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Review of Maritime Transport 1993

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NOTE

This *Review* has been prepared by the UNCTAD secretariat in accordance with section B of the programme of work of the Committee on Developing Services Sectors: Fostering Competitive Services Sectors in Developing Countries: Shipping. Any factual or editorial corrections that may prove necessary based on comments made by the Committee in its consideration of this document or received directly from Governments would be reflected in a corrigendum to be issued subsequently.

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ABBREVIATIONS

cif	cost, insurance and freight
CIS	Commonwealth of Independent States
DMEC	developed market-economy country
dwt	deadweight tons
EEC	European Economic Community
FEU	forty-foot equivalent unit
fob	free on board
GDP	gross domestic product
grt	gross registered tons
ldt	light displacement tons
LNG	liquefied natural gas
MTO	multimodal transport operator
NIC	newly industrializing countries
NVO-MTO	non-vessel-operating multimodal transport operator
OECD	Organisation for Economic Cooperation and Development
TEU	twenty-foot equivalent unit
ULCC	ultra-large crude carrier
VLCC	very large crude carrier
VO-MTO	vessel-operating multimodal transport operator

EXPLANATORY NOTES

Tons refer to metric tons, unless otherwise stated.

Details and percentages presented in tables, due to rounding, do not necessarily add up to the totals.

Two dots (..) indicate that data are not available or are not separately reported.

A dash (-) signifies that the amount is nil, or less than half the unit used.

In some tables, the data shown for earlier years have been revised and updated, and may therefore differ from those shown in previous issues of this *Review*.

In the tables and the text, the use of the term "countries" refers to countries, territories or areas.

INTRODUCTION

The *Review of Maritime Transport* is an annual publication prepared by the secretariat of UNCTAD, in accordance with section B of the programme of work of the Committee on Developing Services Sectors: Fostering Competitive Services Sectors in Developing Countries: Shipping. */ The purpose of the *Review* is to identify the main developments in world maritime transport and to provide relevant statistical data. Emphasis is given to the development of the merchant marines in developing countries as compared with other groups of countries.

In order to observe traditional characteristics on the basis of UNCTAD mandates, the basic structure of the *Review of Maritime Transport* remains unchanged from previous editions. The current issue, however, deals with several new or special features, such as correlations between world main economic conditions and world shipping trends, and a review of intraregional trade and shipping services of East and South-East Asia. Developments in other regions will be covered in future editions of the Review.

SUMMARY OF MAIN DEVELOPMENTS

Development of international seaborne trade

- Developing countries in 1993 registered an average increase of 6.1 per cent in their real GDP while industrial countries experienced a poor growth rate of 1.1 per cent.

- Growth rate of world merchandise exports in terms of volume slowed down to 2.5 per cent in 1993 from the 4.5 per cent attained in the previous year. Asia's export growth edged up slightly to 6.0 per cent.

- The total OECD industrial production index in 1993 very slightly declined by 0.2 points from 113.5 in 1992 (1985=100).

- World seaborne trade continued to expand for the eighth consecutive year, exceeding 4.3 billion tons. The annual rate of change, however, decelerated to 2.2 per cent from 2.4 per cent in the previous year and was the lowest rate since 1988.

- Total ton-miles for all cargoes continued to increase, by 3.1 per cent over 1992 to 18,800 billion.

Development of the world fleet

- The world merchant fleet significantly expanded to 710.6 million dwt by the end of 1993. This expansion (2.3 per cent over 1992) is due to an 8.5 per cent increase in newbuilding deliveries and an 11.1 per cent decline in scrapping from the figures in 1992.

- The combined share of the world fleet of developed market-economy countries and the major open-registry countries decreased in 1993 to 67.6 per cent (from 68.2 per cent in 1992).

- Developing countries expanded their fleet to 157.9 million dwt, representing 22.2 per cent of the world fleet (21.6 per cent in 1992). Nearly 60 per cent of the developing countries' fleet was concentrated in the countries of Asia.

Productivity of the world fleet and supply and demand in world shipping

- The main operational productivity indicators of the world fleet expanded to a comparatively high level in 1993. The figure of 6.07 tons of cargo carried per dwt was the third highest since 1970. Ton-miles performed per dwt continued the upward trend to reach the record high of 26,456 since 1977.

- The world total surplus tonnage reached 72.0 million dwt, as compared to 71.7 million dwt in 1992. The surplus capacity in the oil tanker sector in 1993 reached its highest level (43.5 million dwt) since 1988. Conversely, overcapacity in the dry bulk sector decreased to 23.6 million dwt, representing a 6.0 per cent decline over 1992.

Shipbuilding, second-hand market and demolition

- Newbuilding contracts for main types of vessels in 1993 almost doubled the 1992 orders, reaching

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*/ *Report of the Standing Committee on Developing Services Sectors: Fostering Competitive Services Sectors in Developing Countries: Shipping, first session*, TD/B/39(2)/5-TD/B/CN.4/13, annex I.

43 million dwt. The main shipbuilding activities were concentrated on tankers and dry bulk carriers.

- The world total deliveries of newbuildings increased in 1993 by 8.5 per cent over the previous year. Shipyards of developed market-economy countries further increased their predominant share to 63.9 per cent.

- In the second-hand market, 1993 was the year when the trend of decreasing ship value turned upward for dry and wet segments of modern vessels. The total dry and tankers tonnage traded increased by 31 per cent to 42 million dwt as compared to 32 million dwt in 1992.

- The total volume sold for demolition in 1993 declined by 11.1 per cent to 16.9 million dwt. The price level was however rather stable throughout the year.

Port development

- Total container traffic broke the 100 million TEU barrier, reaching 100,734,000 TEU in 1992.

Freight markets

- The 1993 overall liner freight index was at the average level of 76 which was a two point decrease from the average of 1992 (1985=100).

- The comparatively favourable markets for dry bulkers were mainly attributed to an increase of 1.7 per cent in iron ore trade over the previous year, resulting from the world steel production increase.

- The global oil tanker trades in 1993 improved compared to the previous year in the shipments of both crude oil and petroleum products. The annual average freight rates in Worldscale rose from the 1992 level for the principal types of tankers except VLCCs and ULCCs.

- World total freight payments as a proportion of total import value climbed to 5.33 per cent in 1992 from 5.24 per cent in 1991. The proportion of developing countries also turned upwards slightly.

Multimodal transport and technological developments

- Container production in 1993 declined by 15.7 per cent to 970,000 TEU. This reflects a marginal decline in the Asian countries in 1993 to 730,000 TEU from 925,000 TEU in 1992, which represents 80 per cent of the 1992 world production.

Other developments

- Adoption of the International Convention on Maritime Liens and Mortgages, May 1993 by the United Nations and International Maritime Organization Conference of Plenipotentiaries.

Box 1

Vessel and registry groupings used in the Review of Maritime Transport

As in the previous year's *Review*, five vessel groupings have been used throughout most shipping tables in this report. The cut-off point for all tables based on data from Lloyd's Maritime Information Services Ltd. is 100 grt, except those tables dealing with ownership where the cut-off level is 1,000 grt. The groups aggregate 20 principal types of vessel categories, as noted below.

Review group	Constituent ship types
Oil tankers	Oil tankers
Bulk carriers	Ore and bulk carriers, ore/bulk/oil carriers
General cargo	Refrigerated cargo, specialized cargo, ro-ro cargo, general cargo (single- and multi-deck), general cargo/passenger
Containerships	Fully cellular
Other ships	Oil/chemical tankers, chemical tankers, other tankers, liquefied gas carriers, passenger ro-ro, passenger, tank barges, general cargo barges, fishing, offshore supply, and all other types
Total all ships	Summation of all the above-mentioned vessel types

With the formation of new States in Eastern Europe, the registry situation as at 31 December 1993 had changed. Lloyd's Register advises that vessels are only allocated to a new register after confirmation that a new registry has been created and ships entered into a registry. The following guidelines are offered by Lloyd's Maritime Information Services Ltd. for the Review of Maritime Transport, 1993 tables relating to fleet development.

Former USSR

(i) Confirmation has been received from the Latvian (LAV), Lithuanian (LTH) and Estonian (ETN) registries, and these flag codes have been created and maintained.
(ii) The Russian (RUS), Ukrainian (UKE), Azerbaijani (AZE) and Georgian (GEO) republics have by this time started their own registries and these have also been allocated accordingly.
(iii) The other republics, Armenia (ARM), Belarus (BEL), Kazakhstan (KAZ), Kyrgyzstan (KYR), Moldova (MOL), Tajikistan (TAJ), Turkmenistan (TUR) and Uzbekistan (UZB), have not confirmed the establishment of registries, and in consequence a significant number of vessels are held under the USSR flag code (USR) until such time as new registries are set up.

Former Yugoslavia

Ships have been allocated to either Croatia (CRT) or Slovenia (SLO). Any as yet unallocated have been left under Yugoslavia (YUG).

Source: Lloyd's Maritime Information Services Ltd. (London).

Chapter I

THE DEVELOPMENT OF INTERNATIONAL SEABORNE TRADE

The initial chapter of the Review of Maritime Transport provides an overview of the demand for global shipping services. This includes background information on the world economic situation and a review of developments in world seaborne trade.

A. World economic background

1. Developments in the world economy have a direct effect on the demand for global shipping services. In 1993, world real GDP increased by 2.2 per cent over 1992. The GDP of industrial countries grew by 1.1 per cent, while developing countries experienced an increase of 6.1 per cent over the previous year. Growth was particularly strong in Asia at an average of 8.7 per cent, including China (13.4 per cent). Conversely, the former USSR suffered a third consecutive decline (-13.7 per cent compared with 1992). [1/]

2. The volume of world merchandise exports grew by 2.5 per cent in 1993, which was much below the rate of growth of 4.5 per cent recorded in 1992. This slowdown was primarily an effect of the recession in Western Europe, which had a depressing effect not only on the volume of intra-West European trade, but also on the trade with third countries. Rates of trade expansion above the world average were recorded, for the second consecutive year, in North America, Asia and Latin America. Thus, the volume of merchandise imports was up in North America (11.0 per cent in 1993 and 8.0 per cent in 1992) and Asia (10.5 in 1993 after 7.5 in 1992). Asia's export growth edged up slightly to 6.0 per cent, despite a decline in the volume of Japan's exports and a marked deceleration in China's exports (which none the less remained above the region's average). North America's merchandise export growth (5.5 per cent) was less strong than in 1992 (8 per cent), primarily reflecting slowing demand for imports in Latin America (down to 8 per cent from 18 per cent in 1992) and an absolute decline in Western Europe of -3.5 per cent as compared to 2.5 per cent in 1992. [2/]

3. Industrial production, particularly of the OECD countries is another important economic indicator for the maritime sector. Graph 1 indicates the close correlation between the annual change in OECD industrial production and world seaborne trade. In 1993 the total OECD industrial production index marginally declined to 113.3 from 113.5 in 1992 (1985=100). This primarily reflects a 3.0 per cent drop in OECD European countries and a 4.2 per cent decline in Japan. The United States, on the contrary, expanded industrial production by 4.2 per cent during 1993. [3/]

4. With regard to the diverging growth rates in OECD industrial production and world seaborne trade in recent years, the decline in industrial production, particularly since 1990, is mainly attributed to the decrease in production of crude steel, iron ore, coking coal, crude petroleum, non-ferrous metals and fertilizer, and the decline in the prices of such commodities. However increasing trade of other manufactures (mainly merchandise) specifically by North America, Latin America and Asia including China has maintained the growth of world seaborne trade.

B. World seaborne trade

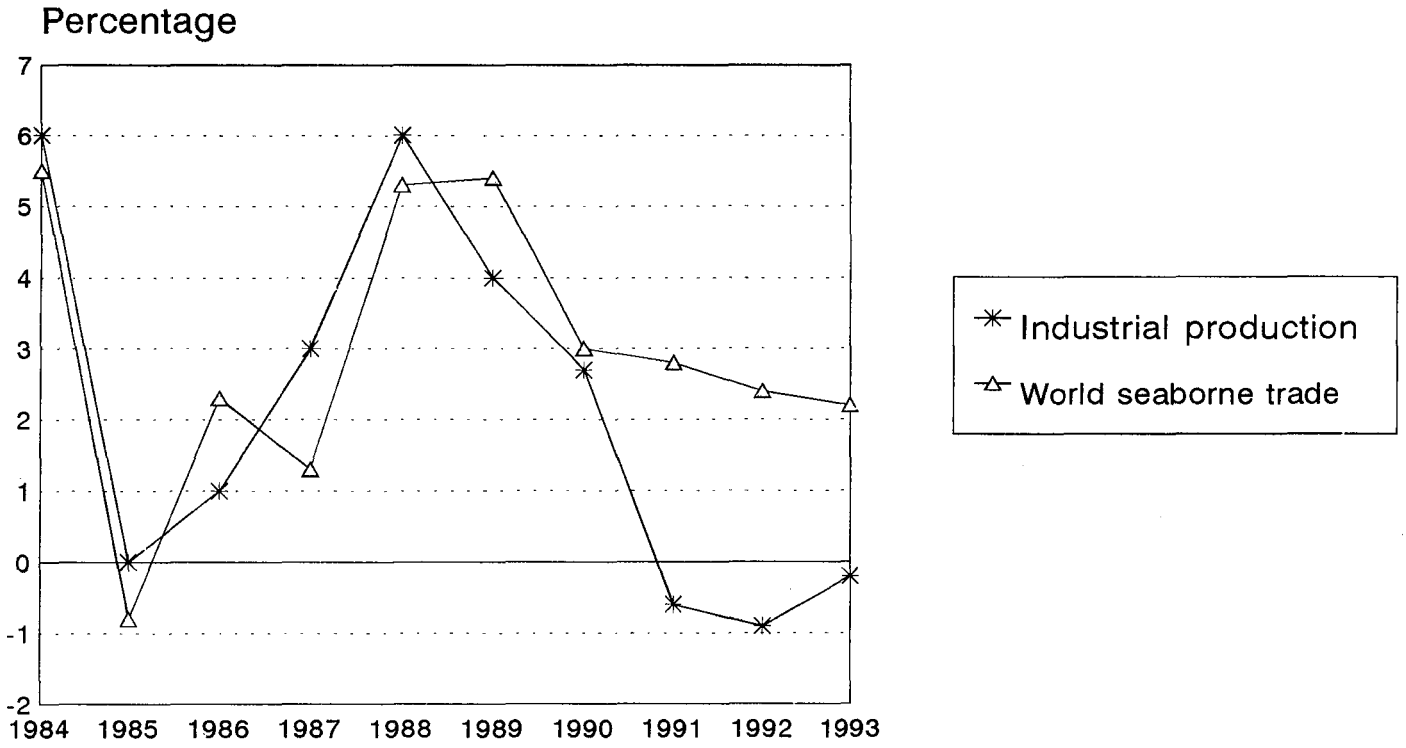
5. World seaborne trade continued to expand in 1993, as shown in table 1 and graph 2. Total cargo tonnage exceeded 4.3 billion tons, registering the eighth consecutive annual increase. The annual rate of change, however, decelerated to 2.2 per cent in 1993 from 2.4 per cent in the previous year (1992). This also marks the fourth successive decline of the annual rate of growth and the lowest rate since 1988. Nevertheless the long-term upward trend in world seaborne trade prevailed, the average annual rate of growth amounting to 3.5 per cent over the period 1986-1993.

6. By broad segments of maritime trade, tanker cargoes represented almost 45 per cent of the total 1993 seaborne trade, increasing by 4.6 per cent to 1,945 million tons. On the other hand, the volume of total dry cargoes traded stagnated in 1993, and the main dry bulk commodities registered a decline by 0.5 per cent to 985 million tons in 1993.

7. As mentioned above, the total oil tanker trade improved in 1993, despite stagnating world oil production. While OPEC countries' total production increased by 1.5 per cent, the production of non-OPEC countries fell by 1.3 per cent, of which the former USSR showed the most marked decline (13.42 per cent). [4/] On the export side, the recorded growth is mainly due to increasing crude oil shipments from the Middle East. Crude oil imports of OECD countries grew by 3.3 per cent [5/] while the growth in oil product trades was primarily based on imports by the countries in East and South-East Asia. [6/]

Graph 1

Annual change in OECD industrial production and world seaborne trade, 1984-1993



Source: OECD, *Main Economic Indicators*, March 1994.

Table 1

Development of international seaborne trade, a/ 1970, 1975, 1980 and 1985-1993
(Estimates of goods loaded)

	Tanker cargo		Dry cargo				Total (all goods)	
			Total		of which: main bulk commodities b/			
Year	Millions of tons	Percentage annual change	Millions of tons	Percentage annual change	Millions of tons	Percentage annual change	Millions of tons	Percentage annual change
1970	1 440	13.1	1 165	13.0	448	16.0	2 605	13.0
1975	1 644	-10.0	1 428	-3.0	635	-5.0	3 072	-4.0
1980	1 871	-6.6	1 833	3.3	796	4.5	3 704	-2.0
1985	1 459	-22.0	1 923	4.9	857	7.7	3 382	-8.7
1986	1 514	3.8	1 945	1.1	834	-2.7	3 459	2.3
1987	1 506	-0.5	1 999	2.8	875	4.9	3 505	1.3
1988	1 587	5.4	2 105	5.3	940	7.4	3 692	5.3
1989	1 692	6.6	2 199	4.5	965	2.7	3 891	5.4
1990	1 755	3.7	2 253	2.5	968	0.3	4 008	3.0
1991	1 790	2.0	2 330	3.4	1 005	3.8	4 120	2.8
1992	1 860	3.9	2 360	1.3	990	-1.5	4 220	2.4
1993 c/	1 945	4.6	2 367	0.3	985	-0.5	4 312	2.2

Sources: Based on data from the United Nations Statistical Office; Fearnleys (Oslo), *World Bulk Trades 1992* and *Review 1993*, UNCTAD data bank and other specialized sources.

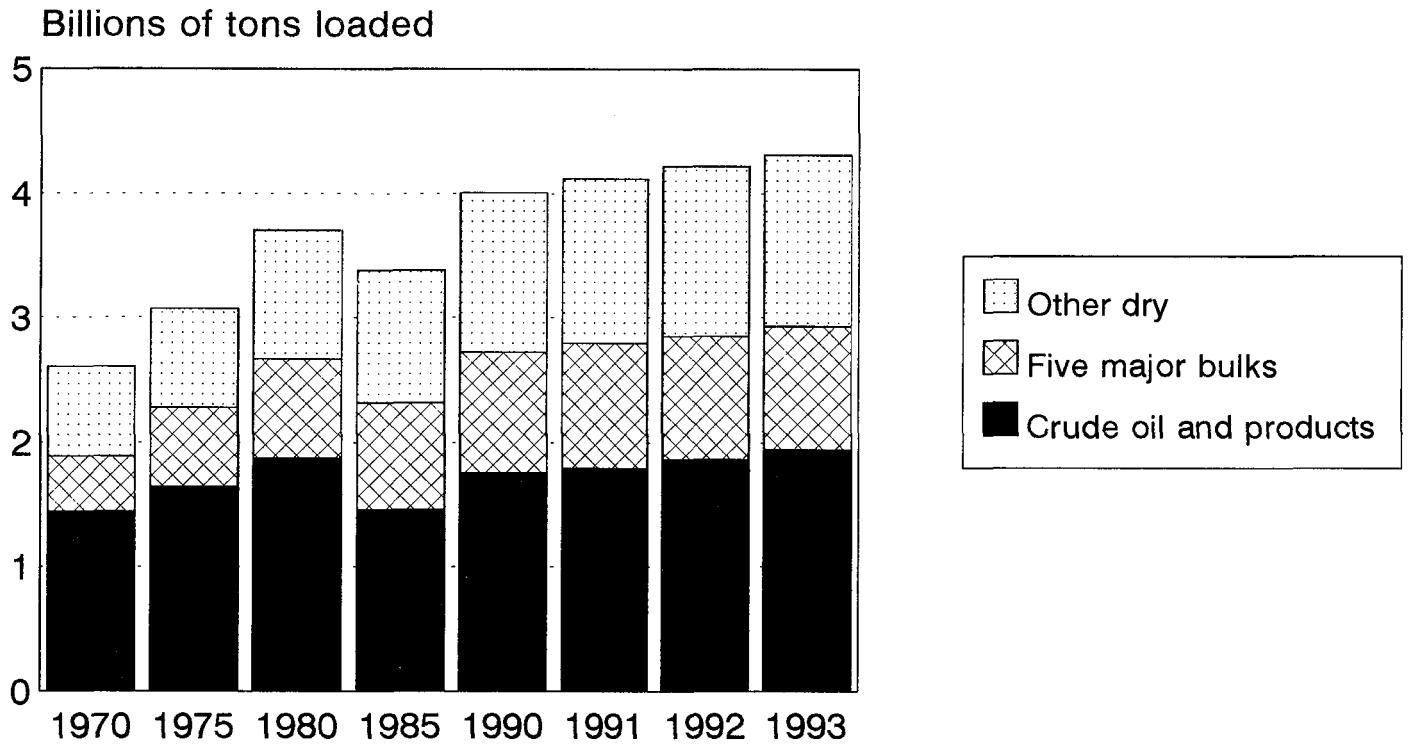
a/ Including international cargoes loaded at ports of the Great Lakes and St. Lawrence system for unloading at ports of the same system.

b/ Iron ore, grain, coal, bauxite/alumina and phosphate.

c/ UNCTAD preliminary estimates.

Graph 2

International seaborne trade for selected years



Source: *Review of Maritime Transport*, various issues.

8. Developments in the dry bulk sector varied considerably depending on types of commodities. In 1993 world crude steel production marginally improved by 0.4 per cent to 725.3 million tons, [7] resulting in an increase in iron ore shipments by 1.7 per cent to 338.0 million tons. [8] The major iron ore producing country, Australia, exported 110.0 million tons in 1993, a 3.2 per cent increase from 106.6 million tons in 1992, while Brazil, another major producer, marked a decline of 1.0 million tons from the previous year. [9] Exports of Brazilian and Australian iron ore expanded in the trades with Japan, China and the Republic of Korea, whose total production of steel increased by 6.5 per cent over 1992 to 267.2 million tons, representing 36.8 per cent of the world steel production. [10] Coking coal shipments also increased slightly whilst thermal coal shipments decreased considerably due to the competition of cheap oil. Consequently, total coal shipments for 1993 fell by about 3.0 per cent to 360.0 million tons. [11] Exports from Australia, which constitute about one third of the world's coal exports, amounted to 132.3 million tons, as compared to 126.8 million tons in 1992. [12] The grain (wheat and course grain) trade declined to 192 million tons in 1992/1993 (July-June) from 199 million tons in 1991/1992, with the four major exporting areas (North America, Australia, Argentina and the European Community) decreasing exports for the January-September period by 6.8 per cent from the previous corresponding period. [13] This is mainly attributable to the decline in grain imports by the Commonwealth of Independent States from 38.8 million tons in 1991/1992 to 26.1 million tons in 1992/1993. [14] The world phosphate rock trade declined in 1993 by 14.5 per cent to 17.7 million tons for the January-September period, from 20.7 million tons for the corresponding period in 1992. This trend reflects the export reduction by 15.8 per cent from the three major exporting countries (Jordan, Morocco and the United States), which share almost two thirds of the world total exports. [15] The alumina and bauxite trades slightly moved as the world primary aluminium production increased by 1.4 per cent to 15.0 million tons, primarily due to an 11.0 per cent increase in both South-East Asia and Oceania. [16]

9. Shipments of "other dry cargo" including general cargo and liner shipments slightly increased by 0.9 per cent over 1992. Containerized liner trades of the OECD countries and NICs grew at 3.8 per cent in 1993, the lowest rate seen over the seven-year historical period. [17] Total OECD countries' manufacturing production in 1993 remained unchanged from 1992. United States improved by 4.3 per cent over 1992. Conversely OECD Europe and Japan declined by 3.4 per cent and 4.2 per cent respectively. [18]

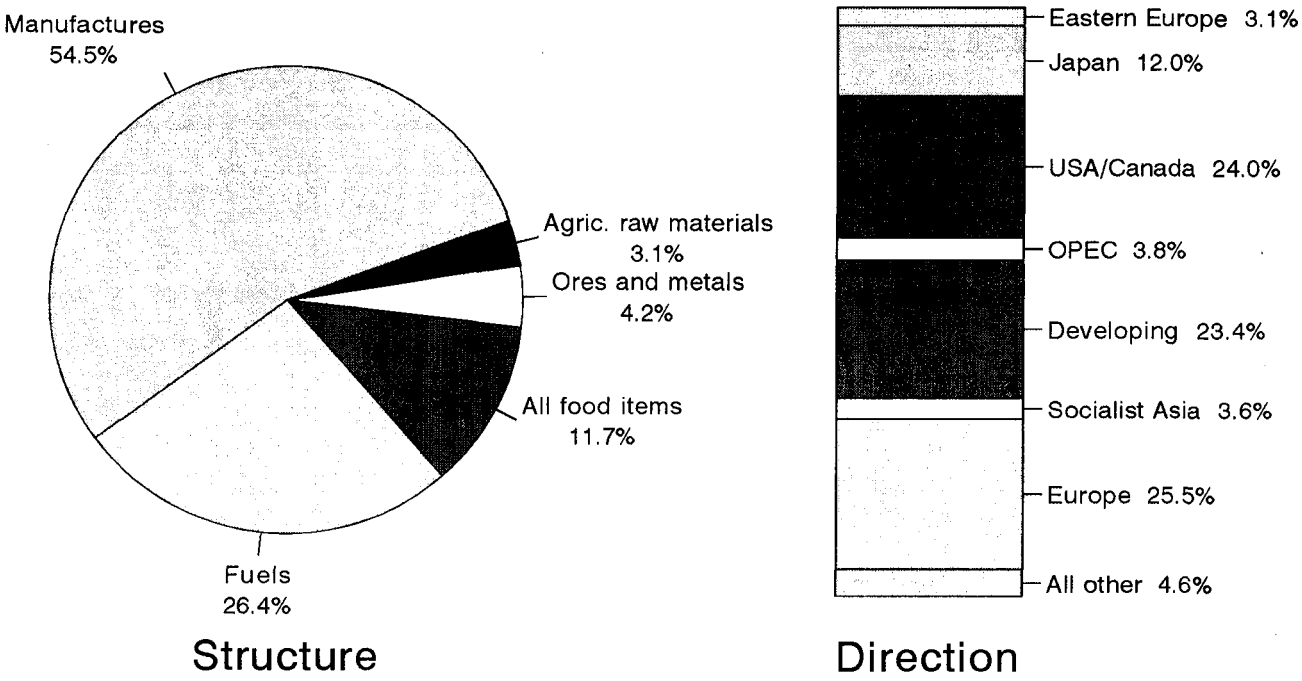
10. Graph 3 illustrates the export structure and direction of trade for developing countries. The structure of exports by value comprises five broad categories. Manufactured goods, fuels and all food items are the dominant cargoes, sharing nearly 93 per cent of the total. In terms of weight, developing countries' exports consist dominantly of bulk cargoes. The direction of the developing countries' exports by value is indicated, with 61.5 per cent of the total towards developed market-economy countries and 23.4 per cent within the group.

11. Table 2 translates long-term developments of world seaborne trade by types of cargo into demand for shipping services expressed in ton-miles. Total services provided increased by 3.1 per cent in 1993. This is higher than the 1992 rate of growth of 2.0 per cent, but still falling significantly short of the 10-year average annual rate of growth of 4.9 per cent. Performance in different market segments, however, varied considerably. Developments in tanker and iron ore trades basically followed the same trend as the total trade ton-miles. Conversely, in the coal trades, ton-miles decreased by 2.3 per cent in 1993, marking a first absolute decrease since 1983. Grain shipments have been stagnating over the last 10 years at around 1,050 billion ton-miles, but have shown considerable annual fluctuations. The most notable development could be observed with regard to oil products shipments, which expanded by 9.6 per cent in 1993 as compared to the past 10-year average annual rate of 6.4 per cent.

12. A summary of seaborne trade by major cargo segments and country groups is shown in table 3 and graph 4. In terms of regional distribution, developing countries increased their share of both oil and dry cargoes for the third consecutive year to a combined share of 51.1 per cent for loading and 26.8 per cent for unloading. Within this group, however, the marginalization of African economies in world trade continues. In 1992 their share of goods unloaded declined after a period of stagnation for the third consecutive year. Developed market-economy countries suffered a decrease to 42.8 per cent in their share of all goods loaded, whilst they experienced a slight increase to 67.8 per cent for those unloaded. It is notable that for the fourth consecutive year the share of the countries of Central and Eastern Europe declined to 4.0 per cent and 3.4 per cent in terms of goods loaded and unloaded respectively. The share of the socialist countries of Asia remained unchanged since 1991 at 2.1 per cent for loading and 2.0 per cent for unloading.

Graph 3

Export structure and direction of trade for developing countries
(1990 percentage distribution by value)



Source: UNCTAD, *Handbook of International Trade and Development Statistics, 1992* (United Nations publication, Sales No. E/F.93.II.D.9) table 3.2, p. 76.

Table 2

World seaborne trade by types of cargo, 1970, 1980 and 1985-1993
(Billions of ton-miles)

Year	Oil		Iron ore	Coal	Grain a/	Other cargo	Total trade
	Crude	Products					
1970	5 597	890	1 093	481	475	2 118	10 654
1980	8 385	1 020	1 613	952	1 087	3 720	16 777
1985	4 007	1 150	1 675	1 479	1 004	3 750	13 065
1986	4 640	1 265	1 671	1 586	914	3 780	13 856
1987	4 671	1 320	1 728	1 653	1 061	3 840	14 273
1988	5 065	1 445	1 919	1 719	1 117	4 040	15 305
1989	5 736	1 540	1 983	1 798	1 095	4 250	16 402
1990	6 261	1 560	1 978	1 849	1 073	4 440	17 161
1991	6 757	1 530	2 008	1 999	1 069	4 510	17 873
1992	6 970	1 620	1 896	2 001	1 091	4 650	18 228
1993	7 250	1 775	1 940	1 955	1 040	4 840	18 800

Source: Fearnleys (Oslo), *Review 1993*.

a/ Including wheat, maize, barley, oats, rye, sorghum and soya beans.

Table 3

World seaborne trade a/ in 1970, 1991, 1992 and 1993 (est.)
by types of cargo and country groups b/

Country group	Year	Goods loaded				Goods unloaded			
		Oil		Dry cargo	Total all goods	Oil		Dry cargo	Total all goods
		Crude	Products			Crude	Products		
		(Trade in millions of tons)							
World total	1970	1 110	330	1 165	2 605	1 101	302	1 127	2 530
	1991	1 333	457	2 330	4 120	1 355	441	2 449	4 245
	1992	1 394	466	2 360	4 220	1 414	451	2 480	4 345
	1993	1 443	502	2 367	4 312	1 465	480	2 471	4 416
		(Percentage share of each category of goods in total)							
World total	1970	42.6	12.7	44.7	100.0	43.5	11.9	44.6	100.0
	1991	32.4	11.1	56.5	100.0	31.9	10.4	57.7	100.0
	1992	33.0	11.1	55.9	100.0	32.5	10.4	57.1	100.0
	1993	33.5	11.6	54.9	100.0	33.1	10.9	56.0	100.0
		(Percentage share of trade by groups of countries)							
Developed market-economy countries	1970	2.0	27.1	60.0	31.1	80.4	79.6	79.1	79.9
	1991	13.3	33.2	63.3	44.0	73.2	82.4	62.0	67.7
	1992	13.3	33.5	63.1	43.4	72.9	82.3	61.9	67.6
	1993	12.9	33.3	63.0	42.8	73.0	81.9	61.9	67.8
Countries of Central and Eastern Europe (including the former USSR)	1970	3.4	8.0	6.9	5.6	1.2	1.0	3.8	2.3
	1991	4.0	10.3	3.6	4.5	2.2	0.2	5.5	3.9
	1992	3.6	9.8	3.5	4.2	2.0	0.2	5.3	3.7
	1993	3.2	9.3	3.3	4.0	1.7	0.2	5.0	3.4
Socialist countries of Asia	1970	-	-	1.2	0.5	0.5	0.1	2.0	1.2
	1991	2.5	0.9	2.0	2.1	0.3	0.3	3.3	2.0
	1992	2.5	0.9	2.1	2.1	0.3	0.3	3.3	2.0
	1993	2.5	0.8	2.2	2.1	0.3	0.4	3.4	2.0
Developing countries	1970	94.6	64.9	31.9	62.8	17.9	19.4	15.1	16.6
	1991	80.2	55.6	31.1	49.4	24.3	17.1	29.2	26.4
	1992	80.6	55.9	31.4	50.3	24.8	17.3	29.5	26.7
	1993	81.4	56.6	31.5	51.1	25.0	17.5	29.7	26.8
of which in:									
Africa	1970	25.5	2.4	9.1	15.2	1.7	4.7	3.6	2.9
	1991	23.8	7.5	4.2	11.0	5.5	2.1	4.2	4.4
	1992	22.6	7.4	4.1	10.5	5.4	2.0	4.1	4.3

Table 3 (continued)

Country group	Year	Goods loaded				Goods unloaded			
		Oil		Dry cargo	Total all goods	Oil		Dry cargo	Total all goods
		Crude	Products			Crude	Products		
		(Percentage share of trade by groups of countries)							
America	1970	12.2	35.4	13.8	16.0	10.5	5.6	4.4	7.2
	1991	13.4	12.0	13.2	13.0	5.5	3.6	4.1	4.4
	1992	13.5	12.0	13.2	13.2	5.5	3.5	4.0	4.4
Asia	1970	56.9	27.0	8.1	31.3	5.5	8.5	6.7	6.4
	1991	43.0	35.8	13.0	25.0	13.1	10.6	20.0	16.7
	1992	44.5	36.2	13.4	26.2	13.3	11.1	20.5	17.3
Europe	1970	-	-	-	-	-	0.1	0.1	-
	1991	-	0.2	0.3	0.2	0.7	0.4	0.8	0.7
	1992	-	0.2	0.3	0.2	0.6	0.3	0.7	0.6
Oceania	1970	-	0.1	0.8	0.4	-	0.5	0.3	0.2
	1991	-	0.1	0.4	0.2	-	0.5	0.1	0.2
	1992	-	0.1	0.4	0.2	-	0.4	0.1	0.1

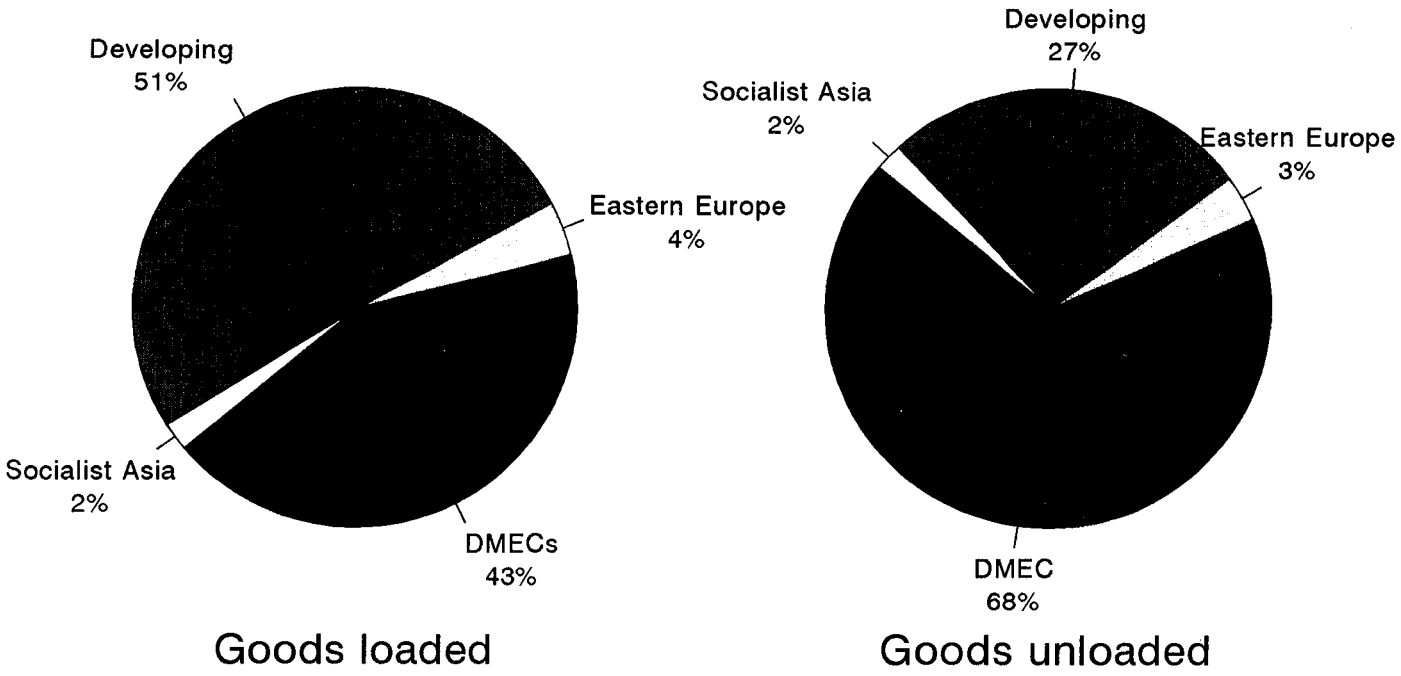
Sources: Based on statistics provided by the United Nations Statistical Office, the UNCTAD data bank, and other specialized sources.

a/ Including international cargoes loaded at ports of the Great Lakes and St. Lawrence system for unloading at ports of the same system, but excluding such traffic in main bulk commodities.

b/ See annex I for the composition of these groups, and note 2 thereto regarding the recording of trade of land-locked countries.

Graph 4

World seaborne trade by country groups
(Percentage distribution of tonnage, 1993)

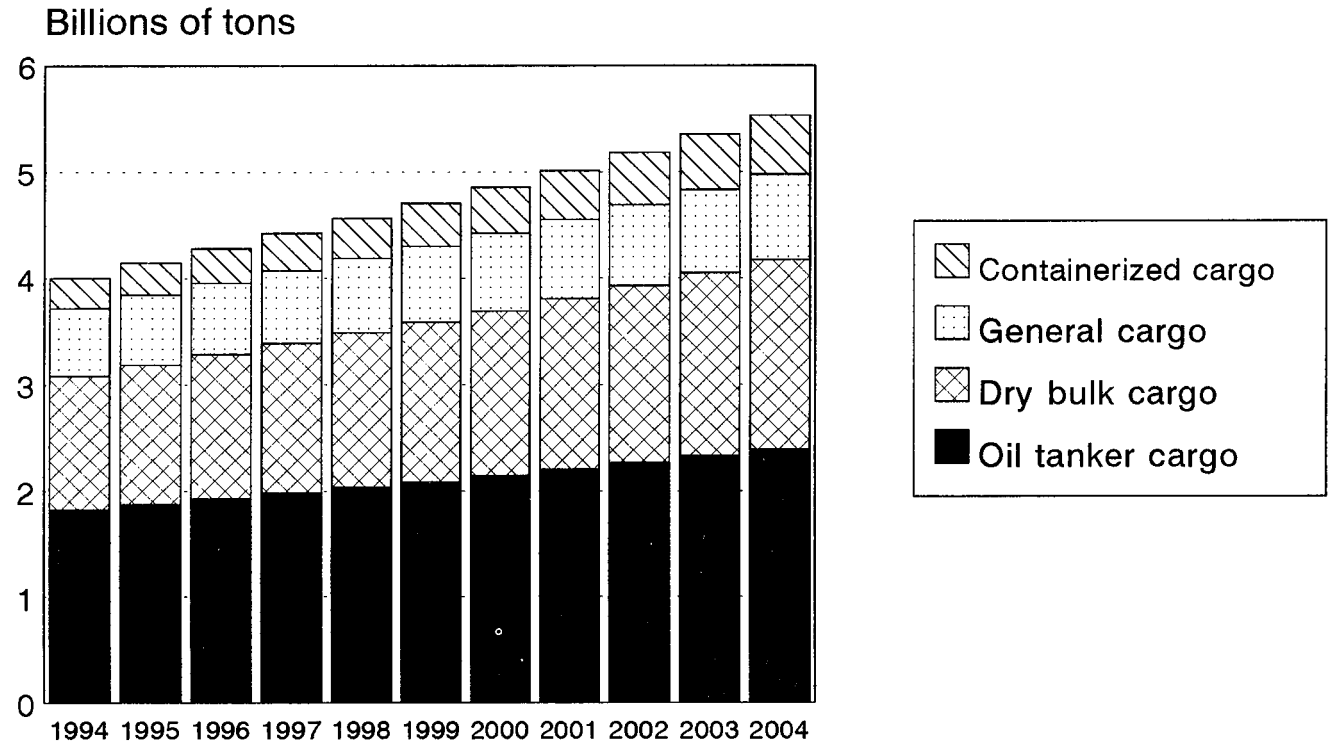


Source: UNCTAD data bank.

13. A forecast of world seaborne trade by main cargo sectors from 1994 to 2004 is shown in graph 5. Estimated at 4.000 billion tons for 1994, the trade is expected to increase by an average of 3.8 per cent per year, reaching 5.530 billion tons by 2004. This is an upward revision from the average rate of 3.6 per cent forecast in 1992. Containerized and other general cargoes are projected to increase at 4.8 per cent per year (4.1 per cent per year expected in 1992) to 1.360 billion tons. Dry bulk cargo and oil tanker cargo, estimated at the average growth rate of 4.1 and 3.1 per cent per year (3.9 and 3.1 per cent per year expected in 1992) are forecast to reach 1.780 and 2.390 billion tons respectively by 2004.

Graph 5

Forecast of world seaborne trade, 1994-2004



Source: DRI/McGraw Hill, World Sea Trade Service.

Box 2

Review of LNG maritime transport

The volume of world maritime transport of LNG in 1993 is estimated to have changed little from the previous year not only in terms of carrying capacity but also trade routes and volume of cargo (LNG). In 1992, 131.965 million m^3 of LNG were carried, representing an increase of 2.8 per cent over 1991. The annual growth rate was however the lowest since 1986.

Regionally the Far Eastern demand dominated the world market, representing 96.108 million m^3 accounting for 72.8 per cent of the world total, with an increase of 2.6 per cent from 1991. The corresponding statistics for Europe shows 33.805 million m^3 or 25.6 per cent of the world total, increasing by 6.7 per cent from 1991. In contrast those for the United States drastically fell to 2.052 million m^3 or 1.6 per cent, representing a decrease of 32.4 per cent from 1991.

The existing world fleet of LNG carriers of 20,000 m^3 and over consists of 76 vessels with a carrying capacity aggregating 7.924 million m^3. The annual average fleet utilization improved to 89.7 per cent in 1993 from 89.2 per cent in the previous year.

For the freight market, it has been expected that high economic growth in many of the countries of the Pacific region will lead to rapidly increasing consumption of natural gas. While existing LNG suppliers in the Middle East and South-East Asia have the potential to meet much of this incremental demand at a cost that is acceptable to the market, doubts have been expressed about the development of completely new fields in the late 1990s especially in respect to price competition with crude oil.

Existing fleet of LNG carriers of 20,000 m^3 and over
(as at 31 December 1993)

Size (m^3)	Year of build								Totals	
	1978 and earlier		1979-1983		1984-1988		1989-1993			
	No.	m^3	No.	m^3	No.	m^3	No.	m^3	No.	m^3
20,000/49,999	11	385 600	-	-	-	-	-	-	11	385 600
50,000/74,999	3	193 240	-	-	-	-	-	-	3	193 240
75,000/99,999	9	705 914	-	-	-	-	2	175 000	11	880 914
100,000/124,999	4	493 762	-	-	-	-	-	-	4	493 762
125,000 and over	14	1 774 589	20	2 559 686	4	500 877	9	1 135 000	47	5 970 152
	41	3 553 105	20	2 559 686	4	500 877	11	1 310 000	76	7 923 668

Sources: John I. Jacobs plc, *World Tanker Fleet Review*. Society of International Gas Tanker and Terminal Operators Ltd. *Lloyd's Shipping Economist*, various issues.

Chapter II

DEVELOPMENT OF THE WORLD FLEET

This chapter studies the supply of world merchant shipping. The information comprehensively covers structure and ownership of the world fleet, the comparison of cargo generation and fleet ownership and a forecast for fleet development.

A. Structure of the world fleet

14. Comparative annual data for 1991, 1992 and 1993 are presented in table 4. The world merchant fleet aggregated 710.6 million dwt by the end of 1993. This represents a 2.3 per cent increase over 1992, and largely exceeds the 0.36 per cent yearly average growth of the 1983-1993 period. The 1993 fleet expansion is attributable to both increasing newbuilding deliveries (31.0 million dwt) and reduced scrapping levels (16.9 million dwt), leaving a net gain of 14.1 million dwt.

15. By vessel type, oil tankers and dry bulk carriers continue to dominate the world fleet. The former represented 38.2 per cent of the 1993 global dwt and the latter 34.1 per cent. The shares of general cargo and containerships were 15.0 per cent and 4.9 per cent, respectively. Comparative data on tonnage structures reveal a continuously growing share of oil tankers and containership tonnage in the world fleet, whilst the share of general cargo ships is on the decline and that of bulk carriers stagnating. However, despite the fact that the share of tanker tonnage increased for the fourth consecutive year, its relative importance is still below that of the early 1980s when tanker tonnage accounted for nearly half the world fleet. Graph 6 illustrates world fleet size trends by principal types of vessel for the 1980-1993 period.

16. The world's fully cellular containerships continued to expand both in terms of TEU capacity and number of ships, and reached 2,090,000 TEUs or 1,423 ships by the end of 1993. Developments since 1991 indicate a 10.3 per cent annual average increase in total TEU capacity and a 3.8 per cent increase in carrying capacity per ship. Table 5 summarizes developments for the 1991-1993 period.

17. The world 1993 container fleet remained concentrated in developed market-economy and open-registry countries. The major open-registry countries represented 28.7 per cent of the world TEU capacity, as compared to 26.0 per cent in 1992. Conversely the share of developed market-economy countries decreased to 34.1 per cent in 1993 from 36.6 per cent in the previous year, leaving their combined share virtually unchanged at 62.8 per cent.

18. The 1993 share of developing countries in TEU capacity of the world fleet decreased to 15.7 per cent, the lowest level since 1990. The major proportion of the containership fleet registered in developing countries was focused in the developing countries of Asia. In 1993 however Asia's share fell to 13.7 per cent of the world containership fleet, which was the lowest since 1990. The share of other developing regions remained insignificant (America - 2 per cent) or practically non-existent (Africa and Europe).

19. Table 6 provides data on the age distribution of the world merchant fleet by type of vessel and by group of countries and territories. From the data it can be generally concluded that the problematic ageing of the world fleet continues, particularly with regard to tanker and bulk carrier tonnage. The average age of the total world fleet increased slightly in 1993 to 15.05 years, representing an increase of 0.9 per cent over 1992. In all groups of countries, the share of tonnage aged 15 years and more increased in 1993 with the exception of major open-registry countries and countries of Central and Eastern Europe. Developments in both these groups, however, are already based on an extremely unfavourable age distribution. With regard to types of vessels, tankers continued to represent the oldest sector of the world fleet (16.86 years in 1993 versus 16.72 years in 1992) with vessels built 15 and more years constituting 63.3 per cent (62.3 per cent in 1992) of the available tanker tonnage. The average age of bulk carriers moved up by about 1.0 per cent (13.61 years in 1993 versus 13.50 years in 1992). While the average age of containerships increased by 6.2 per cent to 12.82 years (12.07 years in 1992), they still represented the youngest fleet segment.

20. By country grouping, developing countries showed the lowest average age of all ships (14.35 years), followed by developed market-economy countries (14.44 years), countries of Central and Eastern Europe (14.87 years) and major open-registry countries (15.88 years). Socialist countries of Asia have the oldest fleet, with vessels built 15 and more years ago representing 60.5 per cent of their total fleet.

Table 4

World fleet size by principal types of vessel, 1991-1993
(Thousands of dwt) a/
(End-year figures)

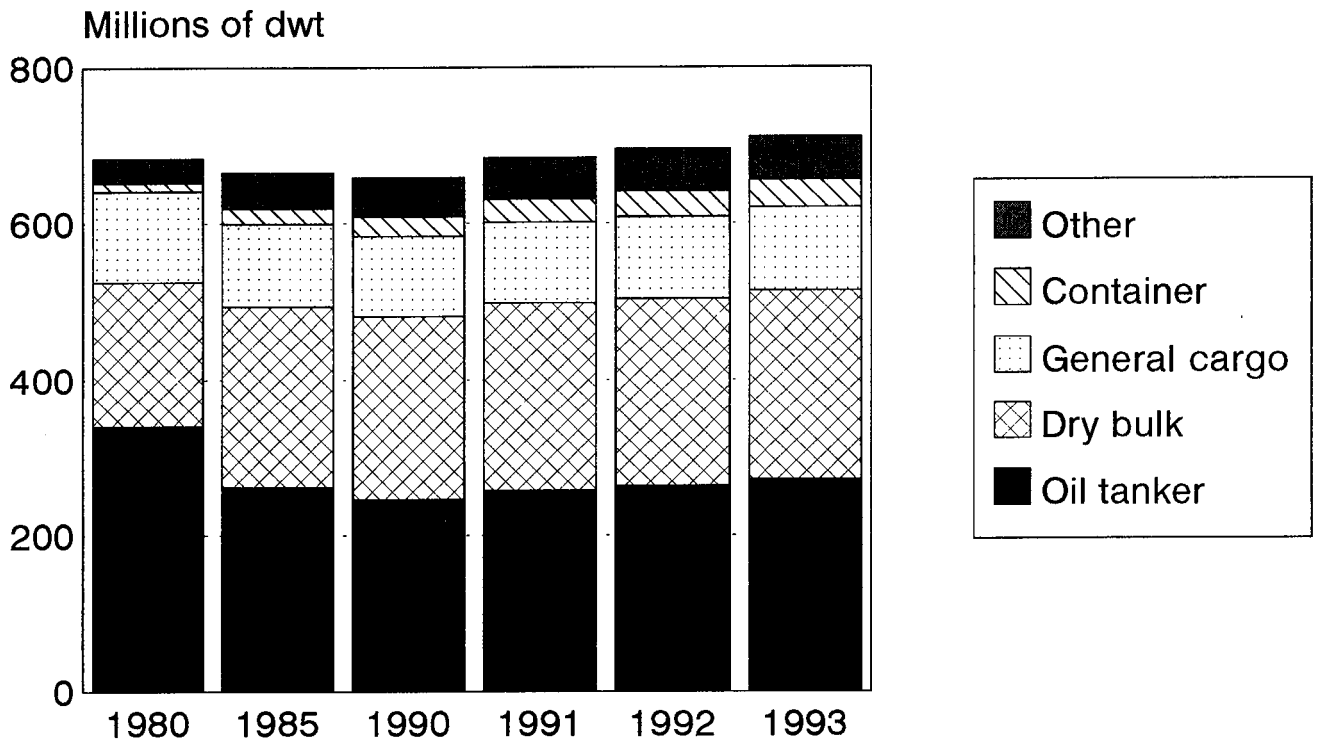
Principal types	1991	1992	1993	Percentage change 1992/1993
1. Oil tankers	256 905	263 334	271 222	3.0
	37.6	*37.9*	*38.2*	
2. Bulk carriers	241 215	239 973	242 134	0.9
	35.3	*34.5*	*34.1*	
Ore/bulk/oil	33 599	36 460	34 207	-6.2
	4.9	*5.3*	*4.8*	
Ore/bulk	207 616	203 513	207 927	2.2
	30.4	*29.3*	*29.3*	
3. General cargo ships	103 386	104 933	106 866	1.8
	15.1	*15.1*	*15.0*	
4. Containerships	29 521	32 408	34 848	7.5
	4.3	*4.7*	*4.9*	
5. Other ships	52 486	54 043	55 552	2.8
	7.7	*7.8*	*7.8*	
Liquefied gas carriers	12 121	12 721	13 388	5.2
	1.8	*1.8*	*1.9*	
Chemical tankers	6 523	7 113	7 381	3.8
	1.0	*1.0*	*1.0*	
Miscellaneous tankers	544	627	539	-14.0
	0.1	*0.1*	*0.1*	
Ferries and passenger ships	3 435	3 673	3 811	3.8
	0.5	*0.5*	*0.5*	
Others	29 863	29 909	30 433	1.8
	4.4	*4.3*	*4.3*	
World total	683 513.0	694 691.0	710 622	2.3
	100.0	*100.0*	*100.00*	

Source: Lloyd's Maritime Information Services Ltd. (London).

a/ Percentage shares are shown in italics.

Graph 6

World fleet size by principal types of vessel : selected years 1980-1993



Source: Lloyd's Maritime Information Services Ltd. (London).

Table 5

Distribution of the world fleet and TEU capacity of fully cellular containerships by groups of countries, 1991, 1992 and 1993
(End-year figures)

Flags of registration by groups of countries	Number of ships			TEU capacity and percentage shares a/		
	1991	1992	1993	1991	1992	1993
1. World total	1 269	1 371	1 423	1 734 016 *100.0*	1 925 177 *100.0*	2 092 204 *100.0*
2. Developed market-economy countries	419	417	397	674 018 *38.9*	704 258 *36.6*	714 088 *34.1*
3. Major open-registry countries b/	308	377	426	395 661 *22.8*	501 281 *26.0*	599 753 *28.7*
Total, 2 and 3	727	794	823	1 069 679 *61.7*	1 205 539 *62.6*	1 313 841 *62.8*
4. Countries of Central and Eastern Europe (including the former USSR)	68	67	55	38 888 *2.2*	34 899 *1.8*	35 343 *1.7*
5. Socialist countries of Asia	62	69	73	62 356 *3.6*	65 592 *3.4*	70 297 *3.4*
6. Developing countries	278	289	292	296 200 *17.1*	320 127 *16.6*	329 200 *15.7*
of which in: Africa	3	3	3	585 -	585 -	585 -
America	40	55	66	25 745 *1.5*	36 075 *1.9*	41 282 *2.0*
Asia	213	225	218	255 796 *14.8*	279 867 *14.5*	285 495 *13.7*
Europe	16	2	1	12 377 *0.7*	2 336 *0.1*	574 -
Oceania	6	4	4	1 697 *0.1*	1 264 *0.1*	1 264 *0.1*
7. Other, unallocated	134	152	180	266 893 *15.4*	299 020 *15.5*	343 523 *16.4*

Source: Lloyd's Maritime Information Services Ltd. (London).

a/ Percentage shares are shown in italics.

b/ Including Malta and Vanuatu.

Table 6

Age distribution of the world merchant fleet by type of vessel
as at 31 December 1993
(Percentage of total in terms of dwt)

Country grouping	Type of vessel	Total	0-4 years	5-9 years	10-14 years	15 years and over	Average age (years) a/	Average age (years) 1992 a/
World total	All ships	100	10.9	18.5	19.7	50.8	15.05	14.91
	Tankers	100	10.4	8.7	17.6	63.3	16.86	16.72
	Bulk carriers	100	11.1	28.2	19.4	41.3	13.61	13.50
	General cargo	100	8.6	17.7	26.0	47.7	15.03	15.04
	Containerships	100	18.0	25.4	17.5	39.0	12.82	12.07
	All others	100	13.0	21.0	21.3	44.8	14.14	13.87
Developed market-economy countries	All ships	100	10.5	21.1	23.2	45.3	14.44	14.09
	Tankers	100	6.3	10.6	24.8	58.2	16.65	16.15
	Bulk carriers	100	12.1	31.8	21.1	35.0	12.70	12.73
	General cargo	100	11.6	24.3	28.0	36.2	13.26	13.04
	Containerships	100	19.7	20.4	19.3	40.6	13.07	12.37
	All others	100	14.9	25.1	20.9	39.1	13.17	12.85
Major open-registry countries b/	All ships	100	11.2	14.7	16.8	57.3	15.88	15.92
	Tankers	100	13.3	5.6	12.4	68.7	17.26	17.36
	Bulk carriers	100	8.4	21.9	18.2	51.5	15.22	15.18
	General cargo	100	9.9	19.9	27.2	43.1	14.34	14.57
	Containerships	100	12.5	28.0	15.9	43.7	13.73	12.70
	All others	100	14.4	19.7	20.3	45.5	14.11	13.98
Subtotal	All ships	100	10.9	17.5	19.7	51.9	15.23	15.09
	Tankers	100	10.3	7.7	17.7	64.2	16.99	16.85
	Bulk carriers	100	10.0	26.2	19.4	44.4	14.13	14.06
	General cargo	100	10.5	21.6	27.5	40.4	13.91	13.97
	Containerships	100	16.7	23.5	17.9	41.8	13.32	12.50
	All others	100	14.7	23.1	20.7	41.6	13.55	13.28
Countries of Central and Eastern Europe	All ships	100	8.6	20.1	24.0	47.3	14.87	14.75
	Tankers	100	8.8	18.8	33.1	39.4	14.13	14.05
	Bulk carriers	100	6.0	27.0	31.7	35.3	13.58	13.34
	General cargo	100	9.0	15.5	17.0	58.6	16.20	16.08
	Containerships	100	8.9	48.9	15.5	26.5	11.29	11.82
	All others	100	12.7	15.9	15.4	56.1	15.56	15.58
Socialist countries of Asia	All ships	100	5.1	17.6	16.8	60.5	16.66	16.28
	Tankers	100	5.1	15.7	12.7	66.6	17.38	16.03
	Bulk carriers	100	4.8	21.2	16.3	57.7	16.23	15.99
	General cargo	100	3.7	11.7	21.1	63.5	17.40	17.37
	Containerships	100	18.9	46.3	7.4	27.4	10.54	9.44
	All others	100	3.2	5.4	15.1	76.3	19.04	19.00
Developing countries (excluding open-registry countries)	All ships	100	12.2	21.7	19.8	46.4	14.35	14.22
	Tankers	100	11.2	11.9	13.9	63.1	16.61	16.65
	Bulk carriers	100	17.0	37.8	18.1	27.1	11.12	10.99
	General cargo	100	5.1	11.5	29.2	54.2	16.34	16.39
	Containerships	100	22.8	19.2	17.8	40.2	12.78	12.11
	All others	100	7.4	17.4	28.4	46.9	15.09	14.70

Source: Compiled on the basis of data supplied by Lloyd's Maritime Information Services Ltd. (London).

a/ To calculate average age, it has been assumed that the ages of vessels are distributed evenly between the lower and upper limit of each age group. For the 15-years-and-over age group, the mid-point has been assumed to be 22 years.

b/ Including Malta and Vanuatu.

B. Ownership of the world fleet

21. Table 7 and graph 7 provide information on the distribution of the world merchant fleet by groups of countries for the years 1980, 1992 and 1993. Developed market-economy countries and major open-registry countries owned 67.5 per cent of the 1993 total. This represents about the same as 1992, but a decline from 82.4 per cent in 1980. Developing countries' share of the total 1993 dwt slightly increased to 22.2 per cent, as compared to 21.6 per cent in 1992. This is a significant increase over 1980, when the share was only 10.0 per cent. The share of socialist countries of Asia and countries of Eastern Europe in the world dwt slightly declined to 5.4 per cent.

22. Table 8 contains more detailed data on fleet distribution by vessel types and country groups for the years 1980, 1992 and 1993. In the oil tanker sector, the share of developed market-economy countries in the world total tonnage slightly increased to 34.3 per cent in 1993. At the same time, however, the share of major open-registry countries continued to decrease to 43.0 per cent, resulting in a decreased share of 77.3 per cent of the two groups. Developing countries continuously increased their share to 18.1 per cent in 1993 from 7.7 per cent in 1980 and 16.3 per cent in 1990.

23. In the dry bulk sector, the tonnage share of developed market-economy countries continued to decrease to 25.9 per cent from 52.7 per cent in 1980, but the major open-registry countries expanded their dwt share to 37.0 per cent in 1993 from 31.7 per cent in 1980.

24. The share of general cargo ships in the total world dwt decreased from 17.0 per cent in 1980 to 15.0 per cent in 1993. The share of the developed market-economy countries in this sector declined by more than half from 43.4 per cent in 1980, representing 21.2 per cent of the world general cargo ship dwt in 1993. Conversely the major open-registry fleet dwt share increased further to 31.0 per cent and the developing countries' share also rose to 26.7 per cent in 1993.

25. It is notable that the containership sector expanded to 4.9 per cent of the world dwt in 1993, representing a constant expansion from 1.6 per cent in 1980. Developed market-economy countries decreased further their share of the containership dwt from 74.3 per cent in 1980 to 40.8 per cent in 1993. On the other hand, the open-registry countries' share doubled to 27.8 per cent in 1993 as compared to 13.5 per cent in 1980. The share of developing countries in the world containership fleet slightly decreased from 18.1 per cent in 1992 to 17.7 per cent in 1993, which is however a large expansion from 7.6 per cent in 1980.

26. The 1993 structure of the merchant marine fleet of the main country groups is provided in table 9. Developed market-economy countries' tonnage in oil tankers and dry bulk carriers reached 71.9 per cent of the group's total fleet, which is a small decrease from 72.3 per cent in 1992. Their general cargo ships amounted to 10.4 per cent, while containerships accounted for 6.6 per cent, both of which were almost unchanged from the 1992 figures. Major open-registry countries have a greater proportion of their fleets in the oil tanker and dry bulk carrier sector, accounting for a combined 78.2 per cent in 1993 (78.8 per cent in 1992). Their share of general cargo ships (12.6 per cent) is higher than in developed market-economy countries (10.4 per cent), but containerships (3.7 per cent) account for less than the developed market-economy countries (6.6 per cent).

27. Tonnage distribution in developing countries is characterized by a relatively high proportion of dry bulk carriers (40.3 per cent) and general cargo ships (18.1 per cent), while containerships makes up only 3.9 per cent, which is unchanged from the 1992 proportion. Thus, structural deficiencies continue to characterize the liner fleet of developing countries as reflected in the low share of technologically advanced container tonnage. In the countries of Central and Eastern Europe, general cargo fleets were most concentrated, accounting for 36.7 per cent, while containership tonnage makes up only 1.8 per cent. The socialist countries of Asia continued to have a predominant share of both dry bulk carriers (40.5 per cent) and general cargo ships (32.4 per cent) in their total merchant fleets.

Box 3

Asia-Pacific maritime authorities target sub-standard ships

The Asia/Pacific Memorandum of Understanding (MOU) on Port State Control was finalized at the meeting described below, at the end of 1993. All but one participating nation, China, signed the agreement although it is expected to do so at the first meeting in Beijing in April 1994.

The following statement was issued after the meeting:

"Agreement has been reached today among the maritime authorities of the Asia-Pacific region to cooperate in the fight against sub-standard shipping. The agreement is a significant international initiative to improve maritime safety, to protect the marine environment and to improve the welfare of seafarers."

The Final Preparatory Meeting on Asia-Pacific Regional Cooperation on Port State Control was held in Tokyo from 29 November to 2 December 1993. This meeting was attended by the representatives of 17 maritime authorities of the Pacific basin, together with representatives from the International Maritime Organization, the International Labour Organisation and the Paris Memorandum of Understanding.

The meeting was arranged as the final step to developing a regional cooperative agreement on port state control for the purpose of substantially reducing the number of sub-standard ships operating in this region.

As a consequence of a series of preparatory meetings, a Memorandum of Understanding was unanimously agreed to by the 17 authorities of Australia, Canada, China, Fiji, Hong Kong, Indonesia, Japan, Republic of Korea, Malaysia, New Zealand, Papua New Guinea, the Philippines, Russian Federation, Singapore, Solomon Islands, Thailand and Viet Nam. The Memorandum will be known as the Tokyo MOU.

A secretariat located in Tokyo will operate independently from participating maritime authorities and other organizations, but will be accountable to the committee established as a governing body under provisions of the Memorandum.

The Tokyo MOU takes effect, on or after 1 April 1994, for each participating maritime authority on the date that its acceptance is notified to the secretariat.

A ship inspection database that can be accessed and updated by participating authorities to target sub-standard shipping will be operated by the Canadian Coast Guard.

Regarding the significance of the finalization of the Tokyo MOU, the meeting Chairman said:

"The signing of the Tokyo MOU is possibly the most important single initiative to have occurred in recent times to combat unsafe shipping. It should send a strong signal to unscrupulous owners and charterers that this standard of shipping will no longer be tolerated in the Asia-Pacific region. It is envisaged that the Tokyo MOU will operate in close cooperation with the Paris MOU and the Vina del Mar Agreement, as concluded in Latin America. Such inter-regional cooperation is believed to provide an increased world-wide deterrent for operators of sub-standard ships. Regional maritime authorities decided to hold the next meeting in Beijing in April 1994 to explore further means to extend the fight against poorly maintained and operated ships trading in the Asia/Pacific area."

At the same time the meeting agreed that the secretariat would function independently from any single maritime administration or organization and necessary principles of independence and accountability were written into the text.

It is further noted that considerable effort will be required to ensure that all members of the MOU have in place the necessary personnel and infrastructure to ensure both adequate and consistent levels of vessel inspection.

Source: *International Bulk Journal* (London), January 1994.

Table 7

Distribution of world tonnage (grt and dwt) by groups of countries of registration, 1980, 1992 and 1993 a/
(End-year figures)

Flags of registration by groups of countries	Tonnage and percentage shares b/						Increase in tonnage (mill. of dwt)	
	In grt (millions)			In dwt (millions)				
	1980 c/	1992	1993	1980 c/	1992	1993	1980-1993 average	1992-1993
1. World total	414.5	444.9	457.4	682.8	694.7	710.6	2.1	15.9
	100.0	*100.0*	*100.0*	*100.0*	*100.0*	*100.0*		
2. Developed market-economy countries	214.3	142.3	142.7	350.1	216.6	216.6	-10.3	0.0
	51.7	*32.0*	*31.2*	*51.3*	*31.2*	*30.5*		
3. Major open-registry countries	114.2	153.0	158.8	212.6	257.2	263.4	3.9	6.2
	27.6	*34.4*	*34.7*	*31.1*	*37.0*	*37.1*		
Total 2 and 3	328.5	295.3	301.5	562.7	473.8	480.0	-6.4	6.2
	79.3	*66.4*	*65.9*	*82.4*	*68.2*	*67.6*		
4. Countries of Central and Eastern Europe (including the former USSR)	32.0	33.7	33.2	37.8	39.0	38.2	0.0	-0.8
	7.7	*7.6*	*7.3*	*5.5*	*5.6*	*5.4*		
5. Socialist countries of Asia	7.3	15.1	16.5	10.9	22.6	24.7	1.1	2.1
	1.8	*3.4*	*3.6*	*1.6*	*3.3*	*3.5*		
6. Developing countries	44.7	94.6	99.6	68.4	149.9	157.9	6.9	8.0
	10.8	*21.3*	*21.8*	*10.0*	*21.6*	*22.2*		
of which in:								
Africa	4.9	5.1	5.1	7.2	6.9	6.9	0.0	0.0
America	14.5	17.9	18.7	21.8	27.6	28.8	0.5	1.2
Asia	25.0	58.2	59.3	39.1	93.3	94.6	4.3	1.3
Europe	0.1	11.2	14.4	0.2	18.9	24.6	1.9	5.7
Oceania	0.1	2.2	2.1	0.1	3.2	3.0	0.2	-0.2
7. Other, unallocated	2.0	6.2	6.6	3.0	9.4	9.8	0.5	0.4
	0.5	*1.4*	*1.4*	*0.4*	*1.4*	*1.4*		

Source: Compiled on the basis of data supplied by the Shipping Information Services of Lloyd's Register of Shipping and Lloyd's of London Press Ltd.

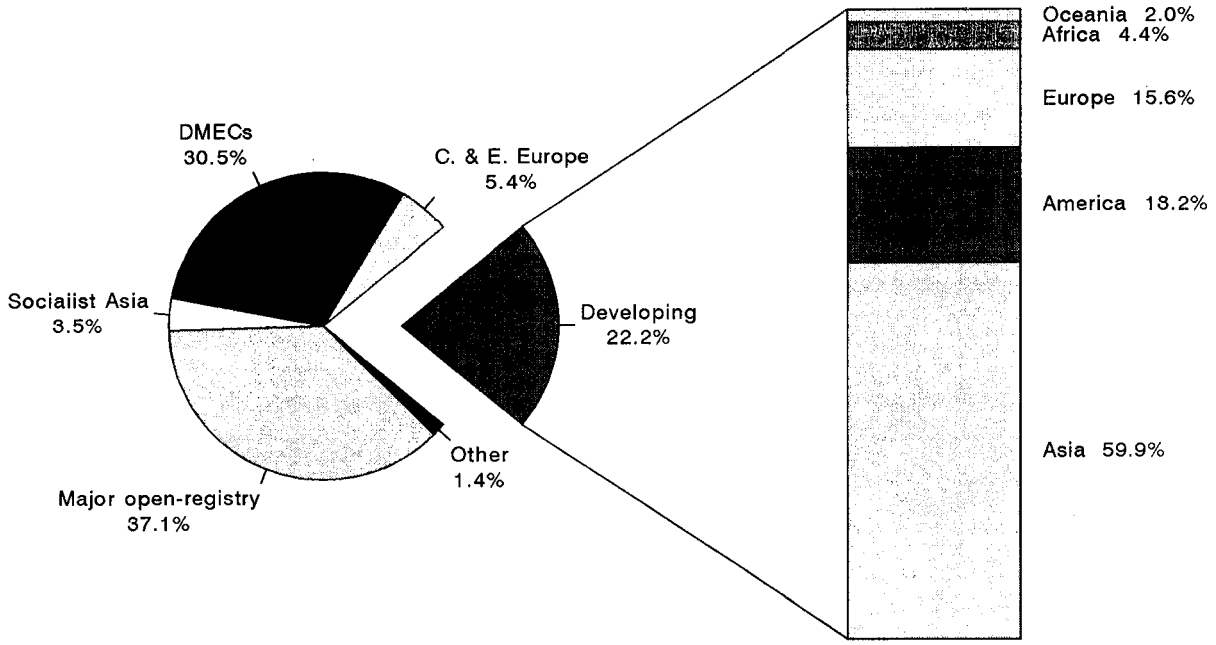
a/ Excluding the United States Reserve Fleet and the United States and Canadian Great Lakes fleets, which in 1993 amounted respectively to 2.8, 1.1 and 1.5 million grt (3.7, 1.9 and 2.1 million dwt).

b/ Percentage shares are shown in italics.

c/ Mid-year figure.

Graph 7

World tonnage by country groups, 1993
(Percentage distribution of dwt)



Source: Lloyd's Maritime Information Services Ltd. (London).

Table 8

Percentage shares of world tonnage by types of vessel and country groups
1980 (as at 1 July), 1992 and 1993 (as at 31 December) a/
(In terms of dwt)

Country group	Year	Total dwt		Oil tankers	Bulk carriers b/	General cargo ships	Container ships	Other ships
		Millions of dwt	Percentage of world total	Percentage share by vessel type				
World total	1980	682.8	100.0	49.7	27.2	17.0	1.6	4.5
	1992	694.7	100.0	37.9	34.5	15.1	4.7	7.8
	1993	710.6	100.0	38.2	34.1	15.0	4.9	7.8
				Percentage share by group of countries				
Developed market-economy countries	1980	350.1	51.3	52.5	52.7	43.4	74.3	50.4
	1992	216.6	31.2	34.1	27.8	21.5	42.6	43.9
	1993	216.6	30.5	34.3	25.9	21.2	40.8	43.3
Major open-registry countries	1980	212.5	31.1	36.2	31.7	20.8	13.5	17.0
	1992	257.2	37.0	44.4	35.8	30.4	25.5	26.4
	1993	263.4	37.1	43.0	37.0	31.0	27.8	26.3
Countries of Central and Eastern Europe	1980	37.8	5.5	2.8	4.2	12.3	2.9	19.2
	1992	39.0	5.6	2.7	4.9	13.7	2.0	9.6
	1993	38.2	5.4	2.6	4.6	13.1	1.9	9.5
Socialist countries of Asia	1980	10.9	1.6	0.6	1.6	4.7	0.1	1.3
	1992	22.6	3.3	1.1	3.9	7.3	3.9	2.5
	1993	24.6	3.5	1.5	4.1	7.5	3.8	2.6
Developing countries	1980	68.4	10.0	7.7	9.2	17.6	7.6	12.0
	1992	149.9	21.6	17.1	25.7	26.6	18.1	17.5
	1993	158.0	22.2	18.1	26.4	26.7	17.7	18.2
of which in:								
Africa	1980	7.1	1.0	1.1	0.1	2.3	..	2.1
	1992	6.9	1.0	0.8	0.5	2.1	..	2.6
	1993	6.9	1.0	0.7	0.5	2.1	..	2.6
America	1980	21.8	3.2	2.3	3.3	5.6	0.1	3.7
	1992	27.6	4.0	3.1	3.7	7.0	2.1	4.7
	1993	28.8	4.1	3.1	3.7	7.3	2.4	5.1
Asia	1980	39.1	5.7	4.3	5.7	9.8	2.7	5.7
	1992	93.3	13.4	10.9	16.9	13.6	15.0	8.9
	1993	94.6	13.3	10.7	17.1	13.4	14.0	8.9
Europe	1980	1.2	..	..	..	0.1	-	-
	1992	18.9	2.7	2.2	3.8	3.2	0.9	0.7
	1993	24.6	3.5	3.6	4.3	3.3	1.2	0.9
Oceania	1980	0.2	..	..	..	0.1	-	-
	1992	3.2	0.5	0.1	0.8	0.7	0.1	0.6
	1993	3.1	0.4	..	0.8	0.6	0.1	0.7
Other, unallocated	1980	3.0	0.4	0.2	0.6	0.9	1.6	0.1
	1992	9.4	1.4	0.6	1.9	0.5	7.9	0.1
	1993	9.8	1.4	0.5	2.0	0.5	8.0	0.1

Source: Compiled on the basis of data supplied by the Shipping Information Services of Lloyd's Register of Shipping and Lloyd's of London Press Ltd.

a/ Excluding the United States Reserve Fleet and the United States and Canadian Great Lakes fleets.

b/ Ore and bulk carriers, including combined ore/oil and ore/bulk/oil carriers.

Table 9

Structure of the merchant marine fleet of the main country groups, as at 31 December 1993 a/
(Million dwt and percentage shares)

	World		Developed market-economy countries		Major open-registry countries		Developing countries		Countries of Central and Eastern Europe		Socialist countries of Asia	
	Million dwt	%	Million dwt	%	Million dwt	%	Million dwt	%	Million dwt	%	Million dwt	%
Total fleet	710.6	100.0	216.6	100.0	263.4	100.0	157.9	100.0	38.2	100.0	24.7	100.0
of which: Oil tankers	271.2	38.2	93.0	42.9	116.5	44.2	49.3	31.2	7.0	18.3	4.0	16.2
Bulk carriers	242.1	34.1	62.8	29.0	89.5	34.0	63.7	40.3	11.2	29.3	10.0	40.5
General cargo	106.9	15.0	22.6	10.4	33.1	12.6	28.6	18.1	14.0	36.7	8.0	32.4
Containerships	34.8	4.9	14.2	6.6	9.7	3.7	6.2	3.9	0.7	1.8	1.3	5.3
Other ships	55.6	7.8	24.0	11.1	14.6	5.5	10.1	6.4	5.3	13.9	1.4	5.7

Source: Compiled on the basis of data supplied by the Shipping Information Services of Lloyd's Register of Shipping and Lloyd's of London Press Ltd.

a/ Ships of 100 grt and over, excluding the United States Reserve Fleet and the United States and Canadian Great Lakes fleets.

C. The 35 most important maritime countries and territories

28. The 35 most important maritime countries in dwt terms are ranked in table 10. This table comprises merchant vessels registered under the national flag or a foreign flag when the controlling interest of the vessels is located in the country. These 35 countries control 93.2 per cent of the world merchant fleet through their own (national) or foreign registry. The five largest countries or territories control more than half of the world fleet and over two thirds of the world fleet is controlled by the top 10 maritime countries or territories.

29. The trend for increasing use of foreign flags continues. In 1993 total tonnage registered under foreign flags reached 309.7 million dwt representing 50.7 per cent of the 35 countries' total fleet, as compared to 49.7 per cent in 1992. Thus, more than half of the tonnage beneficially-owned in the 35 most important maritime countries is not registered in the countries of domicile of the parent companies. While flagging out has been a long-standing practice by owners from developed market-economy countries, it is becoming a common feature for all country groups.

D. Major open registers

30. As reviewed in the preceding paragraphs, foreign registers continue to expand their share in the world merchant fleet. Table 11 summarizes the tonnage distribution of the five major open-registry countries by principal vessel types. The total tonnage registered in 1993 increased to 242.0 million dwt from 233.0 million dwt in the previous year. Panama significantly increased to 83.0 million dwt, and was followed by Cyprus and the Bahamas. Conversely Liberia decreased to 88.4 million dwt from 91.8 million dwt in 1992. By vessel type, oil tankers represent 45.3 per cent of the total dwt (46.2 per cent in 1992), followed by dry bulk carriers with 33.1 per cent (32.8 per cent in 1992), general cargo ships with 12.3 per cent (12.0 per cent in 1992), and containerships with 3.8 per cent (3.3 per cent in 1992).

31. The participation of nationals in the registry of open or international registers is indicated in table 12. The information provided compares the total tonnage registered in the selected countries of registry with the tonnage owned by the nationals of, and registered in, the countries of registry. For most open-registry countries except Cyprus the share owned by nationals is minimal or zero. However with international registry, ownership remained unchanged from the 1992 level of over 90 per cent.

32. The true nationality of the five major open-registry fleets is surveyed in table 13. In the 1993 Review, Russia and Italy were newly added to the major countries of true nationality (20 countries in 1993). Total tonnage of the 20 countries accounts for 92.4 per cent of the total five major open-registry fleets. Ownership is concentrated in 10 countries or territories which control 82.2 per cent of dwt and 75.4 per cent of the number of vessels. These percentage figures increased from 81.2 and 74.7 per cent respectively in 1992. Greece was again placed at the top in 1993 with the largest share (18.6 per cent) of the five major open-registry fleets.

E. Comparison of cargo turnover and fleet ownership

33. The correlation between cargo volume handled in different country groups and their fleet ownership in 1980, 1992 and 1993 is summarized in table 14. The data indicates a disproportional relationship between cargo turnover and fleet ownership. In 1993 developed market-economy countries, either directly or through open or international ship registers, controlled 67.6 per cent (68.2 per cent in 1992) of the world fleet, while they handled 55.6 per cent of the world seaborne trade (56.0 per cent in 1992). In the meantime, the share of developing countries in the world cargo turnover stood at 38.7 per cent (38.2 per cent in 1992), while their merchant fleet constituted 22.2 per cent (21.6 per cent in 1992) of the total world fleet in deadweight.

34. In longer-term comparisons, the gap between cargo turnover and fleet ownership narrowed significantly in both developed market-economy countries and developing countries. Thus, the share of goods loaded and unloaded in 1993 was almost unchanged from the ratio in 1980 for both groups. On the other hand the fleet ownership of developed market-economy countries drastically declined from as high as 82.4 per cent of the world fleet in 1980 to 67.6 per cent in 1993. Conversely, developing countries significantly raised their share to 22.2 per cent in 1993 from the 10.0 per cent registered in 1980.

F. Forecasts for world fleet development

35. Forecasts for world fleet development by vessel type (four main types) are shown in graph 8. The World Fleet Forecast Service (WFFS) projects that the total world fleet will increase from 634.3 million dwt in 1994 to 817.4 million dwt by the year 2004. The combined tonnage of container and general cargo ships is expected to increase by 40.3 per cent over the decade (29.9 per cent expected in 1992). Dry bulk ships and oil tankers will increase by 29.1 per cent and 23.1 per cent respectively by the year 2004 (31.3 per cent and 22.3 per cent respectively expected in 1992).

Table 10

The 35 most important maritime countries, as at 31 December 1993 a/

Country of domicile b/	Number of vessels			Deadweight tonnage				
	National flag c/	Foreign flag	Total	National flag	Foreign flag	Total	Foreign flag as percentage of total	Total as percentage of world total
Greece	1 045	1 821	2 866	52 686 491	62 467 655	115 154 146	54.25	17.58
Japan	1 077	1 824	2 901	29 734 401	55 050 490	84 784 891	64.93	12.95
United States	549	676	1 225	16 317 662	37 805 597	54 123 259	69.85	8.26
Norway	872	513	1 385	32 684 988	18 404 370	51 089 358	36.02	7.80
Hong Kong	95	544	639	5 346 696	27 955 198	33 301 894	83.94	5.08
China	1 460	256	1 716	21 269 773	8 843 135	30 112 908	29.37	4.60
United Kingdom	393	462	855	5 135 539	17 593 627	22 729 166	77.41	3.47
Russian Federation	2 681	274	2 955	15 941 493	5 127 681	21 069 174	24.34	3.22
Republic of Korea	448	217	665	9 847 468	8 711 314	18 558 782	46.94	2.83
Germany	520	681	1 201	5 628 654	10 974 634	16 603 288	66.10	2.54
Denmark	440	217	657	6 762 422	5 197 657	11 960 079	43.46	1.83
Italy	546	92	638	9 175 252	2 737 207	11 912 459	22.98	1.82
Taiwan, Province of China	191	200	391	7 387 473	4 515 553	11 903 026	37.94	1.82
Sweden	176	138	314	2 233 382	9 340 575	11 573 957	80.70	1.77
India	395	42	437	10 385 776	760 347	11 146 123	6.82	1.70
Brazil	231	16	247	8 618 329	1 535 018	10 153 347	15.12	1.55
Singapore	310	192	502	6 395 490	2 608 539	9 004 029	28.97	1.37
Iran (Islamic Rep.of)	153	1	154	8 005 381	1 600	8 006 981	0.02	1.22
Turkey	363	20	383	7 600 440	245 463	7 845 903	3.13	1.20
France	184	101	285	3 403 684	3 607 651	7 011 335	51.45	1.07
Ukraine	649	65	714	5 824 994	276 902	6 101 896	4.54	0.93
Netherlands	430	178	608	3 282 486	1 919 201	5 201 687	36.90	0.79
Romania	280	17	297	4 062 514	757 088	4 819 602	15.71	0.74
Spain	232	116	348	1 502 133	2 873 856	4 375 989	65.67	0.67
Kuwait	36	7	43	3 299 469	1 007 769	4 307 238	23.40	0.66
Belgium	36	116	152	150 316	4 052 523	4 202 839	96.42	0.64
Saudi Arabia	60	41	101	906 349	3 273 516	4 179 865	78.32	0.64
Indonesia	426	95	521	2 560 173	1 447 378	4 007 551	36.12	0.61
Philippines	276	16	292	3 736 245	270 612	4 006 857	6.75	0.61
Cyprus	43	38	81	3 002 925	828 979	3 831 904	21.63	0.59
Finland	109	57	166	1 190 696	2 589 052	3 779 748	68.50	0.58
Switzerland	15	148	163	488 431	3 205 268	3 693 699	86.78	0.56
Croatia	33	140	173	126 802	3 239 413	3 366 215	96.23	0.51
Poland	221	17	238	2 986 106	206 894	3 193 000	6.48	0.49
Australia	80	18	98	2 910 008	248 848	3 158 856	7.88	0.48
Total (35 countries)	15 055	9 356	24 411	300 590 441	309 680 610	610 271 051	50.74	93.18
Percentage	61.7	38.3	100	49.3	50.7	100		
World total	17 911	10 142	28 053	330 196 171	324 726 432	654 922 603	49.58	100.00
Percentage	63.9	36.2	100	50.4	49.6	100		

Source: Information supplied by Lloyd's Maritime Information Services Ltd. (London).

a/ Vessels of 1,000 grt and above, excluding the United States Reserve Fleet and the United States and Canada Great Lakes fleets.

b/ The country of domicile indicates where the controlling interest of the fleet is located, in terms of the parent company. In several cases, this has required certain judgements to be made. Thus, for instance, Greece is shown as the country of domicile with respect to vessels owned by a Greek owner with representative offices in New York, London and Piraeus, although the owner may be domiciled in the United States.

c/ Including vessels flying the national flag but registered in territorial dependencies or associated self-governing territories. For the United Kingdom, British flag vessels are included under the national flag, except for Bermuda (listed in table 11 as an open-registry country) and Hong Kong (shown separately in the present table).

Table 11

Tonnage distribution of major open-registry fleets a/ as at 31 December 1993

Country	Oil tankers		Dry bulk carriers		General cargo		Containerships		Others		1993 Total		1992 Total	
	Ships	Thousand dwt	Ships	Thousand dwt	Ships	Thousand dwt	Ships	Thousand dwt	Ships	Thousand dwt	Ships	Thousand dwt	Ships	Thousand dwt
Liberia	394	49 030	399	25 263	283	4 971	104	3 039	281	6 051	1 461	88 354	1 508	91 757
Panama	341	32 857	576	26 806	1 523	14 706	183	4 460	528	4 163	3 151	82 992	2 927	73 524
Cyprus	81	6 168	495	19 708	532	5 339	57	871	65	583	1 230	32 669	1 168	30 384
Bahamas	161	17 913	147	8 151	368	4 678	32	725	213	1 595	921	33 062	896	31 874
Bermuda	18	3 755	8	247	14	111	5	112	33	873	78	5 098	76	5 467
Total	995	109 723	1 625	80 175	2 720	29 805	381	9 207	1 120	13 265	6 841	242 175	6 575	233 006

Source: Based on data supplied by Lloyd's Maritime Information Services Ltd. (London).

a/ Ships of 1,000 grt and above. This table is not fully comparable with tables 7 and 9, which take ships of 100 grt and above as the base.

Table 12

Tonnage owned by the nationals of, and registered in, the country of registry in the total fleet of the most important open and international registers
(Thousand dwt as at 31 December 1993) a/

Country of registry or register	Total tonnage registered in the country of register	Tonnage owned by nationals of, and registered in, the country of registry	Share of tonnage owned by nationals in the total registered fleet (%)
Liberia	88 353	0	0.0
Panama	82 992	0	0.0
Cyprus	35 673	3 003	8.4
Bahamas	33 190	128	0.4
Norwegian International Ship Registry	33 138	30 663	92.5
Danish International Ship Registry	6 389	6 358	99.5
Bermuda	5 098	0	0.0

Source: As table 11.

a/ See table 11.

Table 13

True nationality of major open-registry fleets, as at 31 December 1993

Flag country / Country or territory of domicile	Liberia			Panama			Cyprus			Bahamas			Bermuda			Subtotal			Total foreign-flag fleet	
	Thousand dwt	No. of vessels	%	Thousand dwt	No. of vessels	%	Thousand dwt	No. of vessels	%	Thousand dwt	No. of vessels	%	Thousand dwt	No. of vessels	%	Thousand dwt	No. of vessels	%	Thousand dwt	No. of vessels
Greece	10 270	123	11.6	7 388	328	8.9	22 566	722	69.1	4 847	120	14.7	-	-	0.0	45 071	1 293	18.6	62 468	1 821
Japan	9 481	226	10.7	33 044	1 233	39.8	134	19	0.4	1 039	34	3.1	-	-	0.0	43 698	1 512	18.0	55 050	1 824
United States	18 755	227	21.2	2 188	119	2.6	25	7	0.1	8 189	120	24.8	996	6	19.5	30 153	479	12.5	37 806	676
Hong Kong	9 451	128	10.7	13 072	277	15.8	547	4	1.7	370	8	1.1	-	-	0.0	23 440	417	9.7	27 955	544
Norway	7 591	166	8.6	2 001	62	2.4	2 300	19	7.0	4 178	131	12.6	214	8	4.2	16 284	386	6.7	18 404	513
United Kingdom	4 522	78	5.1	919	56	1.1	330	14	1.0	2 193	100	6.6	2 085	31	40.9	10 049	279	4.2	17 594	462
Germany	4 283	113	4.9	1 497	30	1.8	2 177	199	6.7	359	12	1.1	54	1	1.1	8 370	355	3.5	10 975	681
Republic of Korea	1 717	22	1.9	6 531	163	7.9	-	-	0.0	-	-	0.0	-	-	0.0	8 248	185	3.4	8 711	217
Sweden	4 699	29	5.3	132	13	0.2	-	-	0.0	1 566	30	4.7	945	5	18.5	7 342	77	3.0	9 341	138
China	2 291	52	2.6	3 956	108	4.8	207	12	0.6	34	1	0.1	-	-	0.0	6 488	173	2.7	8 843	256
Russian Federation	2 752	45	3.1	225	30	0.3	1 371	46	4.2	70	4	0.2	-	-	0.0	4 418	125	1.8	5 128	274
Taiwan, Province of China	732	22	0.8	3 124	155	3.8	274	2	0.8	-	-	0.0	-	-	0.0	4 130	179	1.7	4 516	200
Saudi Arabia	2 335	8	2.6	153	15	0.2	-	-	0.0	510	2	1.5	-	-	0.0	2 998	25	1.2	3 274	41
France	617	4	0.7	892	19	1.1	53	5	0.2	1 259	36	3.8	-	-	0.0	2 821	64	1.2	3 608	101
Finland	-	-	0.0	23	6	0.0	254	1	0.8	2 169	38	6.6	-	-	0.0	2 446	45	1.0	2 589	57
Switzerland	386	10	0.4	866	57	1.0	170	9	0.5	693	17	2.1	-	-	0.0	2 115	93	0.9	3 205	148
Denmark	873	14	1.0	222	23	0.3	62	9	0.2	869	79	2.6	-	-	0.0	2 026	125	0.8	5 198	217
Italy	676	15	0.8	131	9	0.2	279	8	0.9	465	10	1.4	-	-	0.0	1 551	42	0.6	2 737	92
Singapore	348	13	0.4	702	81	0.9	-	-	0.0	395	5	1.2	-	-	0.0	1 445	99	0.6	2 609	192
Belgium	240	6	0.3	35	5	0.0	215	18	0.7	161	5	0.5	-	-	0.0	651	34	0.3	4 053	116
Subtotal	82 019	1 301	92.8	77 101	2 789	92.9	30 964	1 094	94.8	29 366	752	88.8	4 294	51	84.2	223 744	5 987	92.4	294 064	8 570
Others	6 334	160	7.2	5 891	362	7.1	1 706	136	5.2	3 697	169	11.2	804	27	15.8	18 432	854	7.6	30 662	1 572
TOTAL	88 353	1 461	100.0	82 992	3 151	100.0	32 670	1 230	100.0	33 063	921	100.0	5 098	78	100.0	242 176	6 841	100.0	324 726	10 142

Source: Based on data supplied by Lloyd's Maritime Information Services Ltd. (London).

Table 14

Comparison between total cargo turnover and fleet ownership by groups of countries, 1980, 1992 and 1993

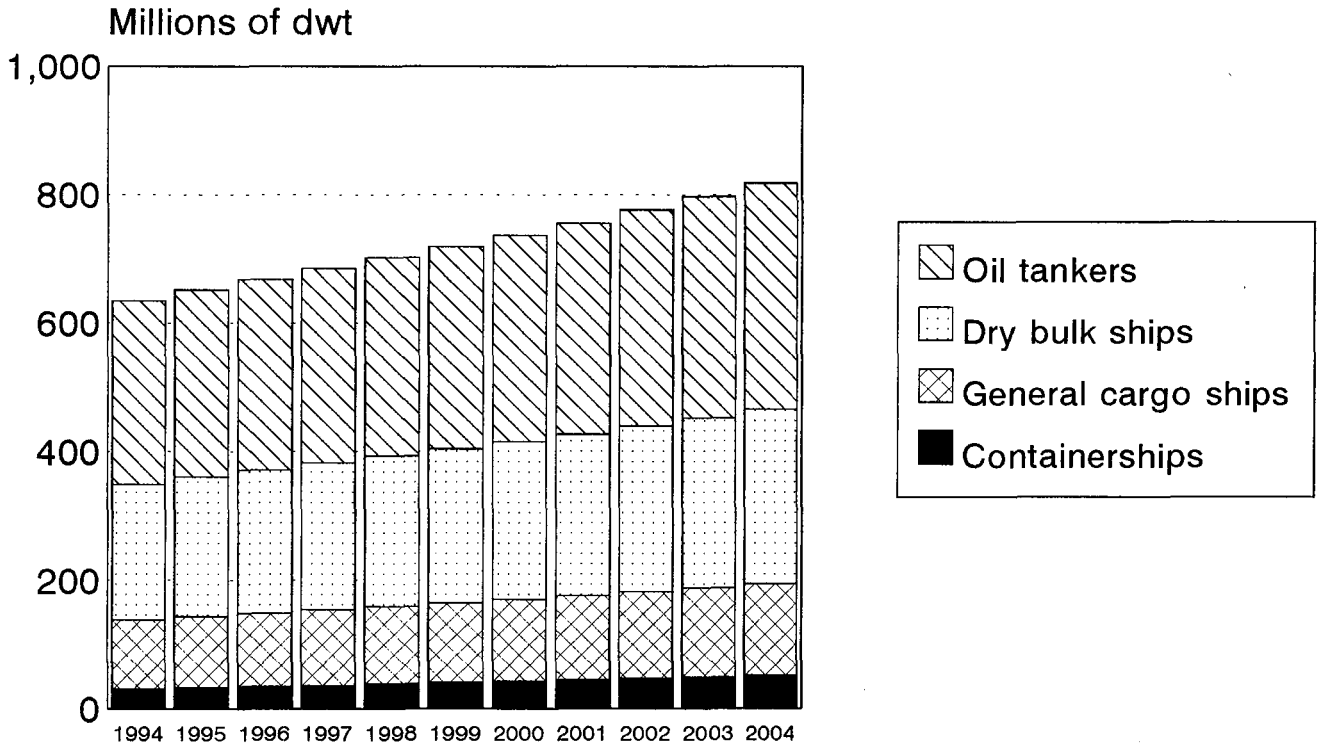
Country grouping	Year	Goods loaded and unloaded (millions of tons)		Total of goods loaded and unloaded (millions of tons)	Merchant fleet (millions of dwt)	Percentage of world total of	
		Loaded	Unloaded			Goods loaded and unloaded	Merchant fleet owned (dwt)
Developed market-economy and major open-registry countries	1980	1 424	2 626	4 050	562.7	54.9	82.4
	1992	1 845	2 941	4 786	473.8	55.9	68.2
	1993	1 853	2 998	4 851	480.0	55.6	67.6
Developing countries	1980	2 033	808	2 841	68.4	38.5	10.0
	1992	2 109	1 156	3 265	149.9	38.1	21.6
	1993	2 195	1 180	3 375	158.0	38.7	22.2
Countries of Central and Eastern Europe (including the former USSR)	1980	201	145	346	37.8	4.7	5.5
	1992	178	161	339	39.0	4.0	5.6
	1993	173	150	323	38.2	3.7	5.4
Socialist countries of Asia	1980	46	100	146	10.9	2.0	1.6
	1992	88	87	175	22.6	2.0	3.3
	1993	91	88	179	24.6	2.1	3.5
World total a/	1980	3 704	3 679	7 383	682.8		
	1992	4 220	4 345	8 565	694.7		
	1993	4 312	4 416	8 728	710.6		

Source: As per tables 3 and 8.

a/ Including unallocated tonnage indicated in annex III.

Graph 8

Forecast of world fleet by principal types of vessel, 1994-2004



Source: DRI/McGraw-Hill, World Fleet Forecast Service.

Chapter III

PRODUCTIVITY OF THE WORLD FLEET AND THE SUPPLY AND DEMAND SITUATION IN WORLD SHIPPING

This chapter provides information concerning the operational productivity of the world fleet and an analysis of the balance between supply and demand for tonnage. Key indicators are tons of cargo carried and ton-miles performed per dwt, and analyses of tonnage oversupply by main shipping market sectors.

A. Estimate of tons and ton-miles per dwt

36. The main operational productivity indicators for the world fleet rose to a comparatively high level in 1993 as indicated in table 15 and graph 9. Tons of cargo carried per dwt stood at 6.07, which is the same as in 1992, and is the third highest since 1970 following the 6.10 and 6.09 registered in 1989 and 1990. Ton-miles performed per dwt continued the upward trend to reach the record high of 26,456 since 1977. The improved performance can be mainly attributed to the expansion of world seaborne trade (an increase of 2.2 per cent over 1992), and continuously high levels of scrapping of inefficient tonnage.

37. Table 16 provides additional details on ton-miles performed by oil tankers, dry bulk carriers and combined carriers. Ton-miles per dwt of both tankers and combined carriers increased by 3.6 per cent and 6.0 per cent respectively over 1992 but those of dry bulk carriers and the residual fleet marked a decline of 1.9 per cent and 1.8 per cent respectively in 1993. Table 17 shows that there was an expansion in tons carried per dwt of both oil tankers and combined carriers (an increase of 1.8 per cent and 8.8 per cent over 1992); nevertheless dry bulk carriers and the residual fleet declined in tons carried per dwt by 1.8 per cent and 2.3 per cent respectively as compared to the 1992 results.

Table 15

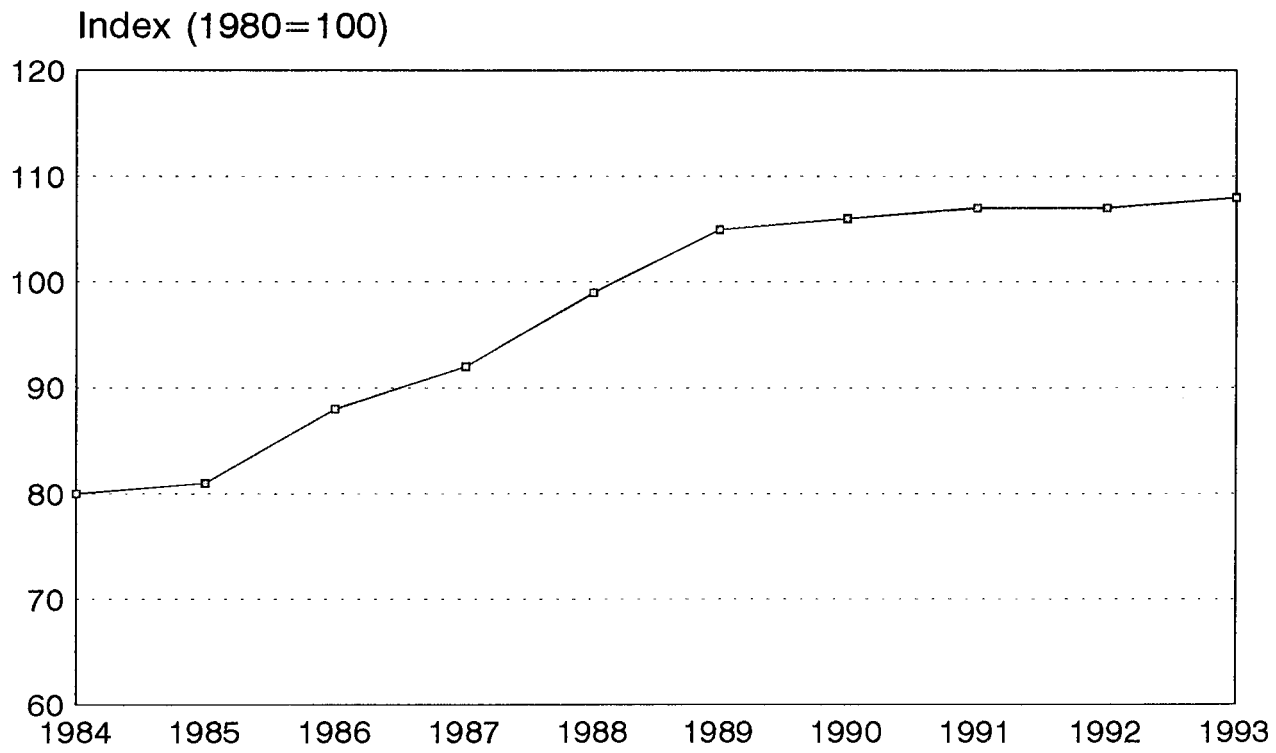
Cargo carried and ton-miles performed per dwt of the total world fleet, 1984-1993

Year	World fleet (millions of dwt)	Total cargo carried (millions of tons)	Total ton-miles performed (thousands of millions of ton-miles)	Tons of cargo carried per dwt	Ton-miles performed per dwt
1984	674.5	3 410	13 368	5.06	19 820
1985	664.8	3 382	13 160	5.09	19 800
1986	639.1	3 459	13 856	5.41	21 680
1987	632.3	3 505	14 298	5.54	22 610
1988	628.0	3 692	15 299	5.88	24 360
1989	638.0	3 891	16 385	6.10	25 680
1990	658.4	4 008	17 121	6.09	26 000
1991	683.5	4 120	17 873	6.03	26 150
1992	694.7	4 220	18 228	6.07	26 240
1993	710.6	4 312	18 800	6.07	26 456

Source: World fleet: *Lloyd's Register of Shipping: Statistical Tables* (London), various issues, Shipping Information Services of Lloyd's Register of Shipping and Lloyd's of London Press Ltd. (mid-year data for 1984-1990, year-end data for 1991-1993); total cargo carried: UNCTAD data bank; ton-miles: Fearnleys (Oslo), *Review*, various issues.

Graph 9

Index of ton-miles performed per dwt total world fleet, 1984-1993



Source: UNCTAD calculations based on table 15 of this publication.

Table 16

Estimated productivity of tankers, bulk carriers, combined carriers a/ and the residual fleet, b/ 1984-1993

Year	Ton-miles of oil by tankers (thousands of millions)	Ton-miles per dwt of tankers	Ton-miles of dry bulk cargo by dry bulk carriers (thousands of millions)	Ton-miles per dwt of bulk carriers	Ton-miles of oil and dry bulk cargo by combined carriers (thousands of millions)	Ton-miles per dwt of combined carriers	Ton-miles of the residual fleet b/ (thousands of millions)	Ton-miles per dwt of the residual fleet
1984	5 305	18 930	3 041	17 070	1 187	28 130	3 835	22 050
1985	4 853	18 350	3 208	17 080	1 192	29 000	3 812	22 240
1986	5 426	22 670	3 717	18 820	944	26 520	3 769	22 610
1987	5 600	24 030	3 922	20 010	1 022	30 690	3 729	21 940
1988	6 155	26 890	3 475	17 990	1 264	37 510	4 411	25 630
1989	6 960	30 000	3 629	18 560	1 247	37 450	4 566	25 780
1990	7 376	30 810	3 804	18 770	1 164	36 040	4 777	25 960
1991	7 884	30 920	4 035	18 680	1 049	33 620	4 905	26 980
1992	8 190	31 420	4 061	18 770	1 012	32 440	4 965	26 620
1993	8 635	32 540	4 065	18 410	990	34 380	5 110	26 130

Source: Compiled on the basis of Fearnleys (Oslo), *Review*, *World Bulk Trades* and *World Bulk Fleet*, various issues.

a/ As from 1988 the source data for tankers pertain to ships above 50,000 dwt (previously 60,000 dwt). For bulk carriers the basis is now also ships above 50,000 dwt (previously 40,000 dwt). Combined carriers have been similarly amended.

b/ The "residual fleet" refers to all vessels included in table 9, excluding tankers, bulk carriers and combined bulk carriers of the size range indicated in footnote a/.

Table 17

Estimated productivity of tankers, bulk carriers, combined carriers and the residual fleet, 1984-1993
(Tons carried per dwt)

Year	Tons of oil carried by tankers a/ (millions)	Tons carried per dwt of tankers	Tons of dry cargo carried by bulk carriers of over 18,000 dwt (millions)	Tons carried per dwt of bulk carriers	Tons of oil and dry bulk cargo carried by combined carriers of over 18,000 dwt (millions)	Tons carried per dwt of combined carriers	Tons carried by the residual fleet b/ (millions)	Tons carried per dwt of the residual fleet
1984	1 174	4.19	566	3.18	214	5.07	1 358	7.81
1985	1 084	4.10	620	3.30	200	4.80	1 389	8.10
1986	1 140	4.76	663	3.36	195	5.48	1 420	8.52
1987	1 185	5.08	693	3.54	195	5.84	1 384	8.15
1988	1 295	5.66	610	3.16	214	6.35	1 556	9.04
1989	1 398	6.02	639	3.27	211	6.34	1 612	9.10
1990	1 427	5.96	667	3.29	203	6.28	1 680	9.13
1991	1 485	5.82	707	3.27	196	6.38	1 722	9.47
1992	1 550	5.95	709	3.28	194	6.22	1 762	9.45
1993	1 608	6.06	710	3.22	195	6.77	1 805	9.23

Source: As for table 16.

a/ Tankers of 50,000 dwt and above as from 1988 (previously 60,000 dwt and above).

b/ See footnote b/ to table 16.

B. Supply and demand in world shipping

38. Table 18 provides a summary of tonnage oversupply for the 1986-1993 period. The world merchant fleet in 1993 increased by 2.3 per cent over 1992. The total surplus tonnage reached 72.0 million dwt, as compared to 71.7 million dwt in 1992, representing 10.1 per cent of the 1993 world merchant fleet (10.3 per cent in 1992).

39. By main vessel type, the surplus capacity in the oil tanker sector in 1993 reached its highest levels since 1988 (see table 19 and graph 10). A total of 43.5 million dwt or 15.3 per cent of the total world tanker fleet was in excess of the demand for global oil seaborne transport. The 1993 percentage ratio was slightly higher than in 1992, when 14.8 per cent of the total world tanker fleet was surplus. This was mainly because in 1993 slow steaming and laid-up tankers specifically in the segments of VLCCs and ULCCs increased over 1992 (see table 20). The high surplus capacity is also reflected in the voyage charter markets for VLCCs and ULCCs, which remained at a disappointing average of Worldscale 44 despite an increase in oil trades of 1.8 per cent.

40. Overcapacity in the dry bulk sector decreased to 23.6 million dwt. This represents a 6.0 per cent decline over 1992 and accounts for 9.9 per cent of the world dry bulk fleet. This improvement can be explained by a prompt increase in crude steel production and thus an increase in iron ore shipments, specifically in the sector of handy-size and handymax dry bulk carriers for steel products. Dry cargo tramp time charter markets reacted accordingly and reported a notable index increase from 96 in 1992 to 125 in 1993.

41. Surplus capacity in the conventional general cargo and unitized sectors is constantly far less than the bulk trades as shipowners concentrated more on a steady trading pattern and were to a lesser extent involved in speculative operations. In 1993 the oversupply of unitized fleet decreased to 1.5 per cent of the world total unitized fleet as compared to 1.6 per cent in 1992.

42. The average of tanker tonnage engaged in oil storage throughout the year 1993 increased marginally to 10.95 million dwt (10.74 million dwt in 1992). In August, however, the tonnage for semi-permanent storage exceeded 7.0 million dwt, which was the record high since July 1987 and continued at the high level to the year end (see table 20). In December 1993 the total tonnage of VLCCs and ULCCs accounted for 69.3 per cent and 85.6 per cent of the total tonnage for semi-permanent and short-term storage respectively. [19/]

Table 18

Tonnage oversupply in the world merchant fleet, 1986-1993
(Million dwt and percentages)

	1986	1987	1988	1989	1990	1991	1992	1993
	Million dwt							
World merchant fleet (as at mid-year)	639.1	632.3	627.9	638.0	658.4	683.5c/	694.7c/	710.6c/
Surplus tonnage a/	108.0	101.1	83.4	62.3	63.7	64.2	71.7	72.0
Active fleet b/	531.0	531.2	544.5	575.7	594.7	619.3	623.0	638.6
	Percentages							
Surplus tonnage as a percentage of the world merchant fleet	16.9	16.0	13.3	9.8	9.7	9.4	10.3	10.1

Sources: Shipping Information Services of Lloyd's Register of Shipping and Lloyd's of London Press Ltd.; *Lloyd's Shipping Economist* (London), various issues.

a/ Estimates of average year figures. Surplus tonnage is defined as tonnage which is not fully utilized due to slow steaming, lay-up status or because it is lying idle for other reasons.

b/ World fleet minus surplus tonnage.

c/ Year-end figure.

Table 19

Analysis of tonnage oversupply by main vessel type, 1986-1993
(Average year figures in million dwt) a/

	1986	1987	1988	1989	1990	1991	1992	1993
Supply of world tanker fleet b/	261.7	255.1	250.6	253.9	266.2	273.5	283.4	284.6
Total tanker fleet surplus c/	68.8	65.8	54.7	41.0	40.9	39.8	41.8	43.5
Share of surplus fleet in the world tanker fleet (per cent)	26.3	25.8	21.8	16.2	15.4	14.6	14.8	15.3
Supply of world dry bulk fleet b/	215.4	213.8	220.6	225.4	228.7	235.0	237.3	238.6
Dry bulk fleet surplus c/	30.8	28.0	23.4	17.0	19.4	20.7	25.1	23.6
Share of surplus in the world dry bulk fleet (per cent)	14.3	13.1	10.6	7.5	8.5	8.8	10.6	9.9
Supply of world conventional general cargo fleet	69.7	65.6	64.7	63.4	63.6	63.5	63.0	62.1
Conventional general cargo fleet surplus	4.3	3.6	2.9	2.2	2.1	2.2	2.7	2.8
Share of surplus in the world conventional general cargo fleet (per cent)	6.2	5.5	4.5	3.5	3.3	3.5	4.3	4.5
Supply of world unitized fleet d/	31.2	32.9	34.4	35.8	37.5	40.3	43.0	45.7
Surplus of unitized fleet	1.5	1.7	0.8	0.8	0.5	0.4	0.7	0.7
Share of surplus in the world unitized fleet (per cent)	4.8	5.2	2.3	2.2	1.3	1.0	1.6	1.5

Source: Based on *Lloyd's Shipping Economist* (London), various issues.

a/ Aggregates for all sectors as shown in the present table are averages for the years shown and therefore differ from the world figures in table 18, which indicate estimates at mid-year. Table 19 excludes tankers and dry bulk carriers of less than 10,000 dwt and conventional general cargo/unitized vessels of less than 5,000 dwt.

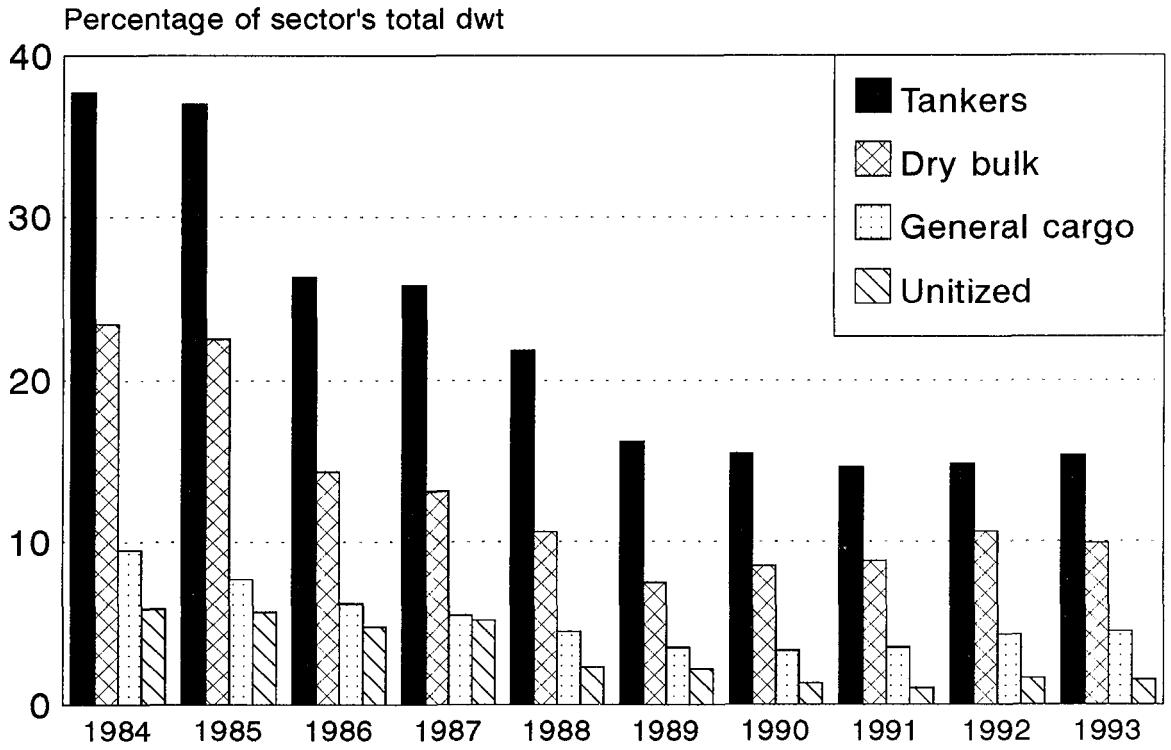
b/ Including combined ore/bulk/oil carriers on the basis of actual supply (e.g. December 1993, total of 30.7, of which 12.7 as tanker and 18.0 as dry bulker).

c/ Including 50 per cent of combined ore/bulk/oil carriers.

d/ Unitized fleet includes here fully cellular containerships, partly cellular containerships, ro-ro ships and barge carriers.

Graph 10

Trends in surplus capacity by main vessel types, 1984-1993



Source: Based on *Lloyd's Shipping Economist* (London), various issues.

Table 20

Tanker tonnage engaged in oil storage, 1982-1993
(Capacity in thousand dwt)

Date	Semi-permanent		Short-term		Total	
	No.	Thousand dwt	No.	Thousand dwt	No.	Thousand dwt
July 1982	58	12 703	16	2 753	74	15 456
January 1983	51	11 135	16	2 615	67	13 750
July 1983	53	11 837	14	1 764	67	13 601
January 1984	49	9 737	25	4 658	74	14 395
July 1984	43	9 601	48	11 134	91	20 735
January 1985	30	6 384	49	12 093	79	18 477
July 1985	38	8 342	38	9 714	76	18 056
January 1986	43	7 514	35	8 353	78	15 867
July 1986	40	6 696	33	9 196	73	15 892
January 1987	41	7 148	45	12 879	86	20 027
July 1987	39	7 012	28	7 917	67	14 929
January 1988	40	6 837	30	9 394	70	16 231
July 1988	37	6 553	29	7 636	66	14 189
January 1989	35	6 123	20	4 783	55	10 906
July 1989	35	6 123	19	5 125	54	11 248
January 1990	37	6 234	16	4 162	53	10 396
July 1990	34	5 784	20	5 618	54	11 402
December 1990	33	5 929	27	6 720	60	12 649
July 1991	34	6 081	52	11 499	86	17 580
December 1991	34	6 291	22	4 553	56	10 844
July 1992	36	6 425	25	5 734	61	12 159
December 1992	34	6 299	16	2 886	50	9 185
January 1993	33	6 151	18	3 352	51	9 503
February 1993	34	6 231	21	3 860	55	10 091
March 1993	37	6 633	20	3 937	57	10 570
April 1993	40	6 805	22	4 884	62	11 689
May 1993	38	6 685	25	5 910	63	12 595
June 1993	41	6 763	24	5 192	65	11 955
July 1993	41	6 745	26	5 368	67	12 113
August 1993	43	7 243	20	3 597	63	10 840
September 1993	41	7 076	19	3 434	60	10 510
October 1993	41	7 238	17	2 937	58	10 175
November 1993	41	7 238	19	3 553	60	10 791
December 1993	39	7 019	20	3 582	59	10 601

Source: John I. Jacobs plc, *World Tanker Fleet Review* (London), various issues.

Chapter IV

SHIPBUILDING, SECOND-HAND MARKET AND DEMOLITION

This chapter reviews the supply of tonnage in the world shipping industry, covering newbuilding orders, prices and deliveries, and tonnage on order. It also reviews markets for second-hand tonnages of major sectors and ship demolition.

A. Newbuilding orders

43. Considerably more newbuilding contracts for main types of vessels were placed in 1993 than in the previous year when the shipbuilding industry experienced very poor contracting deals (see table 21). In 1993 shipbuilding activities were mainly concentrated on tankers and dry bulk carriers. Tankers experienced an additional boost with IMO double-hull regulations coming into force on 7 July 1993. The replacement demand for bulk carriers increased against the background of an increasing average age and consequent economic and technical obsolescence of the world bulk fleet. [20/]

44. Compared to 1992, tanker orders increased in most segments except for Panamax sizes. For dry bulk carriers, the contracted tonnage more than doubled in 1993. The handy-size segment remarkably increased with more than eight times as many orders as in the year before. The contracts for Panamax and Cape-size dry bulkers also activated newbuilding markets. Container and general cargo newbuilding orders increased by 56.7 per cent and 49.9 per cent respectively in terms of deadweight tonnage (see table 21). Many of the containership orders were placed for replacement of older inefficient vessels not only by actual liner operators but also by owners chartering out tonnage whose share accounts for a considerable portion of all containerships on order as at the end of 1993. New orders of other segments cover in particular car carriers, 1,000-car capacity per unit, which were almost doubled to more than 20 units, about 10 sizeable car/passenger ferries and 10 cruise vessels of the largest class. [21/]

B. Ship prices

45. Newbuilding prices for main types of vessels considerably decreased during the first half of the year specifically for tankers and dry bulkers, in spite of growing contracting interest during the period. Thereafter both segments regained significantly and rose close to the average level of the previous year. Prices of 1,200 TEU ro-ro vessels and 125,000 cubic metre LNG carriers increased to the second highest level since 1982. Conversely in the latter half of 1993, prices for 2,500 TEU containerships drastically deteriorated from their 1992 high to the lowest level since 1989 (see table 22), mainly due to the dearth of newbuilding orders during the period.

C. Delivery of newbuildings

46. As shown in table 23, the total newbuildings delivered in 1993 reached 1,788 vessels, aggregating 19.9 million grt. This represents an 18.7 per cent increase in the number of vessels and a 6.9 per cent growth in gross-ton tonnage over the previous year. Bulk carriers significantly increased by 27.5 per cent over 1992 reaching 4.3 million grt. Equally, deliveries of oil tankers and "other ships" increased above average by 8 to 9 per cent. Activities in the liner sector were more restricted. Deliveries of containership tonnage slightly decreased, while general cargo tonnage declined drastically by 22.4 per cent to 1.5 million grt.

47. Distribution of deliveries of newbuildings by groups of shipbuilding countries are indicated in table 24. The world total deliveries of newbuildings increased in 1993 by 8.5 per cent over the previous year to 19.811 million grt. Shipyards of developed market-economy countries increased their share in the total delivery of newbuildings by 3.3 percentage points to 12.66 million grt (63.9 per cent) of which 9.05 million grt (71.5 per cent) were delivered by Japanese shipyards with an increase of around 1.5 million grt over 1992. The total tonnage delivered by developing countries' yards decreased in 1993 by 3.5 percentage points to 4.97 million grt (25.1 per cent) of which 4.36 million grt (87.8 per cent) were delivered by the Republic of Korea, which, however, marked a decline of 0.34 million grt over the previous year.

D. Tonnage on order

48. The world tonnage on order is reflected in table 25. The decline in the backlog of newbuilding orders that had prevailed since early 1992 came to a halt in mid-1993. At the end of 1993 the world order book stood at 56.5 million dwt which is about the same level as the one prevailing at end-1992. Orders for oil tanker tonnage stabilized at a relatively low level in mid-1993 when IMO double-hull regulations came into force. Tremendous orders for handy-size dry bulkers maintained the order book for dry bulk carriers at a high level in the latter half of 1993.

Table 21

Newbuilding contracts placed for the main types of ship a/ during 1989-1993
(Number of ships, thousands of dwt)

Year	Tankers		Bulk carriers		Combined carriers		General cargo ships		Container vessels		Passenger/Ferries		Total b/	
	No.	Thousand dwt	No.	Thousand dwt	No.	Thousand dwt	No.	Thousand dwt	No.	Thousand dwt	No.	Thousand dwt	No.	Thousand dwt
1989	286	17 995	210	11 590	17	1 975	327	2 077	124	3 255	122	118	1 086	37 010
1990	338	25 876	93	3 640	24	2 726	310	2 090	124	3 073	93	119	982	37 524
1991	308	19 872	148	11 836	4	322	167	877	66	1 796	84	90	777	34 793
1992	206	10 050	126	7 261	0	0	225	1 402	127	3 227	114	91	798	22 031
1993														
January	25	575	11	617	-	-	21	172	9	165	14	29	80	1 558
February	18	1 022	10	332	-	-	15	138	13	319	16	16	72	1 827
March	14	1 201	36	2 414	-	-	14	84	8	411	6	8	78	4 118
April	17	1 097	22	1 185	-	-	34	449	3	74	5	2	81	2 807
May	23	1 359	19	1 260	-	-	24	210	13	470	10	8	89	3 307
June	60	6 144	41	2 927	-	-	46	285	27	538	12	6	186	9 900
July	20	1 096	23	1 368	1	83	31	188	27	1 111	6	5	108	3 851
August	12	778	26	1 629	-	-	3	29	12	217	4	0	57	2 653
September	17	846	25	1 258	-	-	9	48	13	495	6	12	70	2 659
October	33	1 354	31	2 297	-	-	23	259	8	133	13	2	108	4 045
November	8	408	33	1 621	-	-	9	78	23	518	14	45	87	2 670
December	20	1 447	22	1 395	-	-	32	162	26	606	16	30	116	3 640
Total 1993	267	17 327	299	18 303	1	83	261	2 102	182	5 057	122	163	1 132	43 035

Source: Institute of Shipping Economics and Logistics (Bremen), 1994, No. 1/2.
a/ Ships of 300 grt and over.
b/ Total does not include the data on newbuilding contracts for other types of ships.

Table 22

Representative newbuilding prices, 1980, 1985 and 1989-1993
(Millions of dollars)

Type and size of vessel	1980	1985	1989	1990	1991	1992	1993	Percentage change 1992/1993
30 000 dwt bulk	17	11	22	24	24	24	21	-12.5
32 000 dwt tanker	19	18	27	29	30	30	29	-3.3
70 000 dwt bulk	24	14	27	32	32	30	28	-6.7
80 000 dwt tanker	28	22	38	42	43	42	41	-2.4
120 000 dwt bulk	32	27	42	45	47	44	41	-6.8
250 000 dwt tanker	75	47	75	90	95	86	84	-2.3
125 000 m^3 LNG	200	200	190	225	260	237	243	2.5
75 000 m^3 LPG	77	44	68	78	83	80	75	-6.3
1 200 TEU ro-ro	44	28	32	36	38	40	41	2.5
15 000 dwt general cargo ship	14	12	22	24	24	24	22	-8.3
2 500 TEU full containership	..	26	41	52	58	59	48	-18.6

Source: *Lloyd's Shipping Economist* (London), various issues.

Table 23

Distribution of deliveries of newbuildings by principal types of ships, 1992-1993
(Number of ships, thousands of grt) a/

Ship types	1992		1993	
	No.	Thousand grt	No.	Thousand grt
Oil tankers	215	9 022	278	9 760
		48.4		*49.0*
Bulk carriers	77	3 342	101	4 261
		17.9		*21.4*
General cargo	360	1 958	441	1 520
		10.5		*7.6*
Containerships	88	2 173	93	2 048
		11.7		*10.3*
Other ships	766	2 138	875	2 324
		11.5		*11.7*
World total	1 506	18 633	1 788	19 913
		100.0		*100.0*

Source: Lloyd's Maritime Information Services Ltd. (London).

a/ Percentage shares of the world total are indicated in italics.

Table 24

Distribution of deliveries of newbuildings by groups of countries of build, 1992-1993
(Thousands of grt) a/ b/

Country grouping		1992	1993
Developed market-economy countries		11 067	12 656
		60.6	*63.9*
Developing countries		5 230	4 969
		28.7	*25.1*
of which:	Africa	2	2
		0.0	*0.0*
	America	305	330
		1.7	*1.7*
	Asia	4 907	4 522
		26.9	*22.8*
	Others	16	115
		0.1	*0.6*
Countries of Central and Eastern Europe		594	611
		3.3	*3.1*
Socialist countries of Asia		363	644
		2.0	*3.3*
Other, unallocated		999	931
		5.5	*4.7*
World total		18 253	19 811
		100.0	*100.0*

Source: Compiled by the UNCTAD secretariat on the basis of data contained in Lloyd's Register of Shipping: Merchant shipbuilding returns, quarterly issues of the respective years.

a/ Percentage shares of the world total are indicated in italics.

b/ General cargo ships of 2,000 gross tons and over. This table is not fully comparable with table 23, which takes ships of 100 grt and over.

Table 25

World tonnage on order at the end of each quarter, 1991, 1992 and 1993
(Millions of dwt and percentage change) a/

Tonnage on order as at	All ships in millions of dwt	Percentage change	Tankers in millions of dwt	Percentage change	Dry bulk carriers in millions of dwt	Percentage change	Other ships in millions of dwt	Percentage change
31 March 1991	55.0		32.3		8.9		13.7	
		4.9		8.1		4.5		-1.5
30 June 1991	57.7		34.9		9.3		13.5	
		3.5		0.3		23.7		-2.2
30 September 1991	59.7		35.0		11.5		13.2	
		8.4		6.6		26.1		-2.3
31 December 1991	64.7		37.3		14.5		12.9	
		0.2		-3.5		13.1		-3.9
31 March 1992	64.8		36.0		16.4		12.4	
		-3.6		-4.7		0.0		-4.8
30 June 1992	62.5		34.3		16.4		11.8	
		-4.6		-6.4		-4.9		0.9
30 September 1992	59.6		32.1		15.6		11.9	
		-6.0		-10.0		0.6		-4.2
31 December 1992	56.0		28.9		15.7		11.4	
		-12.1		-17.0		-7.6		-6.1
31 March 1993	49.2		24.0		14.5		10.7	
		3.9		-0.4		11.0		3.7
30 June 1993	51.1		23.9		16.1		11.1	
		8.2		2.1		16.8		9.0
30 September 1993	55.3		24.4		18.8		12.1	
		2.2		-5.7		11.2		4.1
31 December 1993	56.5		23.0		20.9		12.6	

Source: Lloyd's Maritime Information Services Ltd. (London).

a/ Percentages have been calculated on the basis of the exact net deadweight tonnages (before rounding).

49. Table 26 reflects world tonnage on order by countries of registry and by principal types of vessel. Tonnage on order by developed market-economy countries and major open-registry countries at the end of 1993 amounted to 16.7 million dwt and 30.3 million dwt respectively. This represented 29.7 per cent and 53.7 per cent of the world total tonnage on order and was almost the same proportion as in 1992. Developing countries stood at 8.9 per cent of the world total tonnage on order in 1993, moderately increasing from 8.0 per cent in 1992. This increase was totally based on a growing volume of newbuilding orders placed by the countries in Asia, thus increasing their share from 4.9 per cent in 1992 to 6.6 per cent in 1993. The share of countries of Central and Eastern Europe declined to 2.3 per cent in 1993 from 3.2 per cent in 1992. Socialist countries of Asia also decreased by 0.5 per cent to 3.6 per cent in 1993.

50. By principal types of vessel, the 1993 combined share of developed market-economy countries and major open registries in the orders for oil tankers and containerships decreased to 86.4 per cent and 76.2 per cent respectively (87.3 and 79.3 per cent respectively in 1992). Conversely, their share in the 1993 order book for dry bulk carriers and general cargo ships increased to 85.6 per cent and 62.0 per cent respectively (78.3 per cent and 54.2 per cent respectively in 1992).

51. The developing countries' share declined in 1993 in the tonnage on order for oil tankers and general cargo ships to 7.3 per cent and 8.9 per cent respectively (7.5 and 17.5 per cent respectively in 1992), whereas in the sectors of dry bulk carriers and containerships their share rose to 7.2 per cent and 16.1 per cent respectively (4.8 per cent and 12.3 per cent in 1992). Asian developing countries were the source of nearly three quarters of the group's total tonnage on order. Their 1993 share in the orders for principal types of vessels increased overall except for general cargo ships. Thus, their share in oil tankers, dry bulk carriers and containerships rose to 5.5 per cent, 5.1 per cent and 11.1 per cent respectively, but that in general cargo ships plummeted to 5.2 per cent from 14.2 per cent in the 1992 order book.

E. Sales and purchase of second-hand tonnage

52. In the second-hand market, 1993 was the year when the tide of decreasing ship values turned upward for dry and wet segments of modern vessels, although it was not a great improvement, as shown in table 27. The relatively higher prices for five-year-old tankers reflected the fact that well-maintained good quality tankers frequently experienced great premiums as the situation was changing to a shortage of high-quality modern tankers for sale, specifically in the Panamax segment. The entire market for second-hand dry bulkers was stimulated by Greek owners' buying spree and Chinese and Indian buying activities in the handy-size and handy-max sectors, primarily in the first half of the year. The average annual prices for modern tonnages such as five-year-old dry bulkers ended up at the same levels as 1992 or slightly improved. [22/]

53. Table 28 indicates monthly fluctuations of sales and purchase of second-hand tankers, dry bulk carriers and combination carriers. In the tanker sector, the increasing charter interest in good-quality modern tonnages significantly influenced the entire second-hand tanker market. The total amount of tanker tonnage transacted significantly exceeded the 1992 volume by 31.5 per cent. VLCCs and ULCCs were predominant in the second-hand markets throughout the year, with 37 vessels sold as compared to 25 vessels in the previous year. Nearly 70 Suezmax and Aframax tankers were traded in the market. The handy-size product carriers attracted many buyers, and a total of 65 vessels changed hands during the year. Handy-size and handy-max vessels dominated the second-hand markets for dry bulk carriers from the beginning of the year through the third quarter of 1993. The total tonnage of dry bulkers transacted in 1993 outstripped the 1992 volume by a large margin of 31.2 per cent. The combination tonnage experienced an increase of 17.5 per cent in 1993 over the previous year, with 16 transactions spread over the year. [23/]

F. Demolition of ships

54. The freight markets for both liquid and dry cargo on average experienced a healthier development in 1993 than feared, and second-hand vessels' value started to climb. Under such circumstances, the total volume sold for demolition declined by 11.1 per cent to 16.9 million tons (see tables 29 and 30). The average age of broken-up ships increased for all ship types except for tankers, the average age of which declined to 24.7 years, the lowest level since 1988. Table 31 indicates comparative trends for the 1985-1993 period.

55. Tankers sold for breaking in 1993 showed a moderate reduction (-7.8 per cent) from 115 ships of 11.6 million dwt to 121 ships totalling 10.7 million dwt. The average size was reduced from 100,900 dwt to 88,100 dwt. Twenty-four VLCCs were sold, one less than in 1992, of which 14 were sold to China, 4 each to Bangladesh and Pakistan, and 1 each to India

and Thailand. In the demolition markets for dry bulkers, 53 ships of 2.6 million dwt were broken up, a 36.6 per cent decline from the 1992 total of 65 ships of 4.1 million dwt. Of these 1993 sales, 10 were within the Capesize segment and 7 were Panamax vessels. The average size was below 50,000 dwt. Combination carriers were the only segment which showed an increase in sales for breaking from 1992. Fourteen vessels of 2.0 million dwt were sold, up from 13 ships of 1.6 million dwt (see table 30).[24/]

56. Demolition prices were relatively stable throughout the year (see table 32). Prices rose on two different occasions during the year, firstly in March-April as a result of the reduced Indian import duties and secondly in September-October when both Indian and Chinese breakers re-entered the market in full force after the tentatively limited activity due to both governmental and financial constraints, coupled with a lack of tonnage available for demolition. With reference to geographical distribution of the total tonnage, China kept its market share of just over 50 per cent with 8.6 million dwt, India held its position as runner-up with 2.9 million dwt but in 1993 faced increasingly tough competition from Bangladesh which succeeded in acquiring 2.6 million dwt. Pakistan was stable at 1.7 million dwt. The European markets, whilst the prices were stable at the higher level from March, were more dormant than ever. [25/]

Table 26

World tonnage on order as at the end of 1993
(Thousands of dwt)

Countries of registry	All ships	Oil tankers	Bulk carriers	General cargo	Container ships	Other ships
World total	56 455	22 959	20 875	2 942	5 854	3 825
Developed market-economy countries	16 764	4 623	6 675	951	2 521	1 994
Major open-registry countries a/	30 299	15 224	11 194	875	1 935	1 071
Subtotal	47 063	19 847	17 869	1 826	4 456	3 065
Countries of Central and Eastern Europe	1 298	520	95	619	16	48
Socialist countries of Asia	2 032	592	993	102	334	11
Developing countries, total	5 038	1 667	1 495	262	940	674
of which in:						
Africa	135	-	128	-	-	7
America	1 151	405	310	109	293	34
Asia	3 752	1 262	1 057	153	647	633
Europe	-	-	-	-	-	-
Oceania	-	-	-	-	-	-
Unallocated	1 024	333	423	133	108	27

Source: Lloyd's Maritime Information Services Ltd. (London).

a/ Including Malta and Vanuatu.

Table 27

Second-hand prices for five-year-old vessels, 1987-1993
(as at end of year)
(Millions of dollars)

	1987	1988	1989	1990	1991	1992	1993	Percentage change 1992/1993
30 000 dwt tanker	13.0	16.0	20.0	21.5	20.0	14.5	18.0	24.1
80 000 dwt tanker	16.0	22.0	34.0	34.0	32.0	22.0	31.0	40.9
130 000 dwt tanker	20.0	28.0	40.0	37.0	36.0	29.0	34.5	19.0
27 000 dwt dry bulk carrier	7.0	11.0	14.0	11.0	13.5	12.5	14.0	12.0
60 000 dwt dry bulk carrier	13.0	17.0	21.5	18.5	23.0	18.0	18.5	2.8
120 000 dwt dry bulk carrier	19.5	27.5	32.0	28.0	37.0	28.0	28.0	0.0

Source: Fearnleys (Oslo), *Review 1993*.

Table 28

Development of sales and purchases of second-hand bulkers in 1993
(Thousand dwt)

Type	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total 1993	Total 1992	Percentage change 1992/1993
Tankers	3 122	2 288	1 433	1 378	1 422	2 307	2 226	1 984	3 168	1 525	1 660	577	23 090	17 556	31.5
Dry bulk carriers	1 212	1 612	2 030	1 625	1 413	1 720	1 471	1 688	1 114	1 682	1 317	303	17 187	13 097	31.2
Combi	-	327	-	135	48	169	-	172	150	159	408	-	1 568	1 335	17.5
Total	4 334	4 227	3 463	3 138	2 883	4 196	3 697	3 844	4 432	3 366	3 385	880	41 845	31 988	30.8

Source: Drewry Shipping Consultants Ltd. (London), *Shipping Statistics and Economics*, 1993, various issues.

Table 29

Broken-up tonnage trends, 1980, 1986-1993

	1980	1986	1987	1988	1989	1990	1991	1992	1993
Tonnage sold for breaking (million dwt)	10.0	31.2	16.3	5.7	3.3	3.3	4.7	19.0	16.9
Share of broken-up tonnage in the total world fleet (percentage)	1.5	4.9	2.6	0.9	0.5	0.5	0.7	2.7	2.4

Source: Fearnleys (Oslo), *Review*, various issues.

Table 30

Tonnage reported sold for breaking by type of vessel, 1988-1993
(Thousand dwt and percentage shares)

Type of vessel	Thousand dwt						Percentages					
	1988	1989	1990	1991	1992	1993	1988	1989	1990	1991	1992	1993
Tankers	2 570	1 567	1 000	2 714	11 561	10 665	44.6	48.1	29.9	57.3	60.9	63.3
Combined carriers	293	108	378	426	1 580	2 040	5.1	3.3	11.3	9.0	8.3	12.1
Dry bulk carriers	846	510	649	728	4 141	2 645	14.7	15.6	19.4	15.4	21.8	15.7
Other dry cargo ships	2 050	1 076	1 317	870	1 693	1 502	35.6	33.0	39.4	18.4	8.9	8.9
Total	5 759	3 261	3 344	4 738	18 975	16 852	100.0	100.0	100.0	100.0	100.0	100.0

Source: Fearnleys (Oslo), *Review*, various issues.

Table 31

Average age of broken-up ships by type during 1985-1993 a/
(years)

Year	Tankers	Dry bulk carriers	Containerships	General cargo ships
1985	20.9	20.1	23.1	22.3
1986	21.3	19.4	21.7	23.6
1987	24.4	19.8	24.9	23.8
1988	24.6	22.4	25.1	24.2
1989	24.9	23.1	27.2	25.5
1990	26.4	21.7	19.5	25.1
1991	25.3	22.0	19.0	24.8
1992	25.8	22.9	19.1	25.7
1993	24.7	24.0	22.9	26.4

Source: Institute of Shipping Economics and Logistics (Bremen), *Shipping Statistics*, 1994, No. 3.

a/ Ships of 300 grt and over.

Table 32

Demolition prices in 1991-1993
(Dollars per ldt)

Month	Market								
	Far East			Pakistan/India			Southern Europe		
	1991	1992	1993	1991	1992	1993	1991	1992	1993
January	160.0	155.0	145.0	180.0	180.0	150.0	107.5	82.5	80.0
February	160.0	160.0	145.0	160.0	172.5	145.0	85.0	77.5	80.0
March	160.0	155.0	157.5	175.0	175.0	157.5	85.0	80.0	80.0
April	157.5	150.0	160.0	185.0	157.5	162.5	90.0	80.0	90.0
May	157.5	140.0	160.0	180.0	150.0	162.5	80.0	80.0	90.0
June	155.0	140.0	160.0	180.0	142.5	162.5	80.0	80.0	90.0
July	155.0	140.0	147.5	157.5	152.5	157.5	80.0	80.0	90.0
August	155.0	140.0	147.5	157.5	150.0	157.5	82.0	80.0	90.0
September	155.0	142.5	147.5	157.5	150.0	165.0	82.5	80.0	90.0
October	155.0	142.5	155.0	160.0	150.0	165.0	82.5	80.0	90.0
November	155.0	142.5	160.0	160.0	137.5	157.5	82.5	80.0	90.0
December	155.0	142.5	155.0	170.0	150.0	162.6	82.5	80.0	90.0
Annual average	156.7	145.8	153.3	168.5	155.6	158.8	85.0	80.0	87.5
Annual average change (%)	-20.6	-7.0	5.1	-30.0	-7.7	2.1	-28.8	-5.9	9.4

Source: Institute of Shipping Logistics (Bremen), *Shipping Statistics*, various issues.

Box 4

Maritime sector driven by supply

Lloyd's Maritime has carried out research to determine the major factors that influence the marine sector. Although the conventional theory is that the industry's fortunes follow the general economic cycle, market analysts know that the correlation between economic cycles and freight rates is tenuous. The Lloyd's Maritime work establishes supply as a major driving force in the industry.

The research identifies the main influences in the determination of freight rates, by analysing the markets over a 30-year period, and fixing relationships between freight rates, economic growth, shipping supply and shipbuilding prices.

The research assessed the relationship between GDP and total world trade. It shows that the volume of cargo shipped by sea decreases at a time of economic slowdown, but the correlation between the two is less than would be expected. From the analysis it is notable that despite several periods of economic downturn, the supply of tonnage has only decreased in three of the last 30 years.

Lloyd's Maritime examined the new construction market to see how this responded to changes in the shipping markets. Owners tend to order in rising markets and have their vessels delivered in falling markets. This is the worse scenario for owners of new vessels, as it is in the first few years of a vessel's life that the highest return on investment is required. The need for cash flow to service loans and capital repayments, results in owners operating their older vessels for longer than they would like to in a perfect market. The return on investment required for these vessels to generate positive cash flow is less than that for newbuildings. As the market is dominated by these vessels, they tend to set the market rates.

The conclusion of the detailed analysis is that the shipping markets are supply driven. Freight rates only tend to increase substantially at times when supply and demand come into equilibrium. At such times additional orders tend to be placed for new tonnage which leads to yards increasing prices as the supply of available building capacity tightens. This encourages further orders for concern over long-term increases in building costs and the ability to remain competitive in the future.

As a consequence of a number of related factors, shipping markets have been characterized by longer periods of relatively poor return on investment with only reasonably short periods of high returns. Lloyd's Maritime has called this the "Heartbeat Theory".

Source: Lloyd's Maritime Information Services Ltd. (London), *Review*, November 1993.

Box 5

Ship losses declined in 1993

Total ship losses declined in 1993 for the second consecutive year, the Institute of London Underwriters (ILU) reported.

The ILU said 121 vessels of 652,351 tons were declared total losses in 1993, compared with 134 ships of 1.1 million tons in 1992 and 163 ships of more than 1.7 million tons in 1991.

The institute, which represents 74 companies that offer marine and aviation insurance in the London market, attributed the improvement to loss-prevention efforts that the ILU started in 1991.

But insurance underwriters expect the amount of total insurance claims for marine casualties in 1993 to exceed the 1992 figure. This is because of the higher individual value of vessels and a decline in the number of older, low-value ships.

So far, the insured value of ships lost during 1993 is estimated at US$ 590 million, about the same as the latest figure for 1992. But payments for last year's ship losses will rise further as claims continue to be processed, the institute said. However, the final figure is unlikely to be exceed claims of US$ 800 million in 1991, industry sources indicated. That was the worst year on record, with 27 bulk carriers and combination carriers declared total losses.

Since then, the shipping industry has made great efforts to improve safety at sea and the number of ship losses has fallen sharply. Meanwhile, London marine insurers have been carrying out their own surveys of older high-risk ships over the past two years and are varying premiums much more according to the shipowner.

The figures compiled by the institute cover the world market-place.

Only six bulk carriers of 102,423 gross tons were lost last year, compared with 15 bulkers of 470,797 tons in 1992 and 26 losses in 1991.

Major tanker accidents in 1993 also declined, with 13 vessels of 190,520 tons lost, compared with 16 ships of 297,490 tons in 1992.

Casualties caused by bad weather accounted for 47 ship losses last year, while 28 vessels were lost through fire or explosion and a further 12 irreparably damaged through collision.

Older ships continue to account for most of the losses, according to the ILU. Of the 121 ships that were declared total losses in 1993, 45 were in the 20 to 24-year-old category, while 26 were 25 years old or more. Another 32 vessels were between 15 and 19 years old.

The lower number of ship losses last year follows the decision by marine insurers in the London market to carry out their own surveys of vessels because of declining confidence in classification societies, the organizations that are meant to ensure ships are structurally seaworthy.

Source: *The Journal of Commerce*, New York, N.Y., 26 January 1994.

Chapter V

PORT DEVELOPMENT

This chapter covers recent developments in container port traffic for developing countries, institutional change in ports, the development of EDI in ports as part of the evolution of their role to logistics centre and some technical innovations in container terminals.

A. Container port traffic

57. Table 33 gives the latest available figures on world container port traffic in developing countries and territories for 1992.

58. The world rate of growth of container port throughput in 1992 was 7.6 per cent higher than the previous year's figure, although it is lower than the average annual global increase of 8.5 per cent registered over the last decade. The throughput broke the 100 million TEU barrier reaching 100,734,472 TEUs in 1992.

59. The rate of growth for developing countries and territories was more than double that of the world average and reached 16.2 per cent in the period 1991-1992. However, it showed a decrease in comparison with the 18.1 per cent reached in 1990-1991. The growth figures are unevenly spread and frequently erratic from year to year, partly due to the variable quality of the data available and partly due to turbulent fluctuations in the trade.

B. Institutional restructuring in ports

60. One of the biggest changes to the world port community has continued to be institutional restructuring. New legislation defining the respective roles of the public and private sectors has been enacted and regulations have been prepared and approved. In general this has resulted in an increase in the effective autonomy of ports away from central governments and an increased role for the private sector. This restructuring is a process that has many different forms; privatization, commercialization, corporatization, deregulation, etc.

61. Several reasons are often mentioned as being behind this change. Some Governments wish to increase the accountability of port managements and operators, to remove public sector constraints on personnel management, procurement and pricing, and to relieve themselves of heavy port investments, while others seek to improve the performance of the sector through more effective response to users' requirements. However, the urge to improve the competitivity of a country's exports in the international markets is the underlying one. This is occurring as governments recognize that their path to economic development is through international trade and thus trade promotion is a national economic policy. Poor national port performance can hamper trade development. Poor performance may be caused by technical, managerial and/or institutional factors.

62. The methods of implementing the changes vary from country to country. Some Governments seek to limit the investment of the public sector to infrastructure and leave the investments in superstructure and equipment to the private sector. However there are cases where even the infrastructure is being funded by the private sector. In other countries Government feel that ports must be cost-effective organizations equipped to deal with their customers' requirements effectively and efficiently. This often means that the organization and management of port operations and cargo handling services must be streamlined - to attract potential port users whose sole interest is reliable service and low costs. A prerequisite for such arrangements is autonomy for port managers under a liberal regulatory environment.

63. One of the key issues in the restructuring process is changing national legislation on the status of the dock worker. This has been worked out at a varied pace in the United Kingdom, Australia, France, Italy and Brazil. It is a difficult process as attached to it are normally massive reductions in the number of registered port workers. As a result of technological change, over-staffing has become a common characteristic of public port administrations. Labour-intensive options for fast ship turnaround are no longer viable for ports and thus countries wishing to remain competitive in international trade. A scheme of redundancy payments is usually required, with financial support from the Government, to obtain labour's agreement to the major reduction in the number of jobs needed.

Table 33
Container port traffic of developing countries and territories, 1992 and 1991

Country or territory	Container traffic 1992 (TEUs)	Container traffic 1991 (TEUs)	Percentage change 1991/1992	Percentage change 1990/1991
Hong Kong	7 972 236	6 161 912	29.4	20.8
Singapore	7 580 000	6 354 000	19.3	21.6
Republic of Korea	2 751 006	2 570 734	7.0	14.7
United Arab Emirates	2 506 422	2 072 915	20.9	32.6
Indonesia	1 329 365	1 152 941	15.3	25.2
Thailand	1 312 804	1 172 057	12.0	8.6
Malaysia	1 218 338	1 074 295	13.4	21.0
Philippines a/	1 157 912	1 441 124	-19.7	3.9
Saudi Arabia	1 153 761	1 070 774	7.8	32.5
Egypt	769 448	575 855	33.6	61.6
India	760 887	698 621	8.9	-1.1
Brazil a/	738 945	678 622	8.9	-9.8
Sri Lanka	676 041	669 489	1.0	14.7
Pakistan	510 017	469 705	8.6	17.5
Mexico a/	397 782	348 171	14.3	12.1
Cyprus	357 948	328 520	9.0	-14.5
Argentina	350 000	254 745	37.4	5.7
Malta	291 754	197 202	48.0	58.9
Panama	288 655	238 456	21.1	29.7
Chile a/	288 007	204 672	40.7	16.9
Costa Rica	277 386	123 254	125.1	16.0
Honduras	203 400	190 100	7.0	5.5
Jamaica	189 213	164 636	14.9	13.9
Côte d'Ivoire	188 728	179 501	5.1	-0.9
Kuwait	186 643	71 102	162.5	-47.7
Morocco	182 242	185 838	-1.9	7.2
Bangladesh	160 000	n.a.	n.a.	n.a.
Peru	146 360	98 301	48.9	59.9
Kenya	136 324	135 541	0.6	-0.6
Colombia a/	118 649	129 336	-8.3	18.7
Netherlands Antilles	116 643	91 174	27.9	-4.2
Oman	115 717	156 439	-26.0	-7.1
Papua New Guinea	107 423	97 831	9.8	8.3
Jordan	99 632	72 725	37.0	-12.7
Guadeloupe	95 244	99 929	-4.7	-2.2
Syrian Arab Republic	92 554	82 832	11.7	23.0
Bahrain	89 829	84 254	6.6	12.2
Martinique	88 715	91 602	n.a.	n.a.
Ghana	83 000	70 723	17.4	10.2
Cameroon	82 148	76 286	7.7	-22.2
Lebanon	80 989	131 175	n.a.	n.a.
Mauritius	80 254	70 278	14.2	16.1
Uruguay	75 568	55 524	36.1	7.9
French Polynesia	60 519	55 232	9.6	7.7
Tunisia	49 172	44 626	10.2	42.8
New Caledonia	38 992	30 980	25.9	11.4
Qatar	38 714	129 753	-70.2	526.1
Barbados	31 255	30 450	2.6	-1.9
Samoa	30 400	28 114	8.1	53.0
Other reported b/	306 541	435 973	-29.7	1.9
Total reported c/	36 133 018	31 095 019	16.2	18.1
World total reported	100 734 472	93 645 989	7.6	8.8

Source: Derived from information contained in *Containerisation International Yearbook, 1994*.

a/ Data subject to omissions.

b/ Comprising developing countries and territories where less than 30,000 TEU per year were reported or where substantial lack of data was found.

c/ Certain ports did not respond to the background survey. While they were not amongst the largest ports, total omissions may be estimated at 5 to 10 per cent.

C. Electronic data interchange (EDI) in ports

64. The essential aim of EDI is to facilitate trade and transport by increasing the speed and reducing the cost of the exchange of information. With the globalization of production and the limiting of intermediate stocks, computerized information systems are essential. The electronic transfer of information between different locations within one company is fairly straightforward. When information is to be exchanged between different organizations, a "standard language" is required. The United Nations EDIFACT language is becoming the industry standard.

65. EDI is the communication of information between two computer systems. It does away with repeated data entry which reduces cost and errors as well as speeding up the procedures. This is particular important for port organizations as large volumes of information must be exchanged between many different operators. The manual exchange and treatment of data could limit the productivity of the total operation.

66. The development of an EDI system is complex as it involves multiple bodies. It is not just a technical exercise; in fact it is estimated that 80 per cent of the effort is managerial. The way of doing business needs to be analysed and often changes are required. For the system to be effective it must be utilized by the whole port community. This implies that the port community must be involved in the development of the system. EDI has a powerful synergy and can be a uniting force for the port community, thus improving the services offered and the marketability of the port.

67. The development of EDI in the transport sector in Australia and France has progressed well. The experience of one transportation company in the development of EDI systems is given in box 6. In both countries there has been active support and motivation from the Customs.

68. The port authority has a key role to play as promoter and facilitator of EDI in the port community. In the coming decade, the port authority will have to develop an infostructure as well as infrastructure because the mastery of the information flows will be an essential condition for the mastery of trade.

D. Technical innovation

69. Container terminal operating companies have begun to introduce automated systems to reduce labour costs and improve productivity. The dynamic nature of container terminal operation and the variable container size have been challenges for the engineers to come up with cost-effective solutions. Two terminals having a leading role in the development of terminal automation are the Delta/Sea-Land Terminal in Rotterdam, and Thamesport in the Thames estuary in the United Kingdom (see box 7). The Port of Singapore Authority is also starting a detailed investigation of this technology.

70. The provision of post-Panamax quayside container cranes, often with a dual lifting system, has continued in many terminals. There are 31 vessels in operation with a carrying capacity greater than 4,000 TEUs and another 43 ships on order. Post-Panamax cranes will allow these vessels to be handled and position those ports acquiring them to be major players in the container handling business. The dual lifting systems are designed to increase the productivity of the cranes and one of the latest designs has a planned peak productivity of more than 90 moves per hour.

Box 6

Implementation Guidelines for EDI

- Implementation of EDI is a task requiring the time and commitment of management, operational and technically skilled people
- The early stages will provide more questions than answers
- Top-down with legislative weight is essential to focus the minds of the less enthusiastic EDI players and get the critical mass involved
- National Committees should use multi-national expertise - it sets the pace
- Identify major interfaces with few players for concentration of resources
- EDI cannot be implemented alone - it requires the active participation of all parties in the trading chain
- Software re-engineering at the user end is the most complex and costly issue - EDI techniques must be built into existing in-house IT processes for maximum efficiency
- Remember always that at the end of the day message transmission must be paid for - do no include data elements that are merely "nice-to-have"
- Obtain industry agreement and then business by business agreement
- The concept of a central computer into which all data is deposited for use by other parties failed
- Clearly establish - who will benefit from EDI? - who will pay for message transmission? - how much will transmission cost?
- Value added networks (VANs) cannot impose message standards or implement guidelines on normal business relationships
- Always keep in mind: - who is the owner of the information? - who is responsible for information integrity? - are parties prepared to pay for the EDI community service? - how much will participants pay for the EDI community service?
- Address the legal issues arising from the use of EDI in the trading and transport sectors

Source: Eric Bubeer, *The Australian Experience*: UNCTAD Policy Seminar on EDI in Ports, October 1993.

Box 7

Container terminal automation

The ECT Delta Terminal for Sea-Land's dedicated use is highly automated and computer dependent. A five-year programme with an investment of some US$ 250 million has developed a system that ECT states is 10 years ahead of its time. A Process Control System (PCS) computer controls movement of 24 automated stacking cranes (ASCs) and 50 automatic guided vehicles (AGVs). There is no direct manual intervention between quay side and the land side end of the container stacks. The AGVs move containers between the quay cranes to their destination at the stacks using the route given by the PCS, using an on-board navigation system communicating with a grid system below the terminal surface. Communication between the AGVs and the PCS is via a radio data link. The ASCs then transfer the container from the AGV to its pre-determined slot in the stack and eventually back to an AGV for sea-to-sea containers or to a chassis for inland movement. The planned work force for this terminal with a design capacity of 500,000 boxes per year is 143 persons.

At Thamesport, the AGVs navigational system is based on radar technology and is enhanced by software which controls vehicle position by speed and direction inputs. Rail-mounted gantry cranes are operating automatically to stack and shift containers in the yard when not working a ship.

Source: Information collected by the UNCTAD secretariat.

Chapter VI

FREIGHT MARKETS

This chapter presents comprehensive conditions and trends in freight markets, covering main cargo sectors, liner freight rates as a percentage of prices, estimates of global freight costs and marine bunker prices.

A. Freight rates of main cargo sectors

71. Comprehensive freight rate trends for three principal shipping markets are indicated in table 34. The monthly freight indices cover the 1991-1993 period for selected liner rates, dry cargo time and voyage charters and tanker Worldscale indices for five sizes of crude and product tankers.

72. The overall 1993 liner freight index fluctuated within a small margin at the average level of 76, which was a two point decrease from the average of 1992. In each sector of four types of cargoes such as conventional or containerized general cargo, and conventional or containerized bulk goods, each freight index provides almost the same fluctuations as the overall index (in table 34) on its outward-bound and homeward-bound trades. The stagnancy of the liner freight rates could be partially explained by the special character of the index which is entirely based upon the freight rates registered at the ports in the Antwerp/Hamburg range, which have been affected by confrontations between carriers and shippers on the practices of freight-rate setting and capacity management schemes, such as the Trans-Atlantic Agreement and the Europe-Asia Trades Agreement.

73. Liner market developments are also reflected in containership charter rates and major conference container rates (see graph 11). For the former, the recent build-up of capacity kept charter rates for larger containerships rather on a downward trend from the third quarter of 1992. Containerships of 550 TEU capacity experienced a 5.6 per cent climb from 1992 to an average of US$ 8,385 per day. Conversely, charter rates for larger containerships of the 1,000 TEU class fell to their lowest level of US$ 10,190 per day in September and the last two months of 1993. The average rate of US$ 10,695 per day represented a 6.1 per cent decline from the previous year. [26] Conference unit rates (US$/TEU) decreased on the four main routes with a maximum decline of 8.3 per cent on Europe-Australia followed by 6.9 per cent down on North Atlantic Westbound. The information contained in graph 11 shows that the rates on Europe-Far East and Europe-Australia have been on a continuously downward trend since 1990. North Atlantic Westbound rates are also declining from the peak in 1991. Transpacific Westbound rates, after a recovery in 1992, slightly declined in 1993. On this trade route, a greater proportion of the cargoes consists of agricultural products, cotton, waste paper and raw materials.

74. In the dry bulk sector, the time charter index showed a considerable improvement over 1992, while trip charter rates increased only marginally. The somewhat more favourable time charter market mainly reflected increased demand for iron ore shipments, resulting from the world steel production increase of 0.4 per cent, [27] while the trip charter market was primarily affected by a setback in grain shipments with volumes falling about 3.5 per cent from the previous year. [28/29] The rate increase during the first half of 1993, primarily in the handy-size and handymax sector, was mainly attributed to China's tremendous demand for steel and the charterers' particular requirements for high-quality vessels. In the third quarter the rates for grain shipments were more or less stimulated by programmed United States grain shipments to the Russian Federation, and further influenced by the Mississippi River flood and its adverse effect on United States Gulf loading terminals. After the end of the third quarter, rates throughout the markets fell for all vessel sizes as available tonnage outstripped available cargoes.

75. The Baltic Freight Index (BFI) is another indicator of dry bulk freight rates in world shipping markets. The index is weighted to reflect the importance of the major dry bulk routes. The composition of the index during 1993 was:

Route		Commodity	Weighting
1	US Gulf-North Continent	Grain	10 per cent
1a	Transatlantic round	T/c	10 per cent
2	US Gulf-Japan	Grain	10 per cent
2a	US Gulf-Far East time charter	Grain	10 per cent
3	US North Pacific-Japan	Grain	10 per cent
3a	Transpacific round	T/c	10 per cent
6	H Roads-R Bay-Japan	Coal	7.5 per cent
7	H Roads-Rotterdam	Coal	7.5 per cent
8	Queensland-Rotterdam	Coal	7.5 per cent
9	Far East to Nopac Cont	T/c	10 per cent
10	Tubarao-Rotterdam	Iron ore	7.5 per cent

Graph 12 shows the BFI and selected routes for 1993. On the key United States Gulf to Japan Panamax grain route, May was the peak month where the average rate was US$ 27.19 per ton. By the beginning of December this declined to around US$ 21.0 per ton with cargoes virtually drying up. On the trade routes for iron ore and coal, June saw the highest level for average Capesize earnings during the 12-month period under review. The lack of Japanese interest severely affected the markets of major dry bulk routes during the latter half of the year. [30]

Table 34

Freight rate indices, 1991-1993
(Monthly figures)

	Liner freight rates a/ (1985 = 100)			Dry cargo tramp time charter b/ (1985 = 100)			Dry cargo tramp trip charter c/ (July 1965 to June 1966 = 100)			Tanker freight indices c/														
										VLCC/ULCC			Medium-size crude carriers			Small crude and product carriers			Handy-size clean			Handy-size dirty		
Period	1991	1992	1993	1991	1992	1993	1991	1992	1993	1991	1992	1993	1991	1992	1993	1991	1992	1993	1991	1992	1993	1991	1992	1993
January	78	76	77	97	98	117	215	208	194	98	49	51	137	91	95	183	134	130	271	195	182	291	185	167
February	78	77	77	101	106	116	198	202	192	93	41	45	151	84	98	206	141	127	337	168	169	250	209	172
March	79	80	77	121	100	130	199	195	191	61	34	45	110	81	98	166	116	132	254	154	168	195	158	187
April	82	80	75	131	101	129	207	192	194	46	41	43	102	72	93	140	110	141	184	147	154	176	161	193
May	82	81	75	132	105	131	205	191	195	75	39	40	112	70	101	156	105	154	178	160	170	213	155	177
June	84	79	76	148	103	134	205	195	209	86	36	46	109	69	102	149	104	141	162	154	162	179	172	184
July	82	77	77	136	84	133	205	190	206	61	44	52	104	75	89	131	110	123	135	155	167	185	178	184
August	80	75	77	114	83	124	206	191	194	60	45	42	94	72	78	124	114	111	140	162	172	165	165	161
September	79	74	75	125	82	136	206	191	196	53	43	42	92	73	81	115	113	119	142	162	176	152	156	154
October	78	76	75	125	86	125	205	191	188	59	50	43	85	79	92	130	116	126	172	149	186	163	165	153
November	76	80	77	120	100	118	206	193	196	53	57	41	87	65	93	119	117	120	165	177	210	173	174	159
December	74	79	77	104	107	107	208	196	200	38	52	38	87	98	91	121	139	134	184	193	212	152	163	162
Annual average	79	78	76	121	96	125	205	195	196	65	44	44	106	77	93	145	118	130	194	165	177	191	170	171

Note: All indices have been rounded to the nearest whole number.

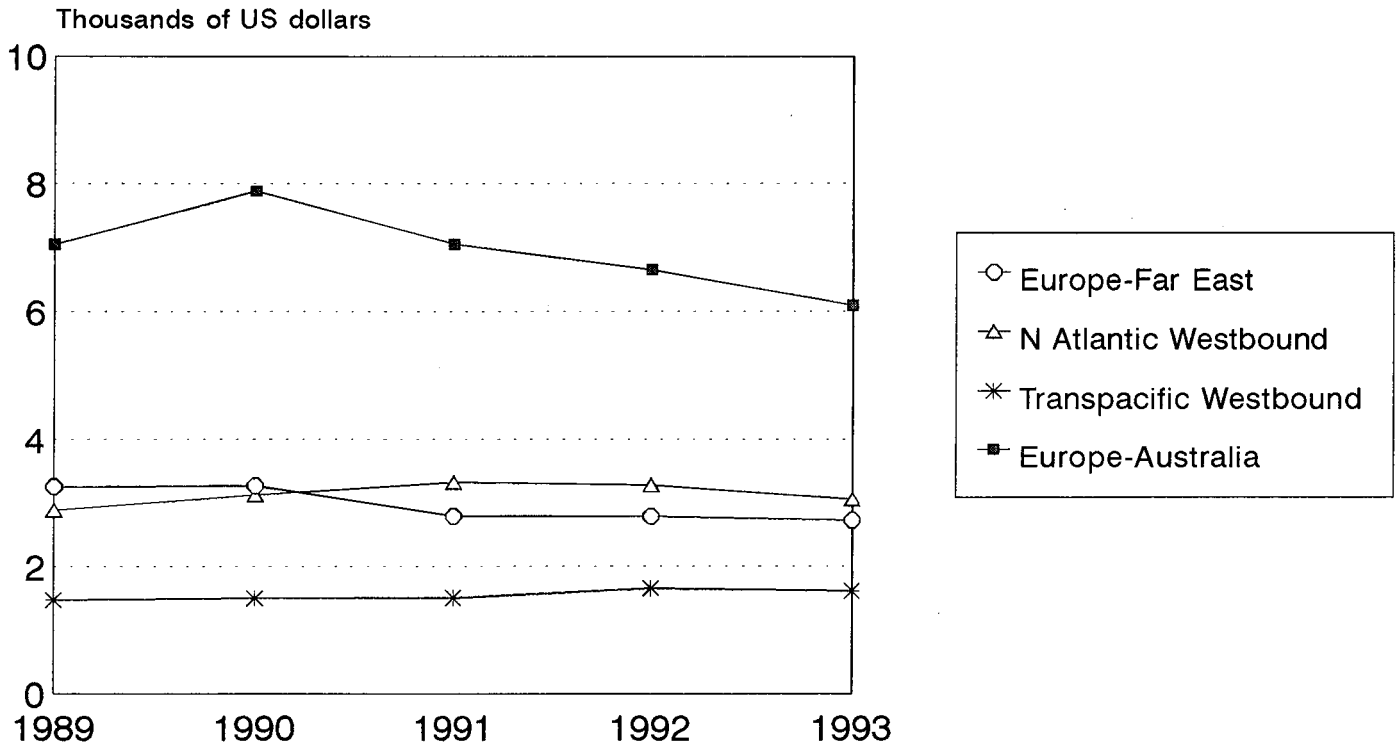
a/ Liner index compiled by the Ministry of Transport of Germany. Monthly weighted assessments of freight rates on cargoes loaded or discharged by liners of all flags at ports in the Antwerp/Hamburg range.

b/ Compiled by the Ministry of Transport of Germany.

c/ Compiled and published by Lloyd's Ship Manager. Worldscale = 100, as effective in each year. For tankers, vessel size groups are as follows: VLCC/ULCC: 150,000 dwt upwards; medium-sized crude carriers: 60,000- 150,000 dwt; small crude and product carriers: 30,000-60,000 dwt; and handy-sized clean and dirty tankers: below 30,000 dwt.

Graph 11

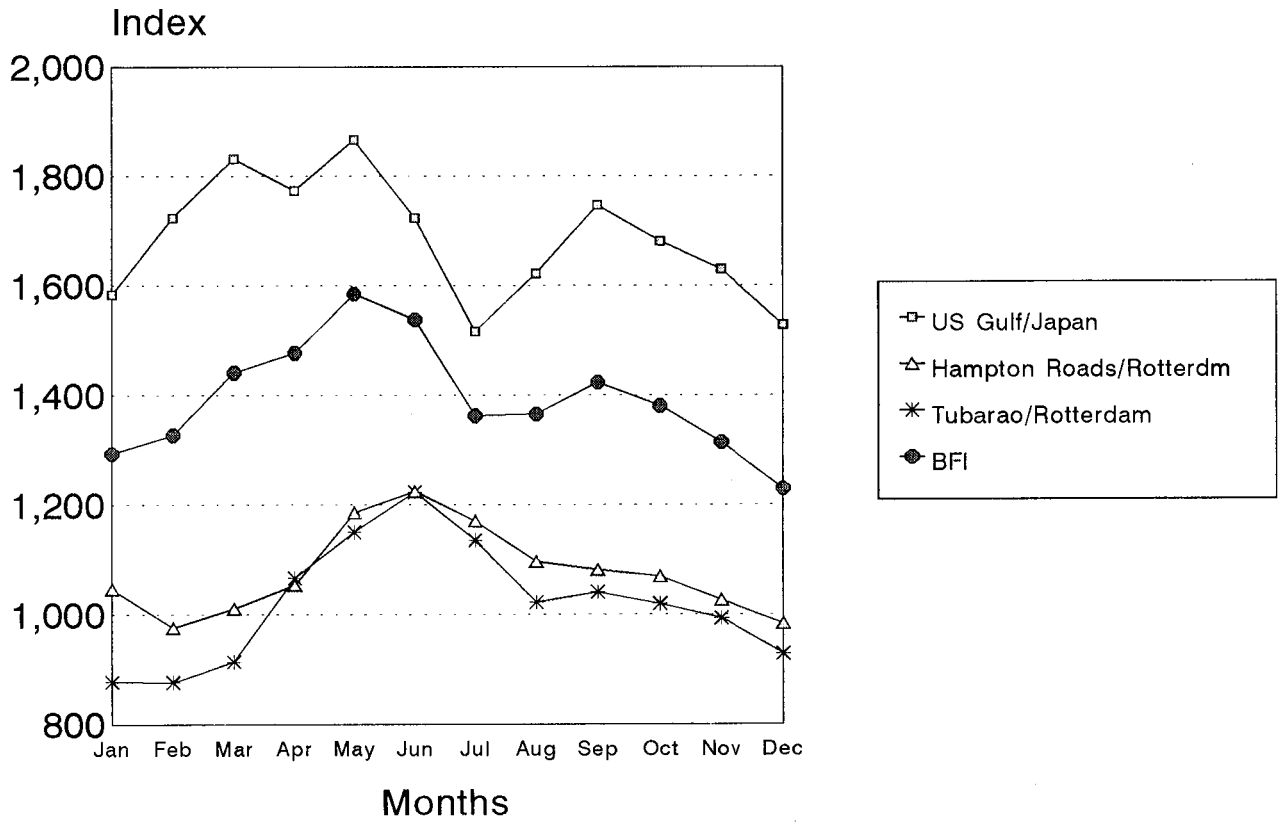
Major conference rates 1989-1993



Source: *Lloyd's Shipping Economist*, April 1994 and previous issues.

Graph 12

Baltic freight index and selected routes, 1993



Source: London Commodity Exchange.

76. Table 35 indicates the highest and lowest freight rates reported during 1992 and 1993 in the leading dry bulk trades. Both high and low freight rates for all the commodities except grain and ore (Brazil/Continental Europe) were up as compared to the previous year. The range between the year's high and low rates for grain and ore (both routes) decreased slightly from those of 1992. Conversely the span between the high and low rates for sugar and fertilizer (Continental Europe/West Coast India) slightly increased. Moreover, fertilizer rates from the United States Gulf to the West Coast of India soared by US$ 8.0 per ton. The highest rates of US$ 45 were paid for handy-size bulkers mid-1993, when the charter market experienced a boost due to China's demand for steel imports.

77. The global oil tanker trades in 1993 improved compared to the previous year, increasing by 4.6 per cent to 1,945 million tons (see table 1) with most of the growth in crude oil shipments from the Middle East Gulf and with large increases in oil product imports to countries in South-East Asia and the Far East. [31/] Demand for tanker tonnage during most of the year kept rate levels slightly above those experienced in 1992. Nevertheless, the usual winter surge, particularly in demand for VLCC/ULCC tonnage remained somewhat disappointing, leaving rate levels below Worldscale (WS) 40. This was mainly due to a large build-up of oil stocks in consumer nations from the middle of 1993, when the spot market for VLCCs saw a significant improvement primarily in July.

Table 35

Comparative freight rates for selected commodities, 1993 versus 1992

Commodity	Route	Freight rate range			
		1992 (US$/ton)		1993 (US$/ton)	
		High	Low	High	Low
Grain	United States (Gulf of Mexico)/Venezuela	19.00	13.00	18.00	13.00
Sugar	Queensland/Japan	18.75	16.75	22.00	18.50
Fertilizers	United States (Gulf of Mexico)/West Coast India	37.00	36.50	45.00	37.50
Fertilizers	Continental Europe/West Coast India	39.00	34.25	40.50	34.00
Ore	Brazil/Japan	9.85	6.95	11.25	9.50
Ore	Brazil/Continental Europe	6.25	3.50	5.50	4.55

Source: *Lloyd's List* (London), 14 June 1993 and 4 January 1994. Drewry Shipping Consultants Ltd. (London), *Shipping Statistics and Economics*, 1993, various issues.

78. Table 34 indicates the fluctuations of freight rates for the five types of vessels. The VLCC market gradually fell to WS 40 in May from WS 51 in January and rather quickly bounced back to WS 52 in July. The June-July improvement in Worldscale rates was mainly attributed to refineries arranging vessels in advance to cover their winter requirements at prevailing relatively low crude prices, which were triggered by speculation that the partial lifting of United Nations sanctions against Iraq [32/] would drive the nation to sell 600,000 bpd of crude oil over six months. The rates remained in the doldrums at slightly above WS 40 from the middle of August through November and deteriorated further towards the year-end. These poor rates were mainly due to the lack of global demand for crude oil, coupled with the oversupply of tonnage, including about 50 VLCCs available in early November. During December, many VLCCs left the Persian Gulf, heading for West Africa, which is traditionally the domain of the Suezmax tanker. A total of 13 VLCCs were reported fixed out of the region. [33/]

79. In the category of medium-sized crude carriers, the market reflected a relative balance between the supply of medium-sized tonnage and the demand for shipment of oil. The quick rise in May and June was brought about by an increase in chartering demand for tonnages of 130,000 ton class for loading in West Africa. Between June and August rates plunged by an average of 24 Worldscale points primarily due to port problems in Nigeria, with the rates for 130,000 ton cargoes in the trans-Atlantic trades falling by an average of 12 Worldscale points between July and August. In October the West African 130,000 ton cargo market improved significantly and continued to be firm at about WS 90 into the latter half of the last quarter.

80. For small crude and product carriers, the Caribbean market was relatively firm since January onwards. The rates for 70,000 ton class were fixed at the varying level of WS 130-160 in the first quarter and climbed up to WS 175 in the second quarter. The market was very weak because of a shortage of demand, fluctuating between WS 95-100 in the third quarter. In early October a rush of inquiries gave a boost to the market, raising the rates for 70,000 ton cargoes to as high as WS 137.5. The market continued to be sound towards the latter part of the fourth quarter. In the Mediterranean, the market was not so active but the rates were also maintained relatively steady for 70,000 ton cargo at WS 110-120 during the first half of 1993. Throughout the third quarter, the market remained stagnant in the region. It picked up tentatively to the level of WS 100 early in the fourth quarter, slowing slightly down afterwards. In another oil product market of the Persian Gulf-Far East trades, the 1993 buoyancy, specifically in the second half, established a steadily improving market from the level of WS 155 in July up to WS 175 in December for 55,000 tons of oil products.

81. In the market for handy-size clean or dirty, the rates for 30,000 ton Caribbean-United States

East Coast fluctuated widely up to WS 215 in the first half of 1993. In the third quarter, the United States imports surge of clean cargoes retained the market at the WS 200-210 level for 30,000 ton cargoes. This sound trend led to a rush of fixtures, commanding rates in the region as high as WS 250 early in the fourth quarter. However, despite the high level of rates for clean cargoes, the market for dirty cargoes weakened considerably from August onwards, with rate levels fluctuating around WS 160.

82. The time-charter market for tankers was fairly passive in the first half of 1993, reflecting charterers' uncertainty over global consumption of oil and prospects of spot markets. For the VLCC and ULCC period charter market, in the months of June and July, a few charterers who had a perspective of large tankers to be on an upward trend on spot markets took large tonnage on time charter. Thus, three ULCCs were fixed in July for one year each, of which the most modern was chartered at US$ 24,000 per day. Moreover six VLCCs were fixed for one year at a firmly-established market rate of US$ 24,000-25,000 per day for a newbuilding. Despite the downward movement in the spot-charter market for VLCC/ULCCs, the time-charter rates were upward from June to the end of the third quarter. In the fourth quarter, however, charterers were unwilling to pay anything more than bottom rates (US$ 16,000 per day) for mid-1970s-built VLCCs for a one-year charter. Conversely for double-hull newbuildings of VLCCs, higher rates were paid. Two VLCCs to be delivered in 1995-1996 were fixed at US$ 37,000 per day for seven years. For other sizes of tankers, the time-charter markets experienced higher rates for modern vessels such as US$ 18,000 per day for Suezmax, US$ 16,000 per day for Aframax and US$ 11,000-13,000 per day for 30,000-50,000 dwt class product tankers for one year each.

B. Liner freight rates as a percentage of prices for selected commodities

83. Table 36 indicates liner freight rates as a percentage of market prices for selected commodities and trade routes from 1970 to 1993. In 1993, a uniform trend was not discernible. In some cases, continuing pressure on freight rates coupled with improving commodity market prices led to considerable reductions of the freight/price ratio. This was particulary the case for coffee and tea with the biggest reduction to be observed in the Brazil-Europe coffee trade. On the other hand, ratios in the tin and coconut oil trades increased, primarily reflecting continuing downward pressure on the respective commodity prices.

C. Estimates of total freight costs in world trade

84. Table 37 indicates estimated total freight payment for imports and its percentage of total import value by country groups. World total freight payment as a proportion of import value was on a downward trend from 6.64 per cent in 1980 to 5.22 per cent in 1990. Since then, however, it climbed to 5.24 per cent in 1991 and 5.33 per cent in 1992 (see also graph 13).

85. The relative level of freight costs of developed market-economy countries continued to be about half that of developing countries, and the ratio between the two groups has been almost unchanged since 1980 (annual average of 50.7 per cent). The difference between the two country groups is attributable, among other things, to differences in the regional structure and commodity composition of their trade, greater bargaining power of shippers from developed market-economy countries when negotiating with shipowners or liner conferences/operators for larger cargo volumes, and more efficient infrastructure facilities at ports and inland distribution systems on the part of such countries.

86. Relative freight costs of developing countries declined almost yearly from 1980 to 1991 (as did those of developed market-economy countries) but increased slightly in 1992. This increase was fairly evenly spread over the different regions, with the notable exceptions of Europe and Oceania whose ratio actually declined. The ratio of developed countries, after having experienced a considerable decline in 1991, remained stable at 4.35 per cent

D. Marine bunker prices

87. The overall bunker prices in 1993 increased and then steadied in the second quarter. Prices were drastically on the slide again throughout the second half, mainly due to overproducing and overstocking triggered by low crude-oil prices, as indicated in table 38. [34/] Prices for the first half of 1993 climbed from those of the corresponding period in 1992, except the North-West European market where all three prices declined from the previous year. In the Gulf of Mexico, West Coast of the United States and the Far East, the prices for high viscosity fuel oil and intermediate fuel oil increased by as much as 13.7 per cent and 14.8 per cent respectively. Marine diesel oil, however, increased modestly in the markets including the Mediterranean. In the second half of the year, prices for high viscosity fuel oil and intermediate fuel oil plummeted by as much as an average of 24.9 per cent and 26.9 per cent respectively from those for the

second half of 1992 in all the bunker markets. Marine diesel oil fell by an average of 10.1 per cent, as compared to those for the second half of the previous year, in all markets except the Persian Gulf and the West Coast of the United States where the prices were slightly up.

Table 36

Ratio of liner freight rates to prices of selected commodities

Commodity and route		Freight rate as percentage of price a/ b/ c/						
		1970	1975	1980	1985	1990	1992	1993
Rubber	Singapore/Malaysia-Europe	10.5	18.5	8.9	n.a.	15.5	13.1	14.5
Tin	Singapore/Malaysia-Europe	1.2	1.6	1.0	n.a.	1.7	1.1	1.4
Jute	Bangladesh-Europe	12.1	19.5	19.8	6.4	21.2	24.1	24.3
Cocoa beans	Ghana-Europe	2.4	3.4	2.7	1.9	6.7	7.9	7.5
Coconut oil	Sri Lanka-Europe	8.9	9.1	12.6	12.6	n.a.	8.7	11.2
Tea	Sri Lanka-Europe	9.5	10.4	9.9	6.9	10.0	9.1	5.3
Coffee	Brazil-Europe	5.2	9.7	6.0	5.0	10.0	8.8	4.3
Coffee	Colombia (Atlantic)-Europe	4.2	5.7	3.3	6.7	6.8	7.9	7.1
Cocoa beans	Brazil-Europe	7.4	8.2	8.6	6.9	11.0	9.3	10.6
Coffee	Colombia (Pacific-Europe)	4.5	6.3	4.4	6.1	7.4	8.4	7.6

Source: Compiled by the UNCTAD secretariat on the basis of data supplied by the Royal Netherlands Shipowners' Association (data for 1970-1989) and conferences engaged in the respective trades (data for 1990-1993).

a/ Cif prices are quoted for coffee (Brazil-Europe and Colombia-Europe) and coconut oil. For cocoa beans (Ghana-Europe and Brazil-Europe) and tea, average of the daily prices in London are quoted. Prices of the remaining commodities are quoted on fob terms.

b/ Freight rates include, where applicable, bunker surcharges and currency adjustment factors, a "tank cleaning surcharge" (for coconut oil only), port delay and additional port surcharges (for Colombia only). Conversion of rates to other currencies is based on parities given in *International Financial Statistics* published by the International Monetary Fund. Annual freight rates were calculated by taking a weighted average of various freight rates quoted during the year, weighted by their period of duration.

c/ For the period 1990-1993, the prices of the commodities were taken from UNCTAD, *Monthly Commodity Price Bulletin*, March 1994.

Table 37

Estimates of total freight costs in world trade a/ by groups
(Millions of US dollars)

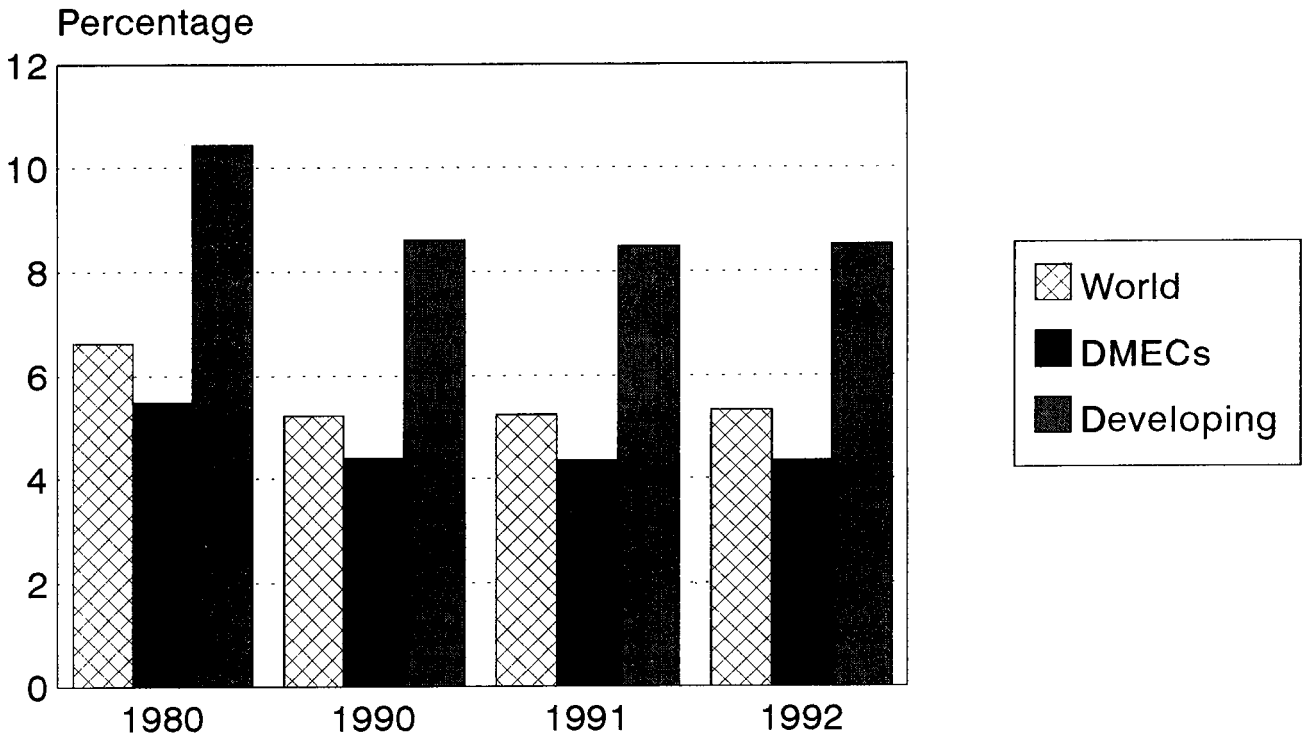
Year	Country group	Estimate of total freight costs of imports	Value of imports (cif)	Freight costs as percentage of import value
1980	1. World total	123 264	1 856 834	6.64
	2. Developed market-economy countries	78 286	1 425 979	5.49
	3. Developing countries - total	44 978	430 855	10.44
	of which in: Africa	10 432	77 757	13.42
	America	10 929	123 495	8.85
	Asia	21 979	211 089	10.41
	Europe	1 320	16 037	8.23
	Oceania	318	2 477	12.84
1991	1. World total	178 307	3 402 660	5.24
	2. Developed market-economy countries	115 895	2 666 645	4.35
	3. Developing countries - total	62 412	736 015	8.48
	of which in: Africa	8 738	78 703	11.10
	America	10 609	131 260	8.08
	Asia	40 764	501 906	8.12
	Europe	1 812	20 159	8.99
	Oceania	489	3 987	12.26
1992	1. World total	194 301	3 645 898	5.33
	2. Developed market-economy countries	121 356	2 789 850	4.35
	3. Developing countries - total	72 945	856 048	8.52
	of which in: Africa	10 080	90 415	11.15
	America	14 360	175 494	8.18
	Asia	46 366	567 495	8.17
	Europe	1 675	18 819	8.90
	Oceania	464	3 825	12.13

Source: Derived from IMF cif/fob factors and IMF import data.

a/ The estimate for the world is not complete, since data for countries which are not members of the IMF are not included.

Graph 13

Estimates of total freight costs in world trade by groups



Source: Table 37.

Table 38

Fluctuations in marine bunker fuel prices, a/ 1991-1993
(US dollars per ton)

		1991	1992	1993				1993 percentage change (fourth quarter to first quarter)
		4Q	4Q	1Q	2Q	3Q	4Q	
Persian Gulf (Mina Ahmadi)	HVF	-	102	78	80	69	61	-21.8
	IFO	-	110	85	88	78	70	-17.7
	MDO	-	220	222	217	212	212	-4.5
Mediterranean (Genoa)	HVF	92	105	91	85	72	70	-23.1
	IFO	102	113	99	93	80	79	-20.2
	MDO	226	215	199	197	183	190	-4.5
North West Europe (Rotterdam)	HVF	82	93	74	72	62	60	-18.9
	IFO	88	97	81	78	68	66	-18.5
	MDO	172	157	153	161	145	144	-5.9
Gulf of Mexico (Houston)	HVF	72	88	76	75	68	64	-15.8
	IFO	77	91	80	79	73	67	-16.3
	MDO	172	173	162	161	159	158	-2.5
West Coast of United States (Los Angeles)	HVF	76	99	80	81	67	66	-17.5
	IFO	81	103	85	86	75	71	-16.5
	MDO	192	204	185	196	204	208	12.4
Far East (Singapore)	HVF	82	89	81	87	71	62	-23.5
	IFO	86	94	85	93	75	66	-22.4
	MDO	178	192	164	166	152	147	-10.4

Source: Drewry Shipping Consultants (London), *Shipping Statistics and Economics*, various issues.

a/ Average prices for each quarter.

HVF - high viscosity fuel oil
IFO - intermediate fuel oil
MDO - marine diesel oil

Box 8

Worldscale fixtures

Worldscale is the tanker industry's standard reference for calculating freight rates, designed to make the business of fixing tankers quicker, easier and more flexible. ... A Worldscale fixture between one load and discharge port - for example 270,000 tonnes AG/Singapore WS 40 - generates roughly the same daily return for the shipowner as a WS 40 fixture between a different load and discharge port. This allows owners to give a quick and flexible response to charterers requiring multiple discharge options as well as allowing an easy reading and comparison of the markets in different areas. So how does it work?

The New Worldwide Tanker Nominal Freight Scale, otherwise known as Worldscale, contains over 500 pages of nominal freight rates - the "base" or "flat" rates - in US dollars per metric tonne, for thousands of different potential voyages. There is only one base rate for any one given voyage calculated on the basis of a theoretical standard vessel of 75,000 tonnes cargo capacity costing US$ 12,000 a day fixed hire and performing a round voyage load/discharge and back to loadport at 14.5 knots on 55 tonnes of fuel oil per day. The rates are revised every year to reflect a new standard of fuel oil cost for the year and any changes in port costs.

That is the theory. How is that then put into practice on the spot charter market? Shipowner and charterer negotiate a Worldscale fixing rate for the cargo in question. This is expressed as a percentage of the base rate printed by Worldscale for the particular voyage. Thus Worldscale 100 (WS 100) means the rate for the particular voyage as published by Worldscale; a VLCC fixing at WS 35 gets 35 per cent of that rate per tonne; a products tanker fixing at WS 235 gets 235 per cent of that rate per tonne. So the owner looks up the base rate in the Worldscale book and applies the fixture percentage to it to calculate his actual freight in dollars per tonne.

Why does the tanker market need a special system for calculating freights when the dry bulk market has always got along fine with expressing rate in dollars per ton? The answer lies in the nature of their respective cargoes. Crude oil and petroleum products are a more consistent commodity, easily transferable into other tankers or into pipelines for onward distribution. As a result they are easily traded with cargoes changing hand many times on voyage.

For the cargo owner to have total flexibility to trade his cargo, he requires a wide range of discharge options. Instead of performing dozens of freight calculations, the owner can provide this flexibility quickly and easily by using Worldscale. It is also easier to talk about and understand how a sector of the market is moving in terms of Worldscale points rather than a wide variety of shifting dollar per tonne rates.

By its nature the system cannot be perfect. The further your ship is from Worldscale's "standard" ship, and the further the market is from WS 100, the greater the potential distortions, though of course as an owner you know what Worldscale figure will generate your required earnings for a particular ship in your fleet. Take the example in our illustration. While owners' port costs at Loop are negligible, Rotterdam is an expensive port. The Worldscale base rates covering Rotterdam thus contain a high port cost element compared to Loop. This means that at market rates appreciably below WS 100 the owner trading to Rotterdam loses out while at market rates at or above WS 100 he gains. Thus 270,000 tonnes at WS 40 AG/Loop generates a return of US$ 13,500 a day on a VLCC: WS 42.5 is needed AG/Rotterdam to generate the same return. But at higher rates, the advantage is the other way round. WS 115 on AG/Rotterdam generates US$ 58,500 a day; WS 117 is needed on AG/Loop for the same return.

Typical examples: (Base rate: 1992 Worldscale)

Discharge port	Rotterdam	Loop	Singapore
Load port	Mina Al Fahal	Mina Al Fahal	Mina Al Fahal
Market rate	WS 40	WS 40	WS 40
Cargo	270,000 tonnes	270,000 tonnes	270,000 tonnes
Base rate	$15.89	$16.19	$5.19
Freight	$1,716,120	$1,748,520	$560,520
Return	$12,000 per day	$13,500 per day	$13,500 per day

Source: *Seatrade Review*, January 1994.

Box 9

Review of 1993 refrigerated sector

Fleet

At the end of 1993, the global fleet of reefer vessels with a capacity of over 40,000 cubic feet and built after 1960 comprised 1,405 vessels. This represents a negligible increase from 1,404 vessels a year earlier and just a 1.0 per cent increase in the total capacity from 383 million cubic feet to 387 million.

Newbuilding deliveries rose by 12.5 per cent from 40 vessels in 1992 to 45, whilst capacity expanded by 13.0 per cent from 17.26 million cubic feet to 19.50 million. The focus in 1993 was on large vessels. Out of the 45 newbuildings delivered, 98 per cent had a capacity in excess of 200,000 cubic feet, 85 per cent in excess of 300,000 cubic feet and 45 per cent in excess of 450,000 cubic feet. The largest tonnage in the past several years, 49 vessels totalling 16.1 million cubic feet were taken out of service, as compared to 12 vessels with a combined capacity 2.93 million cubic feet in 1992. The fleet operated by the former Soviet Union had more effect on the 1993 market. It accounted for 19.0 per cent of the world fleet in terms of number of vessels and 20.5 per cent in terms of capacity. A sharp contraction in the various Republics' demand forced the fleet to channel a large portion of its business to the global market.

Market condition

The 1993 season was influenced by a number of factors such as adverse weather in exporting countries and the harsh economic environment in importing countries. The market's woes can be more attributed to the global economic conditions, the most significant of which are:

- The fleet suffered from chronic excess capacity;
- The massive entry of vessels from the market of the former Soviet Union added to the capacity throughout the season;
- Shipments fell short of projections;
- New European Union regulations for "dollar" banana imports destabilized the market;
- Sizeable stocks from the year before led European countries to significantly reduce their imports of fruit (mainly apples) from the southern hemisphere.

Freights

In the contract market, charter rates for the season as a whole were inferior to those of the previous year. Major traditional contracts primarily for fruit harvested in the southern hemisphere were fixed at 4 to 7 per cent lower than in 1992. In the spot market, the 1993 high season for fruit shipments was shorter-lived than usual with rates averaging as low as US$ 1.10-1.20 per cubic foot, representing a decrease of US$ 0.30-0.40 per cubic foot from the 1992 high season rates. In the second half of the year, demand was almost entirely concentrated on modern vessels. Consequently, shipowners, particularly those of old fleets had to lay up their vessels earlier than usual. In the market for time charter, all categories of time charter were hit by weak demand and the subsequent drop in fixing rates. Twelve-month rates for modern, palletized vessels were in the region of US$ 0.55 per cubic foot for 260,000-300,000 cubic foot vessels and US$ 0.625 for 350,000-400,000 cubic foot vessels.

Source: Barry Rogliano Salles, *The Shipbuilding and Shipping Market, 1993*; *The Journal of Commerce*, various issues, *Lloyd's List* (London), various issues.

Chapter VII

MULTIMODAL TRANSPORT AND TECHNOLOGICAL DEVELOPMENTS

This chapter updates developments in the field of multimodal transport, including developments of legislation, new block train services and container production, and new features.

A. Developments of legislation at the national level

88. In a number of countries and regions legislation and statutes regulating freight forwarding and multimodal transport services have recently been introduced or are in preparation. In India the Multimodal Transportation of Goods Act, 1993 was enacted, according to which transport companies need to be registered as MTOs in order to be able to carry on the business of multimodal transportation. As a consequence of the new act, the Multimodal Transport Association (MTA) was established in Bombay. Among its objectives are the promotion of multimodal transport, the improvement of the quality of such services, the organization of multimodal transport operators at the national level, and the study of problems which operators may encounter. The membership comprises shipowners, shipping agents, forwarders, trade bodies and governmental agencies which are involved, directly or indirectly, in multimodal transport.

89. The countries of the Cartagena Agreement (Bolivia, Columbia, Ecuador, Peru and Venezuela) have adopted common rules to govern the operations of multimodal transport in the subregion. According to the rules a multimodal transport operator registered in any of the member countries can operate also in the other member countries. The rules stipulate the requirements which should be met by a company in order to permit its registration as multimodal transport operator, list the particulars to be included in the multimodal transport document, establish the conditions and the limits of the responsibility of the operator.

90. The Swiss Freight Forwarders' Association (SFFA) has issued a new edition of its General Conditions (1994). The previous version of the general conditions, which date from 1922, was issued in 1982. The purpose of the general conditions is to supplement the provisions of Swiss law and their application is not mandatory. The new version distinguishes between the following fields of activity of the forwarder: the forwarder as an intermediary, as a carrier and as a provider of other services (customs clearance etc.). The liability is defined depending on the fields of activity in which the freight forwarder is rendering his services.

B. New block train services

91. A unique experience in transporting perishable foodstuffs by block trains with refrigerated containers between the port of Antwerp and points inside the Russian Federation has been noticed as a promising positive development in this field. This experience is a part of the programme of revitalization of the transport and logistic services in the former Soviet Union. At the same time a system of transporting swap-bodies and containers by block trains operated by the European railways has gradually spread to the railways of Central and Eastern Europe. For the operation of such block trains in Poland in 1992 a specialized operator, POLCOMBI, was established, in which railways and road carriers, maritime ports and freight forwarders are represented. A similar organization exists in Hungary and another is in process of being organized in the Czech Republic.

92. The use of swap-bodies in combined transport in intra-European services is increasing rapidly as this means of transport is considered to suit best the conditions on the European continent (see table 39).

93. Of the 100,000 or so swap-bodies in operation in Europe, more than half are registered in Germany. It should be noted that only swap-bodies used in combined (rail/road) services are taken into account, so the swap-bodies used exclusively in road transport were not counted in table 39.

C. World container production

94. As indicated in the 1992 issue of the *Review of Maritime Transport*, container production for the first time in history then topped the 1 million TEU mark. In 1993 the overall estimated production was just below that figure, 970,000 TEUs, although the distribution of the production had changed substantially (see table 40). The Asian region continued to be the main container supplier. Production in the Republic of Korea, which for 11 years was the leader in this field, fell from 375,000 TEUs in 1992 to 185,000 TEUs in 1993 and represented less than 20 per cent of the world production. The manufacturing industry of China took the first place and produced not less than a quarter of

all containers in 1993 (250,000 TEUs). China's total multi-shift capacity at 20 active factories amounted to 450,000 TEUs and soon may exceed 550,000 TEUs as five or six new factories are expected to be commissioned in 1994. [35/]

95. At the same time, with the very depressed market in 1993, world production capacity outstripped the real production needs by around 80 per cent or 800,000 TEUs. Under these conditions prices decreased by more than 10 per cent and several factories are known to have been closed throughout Asia and Europe. Many manufacturing companies in the Republic of Korea and in Taiwan Province of China quickly moved into ventures in other countries, maintaining their involvement in the container production industry by providing finance and consulting services. Simultaneously, many dry freight production lines in these countries were switched to the production of special, notably refrigerated containers.

96. As can be seen from table 41, the bulk of containers produced in 1993 continued to be represented by dry freight standard containers. A certain growth can be noticed in the production of the special category of dry freight containers which included open top, flatrack, platform, ventilated, bulk, waste and open-side containers of standard size. There was also a substantial growth in the production of containers longer than 40-foot. These containers were produced primarily by factories in the United States for domestic use by local operators where new entrants to the container transport market, especially in road transport sector, made big purchases of such containers.

Table 39

Number of swap-bodies in operation in Europe
(In real units)

Country	Number	Country	Number
Germany	53 303	United Kingdom	2 500
France	6 975	Finland	2 000
Denmark	6 587	Norway	2 000
Austria	6 582	Belgium	1 770
Italy	4 726	Netherlands	879
Sweden	4 500	Greece	750
Switzerland	2 702	Portugal	750

Source: *Studiengesellschaft für den kombinierten Verkehr eV.*, July 1993.

Table 40

Breakdown of annual container production by region/country for 1991-1993
(in TEUs)

Region/Country	1993	1992	1991	Current production split (%)	
				Standard	Special
Asia					
China	250 000	190 000	120 000	100.0	-
Republic of Korea	185 000	375 000	340 000	86.0	14.0
Taiwan, Province of China	95 000	135 000	115 000	93.0	7.0
Thailand	50 000	70 000	45 000	100.0	-
Malaysia	50 000	55 000	45 000	100.0	-
Indonesia	50 000	40 000	10 000	100.0	-
India	34 000	30 000	30 000	100.0	-
Japan	15 000	20 000	10 000	-	100.0
Singapore	1 000	10 000	8 000	-	100.0
Philippines	-	-	7 000	100.0	-
Subtotal	730 000	925 000	730 000	93.3	6.7
Europe					
Italy	35 000	32 000	30 000	20.0	80.0
Scandinavia	28 000	22 000	10 000	98.0	2.0
CIS	26 000	28 000	31 000	95.0	5.0
United Kingdom	12 000	14 000	17 000	-	100.0
Poland	12 000	11 000	9 000	50.0	50.0
Germany	10 000	13 000	10 000	-	100.0
Spain/Portugal	2 000	5 000	8 000	-	100.0
Hungary	2 000	2 000	3 000	-	100.0
Benelux	2 000	5 000	3 000	-	100.0
Others	6 000	2 000	4 000	100.0	-
Subtotal	135 000	135 000	125 000	52.7	47.3
Others					
North America	40 000	15 000	15 000	10.0	90.0
Central/South America	35 000	40 000	15 000	80.0	20.0
South Africa	20 000	20 000	18 000	75.0	25.0
Other	10 000	15 000	7 000	75.0	25.0
Subtotal	105 000	90 000	35 000	51.9	48.1
WORLD TOTAL	970 000	1 150 000	910 000	83.2	16.8

Source: *Cargoware International*, January 1994, p. 28.

Table 41

Estimated world container production by type for 1991-1993
(in TEUs)

Type of containers	1993	1992	1991
Dry freight	900 000	1 010 000	870 000
Standard	805 000	1 080 000	810 000
Special	50 000	47 000	42 000
Europallet width	10 000	8 000	8 000
More than 40ft-long	35 000	15 000	10 000
Refrigerated	65 000	65 000	35 000
Tank	5 000	5 000	5 000
World total	970 000	1 150 000	910 000

Source: *Cargoware International*, January 1994, page 31.

D. Production of refrigerated containers

97. The world demand and production of refrigerated containers has been steady for the last five years (see table 42). But in 1991 and 1992, the production rose substantially from 35,000 TEUs to 65,000 TEUs annually. About 75 per cent of these were produced by factories in East Asia, primarily the Republic of Korea, Japan and Taiwan, Province of China. About 60 per cent were currently ordered by shipping lines and the rest by leasing companies. The majority of production remains concentrated in the hands of a few established companies of these countries.

98. One of the main preoccupations of the reefer container manufacturers is the substitution of the CFC 11 blowing agent used for the production of insulation polyurethane foam by more environmentally friendly agents. For the time being the R141b blowing agent has been found to be the best replacement and many companies are switching to it though it is more expensive and its use leads to some loss of the insulating capacity of the foam. However, since R141b continues to represent a certain danger for the depletion of the ozone layer (about 14 per cent of that of CFC 11), it will be subject to production restrictions from early in the next century, and can thus be considered as an interim substitute only.

Table 42

Estimated production of refrigerated containers
(in TEUs)

Region	1993	1992	1991	1990	1989
East Asia	48 000	49 000	25 000	32 000	43 000
Europe/United States	17 000	16 000	10 000	13 000	22 000
Total	65 000	65 000	35 000	45 000	65 000

Source: *Cargoware International*, October 1993, p. 34.

E. Landbridges and block train services

99. In Pakistan container traffic by block trains has proved to be successful. A regular service now operates with five dedicated container block trains per week between Karachi Port and Lahore Dry Port. This service may be further expanded in the future.

100. The North American Free Trade Agreement has already had a positive impact on the movement of international rail traffic to and from Mexico. The principal growth area has been container traffic, the volume of which rose 16 per cent in 1992 and 18 per cent in the first half of 1993. Clearance enlargement on the North American continent to permit further expanding of the network for double-stack container trains continues. According to the Association of American Railroads, the total volume of loadings of intermodal traffic exceeded 7 million containers and trailers in 1993.

101. Despite considerable efforts made by the railways of the Russian Federation in the organizational and technological fields on the trans-Siberian container line, the volume of traffic continued to decline (in 1993 the volume of container traffic was estimated to be as low as 30,000 TEUs.) This fall has been explained by the confusion created by the establishment of numerous operators, significant increases in rail tariffs, port congestion and by the sometimes awkward intervention of the State authorities, with additional red tape and taxation.

F. Intermodal river traffic in Europe

102. The volume of container traffic on the Rhine exceeded 500,000 TEUs in 1992. The opening of the Rhine-Main-Danube waterway link in September 1992 gave intermodal traffic on the European waterways a new impetus, with the introduction of regular container and ro-ro services between Rotterdam and various ports on the Danube. From September 1992 till July 1993 the new canal handled 1.3 million tons of cargo in both directions, despite unfavourable socio-economic conditions and a difficult hydraulic situation on certain stretches of the waterway.

103. One intermodal liner service called the Danube Container Service was opened in April 1993, offering a regular weekly service between Rotterdam and the Austrian ports of Vienna, Linz and Krems with the use of three 1,600-1,700 dwt motor vessels of 70-76 TEUs capacity each. It is expected that the line will be extended to Budapest. It is indicated that the rates offered by this line are 20-30 per cent lower than rail and up 2-3 times cheaper than road.

104. The joint Bulgarian-German ro-ro service between Passau and Vidin has now been in operation for several years. The service is operated by six catamarans with a capacity of 49 trailers each. Another ro-ro service between Passau and Budapest is offered by a Hungaro-German joint venture using double-decker push barges with a capacity of 60 trailers. The transit time between Passau and Vidin is five to six days and that between Passau and Budapest two days. Transit times are thus only marginally greater than road transit time because of road delays caused by border controls and customs clearance which are becoming increasingly cumbersome. Furthermore, the ro-ro service is not affected by the bans on weekend and holiday road traffic imposed by some European countries.

105. Ro-ro services on the Rhine have also developed strongly in recent years, though less spectacularly than container services. The reason for this development was also the growing congestion of roads and railways, restrictions on traffic during nights and weekends and energy saving and environmental considerations. All of these developments point towards a gradual realization, by both transport providers and users, of the benefits of modern inland waterway transport, both for the environment and for simple economic reasons.

G. Air-road-air multimodal transport services

106. In the past, multimodal transport services that use airplanes for one of the multimodal transport legs, have generally been confined to sea/air shipments. Now a new multimodal transport service combining air-road-air modes has been introduced in the trade between Asia and Latin American destinations through the United States. The goods are delivered by air from Asian points of origin to airports on the west coast of the United States (San Francisco or Los Angeles) then moved by road to Miami where they are reloaded on to planes for delivery to their final destination in Central or South America. Direct shipment from the Asian countries to Latin America is limited by the range constraints of most aircraft. The trip from Los Angeles to Miami takes 72 hours but the tariff by road is 52 cents per kilogram in comparison to 78 cents per kilogram by air.

107. It is reported that the industrial development in Latin American countries, as well as the reduction in tariffs and elimination of trade barriers resulting from the North American Free Trade Agreement have boosted the volume of cargo moved in this way.

H. Cellular-compatible palletwide container for deep-sea trade

108. At present about 20,000 cellular-compatible palletwide containers (CPC), first introduced in 1987, are in operation, mainly in European short-sea and coastal operations. These 20 and 40-foot containers which correspond to ISO standards as regards test requirements and dimensions, except for their width (2.5 m), have specially designed 8-foot wide end-frames and doors, which permits them to combine the capability of being stowed in cellular container vessels with the ability to accommodate the 1,200-mm-wide pallets widely used in the European logistics systems. However, while the special end frames design allows such containers to be stowed in the cells of cellular vessels with 100 mm or wider guides, in vessels with slimmer cells the stowing of such containers in adjacent cells tends to be difficult or even impossible. This has been one of the reasons why such containers have not been introduced in deep-sea trades.

109. To overcome this problem a new configuration of sidewalls has been proposed permitting the reduction of the overall external width of container to 2,460 mm, whilst still retaining internal width of 2,420 mm to permit the accommodation of two 1,200-mm-wide pallets side by side. A new trapezoidal corrugation profile which has an overall depth of just 19 mm with a stiffening crease incorporated to increase the strength permits the achievement of such a reduction of the overall width between the sidewalls. Such a reduced external width would allow the containers to be stowed side-by-side on any deep-sea container vessel.

Box 10

Container world fleet tops 8 million TEU

Production over the past year (1993) may not have been as spectacular as that witnessed in 1992, but it was still enough to boost the world container fleet by another 7 per cent and take it to almost 8.2 million TEU by the 1993 year-end. The replacement of older containers, earmarked for disposal, was similarly maintained at roughly the same rate as in previous years, with an estimated 5.5 per cent of the fleet extant at end-1992 undergoing renewal throughout 1993. In hard figures, it is calculated by Cargoware International that around 540,000 TEU were acquired directly to fuel expansion in 1993, and a further 430,000 TEU to match replacement. The world fleet stood at a verified 7.63 million TEU at end-1992, and is calculated to have risen to 8.17 million TEU by the end of 1993.

Who were the main purchasers? Certainly not the leasing sector which, after its gargantuan investment in 1992, markedly slowed its overall rate of acquisition in 1993. Collectively, leasing TEU contracts were down by more than 30 per cent in 1993 as compared with the preceding year and were lower than forecasts made early in 1993. In numerical terms, rental firms ordered around 430,000 TEU in 1993, as opposed to 620,000 TEU in 1992. Moreover, it is reckoned that a larger portion of contracts in 1993 were to serve replacement than in 1992. Upwards of 190,000 TEU were acquired purely to substitute older units in 1993, as compared with 170,000 TEU in 1992. As a consequence, a substantially reduced 240,000 TEU of leasing company orders fuelled expansion in 1993, equating to 7 per cent growth. In 1992, lessors enlarged their operational fleet by a massive 450,000 TEU, representing growth of 15 per cent. At end-1991, lessors' inventories stood at 3.03 million TEU, rising to 3.48 million TEU by end-1992 and to around 3.72 million TEU by the end of 1993.

Ocean carriers showed a more stable pattern. Shunning the "boom and bust" approach so prevalent with the rental sector, these companies are reckoned to have maintained roughly the same growth profile in 1993, as in 1992. In 1992 carriers were estimated to have added up to 7 per cent to their collective fleet based, and also replaced 7 per cent. In 1993, much the same strategy was adopted, although there is a likelihood that carrier replacements were down slightly for the past year, because of falling second-hand box prices.

Direct carrier purchases for 1993 amounted to about 500,000 TEU per annum. Shipping line inventories grew from 3.45 million TEU at end-1991 to 3.7 million TEU at end-1992, and up to around 3.95 million TEU by the end of 1993. In considering the above figures, it is perhaps worth noting that a sizeable quantity of recent carrier acquisitions have been of the lease-purchase type and lodged with some of the largest rental names. This trend may go some way to explain the dramatic fall in lessor acquisition in 1993, as against a more stable carrier uptake. Whatever the prognosis, leasing companies are only just holding on to their share of world TEU ownership; on the basis of the above figures, leasing firms held an estimated 45.5 per cent of inventories at end-1993, as compared with 48.5 per cent held by carriers and 6 per cent by others.

These "others" contained owners, including railroads, road hauliers and forwarders, boosted their share in 1993 by virtue of the direct purchases made of domestic containers in North America. Non-categorized owners now hold up to 470,000 TEU, having achieved an estimated growth of around 20,000 TEU (or 4.5 per cent) during 1993. Disposals from these owners were calculated to be no more than 20,000 TEU for the past year.

Plans for 1994 are presently uncertain, but it is possible that (on present forecasts) a comparable level of output will be achieved during the coming year as in 1993. Ocean carriers are likely to take up to 500,000 TEU, leaving perhaps 400,000 TEU for the leasing sector and another 40,000 TEU for other categories. In view of the fact that leasing company disposals are likely to be even higher in 1994, it would seem probable that their overall fleet growth will be even smaller for the coming year, when compared to 1993. However, these predictions can take no account of further extraordinary events that might affect the leasing sector in the aftermath of the latest round of "mega" takeovers.

On the basis of the above scenario, leasing firms might boost their collective fleet to around 3.9 million TEU by end-1994, whilst shipping line inventories could rise to over 4.2 million TEU and others to 500,000 TEU. The global fleet would then stand at around 8.6 million TEU.

Source: *Cargoware International*, January 1994.

Chapter VIII

OTHER DEVELOPMENTS

This chapter updates the status of various international agreements dealing with maritime transport and its related industries' activities, outlines UNCTAD's initiatives in technical assistance and training, and features new developments concerned.

A. GATT - Conclusion of the Uruguay Round

110. On 15 December 1993 the Final Act of the Uruguay Round was adopted at Geneva after long negotiations under the auspices of GATT. Agreements reached include, *inter alia*, the "Agreement establishing the World Trade Organization", the "Agreement on Trade in Goods" and the "General Agreement on Trade in Services". [36/] In the area of services, however, agreement could not be reached with regard to commitments in three service sectors, namely financial services, telecommunications and maritime transport, as well as to the movement of persons. Consequently, it was decided to establish separate groups for the purpose of continuing negotiations in these sectors.

111. The situation with regard to shipping is reflected in the Ministerial Declaration on Negotiations on Maritime Transport Services and its annex. The Decision calls for negotiations to be continued on a voluntary basis, aiming at arriving at a schedule of commitments in international shipping, auxiliary services and access to and use of port facilities. The Negotiating Group on Maritime Transport Services (NGMTS) is to conclude negotiations and make a final report no later than June 1996. During the time of the negotiations, most-favoured nation exemptions do not need to be listed and, at the conclusion of the negotiations, members will be free to improve, modify or withdraw any commitments made in this sector during the Uruguay Round without offering compensation. It was also decided that until the date of implementation of the results of the negotiations of the NGMTS, participating countries will refrain from taking any measures affecting trade in maritime transport services except measures designed to maintain or improve the freedom of provision of maritime transport services.

B. United Nations Convention on a Code of Conduct for Liner Conferences

112. The United Nations Convention on a Code of Conduct for Liner Conferences came into force on 6 October 1983. Up to May 1994 the number of Contracting Parties had reached 77, namely: Algeria; Bangladesh; Barbados; Belgium; Benin; Bulgaria; Burkina Faso; Cameroon; Cape Verde; Central African Republic; Chile; China; Congo; Costa Rica; Côte d'Ivoire; Cuba; Czech Republic; Denmark (except Greenland and the Faeroe Islands); Egypt; Ethiopia; Finland; France; Gabon; Gambia; Germany; Ghana; Guatemala; Guinea; Guyana; Honduras; India; Indonesia; Iraq; Italy; Jamaica; Jordan; Kenya; Kuwait; Lebanon; Madagascar; Malaysia; Mali; Mauritania; Mauritius; Mexico; Morocco; Mozambique; Netherlands (for the Kingdom in Europe and Aruba); Niger; Nigeria; Norway; Pakistan; Peru; Philippines; Portugal; Republic of Korea; Romania; Russian Federation; Saudi Arabia; Senegal; Sierra Leone; Slovakia; Spain; Somalia; Sri Lanka; Sudan; Sweden; Togo; Trinidad and Tobago; Tunisia; United Kingdom of Great Britain and Northern Ireland (on behalf of the United Kingdom, Gibraltar and Hong Kong); United Republic of Tanzania; Uruguay; Venezuela; Yugoslavia; Zaire and Zambia.

C. United Nations Convention on International Multimodal Transport of Goods

113. This Convention, [37/] adopted by consensus on 24 May 1980 by the United Nations Conference of Plenipotentiaries, was opened for signature in New York from 1 September 1980 to 31 August 1981 and remained open for accession thereafter. It will enter into force 12 months after 30 States have become contracting parties by definitive signature, ratification or accession. In 1993 one additional State became a Contracting Party to the Convention, and it thus had seven Contracting Parties, *viz.* Chile, Malawi, Mexico, Morocco, Rwanda, Senegal and Zambia. Another two countries - Norway and Venezuela - have signed the Convention subject to ratification.

D. United Nations Convention on Conditions for Registration of Ships

114. The United Nations Convention on Conditions for Registration of Ships was adopted by consensus on 7 February 1986 by the United Nations Conference on Conditions for Registration of Ships at the fourth part of its session. [38/] The Convention contains a set of minimum conditions which should be applied and observed by States when accepting ships

on their ship register(s). It defines the elements of the "genuine link" that should exist between a ship and the State whose flag it flies and thus contains provisions for the participation by nationals of the flag State in the ownership, manning and management of ships. The Convention also stipulates that flag States are required to exercise effectively their jurisdiction and control over ships flying their flag. It also provides for the establishment by a flag State of a competent and adequate national maritime administration which is responsible for a number of specific tasks such as ensuring that a ship flying its flag complies with the State's laws and regulations concerning registration of ships and complies with applicable international rules and standards concerned with the safety of ships and persons on board and the prevention of pollution of the marine environment. The Convention will enter into force 12 months after the date on which no less than 40 States, the combined tonnage of which amounts to at least 25 per cent of world tonnage, as stipulated in annex III to the Convention, have become Contracting Parties to it.

115. By the end of May 1994 the Convention had been ratified by the following nine States: Côte d'Ivoire, Egypt, Ghana, Haiti, Hungary, Iraq, Libyan Arab Jamahiriya, Mexico and Oman. Another 10 States had signed the Convention subject to ratification, acceptance or approval: Algeria, Bolivia, Cameroon, Czech Republic, Indonesia, Morocco, Poland, Russian Federation, Senegal and Slovakia.

E. United Nations Convention on the Carriage of Goods by Sea, 1978 (Hamburg Rules)

116. The United Nations Convention on the Carriage of Goods by Sea, 1978 came into force on 1 November 1992. Up to May 1994 the number of Contracting Parties had reached 22, namely: Austria, Barbados, Botswana, Burkina Faso, Cameroon, Chile, Egypt, Guinea, Hungary, Kenya, Lebanon, Lesotho, Malawi, Morocco, Nigeria, Romania, Senegal, Sierra Leone, Tunisia, Uganda, United Republic of Tanzania and Zambia. Egypt has been the only Contracting State to make use of the provision of article 31, paragraph 4 of the Convention by way of notifying the Government of Belgium on 12 February 1993 of its intention to defer the denunciation of the International Convention for the Unification of Certain Rules of Law relating to Bills of Lading, 1924 (Hague Rules) and the Hague Rules as amended by the Protocol of 1968 (Hague-Visby Rules) for a period of five years from the entry into force of the Convention on 1 November 1992.

F. Adoption of the International Convention on Maritime Liens and Mortgages, 1993

117. The Convention was adopted by consensus on 6 May 1993 by the United Nations/International Maritime Organization Conference of Plenipotentiaries on a Convention on Maritime Liens and Mortgages, which met at Geneva under the auspices of UNCTAD for a period of three weeks. The Convention is intended to improve conditions for ship financing and the development of national merchant fleets and to promote international uniformity in the field of maritime liens and mortgages. The Convention was opened for signature at United Nations Headquarters in New York from 1 September 1993 to 31 August 1994 and will remain open for accession thereafter. It will enter into force six months following the date on which 10 States have expressed their consent to be bound by it. Up to May 1994, there were three signatories subject to ratification namely: Brazil, Guinea and Tunisia. [39/]

G. General average

118. Pursuant to the request of the thirteenth session of the UNCTAD Working Group on International Shipping Legislation, as endorsed by the Standing Committee on Developing Services Sectors: Shipping at its first session, the secretariat continued its investigation and collection of data and information for the preparation of a report on general average. Questionnaires were sent to the Governments of developing countries and through them to their commercial parties requesting information on their experiences of general average, including relevant data. Contacts were made with the insurance industry, including the International Union of Marine Insurance (IUMI), and other international organizations representing commercial parties involved with general average. The report analyses, *inter alia*, the current extent and impact of general average including the number of incidents, types of ships involved and their flag, the events which lead to general average, general average losses and contributions, costs of administering general average and the time taken by the general average process. It also contains proposals to simplify the operation of the general average system. The report was to be submitted to the second session of the Standing Committee on Developing Services Sectors: Shipping in July 1994.

119. The Comité Maritime International (CMI) International Sub-Committee (ISC) charged with the task of studying the law of general average and the York-Antwerp Rules, met in December 1992 and

November 1993. It carried out the revision of the York-Antwerp Rules 1974, as amended in 1991, taking due account of the work done within the International Association of European General Average Adjusters (AIDE). The recommendations of the ISC will be submitted to the CMI Conference which is scheduled to be held in October 1994.

H. Arrest of ships

120. Following the adoption on 6 May 1993 of the International Convention on Maritime Liens and Mortgages, 1993, the United Nations/International Maritime Organization Conference of Plenipotentiaries on a Convention on Maritime Liens and Mortgages adopted a resolution, recommending the reconvening of the Joint Intergovernmental Group of Experts to examine the possible review of the International Convention for the Unification of Certain Rules Relating to the Arrest of Sea-going Ships, 1952. A first meeting of the Joint Group is scheduled for 5-9 December 1994.

I. The first global multimodal transport meeting

121. In accordance with the work programme of the Standing Committee on Developing Services Sectors: Fostering Competitive Services Sectors in Developing Countries: Shipping, the UNCTAD secretariat arranged a multimodal transport meeting in Valencia (Spain) from 30 October to 6 November 1993 for the purpose of collecting and disseminating information on technological and structural changes in multimodal transport (MT). In accordance with the work programme's item D in the field of human resource development, the meeting also reviewed recent developments in trade and MT and exchanged experiences of MT workshop deliveries among trainers engaged in these deliveries. The meeting was organized thanks to the assistance of the Government of Spain, the Port of Valencia and the European Communities.

J. Technical cooperation and training

122. UNCTAD's technical cooperation and training activities in shipping, ports and multimodal transport recovered in 1993 from a temporary decline the previous year. A total of 34 projects were carried out during 1993 with a total expenditure of US$ 3.0 million (compared to 32 projects totalling US$ 2.0 million in 1992).

123. The most important new development was UNCTAD's involvement in the rehabilitation of ports in Somalia. In March 1993 an UNCTAD team visited Mogadishu to advise on the action necessary to rehabilitate the country's main port. In June a five-man UNCTAD team was fielded to take over the administration and management of this port from the United States military. In July an UNCTAD team carried out a survey of the other Somali ports, and concluded that the ports of Kismayu, Berbera and Bosasso needed to be rehabilitated. All had suffered damage as a result of the civil war, equipment had been destroyed or looted and port operations had virtually ground to a halt. A programme has been drawn up for the rehabilitation of these ports which all have distinct hinterlands and therefore an important role to play in the reconstruction and development of the country. In December an UNCTAD team took over from the Belgian military the management and operation of the port of Kismayu. A national ports co-ordination unit will be established in 1994 in Mogadishu to advise the United Nations Operation in Somalia (UNOSOM) and the future Somali Government on all aspects of port policy. Small expatriate management teams will be placed in all the ports to get them fully operational, establish tariffs, collect revenue and arrange for the repair or purchase of equipment. Meanwhile Somali nationals will be identified and trained to take over the management positions as soon as possible.

124. UNCTAD continued the development and implementation of the Advance Cargo Information System (ACIS) in sub-Saharan Africa. ACIS is effectively a tool-box of computer applications designed to produce management information to address multimodal transit and transport resource problems. There are four main components, each tracking cargo on a mode or interface: port, rail, road and lake. There are also modules producing statistics and performance indicators. New work started during 1993 in Burkina Faso, Côte d'Ivoire and Uganda and, by the end of year, Railtracker, the module which tracks cargo on railways, was operational on twelve African railway networks [40/] and Portracker, the module which tracks cargo into and out of ports, was operational in two ports. [41/]

125. The TRAINMAR programme, which provides support to institutions organizing management training in shipping, ports and multimodal transport, continued to expand during 1993 and by the end of the year some 51 bodies in 46 countries were participating in this programme. Two new TRAINMAR projects got under way in 1993: the first to help strengthen training institutions in the southern cone of South America and the second to develop, in collaboration

with TRAINMAR centres in Europe, a new course on short-sea multimodal transport. This association of centres in industrialized countries in TRAINMAR's activities, which started some years ago, was further strengthened in 1993. In addition to the benefits these centres themselves derive from participation in TRAINMAR this also provides developing countries with access to more specialized knowledge and resources than would otherwise be the case.

126. Some 20 policy seminars in shipping, ports and multimodal transport were conducted by the secretariat during 1993. Half of them were multimodal transport workshops designed to disseminate to senior officials the potential advantages of participation by nationals in international multimodal transport and the actions governments and potential multimodal transport operators should take to benefit from this concept, which is still in its infancy in most developing countries. In response to the increasing demand for a practical course for potential multimodal transport operators a new training course on multimodal transport operations was developed in 1993. Seminars on container terminal management continue to be conducted on an annual basis in collaboration with the Antwerp Port Engineering and Consulting (APEC) and a new seminar on the commercial role of ports was conducted for the first time in 1993 in collaboration with the Port of Ghent. Seminars on port equipment policy and management and on strategic port pricing, developed under the Improving Port Performance Programme (IPP), were also delivered at various venues as was the policy seminar on the challenge of the third generation port and the strategic planning course for shipping managers (STRATSHIP).

127. JOBMAR continued at a low level of activity with minimal budget. Three candidates were placed during the period in on-the-job training assignments. These include assignments with port authorities and private sector shipping lines in developed countries.

128. In the field of maritime legislation the secretariat has been involved in updating and harmonizing maritime legislation at both national and subregional levels including: drafting a new maritime code for Ethiopia appropriate to its new status as a land-locked country; reviewing the draft maritime code of Côte d'Ivoire; providing advice in economic and commercial maritime law to Central American States as part of an IMO-executed project; and assisting MINCONMAR member States in the harmonization of maritime legislation through the preparation of guidelines and recommendations.

129. Funding for UNCTAD's technical cooperation and training activities in shipping, ports and multimodal transport was provided by the United Nations Development Programme, the European Commission, the World Bank and the Governments of Australia, Belgium, France, Germany, the Netherlands, Norway, Spain, Portugal and the United States and by the recipient countries themselves.

Box 11

The human factor in the man/ship system of the European fleets

It is a known fact that 75-80 per cent of all ship casualties are due to human errors, which in turn can be put down to the crew member's situation as well as the state of the maritime transport industries. The crew's situation on board is influenced by: existing regulations, the division and organization of work, the ship's technological level, the crew's educational and training level, features relative to work and recreational areas, psychological aspects, influences of environmental conditions.

Against this background the Institute of Shipping Economics and Logistics (ISL), together with 11 other institutions from six EC countries was commissioned by the EC (within the framework of the EURET programme) to carry out an analysis of the causes of the formation of human errors on board ships of the European fleets. To attain the goal of this research project a lot of information was needed concerning the crew (i.e. their composition, qualification, age, experience, frequency of training, living conditions on board), the duties of every single crew member, the ship categories (i.e. ship type, grt-size class, flag, automation and communication facilities, safety aspects), and the ship equipment (i.e. mechanical or electrical aggregate, age, reliability and type of maintenance). The requested information was collected by a questionnaire which was sent to the masters and the owners of the EC fleets. The sample included ships of 1,000 grt/gt and over, of EC national and open national registers and of all ship types of the merchant fleet (excluding special cargo, passenger and fishing ships).

The analysis identified two fundamental problem areas. The first can be seen in the fact that there is a very disparate work allocation in hours per month between officers. Thirty-nine per cent of the first officers and 23 per cent of the masters do more than 160 hours overtime per month, whereas not more than 11 per cent of the other deck officers do so much overtime. In the group of the engine officers there is also an unequal work allocation but not to such an extent.

In accordance with the objective criterion of the real workload measured in hours, 41 per cent of the first officers and 37 per cent of the masters feel absolutely or rather overtaxed by their workload at sea and 65 per cent of the first officers and 46 per cent of the masters feel overtaxed by the workload in the port, which can be explained by the first officer's responsibility for the cargo operation. It is the combination of tasks like administration, cargo handling and inspections by the owner, the classification societies and the port authorities in the port which especially make the first officer and the master feel that the workload is too high. Calculating an average overtime of 200 hours per month and assuming seven working days a week when sailing on overseas routes, a workload of 12½ hours a day would arise. This can result in overtiredness and a lack of concentration which may lead to wrong decisions and finally to a ship casualty.

The second problem area is the situation of the attendance at training courses which are not compulsory by law. Only 30 per cent of the officers attended some training courses during the last two years with the most popular course being "radar training", followed by "machinery training", "cargo operations", "dangerous cargoes" and "manoeuvring simulators". The largest share of the officers (35 per cent) do not attend training courses at all and another 20 per cent attend these courses only less than every fifth year. There could be a certain relationship between a rather high degree of failures to handle the ship's equipment as a cause of a casualty and the very low attendance at training courses.

Taking these factors into consideration and bearing in mind that the technical equipment in general works well, future efforts to avoid ship casualties should concentrate mainly on the human factor. The traditional allocation of work between the officers as well as an obligatory training concept have to be reconsidered.

Source: ISL Monthly *Shipping Statistics*, No. 4, Volume 37, Institute of Shipping Economics and Logistics (ISL) (Bremen), April 1993.

Box 12

Letters in exchange for clear bills of lading

The offer of a letter of indemnity (LOI) to shipowners occasionally comes up in carriage of goods by sea when there is some problem about issuing bills of lading with particular wording. Accepting the LOI can be a very risky business.

Drawdowns under letters of credit in international transactions most often require clean bills of lading. But sometimes cargo turns up for loading in questionable condition. Unless the damage is obvious, the shippers will flatly deny that anything is wrong with the cargo and they will insist on clean bills of lading, perhaps threatening to arrest the ship if they don't get them.

The master has a duty to clause bills of lading if he reasonably believes that some of the cargo is damaged. Legally, if he acts in good faith and clauses them, neither he nor the ship will get into trouble if it later turns out that nothing was wrong with the goods. But there are practical considerations which cannot be ignored.

To begin with, shippers forced to accept clausedbills of lading may well refuse to fix with owners again. Moreover, if the ship has not sailed, it could be detained. Even if owners ultimately prevailed, the chance of not recovering from the shippers for the delay, the certainty that shippers would hold up such payment of the freight, and the possibility of having to post a substantial bond to release the ship from arrest, coupled with the potential for bitter, prolonged, and expensive litigation, are all frightening prospects.

Not wanting trouble, owners find themselves tempted when shippers offer an LOI in exchange for clean bills of lading. But, usually, it is not a good deal.

P&I club rules specifically exclude coverage for cargo carried under clean bills of lading which should have been claused. By accepting an LOI, owners are in effect substituting the LOI for their P&I insurance. The clubs feel so strongly about this that they refuse even to offer guidance about the wording for such an LOI.

The clubs' objections are, for the most part, well-founded. The courts regard an LOI, given in exchange for clean bills of lading which should have been claused, as a fraud on both the buyers of the cargo and on the bank which financed the purchase.

Indeed, in some cases, the courts have denounced the LOI as an illegal contract and refused to enforce it - i.e. the shippers have been allowed to walk away from their obligations, leaving owners with the worst of all possible worlds - no P&I coverage and no indemnity.

But what if the damage is not obvious? The master has discretion to clause the bills of lading where he suspects damage. He does not, however, have a duty to clause them if he has a reasonable doubt about whether the cargo is damaged at all.

An analogous case is where a dispute arises over the quantity of cargo loaded, as, for example, when tallymen disagree about the number of bags, or where the railway weights differ from the draft survey, or the shore meter readings and the ship ullages do not coincide. Article 3(5) of the Hague Rules already contains a guarantee by the shippers of the numbers and weights furnished by them to the shipowners. As long as those figures could reasonably be viewed by the master as correct, an LOI from the shippers in exchange for bills of lading showing the larger quantity would do no more than reinforce the statutory guarantee and should be unobjectionable, even to the clubs.

A more difficult situation presents itself when dealing with a condition that could cause damage to some cargoes but not others. For example, gravel loaded in the rain. An overcautious master might propose to describe the cargo as "wet gravel". But the banks would surely regard such bills of lading as claused. A similar dilemma arises over crates defaced with graffiti.

A related issue comes up when cargo is dropped by the ship itself during loading on berth terms. The law is not clear whether the bill of lading is supposed to reflect the cargo's condition at the start or upon the completion of loading, especially when cargo handling as well as stowage are the carrier's responsibility.

In all these cases, the shippers can be expected to demand clean bills of lading. Due to the genuine doubt about whether the cargo was short-shipped, or damaged, an LOI could lawfully be given for clean bills of lading, and the carrier would be entitled to enforce the LOI against the shipper, were it necessary to do so.

Source: Michael Marks Cohen, partner, Burlingham Underwood, New York, *Fairplay* (London), 27 January 1994, p. 23.

Chapter IX

REVIEW OF REGIONAL DEVELOPMENTS - EAST AND SOUTH-EAST ASIA

This chapter reviews the expanding intraregional trade in East and South-East Asia, along with the development of shipping and related services.

A. Trade and industrial production in East and South-East Asia

130. Since the early 1980s, the countries in East and South-East Asia have been remarkably successful in raising output, productivity and trade. In the fast-growing countries of the region, governments provided private business with substantial finance and administrative support, including developed countries' investment and technical aid. [42/] Enterprises have attained higher levels of industrialization by making the best use of official incentives and subsidized credit in favour of industrial activities designated by governments as having a potential for rapid productivity gains, at all levels from primary industries to heavy industries. The pattern of industrialization has also been changing rapidly, with the more industrialized economies moving out of primary products into more sophisticated lines of production, and the less industrialized ones stepping up to take their place.

131. Government's direct involvement has on the whole been phasing out in recent years in an orderly fashion. Consequently growth was not interrupted by a vicious circle of macro-economic disorder, sagging investment and economic retrogression. Rather, growth continued to be driven by high and rising levels of public and private financing through various forms of investments such as joint ventures with foreign countries' business. The persistence of the growth-with-integration dynamism has made the countries increasingly independent and the region more self-reliant in production and trade. This contrasts with the macro-economic disorder which has been observed in some countries in other developing regions. [43/]

Development of output

132. The developing countries in this region including China have constituted a fast-expanding industrial zone. During the first half of the 1980s their combined real GDP grew at an annual rate of 7.6 per cent, as compared to a world total of 3.0 per cent. With a broadly sustained growth rate of 7.8 per cent in the second half, the growth in these countries was 4.7 percentage points above the world average. Moreover, during the global recession of the early 1990s, when world output more or less stagnated, the combined growth in the countries accelerated slightly to 7.9 per cent during 1990-1992. [44/] Table 43 indicates GDP growth fluctuation for the main countries of this region.

Exports of manufactures

133. This exceptionally rapid expansion owed much to exports, especially of manufactures, as shown in tables 44 and 45. Asia's share of the total exports of developing countries expanded to 83.1 per cent in 1990 from 74.8 per cent in 1980. The combined share of the eight major exporting countries increased from 62.0 per cent in 1980 to 72.8 per cent in 1990. As regards the share of manufactures in exports, the three major export countries (Hong Kong, Republic of Korea and Taiwan, Province of China) have maintained the highest level of 90 per cent since the early 1980s. Singapore, Malaysia and Thailand have been expanding their manufacturing industries. Singapore thus increased its share of manufactures in exports by 66.4 per cent, whilst Malaysia and Thailand more than doubled their shares during the decade from 1980.

Intraregional trade

134. The more industrialized countries of the region have succeeded in moving into the production of export items by incorporating high domestic value-added and technological sophistication, and then market diversification. These countries have not only developed interregional exports but have also become increasingly important markets for each other's exports. [45/] Table 46 shows the percentage share (based on value) of intraregional trade in the total trade of the region. The share of East and South-East Asia has been steadily expanding since 1987. This trend is also reflected in graph 14.

B. Development of shipping

135. Total intraregional seaborne general cargo trade comprising break-bulk and unitized cargoes is estimated to have reached 50 million tons in 1993. [46/] Table 47 provides details of the estimated intra-Asian containerized cargo movements in 1993. About 45 per cent of the total cargo from Taiwan, Province of China and from the Republic of Korea are destined for Hong Kong, a considerable portion of

which are expected to go to China. The exports of Taiwan, Province of China are 1.4 times larger than its imports and the Republic of Korea's exports are almost three times the volume of imports.

136. Table 48 indicates the container throughput of the ports of eight major countries in East and South-East Asia. These countries' percentage share of the world total increased very slowly but steadily in the second half of the 1980s, while the pace of growth has accelerated since 1990. Hong Kong and Singapore were ranked as the world's first and second largest ports in container handling in 1993. Their combined throughput accounts for 16.7 per cent of the world total volume. This large portion reflects both ports' transhipment activities linking feeder services with trunk lines.

Table 43

Growth rate of GDP in selected Asian developing countries, 1980-1993
(Percentage)

Country	1980-1985	1986-1990	1991	1992	1993
Hong Kong	5.6	7.6	4.2	5.0	5.9
Republic of Korea	8.4	10.2	8.4	4.5	4.5
Singapore	6.2	8.0	6.7	5.8	8.1
Taiwan, Province of China	6.4	8.9	7.2	6.6	6.0
Indonesia	4.7	6.3	6.6	5.9	6.3
Malaysia	5.1	6.7	8.6	8.0	7.6
Philippines	-0.7	4.2	-0.9	0.0	1.8
Thailand	5.7	9.9	8.0	7.5	7.7

Source: UNCTAD, *Trade and Development Report, 1993* for data up to 1992; Nihon Keizai Shinbun, February 1994, for 1993.

Table 44

Main exporters of manufactures in East and South-East Asia: growth of exports, 1987-1990

Region/country	Value (US$ million)	Share of total exports of developing countries (per cent)			Annual export growth (per cent)
	1987	1980	1987	1990	1987-1990
Asia total	201 692	74.8	82.2	83.1	16.4
Taiwan, Province of China	48 893	16.6	19.9	16.2	8.3
Hong Kong	44 366	17.1	18.1	19.8	19.5
Republic of Korea	43 537	14.9	17.7	15.8	11.7
Singapore	18 793	7.9	7.7	9.8	25.9
Malaysia	7 063	2.3	2.9	4.2	31.2
Thailand	5 996	1.5	2.4	3.8	34.2
Indonesia	3 895	0.5	1.6	2.4	32.4
Philippines	2 146	1.2	0.9	0.8	14.1

Source: UNCTAD, *Trade and Development Report, 1993*.

Table 45

Share of manufactures in exports of selected Asian developing countries, 1980 and 1990
(Percentage)

Country	Share of manufactures in exports	
	1980	1990
Hong Kong	95.7	94.5
Republic of Korea	89.5	93.5
Singapore	43.1	71.7
Taiwan, Province of China	87.9	92.5
Indonesia	2.3	35.5
Malaysia	18.8	48.7
Philippines	21.1	34.3
Thailand	25.2	63.1

Source: UNCTAD, *Trade and Development Report, 1993*.

Table 46

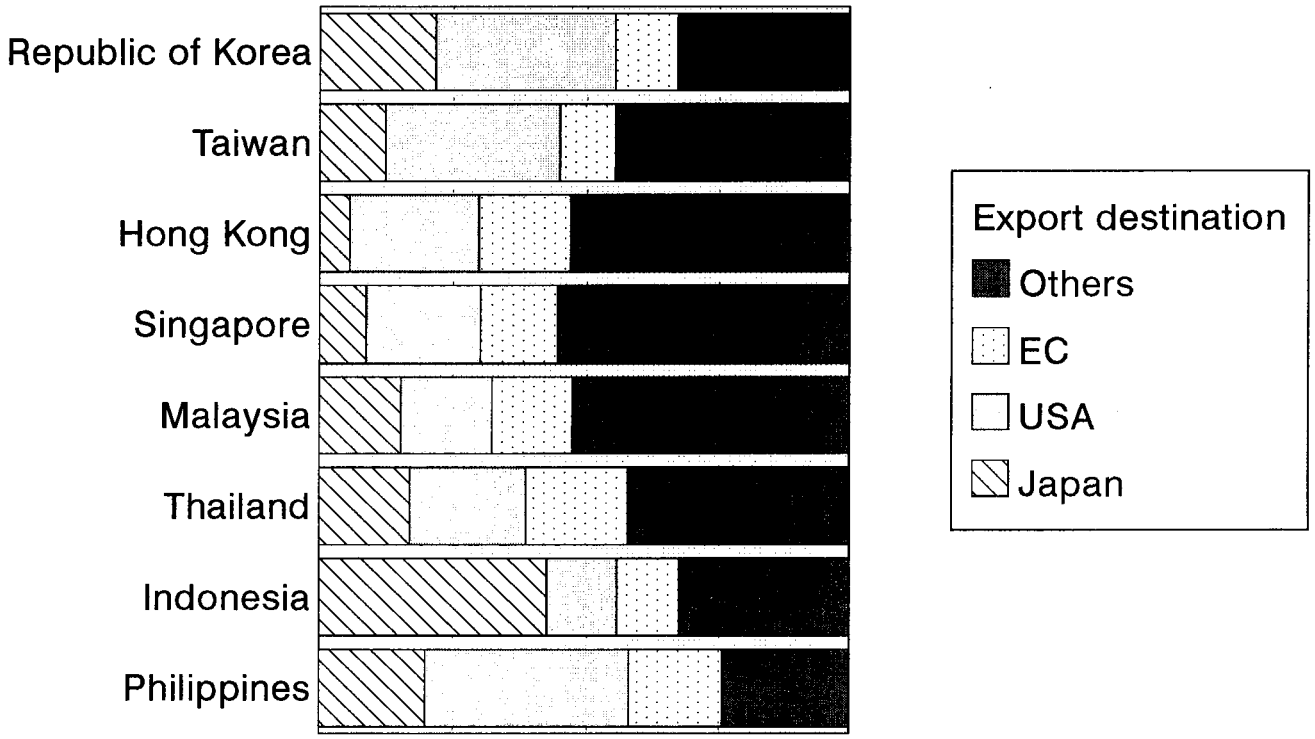
Share of intra-regional trade in total trade of the region, 1970-1991
(Percentage)

	Developed market-economy countries	Socialist and ex-socialist countries in Asia and Eastern Europe	Developing countries				
			America	Africa	West Asia	East and South-East Asia	Oceania
1970	62.8	n.a.	9.2	2.9	4.6	10.0	2.9
1980	52.3	n.a.	10.9	1.7	3.8	11.4	1.7
1986	63.0	n.a.	8.8	2.7	7.8	10.9	2.7
1987	63.7	n.a.	7.4	2.7	7.4	11.5	2.8
1988	63.2	35.4	7.0	2.8	7.1	12.3	2.3
1989	62.6	29.7	8.1	3.1	6.8	12.8	2.4
1990	63.6	22.4	7.3	2.7	6.6	13.9	1.8
1991	62.0	18.6	8.0	2.7	5.6	14.7	n.a.

Source: Compiled by the UNCTAD secretariat on the basis of data in United States dollars contained in the UNCTAD Handbook, various issues.

Graph 14

Destination-wise share (in value) of exports of selected Asian developing countries
(as at the end of 1992)



Source: *Kaiun* (Shipping), February 1994.

Table 47

Estimated intra-Asia containerized cargo movements in 1993
(TEUs)

Destination Origin	Taiwan, Province of China	Hong Kong	Republic of Korea	Singapore	Philippines	Thailand	Malaysia	Indonesia	TOTAL
Taiwan, Province of China		195 500	29 900	58 900	19 000	26 500	47 200	41 400	418 400
Hong Kong	69 000		41 400	46 000	28 800	35 100	21 900	35 700	277 900
Republic of Korea	54 100	166 800		29 900	29 900	27 600	12 900	61 000	382 200
Singapore	51 800	52 900	14 400		15 000	20 700	41 400	26 400	222 600
Philippines	10 400	16 100	5 500	8 100		1 700	1 700	1 200	44 700
Thailand	34 500	36 800	11 500	27 600	4 800		5 800	5 500	126 500
Malaysia	34 500	35 700	9 500	33 400	4 000	7 000		10 000	134 100
Indonesia	36 800	21 900	18 400	41 400	2 300	4 100	7 400		132 300
TOTAL	291 100	525 700	130 600	245 300	103 800	122 700	138 300	181 200	**1 738 700**

Source: Compiled on the basis of data supplied by Kaiun (Shipping), various issues, 1993.

Table 48

Main intra-Asia ports' container throughput volume, 1986-1993
(Thousand TEUs)

	1986	1987	1988	1989	1990	1991	1992	1993 (estimated)
Hong Kong	2 774	3 457	4 033	4 464	5 101	6 162	7 972	9 300
Singapore	2 203	2 635	3 375	4 364	5 224	6 354	7 560	9 000
Taiwan, Province of China	4 105	4 772	4 889	5 278	5 451	6 127	6 635	7 190
Republic of Korea	1 533	1 949	2 065	2 159	2 348	2 694	2 860	3 200
Philippines	754	908	1 097	1 160	1 408	1 463	1 594	1 820
Thailand	511	650	795	939	1 078	1 171	1 299	1 530
Indonesia	364	379	618	763	924	1 156	1 868	2 350
Malaysia	402	462	589	740	888	1 074	1 113	1 350
TOTAL	12 646	15 212	17 461	19 867	22 422	26 201	30 901	35 740
World Total	60 877	65 844	73 810	78 471	85 597	93 101	100 734	109 500
Total as a percentage of world total	21	23	24	25	26	28	31	33

Source: *Containerisation International Yearbooks*, 1988-1994.

Development of land and sea infrastructure and services

137. To cater for the rapidly expanding intraregional trade including feeder services, not only port facilities but also inland infrastructure are provided and about 40 main liner operators are offering intra-Asia services with approximately 250 vessels accommodating 150,000 TEU.

138. Table 49 shows global calls of containership services by trading area. Far East and South-East Asia (including Japan) represent a dominant share: 44.7 per cent of the world total calls by all types of containerships and also 42.7 per cent by containerships of 1,000 TEU and over. The proportion for the region between the larger ships (1,000 TEU and over) and the smaller ones stands at 55 to 45. This means a better development of cabotage and feeder service networks, as compared to other developing areas. For example, Africa (West, South and East) and Australia/Oceania share only 2.2 per cent and 3.3 per cent respectively of the world total calls by larger containerships. The proportion of larger containerships for these areas however indicates respectively almost two thirds of each area's total calls by all types of containerships.

Development of ports [47/]

139. Some of the major port developments in East and South-East Asia are reflected in box 13. The world's busiest ports, Hong Kong and Singapore each handled over 9 million TEUs in 1993, as shown in table 48. Both are investing large sums in further expansion. In Singapore a new US$ 890 million container terminal will be completed in 1995, increasing the port's capacity by 50 per cent. Moreover the port authority will soon start work on a new port on an area of reclaimed land next to the present port. When completed this will be four times the size of Singapore's existing facilities. The Hong Kong port authority is trying to make the port more efficient as well as bigger so as to maintain pre-eminence as rival ports are built in China.

140. Other ports in East and South-East Asia, encouraged by local ship operators, are determined to challenge Singapore and Hong Kong for a larger slice of the region's trade. Malaysia's three big ports - Penang, Port Klang and Johor - are building hard to double capacity from the current level of 1.2 million TEUs. The Indonesian Government is planning to expand three main ports in Jakarta, Surabaya and Semarang. Jakarta, which currently handles just under 1 million TEUs, plans to have capacity for 2.4 million TEUs by the end of the century.

Table 49

Global calls of containerships by trading area, 1993

Trading area	TOTAL (all ship calls)	Percentage share of total	Calls of ships ≥ 1,000 TEU	Percentage share of total	Percentage share of calls of ships ≥ 1,000 TEU
West Europe (including Scandinavia, Baltic Sea)	1 850	15.4	1 149	16.5	62.1
Mediterranean (South Europe, Levante, North Africa)	1 249	10.4	515	7.4	41.2
West, South, East Africa	238	2.0	150	2.2	63.0
United States/Canada (Atlantic, Pacific, Gulf)	1 398	11.7	1 155	16.6	82.6
Central and South America	742	6.2	386	5.5	52.0
Red Sea, Mid-East	780	6.5	404	5.8	51.8
Far East/South-East Asia (including Japan)	5 364	44.7	2 969	42.7	55.4
Australia/Oceania	373	3.1	227	3.3	60.9
TOTAL	11 994	100.0	6 955	100.0	

Source: Verkehr, No. 9/94.

Box 13

Development of ports in Asia

There are few better gauges of East Asia's economic boom than the region's crowded docks. In Singapore and Hong Kong, Asia already boasts the world's two busiest ports; each handled over 9 million TEUs (or 20-feet equivalent units, the standard container measure), twice as much as in 1989. Both are pouring money into expansion: Hong Kong alone talks of handling a staggering 32 million TEUs by 2011. But other ports in South-East Asia and China, egged on by local shipowners, are determined to challenge Singapore and Hong Kong for a larger slice of the region's trade.

South Korea's Pusan is too far away from either of the ports to represent a direct threat; Taiwan's Kaohsiung is handicapped in competing with Hong Kong by, among other things, the ban on direct travel between Taiwan and the mainland. Other ports hope to compete directly.

Malaysia's three big ports - Penang, Port Klang and Johor - are building hard to double capacity from the current level of 1.2 million TEUs. The most ambitious development is taking place at Port Klang, near the Malaysian capital, Kuala Lumpur, where the Malaysians are planning to invest US$ 593 million. The port authority's chairman predicts that the amount of cargo going through Port Klang will double by 2000 and has suggested that Malaysia's expansion is aimed at Singapore. "For years shippers have bypassed Port Klang for Singapore," he said recently. "There are now plans to transform it into the region's key port."

Indonesian ports are also hoping to declare limited independence from Singapore. At present some 70 per cent of Indonesian exports go through Singapore. The Indonesian government hopes that it can reduce its dependence on its neighbour by expanding its own ports: i.e. a US$ 1 billion container port on Batam island, 20 kilometres from Singapore. Plans are also under way to expand Indonesia's three main ports in Jakarta, Surabaya and Semarang. Jakarta, which currently handles just under 1 million TEUs, plans to have capacity for 2.4 million by the end of the century.

Nobody could accuse the Singaporeans of failing to plan to meet these challenges. A new S$1.4 billion ($890 million) container terminal will be completed next year, increasing the port's capacity by 50 per cent. That expansion is modest compared to what the Port Authority of Singapore plans for the future. It will soon start work on a new port on a patch of reclaimed land next to the present port. When completed, this will be four times the size of Singapore's existing facilities.

Some people think Singapore may have crossed the fine line between forward planning and hubris. Singaporeans retort that the growth in trade throughout the region should provide plenty of work for all the new ports, and that the emergence of monster container ships will increase the need for efficient "hub" ports. If there is to be a dominant entrepôt in South-East Asia, they add, the odds are that it will continue to be Singapore. To make sure of this, they are trying to make their port more efficient as well as bigger. Most trade documents are now cleared by computer in 15 minutes; the old paper system took an average of two days.

The port authority of Hong Kong is also hoping that technology and efficiency will enable it to maintain pre-eminence as rival ports are built in China. But Hong Kong has one obvious problem that is not faced by Singapore: it is no longer master of its own destiny. The Chinese action means that the existing port will, probably hit full capacity by the middle of next year.

Yantian, like Hong Kong, will be a deep-water port. By 1995 it is expected to have five new container berths, with capacity for 1.7 million TEUs. By coincidence, this is almost exactly the capacity planned for the new container terminal in Hong Kong. Both Yantian and Shekou are slightly closer to southern China's industrial heartland than Hong Kong. They will also probably be cheaper.

Like the Singaporeans, the Hong Kong port authority is betting on efficiency and know-how to maintain its lead. The port development board's secretary recently said that "any additional spur to competition can only be good for Hong Kong." But, he added, "we must continue to expand" to match new port development in China. That is a big but. If the Chinese so desire, they have it in their power to ensure that Hong Kong's position as the main gateway to southern China is gradually eroded.

Source: © *The Economist* (London), April 1994.

Notes

1/ IMF, *World Economic Outlook*, October 1993, p. 11 (projection for 1993).

2/ GATT, preliminary estimates, March 1994.

3/ OECD, *Main Economic Indicators*, March 1994, p. 15. Industrial production refers to the goods produced by establishments engaged in mining (including oil extraction), manufacturing and production of electricity, gas and water. These are the industry groups 2 through 4 of the International Standard Industrial Classification of All Economic Activities (ISIC).

4/ *Petroleum Economist*, February 1994.

5/ OECD, IEA, *Quarterly oil statistics and energy balances*, Third Quarter, 1993, p. 10.

6/ Fearnleys (Oslo), *Review 1993*, p. 4.

7/ International Iron and Steel Institute, *Estimates 1993*.

8/ *International Bulk Journal*, January 1994.

9/ Ibid.

10/ International Iron and Steel Institute, *Estimates 1993*.

11/ Fearnleys (Oslo), *Review 1993*.

12/ *Lloyd's Shipping Economist* (London), April 1994.

13/ International Wheat Council, *Grain Market Report*, GMR 200 - January 1994.

14/ *International Bulk Journal*, November 1993.

15/ International Fertilizer Industry Association, *Quarterly Phosphate Rock Statistics*, November 1993.

16/ International Primary Aluminium Institute, IPAI Form 150.

17/ DRI/McGraw-Hill, *World Seatrade Service Review*, First Quarter 1994.

18/ OECD, *Indicators of Industrial Activity*, No. 1, 1994. Manufacturing production refers to the goods of the industry group 3 of the International Standard Industrial Classification of All Economic Activities (ISIC).

19/ John I. Jacobs plc, *World Tanker Fleet Review*, January-December 1993.

20/ Fearnleys (Oslo), *Review 1993*.

21/ Fearnleys (Oslo), *Review 1993*; *Lloyd's List*, January 1994.

22/ Fearnleys (Oslo), *Review 1993*.

23/ John I. Jacobs plc, *World Tanker Fleet Review, 1993*.

24/ Fearnleys (Oslo), *Review*, various issues.

25/ Fearnleys (Oslo), *Review 1993*.

26/ *Lloyd's Shipping Economist* (London), April 1994.

27/ *International Bulk Journal*, January 1994.

28/ Fearnleys (Oslo), *Review 1993*.

29/ International Wheat Council, *Grain Market Report*, GMR 220 - January 1994.

30/ *Lloyd's List Annual* (London), January 1994.

31/ Fearnleys (Oslo), *Review 1993*.

32/ United Nations Security Council resolutions 706 and 712.

33/ Drewry Shipping Consultants, January 1994, p. 5.

34/ *Lloyd's Ship Register* (London), March 1994, p. 79.

35/ *Cargoware International*, March 1994.

36/ For a full text of the Agreement see GATT, *Uruguay Round Final Act*, 1993.

37/ For the text of the Convention, see *United Nations Conference on a Convention on International Maritime Transport*, vol. I, *Final Act and Convention on International Multimodal Transport of Goods* (United Nations publication, Sales No. E.81.II.D.7 (vol.I)).

38/ For the text of the Convention, see document TD/RS/CONF/23.

39/ For more detailed information as to the main features of the Convention, see *Review of Maritime Transport, 1992*, p. 68, (TD/B/CN.4/27).

40/ Burkina Faso Railways, Cameroon Railways, Côte d'Ivoire Railways, Ghana Railways (Western Region) Kenya Railways, Malawi Railways, Mali Railways, OCS/SNCZ (Southern Zairean Railway), Sengalese Railways, Sudan Railways, Tanzania Railways Corporation (TRC), Tazara (Tanzanian Region) and Uganda Railways.

41/ Ports of Dar es Salaam and Mombasa.

42/ *Kaiun* (Shipping), June 1993.

43/ UNCTAD, *Trade and Development Report, 1993*, p. iv.

44/ UNCTAD, *Trade and Development Report, 1993*, p. 127.

45/ *International Trade Forum*, 3/1993.

46/ *Containerisation International*, May 1993. *Kaiun (Shipping)* various issues, 1993. DRI/McGraw-Hill, *World Sea Trade Service Review/Forecast*, various issues 1993.

47/ *The Economist*, 9 April 1994.

Annex I

Classification of countries and territories

Code 1	Canada	United States of America
Code 2	Austria (L)	Italy
	Belgium	Luxembourg (L)
	Denmark	Monaco
	Faeroe Islands	Netherlands
	Finland	Norway
	France	Portugal
	Germany	Spain
	Gibraltar	Sweden
	Greece	Switzerland (L)
	Iceland	Turkey
	Ireland	United Kingdom of Great Britain and Northern Ireland
	Israel	
Code 3	Japan	
Code 4	Australia	New Zealand
Code 5	South Africa	
Code 6	Albania	Latvia
	Azerbaijan	Lithuania
	Bulgaria	Poland
	Czech Republic a/	Romania
	Estonia	Russian Federation
	Georgia	Slovakia
	Hungary (L)	Ukraine
Code 7	China	Viet Nam
	Democratic People's Republic of Korea	
Code 8 - 8.1	Northern Africa	
	Algeria	Morocco
	Egypt	Tunisia
	Libyan Arab Jamahiriya	
Code 8.2	Western Africa	
	Angola	Guinea-Bissau
	Benin	Liberia
	Burkina Faso (L)	Mali (L)
	Cameroon	Mauritania
	Cape Verde	Nigeria
	Congo	St. Helena
	Côte d'Ivoire	Sao Tome and Principe
	Equatorial Guinea	Senegal
	Gabon	Sierra Leone
	Gambia	Togo
	Ghana	Zaire
	Guinea	

Code 8.3 — Eastern Africa

Burundi (L)
Comoros
Djibouti
Ethiopia
Kenya
Madagascar
Mauritius
Mozambique
Reunion
Seychelles
Somalia
Sudan
Uganda (L)
United Republic of Tanzania
Zambia (L)

Code 9 - 9.1 — Caribbean and North America

Anguilla
Antigua and Barbuda
Aruba
Bahamas
Barbados
Bermuda
British Virgin Islands
Cayman Islands
Cuba
Dominica
Dominican Republic
Greenland
Grenada
Guadeloupe
Haiti
Jamaica
Martinique
Montserrat
St. Pierre and Miquelon
Saint Kitts and Nevis
Saint Lucia
Saint Vincent and the Grenadines
Trinidad and Tobago
Turks and Caicos Islands
United States Virgin Islands

Code 9.2 — Central America

Belize
Costa Rica
El Salvador
Guatemala
Honduras
Mexico
Nicaragua
Panama

Code 9.3 — South America - Northern Seaboard

Guyana
French Guyana
Netherlands Antilles
Suriname
Venezuela

Code 9.4 — South America - Western Seaboard

Chile
Colombia
Ecuador
Peru

Code 9.5 — South America - Eastern Seaboard

Argentina
Bolivia (L)
Brazil
Falkland Islands (Malvinas) b/
Paraguay (L)
Uruguay

Code 10 - 10.1 — Western Asia

Bahrain
Cyprus
Iran (Islamic Republic of)
Iraq
Jordan
Kuwait
Lebanon
Oman
Qatar
Saudi Arabia
Syrian Arab Republic
United Arab Emirates
Yemen

Code 10.2	Southern and Eastern Asia	
	Bangladesh	Maldives
	Bhutan	Myanmar
	Brunei Darussalam	Pakistan
	Cambodia	Philippines
	Hong Kong	Republic of Korea
	India	Singapore
	Indonesia	Sri Lanka
	Macau	Thailand
	Malaysia	
Code 11	Bosnia and Herzegovina	Slovenia
	Croatia	Yugoslavia
	Malta	
Code 12	American Samoa	Papua New Guinea
	Christmas Island (Australia)	Samoa
	Fiji	Solomon Islands
	French Polynesia	Tonga
	Guam	Tuvalu
	Kiribati	Vanuatu
	Nauru	Wake Island
	New Caledonia	

Notes to Annex I

(1) This classification is for statistical purposes only and does not imply any judgement regarding the stage of development of any country or territory.

(2) Trade statistics are based on data recorded at the ports of loading and unloading. Trade originating in or destined for neighbouring countries is attributed to the country in which the ports are situated; for this reason land-locked countries do not figure in these tabulations. On the other hand statistical tabulations on merchant fleets include data for land-locked countries that possess fleets: these countries are marked "(L)".

(3) The groups of countries or territories used for presenting statistics in this *Review* are made up as follows:

Developed market-economy countries and territories: Codes 1, 2, 3, 4 and 5.

Countries of Central and Eastern Europe: Code 6.

Socialist countries of Asia: Code 7.

Developing countries and territories: Codes 8, 9, 10, 11 and 12.

of which:
in Africa: Codes 8.1, 8.2 and 8.3
in America: Codes 9.1, 9.2, 9.3, 9.4 and 9.5
in Asia: Codes 10.1 and 10.2
in Europe: Code 11
in Oceania: Code 12.

In certain tables, where appropriate, major open-registry countries are recorded as a separate group. The group comprises Bahamas, Bermuda, Cyprus, Liberia and Panama.

a/ Following the dissolution of the Czech and Slovak Federal Republic on 31 December 1992, the successor States of the Czech and Slovak Federal Republic are the Czech Republic and Slovakia.

b/ A dispute exists between the Governments of Argentina and of the United Kingdom of Great Britain and Northern Ireland concerning sovereignty over the Falkland Islands (Malvinas).

Annex II

World seaborne trade a/ according to geographical areas, 1980, 1991 and 1992
(Millions of tons)

Area b/	Year	Goods loaded				Goods unloaded			
		Oil		Dry cargo	Total all goods	Oil		Dry cargo	Total all goods
		Crude	Products			Crude	Products		
Developed market-economy countries									
North America	1980	0.5	6.9	498.0	505.3	274.3	71.4	170.1	515.7
	1991	1.4	25.2	538.6	565.2	289.2	102.9	242.1	634.2
	1992	1.3	25.0	546.1	572.4	300.6	105.0	245.0	650.6
Japan	1980	-	..	83.6	83.6	216.3	35.0	361.5	612.8
	1991	-	1.2	84.2	85.4	209.3	81.8	455.8	746.9
	1992	-	4.0	80.7	84.7	215.2	87.6	435.8	738.6
Australia and New Zealand	1980	-	1.5	148.4	150.0	9.8	6.6	13.5	29.9
	1991	9.5	1.6	273.8	284.9	8.7	7.3	18.7	34.7
	1992	9.5	1.6	276.5	287.6	9.0	7.4	18.8	35.2
Europe	1980	95.7	79.3	387.4	562.3	585.5	145.1	680.5	1 411.1
	1991	166.3	124.0	495.2	785.5	462.6	171.8	792.3	1 426.7
	1992	174.6	125.5	500.3	800.4	482.9	170.9	826.1	1 479.9
South Africa	1980	-	0.1	68.9	69.0	15.0	1.0	9.7	25.7
	1991	-	-	83.2	83.2	22.3	0.3	9.5	32.1
	1992	-	-	83.4	83.4	23.1	0.3	9.4	32.8
Subtotal: developed market-economy countries	1980	96.2	87.8	1 186.3	1 370.3	1 100.9	259.1	1 235.3	2 595.2
	1991	177.2	152.0	1 475.0	1 804.2	992.1	363.9	1 518.4	2 874.4
	1992	185.4	156.1	1 487.0	1 828.5	1 030.8	371.2	1 535.1	2 937.1
Countries of Central and Eastern Europe									
Countries of Central and Eastern Europe (excluding the former USSR)	1980	-	6.2	44.8	51.0	28.5	0.7	60.6	89.8
	1991	-	5.5	42.2	47.7	24.4	0.6	59.1	84.1
	1992	-	5.0	39.8	44.8	23.3	0.5	58.5	82.3
Former USSR	1980	55.0	44.0	50.8	149.8	7.0	0.6	48.0	55.6
	1991	53.0	41.5	41.5	136.0	5.4	0.3	75.4	81.1
	1992	50.2	40.2	42.8	133.2	5.0	0.4	72.9	78.3
Socialist countries of Asia									
Socialist countries of Asia	1980	22.1	5.7	18.3	46.1	21.6	5.1	72.9	99.6
	1991	33.0	4.1	46.9	84.0	4.0	1.3	81.0	86.3
	1992	34.8	4.2	49.6	88.6	4.2	1.3	81.8	87.3
Developing countries and territories									
Northern Africa	1980	187.7	2.5	30.0	220.2	50.0	2.0	44.9	96.9
	1991	190.2	31.8	33.1	255.2	64.2	4.0	59.5	127.7
	1992	183.9	31.0	31.8	246.7	65.5	4.1	58.2	127.8
Western Africa	1980	102.6	1.9	66.8	171.3	4.3	5.5	30.8	40.6
	1991	132.3	3.2	57.4	192.9	4.1	2.9	28.6	35.6
	1992	131.5	3.0	55.6	190.1	4.3	2.9	27.9	35.1

Annex II (continued)

Area	Year	Goods loaded				Goods unloaded			
		Oil		Dry cargo	Total all goods	Oil		Dry cargo	Total all goods
		Crude	Products			Crude	Products		
Developing countries and territories (cont.)									
Eastern Africa	1980	-	0.9	6.3	7.2	6.2	2.0	9.9	18.1
	1991	-	0.6	9.6	10.2	6.5	2.4	16.2	25.1
	1992	-	0.5	9.4	9.9	6.6	2.6	15.6	24.8
Caribbean and North America	1980	16.0	26.6	31.7	74.3	58.2	6.4	12.1	76.7
	1991	14.6	11.7	30.0	56.3	30.2	8.0	20.7	58.9
	1992	15.3	11.7	30.1	57.1	30.8	8.1	20.9	59.8
Central America	1980	37.5	3.0	21.8	62.3	4.6	2.5	18.1	25.3
	1991	84.6	6.8	19.3	110.7	4.1	2.5	15.7	22.3
	1992	88.8	6.9	19.4	115.1	4.2	2.5	15.8	22.5
South America: Northern Seaboard	1980	127.8	61.9	29.3	219.0	92.3	3.4	17.1	112.8
	1991	60.8	24.3	17.7	102.8	-	1.4	19.4	20.8
	1992	64.8	24.5	17.8	107.1	-	1.5	19.6	21.1
South America: Western Seaboard	1980	7.6	3.4	26.7	37.7	4.9	1.4	13.7	20.1
	1991	18.1	8.3	37.4	63.8	3.6	1.2	14.7	19.5
	1992	19.2	8.4	37.5	65.1	3.7	1.2	14.8	19.7
South America: Eastern Seaboard	1980	-	2.6	133.0	135.6	43.9	2.4	37.4	83.7
	1991	0.1	4.4	206.1	210.6	38.4	2.5	27.9	68.8
	1992	0.1	4.4	206.7	211.2	39.1	2.5	28.1	69.7
Western Asia	1971	800.6	54.5	12.3	867.4	8.6	5.0	54.9	68.4
	1991	487.4	71.3	30.2	588.9	15.0	6.0	105.0	126.0
	1992	540.8	72.2	30.9	643.9	16.5	6.4	107.7	130.6
Southern and Eastern Asia (n.e.s)	1980	74.3	42.2	165.9	282.4	97.4	26.9	163.5	287.8
	1991	81.8	90.1	267.6	439.5	154.6	40.2	385.2	580.9
	1992	79.2	96.5	285.5	461.2	171.6	44.1	403.0	618.7
Developing countries in Europe	1980	-	-	0.1	0.1	-	0.5	0.6	1.1
	1991	0.3	1.2	7.6	9.1	8.8	2.2	18.1	29.1
	1992	..	0.9	7.1	8.0	8.5	1.4	17.4	27.3
Oceania (n.e.s.)	1980	-	0.7	8.4	9.1	1.6	2.3	3.5	7.4
	1991	-	0.3	8.2	8.5	-	2.1	3.6	5.7
	1992	-	0.5	9.4	9.9	-	0.5	2.5	3.0
Subtotal: Developing countries	1980	1 354.1	200.2	532.3	2 086.6	372.0	60.3	406.6	838.9
	1991	1 070.3	254.0	724.2	2 048.5	329.5	75.4	714.6	1 119.5
	1992	1 123.6	260.5	741.2	2 125.3	350.8	77.8	731.5	1 160.1
World total	1980	1 527.4	343.9	1 832.5	3 703.8	1 530.0	325.8	1 823.3	3 679.1
	1991	1 333.5	457.1	2 329.8	4 120.4	1 355.4	441.5	2 449.5	4 245.4
	1992	1 394.0	466.0	2 360.4	4 220.4	1 414.1	451.2	2 479.8	4 345.1

Source: Compiled on the basis of data supplied to the United Nations Statistical Office (by reporting countries), the UNCTAD data bank and other specialized sources.

a/ Including international cargoes loaded at ports of the Great Lakes and St. Lawrence River system for unloading at ports of the system.

b/ See annex I for the composition of groups.

Annex III(a)

Merchant fleets of the world by flag of registration, a/ groups of countries and types of ships b/
as at 31 December 1993
(in grt)

	Total fleet	Oil tankers	Bulk carriers	General cargo c/	Container ships	Other types
World total d/	**457 429 633**	**143 764 981**	**134 658 166**	**83 736 753**	**31 271 330**	**63 998 403**
Developed market-economy countries						
Australia	2 892 587	799 674	1 011 529	156 690	121 040	803 654
Austria	159 937	..	93 423	66 514	..	..
Belgium	232 656	3 893	..	1 322	..	227 441
Canada	1 073 526	121 578	52 148	98 422	..	801 378
Denmark	5 393 573	788 176	462 675	818 072	1 831 337	1 493 313
Finland	1 354 332	307 018	67 659	327 144	..	652 511
France	4 334 319	1 919 038	458 145	320 541	685 279	951 316
Germany	4 981 687	88 862	428 551	1 301 472	2 282 803	879 999
Gibraltar	384 603	276 842	58 442	39 778	..	9 541
Greece	29 154 743	13 271 474	12 470 986	1 340 320	528 979	1 542 984
Iceland	173 506	1 578	..	24 407	..	147 521
Ireland	185 081	8 387	..	84 682	16 008	76 004
Israel	652 036	394	22 476	72 390	547 568	9 208
Italy	7 108 426	2 026 284	1 808 528	865 311	397 809	2 010 494
Japan	24 282 148	7 249 682	6 415 713	4 113 378	1 428 339	5 075 036
Luxembourg	1 326 526	53 205	669 291	58 639	110 278	435 113
Netherlands	4 164 408	438 947	224 988	1 247 715	841 915	1 410 843
New Zealand	232 866	60 619	12 590	44 737	..	114 920
Norway	21 544 137	9 264 177	4 905 453	2 507 557	162 510	4 704 440
Portugal	1 011 047	730 292	17 079	84 503	11 974	167 199
South Africa	346 549	1 270	..	445	210 460	134 374
Spain	1 746 742	446 468	184 597	277 564	38 866	799 247
Sweden	2 439 558	367 611	118 226	1 048 523	..	905 198
Switzerland	301 682	..	267 563	14 447	..	19 672
Turkey	5 047 226	902 494	3 048 816	861 830	7 000	227 086
United Kingdom	5 985 497	2 134 411	286 382	410 763	1 016 905	2 137 036
United States	16 215 872	6 960 944	1 056 568	2 146 737	2 791 815	3 259 808
Subtotal	142 725 270	48 223 318	34 141 828	18 333 903	13 030 885	28 995 336
Open-registry countries						
Bahamas	21 236 270	9 680 168	4 735 252	3 668 396	710 617	2 441 837
Bermuda	3 141 666	1 837 786	152 368	98 199	111 288	942 025
Cyprus	22 870 001	4 959 868	12 360 411	4 092 024	807 448	650 250
Liberia	53 940 845	26 268 463	14 747 375	4 771 324	2 793 499	5 360 184
Panama	57 659 452	18 272 029	17 044 787	13 849 338	4 313 595	4 179 703
Subtotal	158 848 234	61 018 314	49 040 193	26 479 281	8 736 447	13 573 999
Central and Eastern Europe and former USSR						
Albania	59 060	..	..	57 598	..	1 462
Armenia	..	..	..	..	..	..
Azerbaijan	666 845	221 661	..	95 404	..	349 780
Belarus	..	..	..	..	..	..
Bulgaria	1 314 743	284 735	589 169	324 040	43 465	73 334
Czech Republic	228 126	..	153 220	74 906	..	..
Estonia	686 364	5 594	159 598	252 045	..	269 127

	Total fleet	Oil tankers	Bulk carriers	General cargo c/	Container ships	Other types
Hungary	45 105	..	..	45 105	..	..
Georgia	205	..	..	..	..	205
Kazakhstan	..	..	..	..	..	..
Kyrgyzstan	..	..	..	..	..	..
Latvia	1 154 993	536 419	..	395 402	..	223 172
Lithuania	638 861	11 883	115 717	239 062	..	272 199
Moldova	..	..	..	..	..	..
Poland	2 648 771	89 471	1 524 125	735 403	..	299 772
Romania	2 863 512	443 637	1 088 877	1 063 575	15 160	252 263
Russian Federation	16 841 626	2 507 170	1 830 685	5 923 407	449 564	6 130 800
Tajikistan	..	..	..	..	..	..
Turkmenistan	..	..	..	..	..	..
Ukraine	5 270 411	79 697	1 195 000	2 688 978	139 187	1 167 549
Former USSR e/	810 896	315 954	228 501	99 309	..	167 132
Uzbekistan	..	..	..	..	..	..
Subtotal	33 229 518	4 496 221	6 884 892	11 994 234	647 376	9 206 795
Socialist countries of Asia						
China	15 062 732	2 169 828	5 763 005	4 993 208	1 026 851	1 109 840
Democratic People's Republic of Korea	671 057	114 801	127 940	382 763	..	45 553
Viet Nam	728 915	91 291	21 366	388 141	..	228 117
Subtotal	16 462 704	2 375 920	5 912 311	5 764 112	1 026 851	1 383 510
Developing countries of Africa						
Algeria	921 258	28 326	172 259	203 637	..	517 036
Angola	88 320	2 269	..	63 175	..	22 876
Benin	1 151	..	..	..	..	1 151
Cameroon	36 000	..	..	24 120	..	11 880
Cape Verde	22 728	445	..	16 997	..	5 286
Comoros	1 897	..	..	1 304	..	593
Congo	9 533	..	..	..	..	9 533
Côte d'Ivoire	103 956	300	14 554	74 334	..	14 768
Djibouti	3 941	..	..	2 181	..	1 760
Egypt	1 212 353	190 694	343 079	478 660	..	199 920
Equatorial Guinea	3 457	..	..	3 342	..	115
Ethiopia	69 481	3 809	..	64 730	..	942
Gabon	36 176	652	11 194	20 777	..	3 553
Gambia	2 317	..	..	..	..	2 317
Ghana	118 388	965	..	43 917	..	73 506
Guinea	5 853	..	..	808	..	5 045
Guinea-Bissau	4 091	..	..	952	..	3 139
Kenya	16 191	4 224	..	2 312	..	9 655
Libyan Arab Jamahiriya	721 417	581 160	..	76 473	..	63 784
Madagascar	34 119	8 863	..	12 719	..	12 537
Malawi	320	..	..	..	..	320
Mauritania	44 244	..	..	1 399	..	42 845
Mauritius	193 855	..	110 220	63 773	..	19 862
Morocco	393 468	13 954	..	83 252	4 608	291 654
Mozambique	36 105	885	..	10 483	..	24 737
Nigeria	516 070	235 557	..	201 890	..	78 623
St. Helena	..	..	..	..	..	..
Sao Tome and Principe	2 584	..	..	1 591	..	993
Senegal	66 123	..	..	23 230	..	42 893

	Total fleet	Oil tankers	Bulk carriers	General cargo c/	Container ships	Other types
Seychelles	4 465	..	..	2 973	..	1 492
Sierra Leone	25 898	1 405	..	1 488	..	23 005
Somalia	17 767	..	..	10 009	..	7 758
Sudan	64 221	832	..	61 429	..	1 960
Togo	12 191	..	..	11 118	..	1 073
Tunisia	269 268	6 433	37 230	49 216	..	176 389
Uganda	..	..	..	..	..	..
United Republic of Tanzania	42 575	4 609	..	30 270	..	7 696
Zaire	14 917	..	..	499	..	14 418
Subtotal	5 116 698	1 085 382	688 536	1 643 058	4 608	1 695 114
Developing countries of America						
Anguilla	4 387	..	..	2 717	..	1 670
Antigua and Barbuda	1 063 444	7 071	86 269	743 504	200 680	25 920
Argentina	796 442	102 634	61 419	325 494	55 512	251 383
Barbados	49 224	44 466	..	322	..	4 436
Belize	147 649	8 844	..	79 335	14 425	45 045
Bolivia	..	..	..	..	..	..
Brazil	5 233 134	2 074 670	2 198 620	415 438	146 898	397 508
Cayman Islands	383 355	31 338	95 473	177 098	..	79 446
Chile	629 190	4 167	322 804	61 914	..	240 305
Colombia	237 817	5 697	62 565	146 437	..	23 118
Costa Rica	7 570	..	..	873	..	6 697
Cuba	625 962	66 983	29 758	357 558	..	171 663
Dominica	1 992	..	..	1 758	..	234
Dominican Republic	12 706	674	..	8 145	..	3 887
Ecuador	286 435	75 474	22 010	143 495	..	45 456
El Salvador	1 634	..	..	..	..	1 634
Falkland Islands f/	15 404	..	..	735	..	14 669
Grenada	1 031	..	..	923	..	108
Guatemala	1 374	..	..	..	..	1 374
Guyana	16 831	125	..	6 786	..	9 920
Haiti	868	..	..	151	..	717
Honduras	1 119 951	119 696	73 138	736 597	7 367	183 153
Jamaica	11 196	1 887	..	7 731	..	1 578
Mexico	1 126 980	477 871	29 660	19 927	..	599 522
Montserrat	711	..	..	711	..	..
Nicaragua	3 784	..	..	498	..	3 286
Paraguay	31 344	..	..	13 785	..	17 559
Peru	409 634	131 394	48 535	69 002	..	160 703
St. Kitts and Nevis	300	..	..	300	..	..
St. Lucia	2 014	..	..	1 657	..	357
St. Vincent	5 299 097	1 111 919	1 852 258	1 845 473	171 396	318 051
Suriname	12 929	1 800	..	7 215	1 343	2 571
Trinidad and Tobago	23 238	..	..	7 490	..	15 748
Turks and Caicos Islands	3 685	853	..	1 042	..	1 790
Uruguay	149 317	46 227	..	3 473	62 757	36 860
Venezuela	970 659	436 845	162 429	118 313	499	252 573
Virgin Islands, British	5 913	..	..	3 071	..	2 842
Subtotal	18 687 201	4 750 635	5 044 938	5 308 968	660 877	2 921 783
Developing countries of Asia						
Bahrain	103 251	1 841	..	72 312	..	29 098
Bangladesh	390 761	51 042	..	306 571	..	33 148

	Total fleet	Oil tankers	Bulk carriers	General cargo c/	Container ships	Other types
Brunei Darussalam	365 179	239	..	2 398	..	362 542
Cambodia	..	..	..	..	..	..
Hong Kong	7 669 062	814 522	5 531 171	525 380	602 999	194 990
India	6 621 391	2 152 781	2 935 451	822 912	43 926	666 321
Indonesia	2 448 804	599 043	164 201	1 087 486	71 310	526 764
Iran, Islamic Rep. of	4 445 314	2 763 958	1 048 805	456 490	..	176 061
Iraq	909 958	719 202	..	70 463	..	120 293
Jordan	70 927	50 490	9 661	9 888	..	888
Kuwait	2 219 081	1 547 182	..	247 105	85 594	339 200
Lebanon	249 041	1 536	45 998	195 633	1 380	4 494
Malaysia	2 167 375	275 387	548 159	420 892	292 157	630 780
Maldives	55 191	6 143	11 301	30 892	..	6 855
Myanmar	710 679	2 481	381 241	276 486	24 415	26 056
Oman	20 354	313	..	2 544	..	17 497
Pakistan	360 613	50 445	16 639	272 428	..	21 101
Philippines	8 465 845	407 198	5 867 835	1 720 704	97 037	373 071
Qatar	430 417	124 964	70 184	131 603	85 594	18 072
Republic of Korea	7 050 728	620 102	3 480 549	988 746	1 162 857	798 474
Saudi Arabia	1 003 132	273 886	..	443 105	67 109	219 032
Singapore	11 039 317	4 683 995	2 842 470	1 592 691	1 483 389	436 772
Sri Lanka	294 348	74 322	92 979	118 018	..	9 029
Syrian Arab Republic	208 599	..	31 926	173 419	..	3 254
Thailand	1 117 263	184 120	156 166	609 369	74 883	92 725
United Arab Emirates	805 533	325 603	27 416	175 484	180 054	96 976
Yemen	25 041	1 886	..	2 910	..	20 245
Subtotal	59 247 204	15 732 681	23 262 152	10 755 929	4 272 704	5 223 738
Developing countries of Europe						
Croatia	193 057	6 650	..	103 634	8 116	74 657
Malta	14 167 027	5 175 837	5 910 016	2 278 129	382 222	420 823
Slovenia	2 612	..	..	276	..	2 336
Yugoslavia	2 520	..	..	..	..	2 520
Subtotal	14 365 216	5 182 487	5 910 016	2 382 039	390 338	500 336
Developing countries of Oceania						
Fiji	38 653	3 470	..	19 312	..	15 871
Kiribati	4 829	..	..	4 708	..	121
Nauru	948	..	..	..	..	948
Papua New Guinea	47 474	3 199	..	34 399	..	9 876
Solomon Islands	7 417	..	..	3 370	..	4 047
Tonga	10 666	..	..	7 110	..	3 556
Tuvalu	70 175	..	..	10 460	..	59 715
Vanuatu	1 945 731	24 215	1 105 534	596 729	26 301	192 952
Western Samoa	6 253	..	..	4 339	..	1 914
Subtotal	2 132 146	30 884	1 105 534	680 427	26 301	289 000
Developing TOTAL	99 548 465	26 782 069	36 011 176	20 770 421	5 354 828	10 629 971
Other unallocated	6 615 442	869 139	2 667 766	394 802	2 474 943	208 792

Annex III(b)

Merchant fleets of the world by flag of registration, a/ groups of countries and types of ships b/ as at 31 December 1993
(in dwt)

	Total fleet	Oil tankers	Bulk carriers	General cargo c/	Container ships	Other types
World total d/	**710 622 083**	**271 221 796**	**242 133 548**	**106 862 626**	**34 848 087**	**55 556 026**
Developed market-economy countries						
Australia	4 073 711	1 336 918	1 696 142	185 569	130 846	724 236
Austria	254 442	..	155 144	99 298	..	..
Belgium	178 064	3 253	..	1 716	..	173 095
Canada	671 068	192 721	91 915	86 926	..	299 506
Denmark	7 056 794	1 492 291	869 848	964 359	2 064 708	1 665 588
Finland	1 237 292	519 982	105 926	343 789	..	267 595
France	6 277 165	3 778 785	799 816	370 845	759 736	567 983
Germany	6 088 726	169 129	686 249	1 707 999	2 887 825	637 524
Gibraltar	705 997	541 364	96 500	61 891	..	6 242
Greece	54 136 203	26 798 810	23 223 923	2 081 790	641 057	1 390 623
Iceland	101 423	2 239	..	40 448	..	58 736
Ireland	211 210	14 218	..	132 958	13 831	50 203
Israel	808 546	785	35 570	100 735	666 667	4 789
Italy	9 681 203	3 464 208	3 315 582	884 252	409 717	1 607 444
Japan	35 611 692	13 146 826	12 140 756	5 168 777	1 390 346	3 764 987
Luxembourg	2 125 063	89 868	1 224 106	67 528	125 882	617 679
Netherlands	5 030 056	682 359	381 628	1 747 438	851 085	1 367 546
New Zealand	251 092	93 105	20 118	68 324	..	69 545
Norway	35 915 148	18 355 213	9 050 273	3 059 697	202 175	5 247 790
Portugal	1 593 515	1 272 900	26 463	138 233	18 546	137 373
South Africa	294 115	1 187	..	..	198 602	94 326
Spain	2 206 826	792 055	342 799	436 120	61 717	574 135
Sweden	2 415 503	652 805	208 648	999 103	..	554 947
Switzerland	516 420	..	463 474	22 442	..	30 504
Turkey	8 572 915	1 652 223	5 442 533	1 318 053	12 500	147 606
United Kingdom	7 400 787	3 902 120	470 319	478 881	994 778	1 554 689
United States	23 172 910	14 030 676	1 912 620	2 032 904	2 779 819	2 416 891
Subtotal	216 587 886	92 986 040	62 760 352	22 600 075	14 209 837	24 031 582
Open-registry countries						
Bahamas	34 181 516	18 376 350	8 427 872	4 967 243	730 573	1 679 478
Bermuda	5 112 390	3 755 346	246 892	111 904	111 554	886 694
Cyprus	39 972 558	9 613 021	22 503 591	6 122 539	972 330	761 077
Liberia	93 132 059	50 538 252	27 642 020	5 316 513	3 098 696	6 536 578
Panama	90 974 770	34 205 422	30 691 947	16 571 359	4 757 014	4 749 028
Subtotal	263 373 293	116 488 391	89 512 322	33 089 558	9 670 167	14 612 855
Central and Eastern Europe and former USSR						
Albania	80 954	..	..	80 954	..	..
Armenia	..	..	..	..	..	..
Azerbaijan	529 081	285 508	..	104 298	..	139 275
Belarus	..	..	..	..	..	..
Bulgaria	1 902 821	459 095	930 015	412 500	46 963	54 248
Czech Republic	353 943	..	252 459	101 484	..	..
Estonia	698 429	9 639	259 695	304 468	..	124 627

	Total fleet	Oil tankers	Bulk carriers	General cargo c/	Container ships	Other types
Hungary	64 979	..	..	64 979	..	..
Georgia	36	..	..	..	..	36
Kazakhstan	..	..	..	..	..	..
Kyrgyzstan	..	..	..	..	..	..
Latvia	1 322 801	809 704	..	383 765	..	129 332
Lithuania	594 765	18 307	164 697	249 725	..	162 036
Moldova	..	..	..	..	..	..
Poland	3 691 832	156 312	2 494 390	867 116	..	174 014
Romania	4 204 766	762 758	1 817 845	1 409 179	16 635	198 349
Russian Federation	17 528 714	3 886 201	2 937 700	6 660 659	475 991	3 568 163
Tajikistan	..	..	..	..	..	..
Turkmenistan	..	..	..	..	..	..
Ukraine	6 205 712	118 586	2 021 825	3 289 849	131 210	644 242
Former USSR e/	1 020 715	469 027	365 532	95 721	..	90 435
Uzbekistan	..	..	..	..	..	..
Subtotal	38 199 548	6 975 137	11 244 158	14 024 697	670 799	5 284 757
Socialist countries of Asia						
China	22 452 007	3 560 309	9 708 065	6 827 104	1 311 842	1 044 687
Democratic People's Republic of Korea	1 039 734	233 473	207 788	565 638	..	32 835
Viet Nam	1 161 920	184 365	36 014	599 536	..	342 005
Subtotal	24 653 661	3 978 147	9 951 867	7 992 278	1 311 842	1 419 527
Developing countries of Africa						
Algeria	1 093 063	46 410	288 145	296 277	..	462 231
Angola	116 072	2 665	..	100 419	..	12 988
Benin	210	..	..	..	..	210
Cameroon	40 194	..	..	33 509	..	6 685
Cape Verde	32 987	562	..	28 668	..	3 757
Comoros	2 959	..	..	2 295	..	664
Congo	11 221	..	..	..	..	11 221
Côte d'Ivoire	141 817	150	21 842	106 303	..	13 522
Djibouti	4 800	..	..	4 450	..	350
Egypt	1 702 045	340 981	565 499	667 716	..	127 849
Equatorial Guinea	3 279	..	..	3 279	..	..
Ethiopia	84 326	5 818	..	78 336	..	172
Gabon	49 265	742	19 089	27 312	..	2 122
Gambia	1 524	..	..	..	..	1 524
Ghana	107 723	1 167	..	56 769	..	49 787
Guinea	1 993	..	..	285	..	1 708
Guinea-Bissau	1 846	..	..	540	..	1 306
Kenya	15 449	6 412	..	1 394	..	7 643
Libyan Arab Jamahiriya	1 217 290	1 093 045	..	94 888	..	29 357
Madagascar	34 954	13 859	..	14 974	..	6 121
Malawi	..	..	..	..	..	..
Mauritania	21 628	..	..	1 871	..	19 757
Mauritius	286 426	..	191 032	83 463	..	11 931
Morocco	438 844	25 092	..	119 704	10 071	283 977
Mozambique	28 418	1 620	..	18 969	..	7 829
Nigeria	749 225	459 260	..	245 594	..	44 371
St. Helena	..	..	..	..	..	..
Sao Tome and Principe	2 277	..	..	1 285	..	992
Senegal	52 519	..	..	31 514	..	21 005

	Total fleet	Oil tankers	Bulk carriers	General cargo c/	Container ships	Other types
Seychelles	3 337	..	..	2 441	..	896
Sierra Leone	18 247	1 835	..	2 456	..	13 956
Somalia	19 526	..	..	13 725	..	5 801
Sudan	86 466	1 222	..	84 420	..	824
Togo	20 633	..	..	20 553	..	80
Tunisia	420 754	9 976	58 572	64 397	..	287 809
Uganda	..	..	..	..	..	..
United Republic of Tanzania	51 602	7 994	..	39 446	..	4 162
Zaire	15 842	..	..	599	..	15 243
Subtotal	6 878 761	2 018 810	1 144 179	2 247 851	10 071	1 457 850
Developing countries of America						
Anguilla	4 688	..	..	4 594	..	94
Antigua and Barbuda	1 624 775	13 217	146 244	1 144 079	278 324	42 911
Argentina	1 038 036	173 481	104 989	477 872	75 310	206 384
Barbados	76 832	76 219	..	378	..	235
Belize	215 473	16 722	..	141 476	17 641	39 634
Bolivia	..	..	..	..	..	..
Brazil	8 806 669	3 738 624	3 883 754	521 918	181 793	480 580
Cayman Islands	529 665	52 920	163 648	246 675	..	66 422
Chile	872 566	6 254	586 930	69 287	..	210 095
Colombia	359 759	9 681	129 882	202 210	..	17 986
Costa Rica	2 895	..	..	688	..	2 207
Cuba	801 781	97 557	49 888	490 922	..	163 414
Dominica	2 833	..	..	2 833	..	..
Dominican Republic	11 852	1 635	..	9 251	..	966
Ecuador	381 238	129 976	37 531	184 977	..	28 754
El Salvador	..	..	..	..	..	..
Falkland Islands f/	9 360	..	..	630	..	8 730
Grenada	1 383	..	..	1 383	..	..
Guatemala	0	..	..	..	..	..
Guyana	14 179	..	..	8 398	..	5 781
Haiti	170	..	..	..	..	170
Honduras	1 703 317	215 102	127 087	1 227 986	8 643	124 499
Jamaica	16 207	3 292	..	12 915	..	..
Mexico	1 536 215	805 377	46 650	20 097	..	664 091
Montserrat	1 016	..	..	1 016	..	..
Nicaragua	1 483	..	..	1 175	..	308
Paraguay	33 544	..	..	17 936	..	15 608
Peru	464 333	231 697	79 000	100 290	..	53 346
St. Kitts and Nevis	550	..	..	550	..	..
St. Lucia	2 279	..	..	2 279	..	..
St. Vincent	8 628 125	2 116 831	3 233 265	2 711 482	199 749	366 798
Suriname	15 721	3 035	..	10 145	1 771	770
Trinidad and Tobago	14 963	..	..	7 295	..	7 668
Turks and Caicos Islands	2 635	1 391	..	1 000	..	244
Uruguay	195 934	93 297	..	3 891	74 127	24 619
Venezuela	1 453 119	718 521	276 151	173 776	1 180	283 491
Virgin Islands, British	3 806	..	..	3 203	..	603
Subtotal	28 827 401	8 504 829	8 865 019	7 802 607	838 538	2 816 408
Developing countries of Asia						
Bahrain	136 028	1 295	..	113 387	..	21 346
Bangladesh	547 371	86 388	..	443 451	..	17 532

	Total fleet	Oil tankers	Bulk carriers	General cargo c/	Container ships	Other types
Brunei Darussalam	352 627	270	..	4 631	..	347 726
Cambodia	..	..	..	..	..	..
Hong Kong	13 091 086	1 491 820	10 149 900	633 074	623 106	193 186
India	10 673 896	3 773 565	5 020 944	1 132 913	52 646	693 828
Indonesia	3 211 918	986 891	245 243	1 576 189	93 084	310 511
Iran, Islamic Rep. of	8 099 261	5 559 197	1 756 502	614 456	..	169 106
Iraq	1 566 433	1 351 180	..	103 048	..	112 205
Jordan	129 598	97 286	15 794	16 271	..	247
Kuwait	3 640 180	2 831 032	..	358 641	91 461	359 046
Lebanon	388 802	2 431	76 446	304 159	1 162	4 604
Malaysia	3 164 907	465 826	999 546	643 413	348 527	707 595
Maldives	85 294	12 679	19 536	45 776	..	7 303
Myanmar	986 960	4 483	667 716	271 626	25 297	17 838
Oman	10 604	460	..	2 996	..	7 148
Pakistan	524 428	90 821	34 686	387 523	..	11 398
Philippines	13 777 253	773 379	10 426 172	2 240 851	124 415	212 436
Qatar	684 926	234 788	135 160	207 024	91 536	16 418
Republic of Korea	10 871 616	1 220 770	6 349 846	1 186 644	1 377 913	736 443
Saudi Arabia	1 403 323	487 218	..	624 492	71 653	219 960
Singapore	17 522 426	8 456 113	5 017 814	1 797 575	1 670 632	580 292
Sri Lanka	452 848	131 532	180 225	137 045	..	4 046
Syrian Arab Republic	330 252	..	49 850	280 402	..	..
Thailand	1 736 870	338 370	264 657	960 411	103 350	70 082
United Arab Emirates	1 197 378	561 562	46 463	260 608	211 720	117 025
Yemen	27 438	3 185	..	2 893	..	21 360
Subtotal	94 613 723	28 962 541	41 456 500	14 349 499	4 886 502	4 958 681
Developing countries of Europe						
Croatia	196 890	9 495	..	148 323	11 031	28 041
Malta	24 380 365	9 783 270	10 390 979	3 352 223	405 078	448 815
Slovenia	1 123	..	..	234	..	889
Yugoslavia	625	..	..	..	..	625
Subtotal	24 579 003	9 792 765	10 390 979	3 500 780	416 109	478 370
Developing countries of Oceania						
Fiji	38 273	4 705	..	21 420	..	12 148
Kiribati	3 980	..	..	3 980	..	..
Nauru	..	..	..	..	..	..
Papua New Guinea	44 925	5 044	..	35 691	..	4 190
Solomon Islands	4 994	..	..	3 389	..	1 605
Tonga	13 740	..	..	11 043	..	2 697
Tuvalu	114 140	..	..	12 345	..	101 795
Vanuatu	2 826 016	41 930	1 883 411	580 045	32 042	288 588
Western Samoa	6 501	..	..	6 066	..	435
Subtotal	3 052 569	51 679	1 883 411	673 979	32 042	411 458
Developing TOTAL	157 951 457	49 330 624	63 740 088	28 574 716	6 183 262	10 122 767
Other unallocated	9 856 238	1 463 457	4 924 761	581 302	2 802 180	84 538

Annex III

Notes

Source: *Lloyd's Register of Shipping - Statistical Tables, 1993* (London) and supplementary data regarding the Great Lakes fleets of the United States and Canada and the United States Reserve Fleet.

a/ The designations employed and the presentation of material in this table refer to flags of registration and do not imply the expression of any opinion by the Secretariat of the United Nations concerning the legal status of any country or territory, or of its authorities, or concerning the delimitation of its frontiers.

b/ Ships of 100 grt and over, excluding the Great Lakes fleets of the United States and Canada and the United States Reserve Fleet.

c/ Including passenger/cargo.

d/ Excluding estimates of the United States Reserve Fleet and the United States and Canadian Great Lakes fleets, which amounted to respectively 2.8 million grt (3.7 million dwt), 1.1 million grt (1.9 million dwt) and 1.5 million grt (2.1 million dwt).

e/ All Republics of the former USSR which have not established new shipping registers (see box 1).

f/ A dispute exists between the Governments of Argentina and the United Kingdom of Great Britain and Northern Ireland concerning sovereignty over the Falkland Islands (Malvinas).

Annex IV

Major flows of selected bulk commodities

This annex provides an origin and destination matrix of the selected commodities for the most recent years, available in the UNCTAD Data Bank. The methodology used to compile the trade matrices is:

- Major exporters were identified by looking at total exports for each commodity as reported in the Comtrade (International Commodity Trade Statistics) data bank for the latest five years.
- Any country whose exports to the world exceeded a certain "floor" value (see table below) in any of the years was considered to be a candidate.
- From this list the top ten or so reporters were retained.
- Major reporting **importers** of each commodity were then identified and the trading partners of the top three or four were used to identify any major traders that may not have been selected by the above procedure.
- Inverted trade was used to fill any non-reported gaps in the exporters series and also to supply data for known non-reporters, e.g. the former USSR and the South African Customs Union, as well as for countries that do not report quantity (Germany) or do not give a full bilateral breakdown (the Netherlands, Saudi Arabia).
- Tables were produced for each commodity with a cut-off applied to each individual cell that would produce between 2 and 4 pages of statistical data. This means that an empty cell does not necessarily indicate that there was no trade, but that the value did not reach the cut-off.

Commodity	Floor value (tonnes)	Cut-off (tonnes)
Bauxite	500 000	50 000
Wheat	1 000 000	250 000
Coal	2 000 000	500 000
Phosphates	100 000	50 000
Iron ore	1 000 000	250 000
Raw sugar	100 000	30 000
Wood	750 000	50 000
Crude petroleum	30 000 000	2 000 000

Note: Because of the breakdown of existing statistical records, data for Germany have been reported separately under Federal Republic of Germany and German Democratic Republic.

Also, in some tables destinations are specified as "special". This term covers free zones, ship stores and cases where countries do not report origins or destinations.

Exports of bauxite (SITC rev.2, 287.3) by major suppliers (individual flows >50,000 mt)

	TONNES				
	1988	1989	1990	1991	1992
Australia to					
Argentina	219,705	289,980	205,616	335,308	166,420
Canada	839,754	629,109	956,697	1,125,096	1,369,128
China	110,532	202,009	535,326	625,304	841,885
Fm Yugoslav	-	105,109	166,988	-	-
Germany	-	-	-	1,455,752	1,295,986
Germany, FR	937,832	857,580	1,422,017	-	-
Iceland	140,525	160,756	160,286	185,456	204,446
Indonesia	285,050	360,043	279,061	182,060	247,373
Italy	666,846	653,329	839,128	919,068	745,341
Japan	1,240,376	1,438,036	1,424,989	1,246,950	1,035,378
New Zealand	441,926	509,550	481,964	531,534	446,001
Norway	227,696	190,672	74,489	76,558	224,838
Romania	-	-	234,000	59,802	-
Saudi Arabia.....	91,148	139,334	100,251	-	-
Spain	-	-	71,112	-	-
Sweden	90,355	118,525	-	-	52,516
Switzerland	58,899	124,068	124,219	116,722	95,855
USA	5,163,665	5,145,135	5,037,466	4,473,804	3,678,831
Venezuela	-	-	1,218,646	452,567	261,906
Brazil to					
Argentina	95,049	-	-	-	134,804
Canada	1,583,237	1,373,715	1,719,134	1,616,963	1,585,615
Fm Yugoslav	-	-	51,130	-	-
France	-	50,365	-	-	-
Italy	55,615	-	-	-	-
Netherlands	-	-	-	-	100,789
Russian Fed	-	-	-	-	241,518
Uruguay	105,943	76,416	-	-	-
US.Virgin Is.....	-	100,558	-	-	-
USA	916,938	1,446,479	1,988,500	1,938,095	1,637,350
Venezuela	1,958,243	1,636,752	1,697,589	2,136,526	962,408
China to					
Canada	107,800	87,000	-	-	-
Fm USSR	-	-	-	56,271	-
France	-	64,751	-	57,192	63,468
Germany	-	-	-	105,454	58,921
Germany, FR	60,692	92,111	142,195	-	-
Italy	76,327	69,784	82,619	59,046	-
Japan	172,778	183,542	148,026	165,923	100,869
Netherlands	164,873	242,546	241,172	167,441	174,013
UK	61,360	-	-	-	-
USA	355,018	425,545	331,725	326,355	263,501
Greece to					
Fm USSR	107,592	137,345	-	97,650	-
France	109,594	204,216	278,556	433,409	411,687
Italy	-	-	-	-	72,580

Exports of bauxite (SITC rev.2, 287.3) by major suppliers (individual flows >50,000 mt)

	TONNES				
	1988	1989	1990	1991	1992
Greece to					
Netherlands	-	-	-	71,676	100,505
Romania	256,441	332,365	342,562	401,612	201,678
Russian Fed	-	-	-	-	325,358
Guinea to					
Brazil	-	-	-	169,031	160,450
Cameroon	-	164,669	1,393,300	439,740	-
Canada	341,511	382,582	257,357	397,591	197,053
Fm Yugoslav	304,313	540,490	229,352	-	-
France	818,856	1,044,217	1,081,091	885,890	1,007,146
Germany	-	-	-	571,717	771,146
Germany, FR	962,294	1,109,663	775,850	-	-
Ireland	1,743,433	1,602,052	1,742,305	1,970,085	1,984,228
Italy	716,556	763,022	712,563	676,930	885,942
Norway	55,210	-	132,371	180,291	98,934
Spain	1,309,602	1,620,598	1,627,380	1,837,612	1,624,396
UK	70,889	-	-	-	-
USA	4,526,515	3,504,147	3,842,094	4,007,352	3,225,987
India to					
Brazil	123,533	104,249	-	-	-
China	55,217	n.a.	-	65,165	-
Egypt	-	-	92,291	-	-
Fm USSR	-	n.a.	96,032	-	-
Indonesia	-	-	51,664	-	-
Romania	-	122,000	-	-	-
Russian Fed	-	-	-	-	67,881
Saudi Arabia.....	56,355	75,197	82,649	-	-
Sweden	-	-	-	53,000	-
Untd Arab Em.....	83,428	n.a.	133,759	-	139,025
USA	99,399	n.a.	58,168	125,097	80,694
Indonesia to					
Japan	433,587	549,499	511,237	636,368	529,348
USA	-	293,976	302,400	409,120	67,500
Ireland to					
Canada	55,630	-	-	-	-
Finland	-	-	-	181,121	114,017
Germany, FR	91,707	172,652	145,469	-	-
Italy	-	-	84,946	-	-
Netherlands	-	-	-	-	92,191
Norway	395,358	312,565	228,396	224,296	206,612
Poland	-	-	75,899	53,617	52,453
Russian Fed	-	-	-	-	77,485
Sweden	-	-	-	-	67,284
UK	243,022	306,204	261,900	337,378	226,988
Italy to					
Finland	-	-	-	-	128,748
Fm USSR	-	-	50,146	-	-
Fm Yugoslav	79,526	63,864	126,272	141,637	-

Exports of bauxite (SITC rev.2, 287.3) by major suppliers (individual flows >50,000 mt)

	TONNES				
	1988	1989	1990	1991	1992
Italy to					
Netherlands	155,689	230,153	191,171	101,873	133,427
Russian Fed	-	-	-	-	52,884
Slovenia	-	-	-	-	59,505
UK	59,889	-	-	-	-
Yugoslavia	-	-	-	-	79,955
Jamaica to					
Brazil	-	65,780	66,702	78,141	-
Canada	539,506	524,560	503,019	533,199	649,350
Fm USSR	995,846	-	-	-	-
France	-	73,031	-	-	-
Germany	158,049	195,444	132,455	245,197	135,593
Netherlands	435,339	210,957	88,871	72,187	130,927
Norway	-	136,896	567,434	487,198	559,056
Sweden	82,139	-	63,725	101,387	-
UK	159,563	-	-	-	-
USA	3,407,164	4,228,471	4,675,716	4,634,081	5,187,229
USA	2,784,949	-	-	-	-
Sierra Leone to					
Brazil	-	127,759	205,360	355,600	181,885
Canada	287,531	308,790	98,144	336,331	154,268
Germany	-	-	-	575,681	418,195
Germany, FR	686,490	851,918	744,233	-	-
UK	50,513	-	-	-	-
USA	-	167,438	159,258	-	-
Venezuela	150,853	66,660	-	-	-
Suriname to					
Brazil	-	124,640	99,247	177,081	232,343
Fm Yugoslav	-	-	54,588	-	-
France	-	-	78,801	-	309,938
Germany, FR	70,177	69,685	-	-	-
Netherlands	298,179	275,165	321,220	285,171	258,705
Norway	376,079	503,060	727,039	575,691	438,817
USA	414,483	209,296	173,304	242,048	242,440
U S A to					
Brazil	115,314	-	123,074	133,007	214,746
Canada	552,961	963,504	736,833	997,601	777,644
Ghana	183,222	124,782	82,807	n.a.	-
Mexico	179,241	136,721	168,883	107,146	-
Sweden	-	-	62,091	-	-
Venezuela to					
Brazil	-	50,650	100,345	-	-
Fm USSR	-	-	-	84,588	-
Norway	118,142	101,509	-	-	-
USA	184,731	-	-	-	146,932

Exports of bauxite (SITC rev.2, 287.3) by major suppliers (individual flows >50,000 mt)

	TONNES				
	1988	1989	1990	1991	1992
Yugoslavia to					
Czechoslovak.....	-	247,489	262,237	-	-
Fm USSR	-	596,570	649,284	-	-
Romania	-	132,371	55,631	-	-

Exports of wheat (SITC rev.2, 041) by major suppliers (individual flows >250,000 mt)

	TONNES				
	1988	1989	1990	1991	1992
Argentina to					
Brazil	860,672	1,035,989	1,809,134	2,822,218	3,253,312
Chile	-	-	-	-	302,801
China	-	1,136,288	753,039	444,859	-
Fm USSR	590,315	624,120	482,357	-	-
Indonesia	-	-	301,454	375,550	345,205
Iran	748,326	664,335	1,481,635	359,508	410,685
Peru	514,555	491,200	326,096	612,524	576,757
Turkey	-	-	425,804	-	-
Australia to					
China	397,187	1,476,045	1,260,262	1,322,715	-
Egypt	1,738,120	1,875,984	1,779,286	1,481,109	1,242,054
Fm USSR	-	256,508	-	1,008,689	-
Fm Yemen	258,823	426,047	-	-	-
India	-	-	-	-	577,836
Indonesia	790,230	1,222,838	853,706	802,856	840,323
Iran	1,634,988	1,140,434	1,944,940	1,566,276	-
Iraq	1,065,975	1,426,481	1,024,048	-	-
Japan	892,073	1,240,282	1,098,583	950,978	1,002,334
Korea Rep.	-	-	509,580	1,136,536	489,274
Malaysia	354,331	665,062	555,244	504,603	n.a.
Pakistan	-	492,247	-	-	323,842
Papua N.Guin.....	-	-	384,433	-	-
Untd Arab Em.....	-	368,779	-	-	-
Yemen	-	-	884,849	426,956	-
Canada to					
Algeria	785,714	536,450	572,345	627,419	261,959
Bangladesh	289,127	-	332,300	408,274	289,936
Belgium-Lux	-	-	-	279,050	-
Brazil	-	-	347,506	1,043,479	1,249,486
China	7,221,157	1,628,323	4,232,769	4,854,273	5,593,304
Colombia	-	-	-	-	353,588
Cuba	681,133	373,855	543,226	354,082	-
Fm USSR	4,267,821	1,890,206	4,029,652	7,120,969	-
India	-	-	-	-	1,028,246
Indonesia	-	297,041	-	368,593	748,952
Iran	519,172	1,110,406	916,528	1,017,799	1,378,715
Iraq	818,652	902,630	423,063	-	-
Italy	491,325	359,048	348,443	260,348	337,202
Japan	1,256,307	1,338,439	1,482,100	1,329,128	1,405,175
Korea D P Rp.....	-	-	-	454,988	-
Korea Rep.	-	-	382,264	1,017,286	626,803
Mexico	-	-	-	-	592,085
Pakistan	-	-	-	-	278,147
Philippines	-	-	334,635	-	260,491
Russian Fed	-	-	-	-	4,792,557
S.Afr.Cus.Un.....	-	-	432,107	328,486	-
UK	522,161	-	300,818	302,419	-

Exports of wheat (SITC rev.2, 041) by major suppliers (individual flows >250,000 mt)

	TONNES				
	1988	1989	1990	1991	1992
Canada to					
USA	351,652	261,096	628,940	560,408	1,464,758
Venezuela	556,504	-	345,529	653,765	365,061
Denmark to					
Egypt	-	-	294,957	-	-
Fm USSR	-	-	410,984	-	-
Germany, FR	314,321	275,657	-	-	-
Russian Fed	-	-	-	-	295,973
France to					
Algeria	-	579,330	1,216,890	921,861	836,998
Bangladesh	448,499	318,272	-	-	-
Belgium-Lux	995,584	705,004	1,688,922	1,332,951	1,518,565
China	-	1,429,022	1,013,509	1,867,392	744,674
Cuba	268,900	-	-	-	357,214
Egypt	696,442	276,114	935,994	-	-
Ethiopia	485,657	-	-	-	-
Fm USSR	1,908,561	1,549,798	1,475,505	2,511,777	-
Germany	-	-	-	893,021	731,276
Germany, FR	817,596	1,158,905	1,127,052	-	-
Greece	285,109	-	257,169	-	-
Iran	293,485	744,687	-	-	-
Italy	2,984,928	3,641,103	2,652,672	3,219,914	3,131,582
Korea Rep.	471,946	-	-	-	-
Libya	-	-	-	307,716	-
Morocco	-	461,733	493,414	540,037	735,313
Netherlands	1,487,080	711,585	2,238,964	1,088,777	812,508
Portugal	-	-	-	451,269	711,943
Romania	-	-	-	304,495	1,050,414
Russian Fed	-	-	-	-	2,083,265
Spain	574,526	-	313,414	773,693	802,824
Syria	250,861	425,682	651,839	-	-
Tunisia	-	402,787	391,484	-	-
Turkey	-	532,440	650,002	-	-
UK	618,131	-	291,649	255,114	395,732
Uzbekistan	-	-	-	-	265,815
Germany to					
Belgium-Lux	-	290,187	278,563	386,680	385,762
Fm USSR	1,394,429	898,115	-	-	-
Iran	-	265,042	-	-	-
Italy	-	-	-	-	385,492
Netherlands	330,922	443,000	331,867	573,773	518,837
Poland	-	1,089,854	567,649	-	277,213
Russian Fed	-	-	-	-	1,414,575
UK	-	-	-	-	315,465
Ukraine	-	-	-	-	340,163

Exports of wheat (SITC rev.2, 041) by major suppliers (individual flows >250,000 mt)

	TONNES				
	1988	1989	1990	1991	1992
Greece to					
Italy	335,626	909,599	474,333	960,948	940,173
Italy to					
Algeria	603,416	691,369	-	-	-
Turkey to					
Azerbaijan	-	-	-	-	348,363
Fm USSR	-	-	-	865,958	-
Jordan	-	-	-	-	360,450
Korea Rep.	-	-	-	288,148	485,601
Morocco	-	-	-	-	421,925
Russian Fed	-	-	-	-	850,107
Uzbekistan	-	-	-	-	273,645
U K to					
Belgium-Lux	250,136	300,459	316,853	-	-
China	-	258,464	718,245	-	-
Cuba	-	293,369	-	-	-
Fm USSR	-	310,677	1,171,773	-	-
Germany, FR	-	370,526	-	-	-
Iran	-	433,056	-	-	-
Italy	323,742	250,960	452,254	1,250,760	948,582
Korea Rep.	283,906	-	-	461,574	-
Netherlands	-	-	449,157	262,026	735,137
Russian Fed	-	-	-	-	439,488
Spain	-	-	411,772	973,007	506,804
U S A to					
Algeria	1,437,779	960,162	883,425	1,047,324	601,492
Bangladesh	484,653	890,175	466,742	-	829,572
China	6,263,063	7,301,252	3,691,677	4,586,557	2,982,448
China Taiwan.....	785,903	743,606	680,847	-	761,143
Colombia	338,367	467,636	359,546	478,899	-
Ecuador	363,194	318,995	380,350	364,456	-
Egypt	2,616,925	3,254,907	1,654,005	1,736,255	3,939,745
El Salvador	-	-	-	316,668	-
Fm USSR	7,595,929	5,212,691	3,690,372	-	-
Guatemala	-	302,963	-	250,820	-
Honduras	-	-	396,086	-	-
India	1,749,544	-	-	-	-
Indonesia	-	308,926	251,312	-	-
Iraq	850,304	953,173	335,086	-	-
Israel	364,406	503,834	495,500	-	621,114
Italy	311,047	491,039	435,032	376,126	299,017
Japan	2,774,782	2,736,086	2,837,416	3,279,595	3,545,243
Jordan	-	398,358	600,679	446,775	-
Korea Rep.	1,941,568	1,738,212	1,596,913	1,669,294	1,483,651
Mexico	809,005	415,088	359,021	-	409,448
Morocco	1,244,583	745,282	548,498	473,541	649,667
Nigeria	-	-	-	-	285,572

Exports of wheat (SITC rev.2, 041) by major suppliers (individual flows >250,000 mt)

	TONNES				
	1988	1989	1990	1991	1992
U S A to					
Pakistan	731,438	1,880,076	894,969	727,280	1,757,858
Peru	394,111	-	-	-	-
Philippines	926,959	904,884	1,088,630	1,336,163	1,482,596
Poland	989,072	-	-	-	-
Russian Fed	-	-	-	-	6,124,270
Sri Lanka	486,549	600,995	514,026	-	621,354
Tunisia	576,835	251,179	330,762	354,528	-
Turkey	-	523,075	-	-	-
Uzbekistan	-	-	-	-	400,367
Venezuela	430,554	647,995	633,055	410,246	570,737
Yemen	-	-	-	-	414,940

Exports of coal (SITC rev.2, 322) by major suppliers (individual flows >500,000 mt)

	TONNES				
	1988	1989	1990	1991	1992
Australia to					
Belgium-Lux	843,100	646,006	1,397,045	1,213,678	2,405,618
Brazil	1,644,001	1,328,041	1,248,978	1,773,450	2,783,751
Chile	-	-	-	680,966	677,946
China	-	-	508,651	-	-
China Taiwan	7,466,453	5,798,630	6,654,837	7,026,538	7,749,348
Denmark	1,351,308	1,864,249	1,577,331	2,004,470	1,455,394
France	2,699,982	2,653,195	3,095,525	4,042,019	4,712,695
Germany	-	-	-	525,954	562,536
Hong Kong	2,372,748	2,897,733	3,360,756	3,572,471	3,710,966
India	4,139,909	-	-	-	6,049,499
Indonesia	942,575	705,802	-	-	-
Iran	-	-	-	-	516,834
Israel	503,557	-	-	670,144	-
Italy	1,888,879	1,245,545	980,690	1,269,776	1,838,997
Japan	50,627,627	53,394,204	57,404,793	60,831,633	61,272,499
Korea Rep.	8,369,602	7,904,950	9,162,153	11,329,251	14,189,330
Malaysia	535,830	696,126	697,128	613,231	-
Netherlands	4,243,550	3,739,283	5,337,845	5,853,106	4,649,713
Pakistan	689,240	648,178	733,496	848,600	907,786
Philippines	568,502	-	586,607	-	-
Romania	1,627,267	1,764,827	1,533,110	713,185	1,212,527
Spain	921,718	1,009,941	869,407	1,128,402	1,126,148
Sweden	1,136,782	893,386	-	607,625	514,099
Turkey	1,572,533	515,360	1,415,893	1,808,507	1,775,372
UK	2,706,059	2,980,096	3,962,198	4,746,650	4,754,040
Canada to					
Brazil	1,558,518	1,358,232	1,227,973	1,283,216	1,073,373
China Taiwan	1,045,847	1,173,999	1,062,968	796,382	609,919
Denmark	-	757,858	-	763,231	1,042,648
France	-	602,659	-	-	-
Japan	19,371,430	19,990,609	19,616,479	18,562,757	14,191,479
Korea Rep.	4,635,112	4,916,013	5,213,905	5,675,419	4,666,037
Mexico	-	-	-	-	527,560
Netherlands	-	521,439	523,660	670,051	-
UK	-	804,320	884,379	903,164	768,583
USA	889,349	880,689	1,361,184	1,350,078	1,562,432
China to					
Belgium-Lux	-	-	-	-	553,924
China Taiwan	-	-	661,357	1,518,415	2,339,222
France	-	646,096	1,532,699	1,656,306	966,280
Hong Kong	2,189,270	2,115,057	2,629,501	2,645,118	2,041,998
Indonesia	-	-	636,115	-	-
Japan	4,661,676	4,407,832	5,283,353	5,798,586	6,230,353
Korea D P Rp	1,797,174	1,596,919	1,728,077	1,912,890	1,369,165
Korea Rep.	-	-	1,942,717	3,197,225	4,213,813
Malaysia	794,568	1,106,379	641,984	-	-
Netherlands	-	1,129,167	555,785	-	-

Exports of coal (SITC rev.2, 322) by major suppliers (individual flows >500,000 mt)

	TONNES				
	1988	1989	1990	1991	1992
China to					
Philippines	2,855,230	1,875,915	844,614	-	-
UK	-	-	-	514,178	-
Colombia to					
Denmark	2,268,313	2,585,129	2,028,089	2,623,484	1,393,643
Finland	-	-	-	630,454	-
France	-	1,255,275	1,935,233	1,743,719	1,142,806
Germany	-	-	-	-	633,166
Hong Kong	-	551,297	-	-	-
Ireland	607,445	583,863	693,962	651,632	839,812
Israel	-	592,555	-	566,102	539,290
Italy	-	520,093	-	-	-
Morocco	635,998	-	-	-	-
Netherlands	1,703,956	1,823,988	1,809,189	2,883,008	2,643,549
Portugal	-	-	-	-	515,451
Spain	-	683,410	-	782,637	872,809
UK	-	767,301	2,390,534	1,819,130	2,172,527
USA	1,294,464	1,274,286	1,074,118	1,892,656	1,507,523
Fm Czechoslovakia to					
Austria	659,348	772,016	745,592	773,997	1,186,471
Germany	-	-	-	3,182,505	3,310,873
Germany, FR	1,982,158	2,153,112	2,312,752	-	-
Hungary	-	-	-	861,172	-
Germany to					
Belgium-Lux	1,873,167	1,999,840	1,758,928	1,277,781	1,064,119
France	1,569,196	1,654,915	1,835,321	1,387,009	535,398
Italy	1,141,396	1,493,696	1,089,378	695,117	-
Netherlands	1,694,190	1,926,555	1,672,917	1,640,864	1,433,178
Spain	-	-	517,778	-	-
Indonesia to					
China Taiwan	508,151	623,145	735,912	803,376	3,352,968
Hong Kong	-	-	638,159	1,468,934	2,505,700
Japan	-	-	947,552	2,473,923	5,198,757
Malaysia	-	-	777,691	885,799	1,064,117
Netherlands	-	-	-	-	894,999
Spain	-	-	-	-	546,411
Netherlands to					
Belgium-Lux	675,051	571,459	683,627	642,368	544,758
Germany	-	-	-	1,477,177	1,471,580
Germany, FR	-	-	1,373,834	-	-
UK	562,599	-	-	-	-
Poland to					
Austria	1,848,331	1,721,175	1,887,397	2,150,712	1,828,453
Belgium-Lux	524,000	-	-	-	-
Brazil	1,959,000	1,646,000	2,176,000	1,414,611	1,204,623
Czechoslovak	1,677,000	1,399,011	1,609,000	-	3,874,874
Denmark	1,658,000	835,000	977,000	705,781	707,733
Finland	2,038,000	2,599,000	2,820,000	2,601,373	1,867,502

Exports of coal (SITC rev.2, 322) by major suppliers (individual flows >500,000 mt)

	TONNES				
	1988	1989	1990	1991	1992
Poland to					
Fm German Dr.....	620,000	601,000	-	-	-
Fm USSR	11,725,000	9,947,000	8,637,000	-	-
France	-	-	-	-	510,909
Germany	-	-	-	4,936,667	3,624,936
Germany, FR	2,011,784	1,808,000	3,611,198	n.a.	n.a.
Hungary	668,804	569,000	-	1,064,874	619,738
Ireland	722,000	581,000	-	-	577,651
Italy	847,261	789,445	736,827	598,990	-
Netherlands	789,000	790,000	1,216,000	820,326	732,494
Romania	1,309,000	1,363,000	-	-	-
Sweden	975,000	759,000	735,000	-	-
Ukraine	-	-	-	-	1,335,259
UK	1,277,000	1,270,000	945,000	539,989	1,072,015
U.K to					
Denmark	-	520,550	-	-	-
U S A to					
Algeria	642,194	671,149	610,961	599,780	554,706
Argentina	553,239	672,970	580,785	-	-
Austria	584,814	517,053	-	-	-
Belgium-Lux	5,887,976	6,437,986	7,709,990	5,435,843	6,528,205
Brazil	4,764,625	5,153,269	5,297,347	6,822,301	5,778,483
Bulgaria	-	-	-	-	545,746
Canada	17,398,935	15,220,405	14,090,698	11,704,962	13,739,517
Chile	-	856,216	-	-	-
China Taiwan.....	4,270,210	4,079,624	4,177,305	-	3,229,622
Denmark	2,543,937	2,882,906	2,892,017	4,702,816	3,476,648
Egypt	-	530,848	586,177	591,293	768,945
Fm Yugoslav	1,174,938	1,369,785	846,073	-	-
France	3,902,632	5,911,843	6,240,618	8,678,652	7,371,548
Germany	-	-	-	1,414,242	910,305
Germany, FR	636,426	675,438	959,140	-	-
Ireland	1,332,960	1,131,776	1,322,362	1,284,316	1,314,445
Israel	-	-	579,688	-	747,513
Italy	10,042,314	10,209,819	10,838,610	10,222,232	8,477,422
Japan	12,859,312	12,561,455	12,093,294	12,024,401	11,161,416
Korea Rep.	3,573,582	3,480,036	3,627,860	3,544,326	3,040,565
Morocco	-	747,252	682,427	845,962	668,168
Netherlands	4,613,542	5,512,148	7,588,851	6,292,995	8,298,323
Portugal	801,403	1,291,835	1,620,189	1,542,577	1,341,984
Romania	1,318,299	1,416,760	1,558,662	1,093,022	682,740
Spain	2,305,928	3,029,523	3,483,748	4,813,105	4,114,565
Sweden	650,985	665,637	785,367	1,068,187	1,057,106
Turkey	1,835,655	1,529,868	1,920,775	1,748,559	1,804,906
UK	3,329,945	4,103,283	4,696,926	4,967,295	5,071,950
Venezuela to					
France	-	-	-	-	780,310

Exports of phosphates (SITC rev.2, 271.3) by major suppliers (individual flows >50,000 mt)

	TONNES				
	1988	1989	1990	1991	1992
Algeria to					
Austria	165,337	-	-	352,387	248,991
China	-	-	-	52,766	-
Fm USSR	-	-	107,734	152,784	-
Fm Yugoslav	62,395	-	-	-	-
France	-	-	-	134,677	-
Hungary	56,482	63,430	-	-	-
Poland	-	80,900	-	-	-
Romania	183,429	-	-	88,983	66,166
Russian Fed	-	-	-	-	101,144
Switzerland	-	-	-	69,928	-
Turkey	66,263	-	-	-	-
UK	-	-	-	91,239	-
China to					
Japan	-	-	-	100,470	145,703
Korea D P Rp.....	-	-	-	141,752	-
Korea Rep.	-	69,039	73,989	100,980	142,503
Malaysia	75,439	83,639	146,151	168,475	100,941
Jordan to					
Australia	-	-	-	-	92,275
Bangladesh	98,200	-	-	-	-
Belgium-Lux	-	141,781	50,731	-	-
Bulgaria	-	-	-	-	60,775
China Taiwan.....	276,795	-	-	-	243,283
Czechoslovak.....	115,770	-	-	-	-
Fm Yugoslav	707,190	420,166	-	-	-
France	103,920	-	69,300	-	-
Greece	64,760	-	79,960	78,068	-
India	1,134,650	-	1,218,379	1,036,764	1,275,092
Indonesia	518,700	468,750	479,850	743,280	539,500
Italy	65,815	-	-	-	-
Japan	251,800	221,400	237,650	218,000	179,650
Korea Rep.	163,400	140,537	117,393	123,780	131,200
Malaysia	174,750	206,916	110,408	73,469	133,400
Netherlands	-	-	68,000	303,300	302,070
Pakistan	234,780	206,443	257,243	167,664	192,760
Philippines	-	-	67,350	69,600	-
Poland	508,030	860,931	59,141	-	139,920
Romania	538,550	172,767	-	-	81,800
Turkey	653,710	527,436	468,696	389,372	432,975
Yugoslavia	-	-	-	-	235,700
Morocco to					
Australia	413,106	221,951	119,244	-	63,000
Austria	-	-	-	-	97,599
Belgium-Lux	1,358,867	1,172,000	1,260,000	1,139,500	918,001
Brazil	95,800	94,926	87,500	56,184	101,189
Bulgaria	250,412	224,000	103,993	94,826	-
China	240,477	266,000	222,940	201,627	217,668

Exports of phosphates (SITC rev.2, 271.3) by major suppliers (individual flows >50,000 mt)

	TONNES				
	1988	1989	1990	1991	1992
Morocco to					
China Taiwan	81,460	-	56,198	-	-
Czechoslovak	221,716	180,000	103,145	-	-
Denmark	168,977	174,163	73,681	-	-
Fm German Dr	190,604	228,000	57,515	-	-
Fm Yugoslav	437,810	551,040	369,042	271,676	-
France	641,904	626,000	387,000	541,600	291,811
Germany	-	-	-	268,600	269,516
Germany, FR	201,501	129,000	195,000	-	-
Greece	218,277	245,000	223,000	206,600	65,024
Hungary	151,876	148,000	-	-	-
India	316,786	265,808	509,494	576,512	258,490
Indonesia	314,672	378,000	574,478	364,069	370,704
Iran	-	171,581	79,789	-	-
Italy	422,008	344,554	413,712	82,311	202,689
Japan	290,044	209,862	193,318	193,592	131,341
Korea Rep.	-	-	60,500	59,128	175,095
Malaysia	144,467	74,205	109,169	72,494	-
Mexico	1,139,762	925,785	943,180	703,713	583,936
Netherlands	812,904	729,000	684,161	430,500	358,740
New Zealand	88,500	209,700	116,710	136,346	143,830
Norway	115,400	186,543	157,320	111,600	64,000
Pakistan	-	-	-	106,561	103,652
Philippines	-	118,860	190,759	-	114,118
Poland	1,219,982	439,137	844,220	193,511	496,015
Portugal	168,827	154,210	109,156	88,936	-
Romania	578,837	606,000	576,605	259,947	278,325
Spain	2,300,800	1,706,000	1,508,229	1,404,363	1,287,887
Sweden	236,346	278,824	258,804	236,041	97,692
Turkey	-	-	-	52,000	115,057
UK	519,723	476,000	494,000	420,500	133,412
USA	728,416	683,024	407,903	663,234	1,644,000
Venezuela	67,640	68,000	74,382	76,084	84,887
Yugoslavia	-	-	-	-	293,153
Netherlands to					
Germany	-	-	-	124,768	154,983
Germany, FR	146,889	188,615	199,827	-	-
Senegal to					
Fm Yugoslav	70,455	62,550	-	-	-
France	300,587	166,466	54,656	88,606	74,258
Greece	130,702	139,541	123,421	102,693	55,705
India	163,733	285,229	312,030	247,519	160,029
Iran	n.a.	-	208,425	133,785	n.a.
Japan	70,800	71,287	56,005	55,590	-
Philippines	366,781	356,374	310,433	233,608	239,861
Spain	178,546	218,153	115,347	53,675	-
UK	163,510	-	-	-	-

Exports of phosphates (SITC rev.2, 271.3) by major suppliers (individual flows >50,000 mt)

	TONNES				
	1988	1989	1990	1991	1992
Sweden to					
Norway	72,353	80,328	-	-	-
Syria to					
Austria	-	158,134	141,047	-	-
China	73,587	52,803	52,074	n.a.	-
Fm German Dr.....	-	252,908	60,574	-	-
Fm Yugoslav	253,149	187,582	93,568	-	-
France	219,549	258,622	101,970	328,170	253,350
Italy	-	52,456	61,960	-	-
Lebanon	n.a.	84,761	128,986	n.a.	n.a.
Portugal	-	61,721	52,100	68,891	64,183
Romania	n.a.	354,041	105,522	-	63,154
Spain	57,817	57,601	-	-	-
Switzerland	-	214,174	302,625	-	-
Turkey	67,247	60,666	64,777	79,522	-
UK	-	222,419	86,947	-	-
Togo to					
Australia	141,250	261,653	-	-	-
Belgium-Lux	54,850	-	-	-	-
Br.Ind.Oc.Tr.....	-	-	91,760	150,134	-
Canada	840,006	890,380	802,766	815,592	849,840
China	-	-	-	65,340	-
Cyprus	110,210	-	-	-	-
Fm Yugoslav	66,630	65,625	-	-	-
France	301,850	319,840	301,381	290,939	114,420
Greece	-	-	81,773	179,528	107,778
India	137,600	178,700	252,767	132,836	-
Italy	239,747	258,688	171,410	194,011	139,050
Mexico	-	80,800	86,600	421,872	-
Netherlands	137,270	-	-	-	-
Nigeria	-	-	-	92,113	-
Philippines	223,700	285,116	225,299	272,779	112,200
Poland	351,918	291,680	67,750	102,277	-
Spain	283,575	384,865	241,307	313,213	160,350
UK	404,787	296,800	-	-	-
USA	-	-	54,450	-	-
Tunisia to					
Brazil	-	-	-	59,935	95,594
Bulgaria	155,188	97,881	-	-	59,479
France	188,489	155,012	168,887	90,357	176,512
Greece	147,763	185,269	-	-	-
India	-	-	-	-	58,127
Indonesia	131,606	99,344	64,961	69,078	-
Poland	70,287	107,971	-	84,556	306,690
Romania	121,529	71,368	65,885	-	54,870
Turkey	137,285	151,264	144,134	-	81,131

Exports of iron ore (SITC rev.2, 281) by major suppliers (individual flows >250,000 mt)

	TONNES				
	1988	1989	1990	1991	1992
Australia to					
China	3,271,234	4,130,135	5,068,266	14,594,323	14,371,991
China Taiwan.....	2,618,015	3,764,851	4,489,930	5,086,255	4,595,144
France	2,134,975	1,547,434	1,981,274	3,226,120	2,839,195
Germany	-	-	-	4,056,008	4,989,736
Germany, FR	4,629,445	3,524,397	3,644,377	-	-
Italy	558,629	1,231,293	1,967,366	1,862,541	2,218,529
Japan	18,060,816	35,767,850	53,592,213	60,769,222	53,018,147
Korea Rep.	3,996,755	4,633,503	4,720,022	12,743,939	14,663,552
Pakistan	501,981	562,005	415,578	636,135	614,337
Philippines	-	430,114	860,965	1,232,071	309,255
Spain	262,482	-	-	726,643	525,537
UK	2,158,167	1,915,890	1,788,630	2,036,026	2,466,352
Brazil to					
Argentina	3,240,386	4,370,805	3,184,638	3,112,166	2,716,623
Australia	-	488,220	593,890	354,806	774,988
Austria	923,008	293,264	508,314	266,521	-
Bahrain	-	277,599	475,700	-	713,967
Belgium-Lux	6,757,257	6,583,818	6,988,711	7,552,398	6,915,213
Canada	575,259	294,133	408,305	-	-
China	3,049,483	2,302,263	2,702,957	4,238,248	4,819,076
China Taiwan.....	2,674,755	2,956,467	3,097,883	3,147,845	2,512,928
Czechoslovak.....	2,556,115	2,928,129	1,236,531	975,339	686,671
Egypt	1,094,829	1,010,320	804,070	785,493	755,076
Fm German Dr.....	270,161	953,533	645,810	-	-
Fm Yugoslav	794,790	1,210,586	523,879	-	-
France	5,718,709	6,356,328	6,263,478	5,818,979	6,332,283
Germany	-	-	-	18,593,470	20,577,279
Germany, FR	18,661,828	20,295,229	18,572,491	-	-
Indonesia	403,635	863,297	1,001,388	600,987	881,714
Iran	-	477,892	408,399	1,175,533	568,144
Italy	5,863,515	4,928,900	6,225,187	6,507,740	7,154,633
Japan	30,113,290	32,639,584	29,603,738	29,449,521	26,575,177
Korea Rep.	5,785,625	5,429,590	7,263,684	8,107,869	7,505,001
Libya	-	537,357	592,228	908,231	470,279
Malaysia	768,415	583,292	940,953	1,011,503	443,867
Mexico	686,856	482,329	-	-	-
Netherlands	2,575,559	1,905,902	2,306,393	2,342,159	2,073,255
Nigeria	-	833,112	-	-	-
Pakistan	402,600	530,279	-	375,198	266,252
Philippines	1,989,413	1,891,203	2,252,173	1,918,203	1,573,382
Poland	2,146,781	643,205	749,107	1,217,985	344,964
Qatar	629,052	572,033	267,671	274,343	281,576
Romania	839,282	1,376,937	834,177	764,848	-
Saudi Arabia.....	1,554,317	1,264,093	1,207,712	1,306,658	1,812,530
Spain	2,486,658	3,717,590	3,402,430	3,763,434	3,061,366

Exports of iron ore (SITC rev.2, 281) by major suppliers (individual flows >250,000 mt)

	TONNES				
	1988	1989	1990	1991	1992
Brazil to					
Trinidad Tbg	803,200	752,617	601,243	755,311	636,534
Turkey	560,117	424,412	863,322	574,498	844,050
UK	3,063,965	2,471,617	3,533,608	3,778,185	3,315,794
Untd Arab Em	-	389,793	534,515	-	342,131
USA	5,393,457	5,132,359	4,260,058	2,900,258	2,504,784
Canada to					
Austria	344,652	-	-	-	-
Belgium-Lux	737,272	878,312	469,106	1,247,932	1,493,761
France	2,762,155	2,332,604	2,064,983	2,101,035	1,669,482
Germany	-	-	-	4,970,008	4,272,871
Germany, FR	3,057,427	3,918,860	4,049,209	-	-
Italy	1,483,828	1,211,201	1,189,666	854,995	1,169,590
Japan	2,189,801	2,471,014	1,797,293	1,880,306	1,188,088
Korea Rep.	636,094	548,260	664,822	1,162,277	792,076
Netherlands	1,939,196	2,697,814	2,656,226	4,016,122	2,915,259
Philippines	-	-	489,184	422,933	464,348
Portugal	412,971	424,317	285,062	-	312,172
Spain	353,382	682,649	549,620	693,830	622,246
Sweden	-	-	-	301,491	-
UK	5,718,598	4,839,223	3,254,294	3,902,604	3,096,462
USA	10,206,695	9,639,866	9,222,190	7,229,527	6,758,196
Chile to					
France	254,745	662,119	439,902	517,623	422,378
Germany	-	-	-	996,230	1,030,413
Germany, FR	847,110	855,601	1,186,996	-	-
Japan	5,021,144	4,409,139	3,956,740	3,403,257	3,894,900
Korea Rep.	-	-	519,929	1,152,638	994,332
Mexico	-	-	250,866	-	-
France to					
Belgium-Lux	3,724,591	3,461,693	3,280,117	3,152,602	2,874,562
India to					
Australia	304,046	-	309,444	422,556	-
Belgium-Lux	277,833	-	-	-	-
China	-	277,333	-	597,627	2,334,167
China Taiwan	-	-	732,101	1,088,457	481,641
Fm German Dr	520,709	-	-	-	-
Fm Yugoslav	291,969	316,394	-	-	-
France	-	-	-	345,741	-
Hungary	604,755	-	463,506	-	-
Indonesia	-	-	-	316,810	-
Iran	-	-	324,104	1,056,492	594,954
Italy	1,127,663	-	1,457,500	1,094,461	1,424,696
Japan	21,636,790	21,219,380	21,602,096	18,642,935	13,424,352
Korea D P Rp	613,050	-	718,491	516,603	-
Korea Rep.	3,103,725	3,907,356	3,063,496	2,771,736	1,760,311

Exports of iron ore (SITC rev.2, 281) by major suppliers (individual flows >250,000 mt)

	TONNES				
	1988	1989	1990	1991	1992
India to					
Netherlands	-	458,362	743,501	539,102	426,471
Pakistan	344,169	309,330	418,381	406,228	-
Romania	2,173,210	2,702,000	1,138,913	-	-
Turkey	369,310	448,731	389,404	410,741	292,603
Liberia to					
Belgium-Lux	1,463,543	994,267	-	-	-
France	1,113,202	999,223	504,389	709,802	-
Germany, FR	5,441,239	5,301,712	3,157,532	-	-
Italy	2,778,072	-	1,123,594	-	576,288
Japan	297,367	-	-	-	-
Romania	-	997,000	702,000	-	-
Spain	737,300	837,990	-	-	-
New Zealand to					
Japan	1,463,457	1,441,218	894,535	1,002,645	1,348,189
Norway to					
France	-	392,177	563,304	326,774	494,004
Germany	-	-	-	866,809	1,147,495
Germany, FR	298,529	422,320	258,148	-	-
UK	839,142	913,464	958,163	689,544	387,888
Peru to					
Fm Yugoslav	416,436	465,445	287,706	-	-
Japan	1,048,549	961,025	666,339	540,871	783,715
Korea Rep.	-	2,452,077	1,399,115	1,686,802	1,954,076
Philippines to					
Japan	4,764,452	4,507,224	4,849,456	4,864,255	3,892,459
S.A.C.U to					
Austria	324,218	1,137,135	1,314,651	1,259,309	1,394,130
France	-	986,743	778,166	501,119	333,583
Germany	-	-	-	493,986	658,971
Germany, FR	879,175	1,845,197	1,166,260	-	-
Italy	768,605	-	1,714,768	1,437,204	1,305,875
Japan	4,900,424	4,852,591	4,804,779	4,993,303	4,844,581
Korea Rep.	-	-	-	-	513,719
Netherlands	293,363	288,518	592,753	-	-
Poland	-	-	-	-	467,211
Romania	-	-	-	576,046	-
Turkey	617,010	1,132,817	939,992	736,632	518,108
UK	2,094,750	2,209,683	1,785,501	1,977,330	1,694,913
Spain to					
Belgium-Lux	-	-	-	307,038	-
France	513,352	312,675	253,444	329,916	359,796
Netherlands	776,933	666,618	406,779	502,138	433,353
Romania	-	-	379,030	-	-
UK	632,589	397,650	326,182	815,643	633,390

Exports of iron ore (SITC rev.2, 281) by major suppliers (individual flows >250,000 mt)

	TONNES				
	1988	1989	1990	1991	1992
Sweden to					
Austria	868,568	512,392	-	-	-
Belgium-Lux	2,987,345	3,073,751	2,966,827	2,617,433	2,566,595
Egypt	-	292,502	363,295	-	384,028
Finland	1,468,879	1,918,105	1,817,044	1,746,439	1,858,330
Fm German Dr.....	526,342	520,082	303,125	-	-
France	725,111	518,339	530,164	593,911	579,610
Germany	-	-	-	5,793,586	5,665,899
Germany, FR	6,251,276	6,314,891	5,723,459	-	-
Indonesia	559,461	945,593	1,018,121	949,938	956,602
Japan	929,852	777,658	438,745	-	-
Libya	-	-	-	590,822	423,956
Netherlands	1,388,612	1,482,504	1,503,291	1,343,756	1,785,078
Norway	259,209	-	-	-	-
Qatar	-	-	263,246	268,794	-
Saudi Arabia.....	432,589	251,119	345,399	342,121	539,813
UK	322,991	356,922	383,264	409,289	417,295
U S A to					
Canada	5,276,567	5,345,439	3,709,957	4,782,934	5,042,614
Egypt	-	-	-	268,141	-
Venezuela to					
Belgium-Lux	1,786,628	1,527,152	1,541,426	1,632,650	1,014,365
France	791,796	1,068,756	936,345	1,194,348	462,595
Germany	-	-	-	667,425	562,214
Germany, FR	618,581	638,341	743,291	-	-
Italy	1,003,023	-	1,114,073	1,662,979	738,666
Japan	443,502	540,492	1,798,060	1,407,405	1,683,403
Netherlands	-	461,217	426,998	431,517	605,678
Poland	-	477,107	301,568	-	-
Romania	-	949,000	618,000	-	-
Spain	793,975	604,756	820,646	1,036,624	870,532
Trinidad Tbg.....	-	362,369	271,857	-	-
Turkey	-	289,440	-	324,160	-
UK	943,125	1,166,006	1,071,055	512,099	945,592
USA	3,568,487	4,232,015	3,502,946	2,762,155	2,540,097

Exports of raw sugar (SITC rev.2, 061.1) by major suppliers (individual flows >30,000 mt)

	TONNES				
	1988	1989	1990	1991	1992
Argentina to					
Brazil	-	56,755	-	-	-
China	120,165	-	-	-	-
Morocco	-	-	40,417	-	-
Uruguay	-	-	-	-	47,998
USA	70,929	74,261	96,004	85,540	45,604
Australia to					
Canada	413,489	408,628	492,252	451,804	336,664
China	425,751	196,406	141,451	105,508	183,994
Japan	676,411	673,697	657,879	578,771	579,317
Korea Rep.	477,094	496,906	394,914	280,582	411,494
Malaysia	490,865	368,944	551,092	503,384	-
New Zealand	60,108	95,981	55,213	110,872	92,424
Singapore	117,608	132,312	132,306	147,006	144,006
USA	-	-	-	140,411	132,053
Brazil to					
Bulgaria	65,546	-	-	-	43,800
China	264,175	-	-	-	-
Egypt	-	84,878	140,341	154,915	178,526
Fm USSR	44,500	44,091	152,406	39,470	-
Kenya	-	-	-	-	40,000
Mexico	-	-	-	32,512	-
Morocoo	112,590	87,250	165,457	270,841	300,080
Nigeria	-	-	-	-	79,130
Portugal	42,000	-	-	-	47,421
Russian Fed	-	-	-	-	135,966
S.Afr.Cus.Un.....	-	-	-	-	68,300
Sri Lanka	-	-	-	-	33,000
Switzerland	171,913	-	-	-	-
Syria	-	-	-	-	41,578
UK	-	31,361	-	-	-
USA	122,247	-	395,566	223,694	142,199
Yemen	-	-	-	40,125	51,000
Colombia to					
China	61,750	-	-	-	-
Morocco	45,500	-	-	-	-
USA	86,147	292,336	340,180	74,371	45,349
Venezuela	-	-	-	72,245	53,481
Fiji to					
China	50,000	-	-	-	-
Japan	31,500	47,250	47,500	44,668	-
Malaysia	66,628	108,050	110,000	87,975	117,239
New Zealand	58,381	-	40,273	-	-
UK	186,085	173,199	153,453	247,113	176,549
USA	-	-	-	-	10,750,000

Exports of raw sugar (SITC rev.2, 061.1) by major suppliers (individual flows >30,000 mt)

	TONNES				
	1988	1989	1990	1991	1992
Guatemala to					
China	37,875	-	-	-	-
Ecuador	-	118,373	47,500	50,645	66,811
Egypt	-	-	-	120,428	91,279
Fiji	-	-	-	-	69,273
Fm USSR	178,297	196,816	-	-	-
Haiti	-	-	-	-	30,057
Jamaica	-	-	54,964	-	35,327
Kenya	-	-	47,782	-	-
Mexico	-	191,027	-	64,200	71,691
Morocco	-	-	-	-	83,183
Sri Lanka	-	-	-	70,347	33,172
Trinidad Tbg.....	35,000	-	-	-	-
Tunisia	-	-	-	-	53,848
USA	44,869	83,126	88,741	201,863	139,827
Honduras to					
Fm USSR	38,761	-	-	-	-
Mauritius to					
Canada	59,986	-	-	-	-
China	48,300	-	-	-	-
Portugal	-	-	31,952	-	-
UK	494,283	483,088	456,386	477,341	496,515
Mexico to					
China	179,280	-	-	-	-
Fm USSR	322,085	76,087	-	-	-
Morocco	42,000	-	-	-	-
UK	55,013	119,951	-	-	-
USA	176,708	123,905	-	-	-
Venezuela	33,000	-	-	-	-
Nicaragua to					
Brazil	-	-	30,864	-	-
Fm USSR	-	46,948	85,003	-	-
USA	-	-	106,373	112,170	59,068
Venezuela	-	-	-	-	41,400
Philippines to					
USA	142,485	187,056	239,436	274,147	208,070
Reunion to					
France	174,005	188,027	197,786	143,297	-

Exports of raw sugar (SITC rev.2, 061.1) by major suppliers (individual flows >30,000 mt)

	TONNES				
	1988	1989	1990	1991	1992
Thailand to					
China	675,831	325,450	177,013	276,904	-
Fm USSR	-	589,094	93,193	-	-
Iran	-	42,254	60,359	136,016	-
Japan	469,357	530,017	528,714	489,339	-
Korea Rep.	334,157	375,649	469,056	603,693	-
Malaysia	37,198	218,584	154,036	225,019	-
Morocco	-	155,325	-	-	-
Philippines	54,417	-	-	-	-
Portugal	-	42,002	-	-	-
Sri Lanka	-	54,845	-	-	-
Syria	-	-	49,895	-	-
UK	-	30,897	-	-	-
USA	-	45,865	33,424	36,500	-

Exports of timber (SITC rev.2, 247) by major suppliers (individual flows >50,000 mt)

	TONNES				
	1988	1989	1990	1991	1992
Austria to					
Fm Yugoslav	-	95,224	234,637	99,092	-
Italy	422,303	467,433	467,244	409,054	370,294
Romania	-	-	65,290	-	-
Belgium/Luxmbrg to					
France	99,367	76,276	116,263	198,454	156,252
Germany	-	-	-	361,396	350,921
Germany, FR	508,233	665,980	503,829	-	-
Italy	-	55,659	101,459	204,405	142,811
Netherlands	215,806	224,224	269,665	269,483	191,443
Canada to					
China	327,521	64,782	-	-	-
Italy	-	-	71,812	-	-
Japan	0	625,004	360,726	362,165	524,524
Sweden	-	-	-	-	70,284
USA	328,290	-	-	-	-
Chile to					
China	319,755	77,289	-	-	-
Italy	-	-	65,415	64,322	-
Japan	89,129	82,803	525,988	538,482	226,964
Korea Rep.	337,783	399,288	502,838	413,583	445,855
Norway	-	-	53,983	-	-
Sweden	-	-	69,165	-	-
Turkey	380,806	159,563	310,725	228,432	235,605
China to					
Japan	106,011	73,230	50,362	87,818	-
France to					
Belgium-Lux	1,594,368	1,656,153	1,575,363	1,460,242	1,302,832
Finland	-	90,476	-	-	-
Germany	-	-	-	219,041	243,255
Germany, FR	306,612	351,356	295,518	-	-
Italy	634,065	745,971	793,264	869,744	788,257
Portugal	56,842	59,684	-	-	54,892
Spain	570,053	821,511	773,811	793,832	553,980
Sweden	152,740	151,185	-	-	-
Switzerland	176,086	168,705	118,650	115,275	95,573
Germany to					
Austria	845,207	1,036,028	1,337,452	2,415,403	1,644,635
Belgium-Lux	69,913	58,800	79,673	83,717	93,361
Czechoslovak.....	-	-	-	232,854	98,963
Denmark	52,429	90,025	77,173	104,359	74,502
Finland	-	114,708	155,124	192,201	169,185
France	-	51,676	100,917	416,689	313,491
Hungary	-	-	119,911	155,825	-
Italy	254,601	292,431	402,523	791,595	581,635
Netherlands	112,592	86,169	76,021	87,037	71,894

Exports of timber (SITC rev.2, 247) by major suppliers (individual flows >50,000 mt)

	TONNES				
	1988	1989	1990	1991	1992
Germany to					
Romania	-	-	86,659	110,551	-
Sweden	774,218	969,394	557,257	922,824	906,857
Switzerland	111,732	119,963	79,507	73,485	120,768
Turkey	-	-	104,476	277,462	72,293
Malaysia to					
China	363,745	151,287	388,471	803,292	-
China Taiwan.....	2,083,817	2,565,731	2,339,351	2,558,334	-
Hong Kong	339,011	355,568	369,829	366,949	-
India	546,122	618,775	908,291	480,688	-
Indonesia	-	-	116,060	-	-
Japan	6,182,331	8,206,490	7,308,987	6,490,863	-
Korea Rep.	1,757,110	2,237,745	2,184,558	2,253,857	-
Philippines	-	247,513	186,888	197,974	-
Singapore	-	56,372	-	-	-
Thailand	138,037	533,982	536,092	456,374	-
New Zealand to					
China	119,348	243,212	148,179	120,484	445,523
China Taiwan.....	-	-	-	-	55,878
Japan	433,375	647,392	1,060,892	1,483,990	1,289,106
Korea Rep.	251,161	447,918	951,954	1,169,218	1,150,253
Norway to					
Sweden	502,304	805,692	384,357	450,515	462,768
Papua-N Guinea to					
China	-	-	-	52,315	-
Japan	641,374	766,727	517,815	564,134	730,673
Korea Rep.	336,917	313,573	331,294	398,974	603,637
Switzerland to					
Austria	-	-	67,652	57,352	-
Italy	479,874	538,036	670,291	719,398	729,749
U S A to					
Austria	584,705	548,048	390,308	270,820	-
Canada	1,256,920	-	-	-	-
China	4,928,784	1,942,884	991,681	189,263	-
China Taiwan.....	307,150	-	-	-	-
Finland	-	-	913,075	855,520	-
Fm Yugoslav	216,834	210,658	166,688	-	-
Germany, FR	91,045	-	-	-	-
Hong Kong	190,441	-	-	-	-
Hungary	-	-	-	367,824	-
Italy	307,776	259,680	278,043	191,636	-
Japan	9,356,502	3,673,321	3,405,333	3,012,890	-
Korea Rep.	2,657,016	-	-	81,537	-
Norway	167,687	183,317	121,044	79,413	-
Poland	69,218	58,200	-	-	-
Sweden	2,110,719	1,874,754	1,084,019	1,097,975	-
Turkey	112,979	-	-	-	-

Exports of timber (SITC rev.2, 247) by major suppliers (individual flows >50,000 mt)

	TONNES				
	1988	1989	1990	1991	1992
USSR to					
Barbados	896,050	-	-	-	-
China	4,510,728	1,784,104	1,338,526	1,472,080	-
Germany	-	-	-	78,683	82,090
Germany, FR	110,102	110,789	94,411	-	-
Italy	-	-	-	52,519	57,513
Japan	0	7,720,173	7,239,426	6,342,527	5,988,318
Korea Rep.	-	-	2,562,210	2,402,248	1,747,083
Turkey	233,113	-	-	197,650	217,472

Exports of crude petroleum (SITC rev.2, 333) by major suppliers (individual flows >2,000,000 mt)

	TONNES				
	1988	1989	1990	1991	1992
Algeria to					
Belgium-Lux	2,168,352	2,048,417	2,207,948	-	-
France	3,010,304	3,112,222	3,080,506	3,659,575	3,707,440
Germany	-	-	-	-	2,984,707
Germany, FR	2,893,339	2,679,040	-	-	-
Italy	3,675,309	5,316,400	6,629,770	4,991,720	4,736,301
Netherlands	2,657,754	2,710,923	2,180,497	2,422,906	-
Spain	-	-	-	2,028,115	2,545,142
USA	6,725,830	6,953,632	7,858,141	8,336,825	6,059,412
Canada to					
USA	34,035,354	30,895,077	29,725,430	36,556,138	39,781,510
Indonesia to					
Australia	-	-	-	2,389,384	2,622,814
China	-	-	-	3,508,983	4,471,983
China Taiwan	-	-	2,122,561	2,035,907	-
Japan	21,184,076	21,393,567	22,825,998	20,640,154	20,653,259
Korea Rep.	-	-	2,332,186	4,437,945	4,844,737
USA	9,767,021	9,839,162	5,757,408	5,185,780	3,365,013
Iran to					
Belgium-Lux	5,450,081	8,396,510	7,214,337	7,870,762	7,730,246
Brazil	-	2,892,422	4,954,025	6,972,268	7,771,770
France	-	7,546,454	8,677,842	8,895,714	7,116,288
Germany	-	-	-	2,615,588	-
Germany, FR	2,630,731	2,049,918	2,744,855	-	-
Greece	-	2,797,620	3,033,820	4,608,244	5,299,860
India	-	-	3,164,000	4,225,000	2,957,000
Indonesia	-	-	2,628,402	-	-
Italy	4,053,298	5,156,113	9,005,505	10,499,015	10,634,502
Japan	9,679,659	14,189,307	19,408,762	18,944,695	18,492,337
Korea Rep.	-	-	-	7,502,520	8,302,201
Netherlands	10,353,728	8,312,181	7,287,007	8,750,239	10,281,731
Philippines	-	2,225,242	-	-	-
Poland	-	-	-	-	2,800,021
Romania	-	8,700,000	3,820,000	3,406,620	3,678,201
Singapore	3,402,477	2,832,749	-	2,446,796	2,929,232
Spain	4,310,310	6,237,450	5,456,028	4,917,452	2,152,574
Sweden	-	-	-	2,773,530	-
Turkey	5,448,289	-	3,156,262	-	2,457,709
UK	2,121,332	2,887,675	2,982,359	-	-
USA	-	-	-	2,005,482	-
Iraq to					
Belgium-Lux	-	2,247,187	-	-	-
Brazil	11,077,094	12,431,698	7,428,856	-	-
Fm Yugoslav	4,924,921	2,898,141	-	-	-
France	6,103,222	5,759,753	3,072,980	-	-
India	-	-	2,381,000	-	-
Indonesia	-	2,251,071	-	-	-

Exports of crude petroleum (SITC rev.2, 333) by major suppliers (individual flows >2,000,000 mt)

	TONNES				
	1988	1989	1990	1991	1992
Italy	6,059,640	2,917,408	-	-	-
Japan	7,215,694	9,963,360	7,162,681	-	-
Jordan	-	2,326,847	2,331,434	-	2,974,858
Morocco	2,213,800	2,969,870	-	-	-
Netherlands	-	4,865,578	5,971,207	-	-
Spain	3,461,046	5,389,149	3,597,954	-	-
Turkey	12,100,183	11,788,945	7,027,687	-	-
USA	11,358,555	-	24,568,698	-	-
Libya to					
France	3,740,359	2,417,671	2,782,774	3,874,249	3,171,922
Germany	-	-	-	12,265,968	11,438,992
Germany, FR	11,190,248	11,013,975	11,492,540	-	-
Greece	-	-	2,098,274	2,948,126	3,118,356
Italy	18,936,579	19,385,523	23,345,835	25,780,559	24,185,594
Spain	4,402,818	4,155,663	4,961,786	5,567,077	6,652,501
Turkey	-	-	2,553,186	-	2,996,660
Mexico to					
France	2,096,462	2,865,021	2,797,542	2,312,494	-
Japan	4,231,011	8,326,849	7,268,953	6,559,607	7,076,937
Spain	4,856,149	9,819,762	10,688,380	12,607,416	11,982,376
USA	17,510,597	36,206,887	36,094,757	38,870,612	39,565,298
Nigeria to					
Canada	2,084,698	2,816,664	2,583,203	2,734,799	2,555,262
France	4,073,219	3,217,827	2,943,297	3,923,584	4,542,407
Germany	-	-	-	6,793,523	8,942,239
Germany, FR	4,553,396	4,409,033	6,127,025	-	-
India	-	-	-	-	4,027,000
Italy	-	2,253,268	-	2,705,347	-
Netherlands	3,512,722	2,728,443	2,408,672	4,365,059	3,654,324
Portugal	-	2,422,944	2,810,362	-	2,478,443
Spain	7,528,598	9,199,516	8,250,136	10,802,776	8,574,227
UK	-	-	2,002,340	-	-
USA	24,336,177	-	36,543,462	33,002,426	33,766,082
Norway to					
Belgium-Lux	-	-	-	-	2,745,704
Canada	-	3,382,730	3,807,902	5,275,031	5,261,551
Denmark	-	-	-	3,098,604	2,989,677
Finland	-	-	-	2,681,463	2,313,899
France	3,616,671	7,847,758	5,299,037	5,400,627	6,240,176
Germany	-	-	-	3,563,091	8,670,099
Germany, FR	-	-	2,617,114	-	-
Netherlands	5,277,790	5,242,914	7,270,566	8,552,469	8,326,038
Sweden	4,164,012	5,745,612	4,946,033	4,971,387	4,986,652
UK	28,369,372	33,412,453	33,960,887	40,220,887	41,037,587
USA	-	4,365,655	5,517,244	2,944,246	5,230,961

Exports of crude petroleum (SITC rev.2, 333) by major suppliers (individual flows >2,000,000 mt)

	TONNES				
	1988	1989	1990	1991	1992
Saudi Arabia to					
Belgium-Lux	3,627,531	2,915,332	-	4,525,900	5,211,317
Brazil	8,802,872	5,251,175	8,326,169	9,430,941	10,509,892
Canada	-	-	3,070,989	3,524,805	3,380,694
China Taiwan	-	-	66,681,531	-	-
France	11,331,670	13,074,900	14,735,556	19,959,383	19,395,782
Germany	-	-	-	7,769,242	8,692,552
Germany, FR	4,741,721	5,173,069	6,008,583	-	-
India	9,126,000	-	6,779,000	6,885,000	8,114,000
Indonesia	3,248,142	-	-	4,193,439	4,110,733
Italy	5,693,181	6,045,840	7,637,099	13,290,919	13,024,266
Japan	29,362,777	31,133,121	38,232,555	46,342,449	51,657,856
Korea Rep.	-	4,385,097	6,215,166	18,297,618	21,843,919
Morocco	-	-	-	-	2,317,822
Netherlands	6,549,724	8,746,719	7,794,736	19,198,791	17,718,353
New Zealand	-	-	-	2,035,389	-
Pakistan	2,297,858	2,207,744	2,328,067	2,287,850	2,465,653
Philippines	-	-	-	4,642,276	6,291,692
Romania	-	4,385,000	4,303,000	2,464,616	-
Singapore	9,685,236	13,930,280	15,897,186	20,002,478	24,524,789
Spain	2,501,452	3,273,395	2,637,372	6,673,080	7,750,975
Thailand	-	-	-	-	3,013,601
Turkey	-	-	2,573,539	11,858,431	10,812,591
UK	-	2,683,493	4,614,873	8,291,518	6,957,308
USA	27,205,619	-	67,048,234	84,044,267	80,430,791
U A E to					
France	-	2,356,039	2,429,459	2,924,929	-
India	4,785,000	-	3,826,000	6,557,000	6,172,000
Italy	-	2,273,430	-	-	-
Japan	32,385,751	35,984,546	41,094,073	52,499,698	52,881,051
Korea Rep.	5,182,037	6,315,484	6,425,244	6,240,153	7,497,736
Morocco	-	-	2,028,708	-	-
Philippines	-	2,081,599	-	-	-
Singapore	4,990,006	5,934,972	8,416,764	8,242,574	3,967,141
Thailand	2,101,055	2,074,006	-	-	2,081,035
Turkey	-	-	-	2,273,699	2,203,568
USA	3,465,627	-	5,003,601	3,834,298	4,306,782
U K to					
Canada	8,995,732	5,816,689	4,966,140	4,378,614	3,014,988
Finland	-	-	-	-	2,930,840
France	11,089,736	4,344,687	5,365,768	6,865,227	5,319,968
Germany	-	-	-	10,189,361	11,845,012
Germany, FR	9,863,943	9,801,879	10,572,429	-	-
Netherlands	11,223,233	9,871,940	10,046,568	10,351,763	9,121,673

Exports of crude petroleum (SITC rev.2, 333) by major suppliers (individual flows >2,000,000 mt)

	TONNES				
	1988	1989	1990	1991	1992
U K to					
Poland	-	-	-	-	2,951,707
Spain	-	-	-	-	2,282,663
USA	14,713,083	12,603,780	14,748,590	10,215,962	13,167,939
Fm USSR to					
Belgium-Lux	-	-	2,283,645	-	-
Cuba	-	8,679,531	-	-	-
Finland	8,377,486	8,272,920	5,263,822	3,382,067	-
Fm Yugoslav	3,196,130	5,704,321	6,082,921	-	-
France	9,565,770	5,098,943	5,088,963	-	-
Germany	-	-	-	15,251,688	-
Germany, FR	5,953,988	5,853,665	5,625,521	-	-
India	-	-	2,309,000	-	-
Italy	8,204,944	7,038,539	6,062,691	3,418,834	-
Netherlands	2,089,001	2,370,297	2,573,660	-	-
Poland	-	13,075,000	10,751,586	-	-
Romania	-	4,001,000	2,474,000	-	-
Spain	5,608,028	4,922,539	4,898,440	-	-
Sweden	-	-	2,574,107	-	-
Venezuela to					
Brazil	-	-	-	2,359,644	-
Germany	-	-	-	5,679,477	6,852,625
Germany, FR	5,021,413	4,744,066	4,654,433	-	-
USA	21,800,952	-	33,361,335	35,489,822	42,347,981

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