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Geneva

**Review
of Maritime Transport
1992**

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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
dwt	Deadweight tons
EEC	European Economic Community
FEU	Forty-foot equivalent unit
fob	Free on board
GDP	Gross domestic production
grt	Gross registered tons
ldt	Light displacement tons
MTO	Multimodal transport operator
NIC	Newly industrialized 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

References to dollars (\$) are to United States dollars.

Billion means a thousand million.

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.

To maintain historical continuity, the overall structure of the *Review of Maritime Transport* is similar to previous editions. The current issue, however, includes several new features. These are: (1) a summary of world economic conditions and their relationship to shipping; (2) extension of a standard ship grouping to statistical tables; (3) an origin/destination matrix for selected commodities; (4) a review of the role of ports; (5) inclusion of the BFI index; and (6) a proposal for a new international classification of ships by type.

Summary of main developments in 1992

- Despite a decline in OECD industrial production, international seaborne trade continued to expand for the seventh consecutive year, exceeding 4.2 billion tons. The annual rate of change, however, decelerated to 2.2 per cent.

- Total ton-miles for all cargoes increased to 18,280 billion (a 2.3 per cent gain over 1991).

- The world merchant fleet expanded slightly to reach 694.7 million dwt by the end of 1992. This minimal expansion (1.6 per cent) occurred despite a quadrupling of scrapping and a decline in newbuilding orders.

- Developed market-economy countries and the major open-registry countries continued to be the dominant groupings in the world merchant fleet (by flag of registration). With a combined tonnage of 473.8 million dwt, they accounted for 68.2 per cent of the total world fleet. Countries of Central and Eastern

Europe and socialist countries of Asia owned 5.6 per cent and 3.2 per cent, respectively, of the world merchant fleet.

- Developing countries increased their fleet to 149.9 million dwt; their share in the total world fleet increased slightly to 21.6 per cent (versus 21.1 per cent in 1991). Almost 72.5 per cent of this fleet was concentrated in only 10 developing countries or territories.

- The disparity between developing country cargo generation and fleet ownership remains. For example, developing countries were the origin for more than one-third of all goods in world seaborne trade but owned only 21.6 per cent of the world deadweight tonnage. Conversely, developed market-economy countries loaded/unloaded 55.9 per cent of world seaborne trade but, either directly or indirectly through open registry fleets, controlled 68.2 per cent of the world tonnage.

- The productivity of the world fleet continued to improve, reaching 26,314 ton miles per dwt.

- Global freight payments for imports increased by about 3.0 per cent over 1990, but the ratio to c.i.f. import value remained at 5.2 per cent. The developing countries' ratio, however, was almost double that of the developed market-economy countries.

- Container traffic reached a new record of 93.1 million TEUs in 1991.

- Freight rate indicators for most sectors declined from 1991. In the liner market, a slight increase occurred in selected conference container rates.

- The new UNCTAD/ICC Rules for Multimodal Transport Documents became operational on 1 January 1992. The import of this development is to provide commercial parties with a voluntary liability régime for multimodal transport in the absence of an international legal instrument currently in force.

*/ *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.*

Box 1Vessel 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	Vessel included from Lloyd's Register statistical tables
Oil tankers	Oil tanker
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 1992 has 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, 1992 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) and Azerbaijan (AZE) Republics have by this time started their own registries and these have also been allocated accordingly.
- (iii) The other republics, Armenia (ARM), Belarus (BEL), Georgia (GEO), Kazakhstan (KAZ), Kyrgyzstan (KYR), Moldova (MOL), Tajikistan (TAJ), Turkmenistan (TUR) and Uzbekistan (UZB), have not made moves to set up 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 (1992) as it relates to the maritime sector and a review of developments in international seaborne trade.

A. World economic background

1. Developments in the world economy have a direct impact on the derived demand for global shipping services. Three key economic indicators are changes in real GDP, world merchandise trade and industrial production. In 1992, real GDP increased by 0.8 per cent over 1991. The GDP of OECD member countries grew by 1.4 per cent, while that of developing countries experienced an increase of 6.1 per cent over the previous year.^{1/} Growth was particularly strong in Asia and the Middle East. However, formerly centrally planned economies (Central and Eastern Europe and CIS) experienced a 17.2 per cent annual decline in output.^{2/}

2. World merchandise trade volume expanded at a rate of 4.5 per cent in 1992. This reversed the downward trend for the previous three-year period (1989-1991) and reflected the improving economies in North America and expanding imports and exports in China and NICs in South-East Asia. Merchandise trade in formerly planned economies continued to decline in 1992. In these countries, annual export volumes fell by 10 per cent and imports by 7.5 per cent. The rate of deceleration, however, was less than 1991, when exports and imports dropped 25 per cent and 33 per cent respectively.^{3/}

3. For the maritime sector, industrial production of the OECD countries is an important economic indicator. Graph 1 indicates the close correlation. In 1992, the total OECD industrial production index declined from 115.8 in the first quarter to 114.7 in the last quarter (1985=100). The EEC members experienced a 4.0 per cent fall and Japan a 5.4 per cent decline. The latter is particularly important as Japan accounts for about a quarter of world seaborne bulk trades.^{4/} Conversely North America, in particular the United States, expanded industrial production sustaining an annual rate of change of 4.1 per cent.^{5/}

B. International seaborne trade

4. International seaborne trade continued to expand in 1992. Total tonnage exceeded 4.2 billion tons, marking the seventh consecutive annual increase.

The annual rate of change, however, decelerated to 2.2 per cent, as compared to 2.8 per cent in the previous year (1991).

5. By broad maritime market segments, tanker cargoes represented almost 44 per cent of total 1992 seaborne trade and increased to 1,850 million tons - an increase of 3.4 per cent over 1991. Total dry cargoes experienced a minimal gain (up 1.3 per cent over 1991) of which main bulk commodity cargoes declined 1.5 per cent to 990 million tons in 1992. Table 1 and graph 2 illustrate the long-term upward trends in seaborne trade since 1982. For example, average annual rate of growth for all goods over the 1982-1992 period was 2.9 per cent. Dry cargoes achieved the largest change (3.2 per cent), while tanker cargo grew at 2.5 per cent annually and the five main bulks increased by 3.0 per cent annually over the same period.

6. In the oil tanker trades, the improvement in seaborne crude and petroleum products was unexpected because of the decline in OECD industrial production and a decrease in oil production in the former Soviet Union from 10.3 mb/d in 1991 to 8.6 mb/d in November 1992.^{6/} Nevertheless, total OECD oil imports increased 2.4 per cent in the fourth quarter of 1992 over the same quarter in 1991,^{7/} and the former Soviet Union maintained exports at an average 1.9 mb/d in 1992.^{8/} Also, Middle East OPEC producers and North Sea production increased by 8.0 per cent and 10.0 per cent respectively in 1992.^{9/}

7. Within the dry bulk sector, developments differed considerably depending on types of commodities. A 3.8 per cent decline in world crude steel production^{10/} decreased the demand for coal/coke and iron ore. Thus, coal exports from North America and Australia amounted to 230.5 million tonnes in 1992, as compared to 241.9 million tonnes in 1991.^{11/} Similarly, iron ore exports fell to 367.5 million tonnes in 1992,^{12/} which represents a 7.8 per cent decline from 1991. On the other hand, the course grain trade reached 92 million tons - up 9.5 per cent over 1990/91, with the four main producing areas (North America, Australia, Argentina, EEC) increasing exports to 75.2 million tons as

compared to 70.8 million tons in 1991.^{13/} Conversely, the 1992 phosphate rock trade declined 5.1 per cent^{14/} for the January-September period, reflecting reduced demand in Western Europe and a consequent reduction of United States exports (down 29.7 per cent).^{15/} The alumina and bauxite trades remained static because primary aluminium production continued at almost the same levels in 1991 and 1992 (14.7 million tons).^{16/}

8. The 1992 other dry cargo sector, which includes general cargo, parcel shipments and liner shipments, increased 3.1 per cent over 1991. The OECD liner trades expanded by 5.4 per cent,^{17/} but this was one of the slowest rates in recent history. The gradual improvement occurred despite a 1.0 per cent drop in OECD manufacturing production. These declines in production, however, were uneven, as North American production expanded by 3.0 per cent, as compared to an 8.0 per cent decline in Japan.^{18/}

9. For developing countries, the structure of exports by value are concentrated into five broad

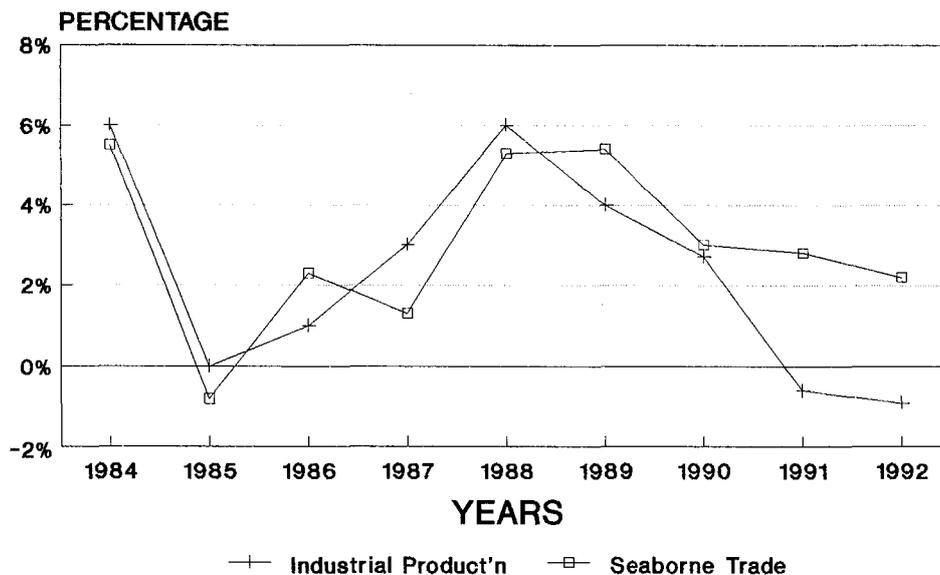
categories. Manufactured goods and fuels are the dominant cargoes. The direction of the developing countries' trade by value is oriented towards developed market economies (62.6 per cent), while trade within the group accounts for about 23.1 per cent of the total. Graph 3 illustrates the structure and direction of trade.

10. In terms of weight tons, developing countries' exports consist nearly exclusively of bulk cargoes. General cargo and refrigerated products represent less than 10 per cent of the group's total seaborne trade.^{19/} Annex IV, a new item in this year's Review of Maritime Transport, provides for an origin and destination matrix for selected commodities.

11. Ton-mile demand is arrived at by adding the spatial element to the trade volume. Table 2 provides long-term trends by types of cargo and indicates that total ton-miles increased by 2.3 per cent in 1992 over 1991. This is well below the ten-year (1982-1992) average annual rate of 3.5 per cent and reflects the recent deceleration in seaborne trade.

Graph 1

Annual change in OECD industrial production and seaborne trade, 1984-1992



Source: IMF, *International Financial Statistics*, various issues; OECD, *Main Economic Indicators*, March 1993.

12. A summary of seaborne trade by major cargo segments and country groups is found in table 3 and graph 4. For 1992, the share of oil cargoes expanded slightly over the previous year to 43.9 per cent of all goods loaded, and dry cargo decreased to 56.1 per cent from 56.5 per cent in 1991. In terms of regional distribution, developing countries increased their share of all goods loaded to 50.3 per cent and of goods unloaded to 26.7 per cent. Developed market-economy countries experienced a decrease in their share of goods loaded to 43.4 per cent and accounted for a stable 67.6 per cent of goods unloaded. For the fourth consecutive year the share of countries of Central and Eastern Europe declined both in terms of goods loaded (4.2 per cent) and unloaded (3.7 per

cent). The share of the socialist countries of Asia (2.1 per cent loaded and 2.0 per cent unloaded) remained unchanged from 1991.

13. A forecast of world trade by main cargo sector from 1993 to 2003 is shown in Graph 5. Estimated at 3.754 billion tons in 1993, trade is expected to increase by an average of 3.1 per cent per year, reaching 5.071 billion tons by 2003. Containerized and other general cargoes are projected to increase at 3.5 per cent per year to 1.117 billion tons. Estimated growth by the year 2003 for the dry bulk and tanker sectors is to 1.8 and 2.0 billion tons, respectively.

Table 1

Development of international seaborne trade, a/ 1970 and 1980-1992
(Estimates of goods loaded)

Year	Tanker cargo		Dry cargo				Total (all goods)	
	Millions of tons	Percentage annual change	Total		of which: main bulk commodities b/		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
1980	1 871	-6.6	1 833	3.3	796	4.5	3 704	-2.0
1981	1 693	-9.5	1 866	1.8	806	1.3	3 559	-3.9
1982	1 480	-12.6	1 793	-3.9	759	-5.8	3 273	-8.0
1983	1 461	-1.3	1 770	-1.3	732	-3.6	3 231	-1.3
1984	1 498	2.5	1 912	8.0	833	13.8	3 410	5.5
1985	1 459	-2.6	1 923	0.6	857	2.9	3 382	-0.8
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 c/	1 850	3.4	2 360	1.3	990	-1.5	4 210	2.2

Sources: Based on data from the United Nations Statistical Office; Fearnleys, *World Bulk Trades 1991 and Review 1992*, (Oslo), UNCTAD data bank and other specialized sources.

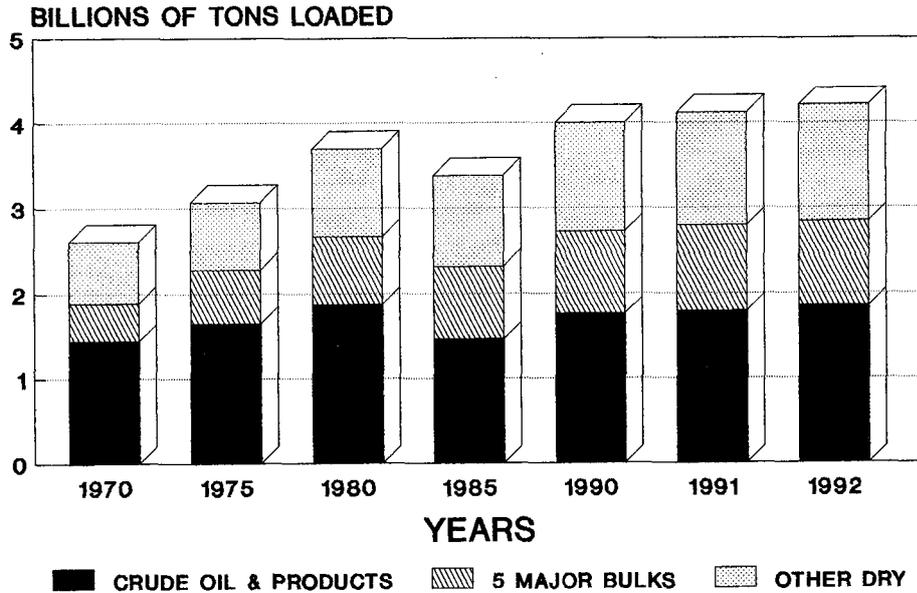
a/ Including international cargoes loaded at ports of the Great Lakes and St. Lawrence system for unloading at ports of the same system.

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

c/ UNCTAD preliminary estimates.

Graph 2

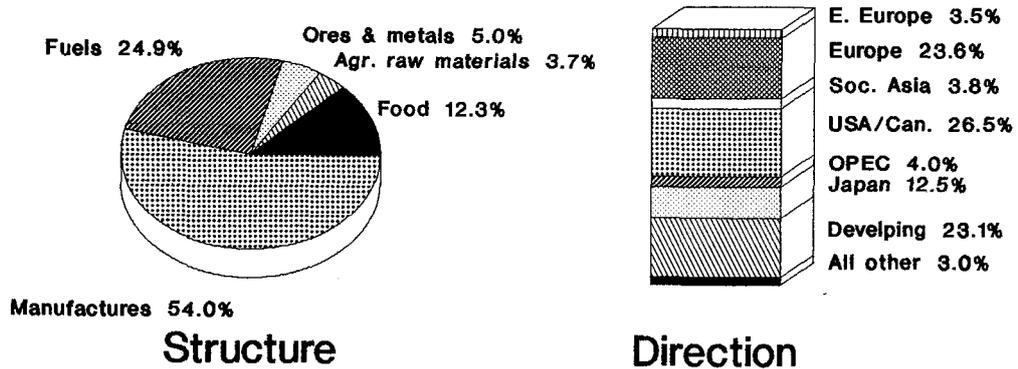
International seaborne trade for selected years



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

Graph 3

Export structure and direction of trade for developing countries
(1989 percentage distribution by value)



Source: UNCTAD, *Handbook of International Trade and Development Statistics, 1991* (United Nations publication, Sales Number E/F.92.II.D.6), table 3.2, p. 76.

Note: Commodity groups are:
 All food items (SITC 0 + 1 + 22 + 4)
 Agricultural raw materials (SITC 2, except 22, 27, 28)
 Fuels (SITC 3)
 Manufactured goods (SITC 5 to 8 less 68)
 Ores and metals (SITC 27 + 28 + 68)

Table 2

World seaborne trade by types of cargo, 1970 and 1980-1992
(Billions of ton-miles)

Year	Oil		Iron ore	Coal	Grain <u>a/</u>	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
1981	7 371	1 000	1 508	1 120	1 131	3 710	15 840
1982	5 212	1 070	1 443	1 094	1 120	3 560	13 499
1983	4 478	1 080	1 320	1 057	1 135	3 510	12 580
1984	4 508	1 140	1 631	1 270	1 157	3 720	13 426
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	7 070	1 540	1 890	2 000	1 130	4 650	18 280

Source: Fearnleys (Oslo), *Review 1992*.

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

Table 3

World seaborne trade a/ in 1970, 1990, 1991 and 1992 (est.)
by type 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
	1990	1 287	468	2 253	4 008	1 315	446	2 365	4 126
	1991	1 333	457	2 330	4 120	1 355	441	2 449	4 245
	1992	1 390	460	2 360	4 210	1 410	445	2 480	4 335
(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
	1990	32.1	11.7	56.2	100.0	31.9	10.8	57.3	100.0
	1991	32.4	11.1	56.5	100.0	31.9	10.4	57.7	100.0
	1992	33.0	10.9	56.1	100.0	32.5	10.3	57.2	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
	1990	13.4	32.6	63.4	43.8	72.5	81.4	61.7	67.3
	1991	13.3	33.2	63.3	44.0	73.2	82.4	62.0	67.7
	1992	13.4	33.5	63.1	43.4	72.9	82.3	61.9	67.6
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
	1990	4.6	11.8	3.8	5.0	2.6	0.3	5.8	4.1
	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
Socialist countries of Asia	1970	-	-	1.2	0.5	0.5	0.1	2.0	1.2
	1990	2.7	0.9	2.0	2.0	0.3	0.3	3.4	2.1
	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
Developing countries	1970	94.6	64.9	31.9	62.8	17.9	19.4	15.1	16.6
	1990	79.6	54.7	30.8	49.2	24.6	18.0	29.1	26.5
	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
<u>of which in:</u> Africa	1970	25.5	2.4	9.1	15.2	1.7	4.7	3.6	2.9
	1990	24.1	7.6	4.3	11.2	5.6	2.3	4.3	4.5
	1991	23.8	7.5	4.2	11.0	5.5	2.1	4.2	4.4

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
	1990	13.3	11.9	13.2	13.1	5.7	3.8	4.0	4.5
	1991	13.4	12.0	13.2	13.0	5.5	3.6	4.1	4.4
Asia	1970	56.9	27.0	8.1	31.3	5.5	8.5	6.7	6.4
	1990	42.2	34.9	12.6	24.7	12.6	10.9	19.9	16.6
	1991	43.4	35.8	13.0	25.0	13.1	10.6	20.0	16.7
Europe	1970	-	-	-	-	-	0.1	0.1	-
	1990	-	0.2	0.3	0.2	0.7	0.5	0.8	0.7
	1991	-	0.2	0.3	0.2	0.7	0.4	0.8	0.7
Oceania	1970	-	0.1	0.8	0.4	-	0.5	0.3	0.2
	1990	-	0.1	0.4	0.2	-	0.5	0.1	0.2
	1991	-	0.1	0.4	0.2	-	0.4	0.1	0.2

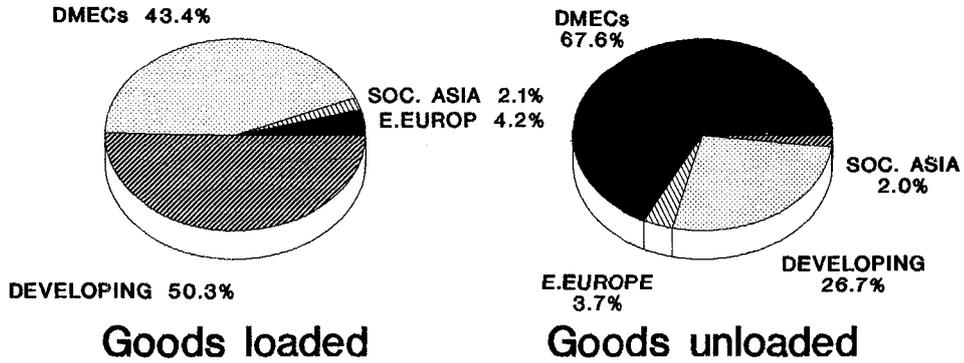
Sources: Based on statistics provided by the United Nations Statistical Office, the UNCTAD data bank, and other specialized sources.

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. The estimates presented here reflect the inclusion of Yugoslavia in 1986 in the group "Developing countries in Europe"; in previous years Yugoslavia was classified as a developed market-economy country.

Graph 4

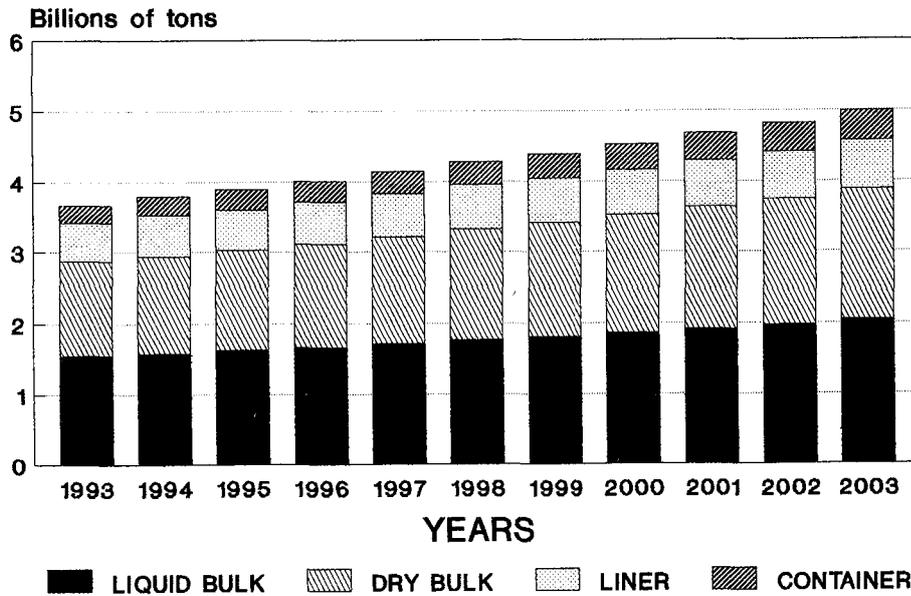
World seaborne trade by country groups
(Percentage distribution of tonnage, 1992)



Source: UNCTAD data bank.

Graph 5

Forecast of world seaborne trade, 1993-2003



Source: DRI/Mercer Management World Sea Trade Service.

Box 2Tanker demand likely to increase with growing world dependence on OPEC oil

The Paris-based International Energy Agency's report entitled "World Energy Outlook" indicates that oil output in member countries of the Organisation for Economic Cooperation and Development is expected to continue declining in this decade and the next, particularly in the United States. During the same period, petroleum consumption is expected to surge, and OECD countries may end up importing 40 per cent more oil. This would raise their import dependence to 70 per cent or more of their oil needs by 2010, compared with about 58 per cent now.

Meanwhile, demand for oil in the rest of the world is expected to rise even faster than in the industrialized countries, with consumption doubling in the 20 years to 2010.

This large appetite for oil can only be satisfied by the Organization of Petroleum Exporting Countries, and some Middle East countries that are not members of the exporters' group. Middle Eastern exporters (excluding North African nations such as the Libyan Arab Jamahiriya and Egypt) and Venezuela currently meet about 30 per cent of the world's oil needs. The IEA says they may account for about 50 per cent of world supply by 2010. Looked at another way, according to the IEA demand for oil from the 12 OPEC nations is expected to double by 2010.

Source: *Wall Street Journal*, 29 April 1993, p. 8.

Chapter II

DEVELOPMENT OF THE WORLD FLEET

This chapter discusses the supply of world merchant shipping. The information broadly covers structural characteristics, ownership, the comparison between cargo generation and fleet ownership, and a forecast for fleet development.

A. Structure of the world fleet

14. Comparative time series data for 1990, 1991 and 1992 are presented in table 4. The size of the world merchant fleet totalled 694.7 million dwt by year-end 1992. This represents a 1.6 per cent increase over the 1991 figures and exceeds the 0.17 per cent yearly average growth of the 1980-1992 period. The 1992 fleet expansion occurred because newbuildings deliveries increased (28.5 million dwt)^{20/} more than scrapping (19.0 million dwt),^{21/} leaving a net gain of 9.5 million dwt.

15. By vessel type, liquid and dry bulk carriers dominated. The former represented 37.9 per cent of the 1992 global dwt and the latter 34.5 per cent. The shares of general cargo and containerships were 15.1 per cent and 4.7 per cent, respectively. The distribution of dwt by ship type has remained about the same for the last two years. Longer-term trends (1980-1992) indicate a decrease in tanker and general cargo dwt share, while bulk carriers and containerships dwt shares have increased. Graph 6 illustrates world fleet size trends by principal vessel type for the 1980-1992 period.

16. The TEU capacity of the world's fully cellular containerships continued its three-year upward trend and reached 1,925,177 TEUs by year end 1992. This represents a 14.1 per cent annual average increase and confirms that fully cellular containerships are the fastest growing segment of the world shipping industry. Table 5 summarizes developments for the 1990-1992 period.

17. The world 1992 container fleet remained concentrated in the developed market-economy and open-registry countries. The former owned 36.6 per cent of the TEU capacity (38.9 per cent in 1991). The five main open-registry countries represented 26.0 per cent of the world TEU capacity, as compared to 22.8 in 1991.

18. In 1992 the share of developing countries in the TEU capacity of the world fleet decreased, falling to 16.6 per cent (versus 17.1 per cent in 1990). The major proportion of the containership fleet registered in developing countries was concentrated in the developing countries of Asia, followed by developing

countries in Latin America. Other developing countries' share of the world TEU capacity was less than 0.2 per cent.

19. The average age of the total world fleet increased slightly in 1992 to 14.91 years. This represents a 4.2 per cent increase over 1991. Table 6 provides data on the age distribution of the world merchant fleet by type of vessel and age groups at end-1992. Containerships are the youngest type of ships (averaging 12.07 years versus 11.81 years in 1991), with 19.9 per cent of tonnage being less than five years' old. The average age of bulk carriers is about one year more (13.50 years versus 13.18 years in 1991). Tankers represented the oldest type of vessel (16.72 years, versus 15.63 years in 1991) with vessels built 15 and more years ago constituting 62.3 per cent of the available tanker tonnage.

20. By country grouping, developed market-economy countries show the lowest average age of ship (14.09 years), followed by developing countries (14.22 years), countries of Central and Eastern Europe (14.75 years) and open-registry countries (15.92 years). Socialist countries of Asia have the oldest fleet, with an average age of 16.28 years.

B. Ownership of the world fleet

21. Table 7 contains information concerning the distribution of the world merchant fleet by groups of countries for the years 1970, 1991 and 1992. Developed market-economy countries and open-registry fleets owned 68.2 per cent of the 1992 total. This is about the same as 1991, but is down from 85.9 per cent in 1970. Developing countries' share of the total 1992 dwt increased to 21.6 per cent, as compared to 21.1 per cent in 1991. This is a significant increase over 1970, when the share was only 6.3 per cent, and exceeds the target of the third United Nations Development Decade for Transportation.^{22/} Socialist countries' of Asia and Eastern European countries' shares of world dwt remained unchanged in 1992. Graph 7 summarizes the dwt distribution for 1992 and emphasizes the concentration of the developing countries' share in Asian countries.

Table 4

World fleet by principal types of vessel, 1990-1992
(Thousands of dwt) *a/*

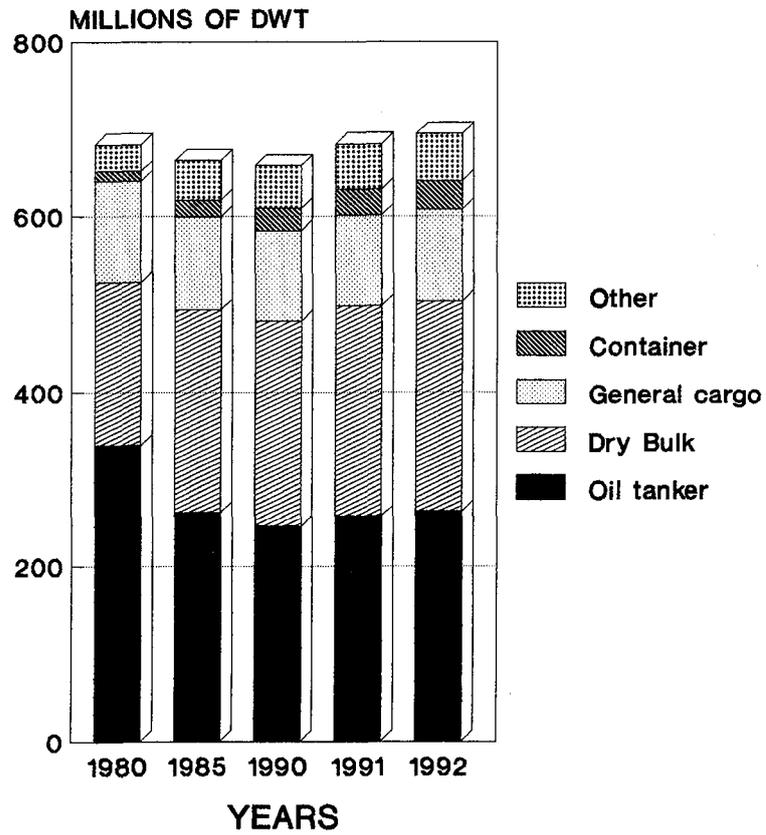
Principal types	1990 <i>b/</i>	1991 <i>c/</i>	1992 <i>c/</i>	Percentage change 1991/1992
1. Oil tankers	245 936	256 905	263 334	2.5
	<i>37.4</i>	<i>37.6</i>	<i>37.9</i>	
2. Bulk carriers	234 659	241 215	239 973	-0.5
	<i>35.6</i>	<i>35.3</i>	<i>34.5</i>	
Ore/bulk/oil	33 599	33 599	36 460	8.5
	<i>5.1</i>	<i>4.9</i>	<i>5.3</i>	
Ore/bulk	201 060	207 616	203 513	-2.0
	<i>30.5</i>	<i>30.4</i>	<i>29.3</i>	
3. General cargo ships	102 676	103 386	104 933	1.5
	<i>15.6</i>	<i>15.1</i>	<i>15.1</i>	
4. Containerships	25 955	29 521	32 408	9.8
	<i>3.9</i>	<i>4.3</i>	<i>4.7</i>	
5. Other ships	49 151	52 486	54 043	3.0
	<i>7.5</i>	<i>7.7</i>	<i>7.8</i>	
Liquified gas carriers	10 892	12 121	12 721	5.0
	<i>1.7</i>	<i>1.8</i>	<i>1.8</i>	
Chemical tankers	6 026	6 523	7 113	9.0
	<i>0.9</i>	<i>1.0</i>	<i>1.0</i>	
Miscellaneous tankers	536	544	627	15.3
	<i>0.1</i>	<i>0.1</i>	<i>0.1</i>	
Ferries and passenger ships	3 220	3 435	3 673	6.9
	<i>0.5</i>	<i>0.5</i>	<i>0.5</i>	
Others	28 477	29 863	29 909	0.2
	<i>4.3</i>	<i>4.4</i>	<i>4.3</i>	
World total	658 377	683 513	694 691	1.6
	<i>100.0</i>	<i>100.0</i>	<i>100.0</i>	

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

a/ Percentage shares are shown in italics.

b/ Mid-year figure.

c/ End-year figure.

Graph 6World fleet by principal types
Selected years 1980-1992

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, at mid-year 1990, end-1991 and end-1992

Flags of registration by groups of countries	Number of ships			TEU capacity and percentage shares ^{a/}		
	1990	1991	1992	1990	1991	1992
1. World total	1 169	1 269	1 371	1 502 731 <i>100.0</i>	1 734 016 <i>100.0</i>	1 925 177 <i>100.0</i>
2. Developed market-economy countries	410	419	417	618 701 <i>41.2</i>	674 018 <i>38.9</i>	704 258 <i>36.6</i>
3. Open-registry countries	261	308	377	312 055 <i>20.8</i>	395 661 <i>22.8</i>	501 281 <i>26.0</i>
Total, 2 and 3	671	727	794	930 756 <i>61.9</i>	1 069 679 <i>61.7</i>	1 205 539 <i>62.6</i>
4. Countries of Central and Eastern Europe (including the former USSR)	78	68	67	43 227 <i>2.9</i>	38 888 <i>2.2</i>	34 899 <i>1.8</i>
5. Socialist countries of Asia	59	62	69	57 508 <i>3.8</i>	62 356 <i>3.6</i>	65 592 <i>3.4</i>
6. Developing countries	233	278	289	232 199 <i>15.5</i>	296 200 <i>17.1</i>	320 127 <i>16.6</i>
<u>of which in:</u> Africa	4	3	3	1 810 <i>0.1</i>	585 <i>-</i>	585 <i>-</i>
America	36	40	55	22 954 <i>1.5</i>	25 745 <i>1.5</i>	36 075 <i>1.9</i>
Asia	172	213	225	195 353 <i>13.0</i>	255 796 <i>14.8</i>	279 867 <i>14.5</i>
Europe	12	16	2	9 072 <i>0.6</i>	12 377 <i>0.7</i>	2 336 <i>0.1</i>
Oceania	9	6	4	3 010 <i>0.2</i>	1 697 <i>0.1</i>	1 264 <i>0.1</i>
7. Other, unallocated	128	134	152	239 041 <i>15.9</i>	266 893 <i>15.4</i>	299 020 <i>15.5</i>

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

^{a/} Percentage shares are shown in italics.

Table 6

Age distribution of the world merchant fleet by type of vessel
as at 31 December 1992
 (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) 1991 ^{a/}
World total	All ships	100	11.2	18.9	20.2	49.7	14.91	14.31
	Tankers	100	10.6	9.0	18.1	62.3	16.72	15.63
	Bulk carriers	100	11.2	28.6	19.7	40.5	13.50	13.18
	General cargo	100	8.6	17.4	26.3	47.7	15.04	14.78
	Containerships	100	19.9	27.3	18.6	34.2	12.07	11.81
	All others	100	13.3	21.9	21.9	42.9	13.87	13.60
Developed market-economy countries	All ships	100	10.8	22.0	24.5	42.7	14.09	13.34
	Tankers	100	7.4	11.4	26.6	54.6	16.15	14.64
	Bulk carriers	100	11.4	31.8	22.2	34.6	12.73	12.37
	General cargo	100	11.7	25.1	28.6	34.6	13.04	12.73
	Containerships	100	20.5	23.1	20.7	35.7	12.37	12.51
	All others	100	14.9	26.2	22.4	36.5	12.85	12.61
Open-registry countries	All ships	100	11.4	14.5	16.3	57.8	15.92	15.52
	Tankers	100	13.2	5.3	12.1	69.4	17.36	16.78
	Bulk carriers	100	8.7	22.3	17.4	51.6	15.18	14.83
	General cargo	100	9.8	18.6	26.8	44.8	14.57	14.49
	Containerships	100	15.6	30.3	16.4	37.7	12.70	11.69
	All others	100	14.9	20.4	19.8	44.9	13.98	13.88
Subtotal	All ships	100	11.1	17.9	20.1	50.9	15.09	14.47
	Tankers	100	10.7	7.9	18.3	63.1	16.85	15.83
	Bulk carriers	100	10.0	26.6	19.5	43.9	14.06	13.67
	General cargo	100	10.6	21.1	27.5	40.8	13.97	13.73
	Containerships	100	18.7	25.7	19.1	36.5	12.50	12.23
	All others	100	14.9	24.0	21.4	39.7	13.28	13.07
Countries of Central and Eastern Europe	All ships	100	8.9	20.5	24.0	46.6	14.75	13.87
	Tankers	100	9.8	18.7	31.9	39.6	14.05	12.62
	Bulk carriers	100	5.8	28.7	32.0	33.5	13.34	12.03
	General cargo	100	9.5	15.3	17.3	57.9	16.08	15.83
	Containerships	100	10.6	39.9	20.8	28.7	11.82	11.21
	All others	100	12.8	16.2	14.3	56.7	15.58	15.19
Socialist countries of Asia	All ships	100	5.7	18.9	17.5	57.9	16.28	15.71
	Tankers	100	6.7	20.1	16.2	57.0	16.03	14.15
	Bulk carriers	100	5.1	22.3	16.5	56.1	15.99	15.27
	General cargo	100	3.6	11.9	21.3	63.2	17.37	17.17
	Containerships	100	23.7	47.8	6.5	22.0	9.44	11.61
	All others	100	3.1	5.9	15.0	76.0	19.00	17.02
Developing countries (excluding open-registry countries)	All ships	100	12.2	22.0	20.4	45.4	14.22	13.61
	Tankers	100	10.4	12.4	14.1	63.1	16.65	15.26
	Bulk carriers	100	17.5	37.4	19.0	26.1	10.99	11.11
	General cargo	100	4.7	11.1	30.1	54.1	16.39	15.82
	Containerships	100	25.1	19.5	19.5	35.9	12.11	12.32
	All others	100	7.5	18.9	29.7	43.9	14.70	14.44

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

Table 7

Distribution of world tonnage (grt and dwt) by groups of countries
of registration, 1970, 1991 and 1992 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)			1970-1992 average	1991-1992 average
	1970 c/	1991	1992	1970 c/	1991	1992		
1. World total	217.9	435.3	444.9	326.1	683.5	694.7	16.8	11.2
	<i>100.0</i>	<i>100.0</i>	<i>100.0</i>	<i>100.0</i>	<i>100.0</i>	<i>100.0</i>		
2. Developed market-economy countries	141.8	145.1	142.3	209.7	223.0	216.6	0.3	-6.4
	<i>65.1</i>	<i>33.3</i>	<i>32.0</i>	<i>64.3</i>	<i>32.6</i>	<i>31.2</i>		
3. Open-registry countries	40.9	143.4	153.0	70.3	244.2	257.2	8.5	13.0
	<i>18.8</i>	<i>32.9</i>	<i>34.4</i>	<i>21.6</i>	<i>35.7</i>	<i>37.0</i>		
Total 2 and 3	182.7	288.5	295.3	280.0	467.2	473.8	8.8	6.6
	<i>83.9</i>	<i>66.3</i>	<i>66.4</i>	<i>85.9</i>	<i>68.4</i>	<i>68.2</i>		
4. Countries of Central and Eastern Europe (including the former USSR)	18.6	34.8	33.7	22.7	40.8	39.0	0.7	-1.8
	<i>8.5</i>	<i>8.0</i>	<i>7.6</i>	<i>7.0</i>	<i>6.0</i>	<i>5.6</i>		
5. Socialist countries of Asia	0.9	14.8	15.1	1.2	22.0	22.6	1.0	0.6
	<i>0.4</i>	<i>3.4</i>	<i>3.4</i>	<i>0.4</i>	<i>3.2</i>	<i>3.3</i>		
6. Developing countries d/	14.5	91.2	94.6	20.5	144.3	149.9	5.9	5.6
	<i>6.7</i>	<i>21.0</i>	<i>21.3</i>	<i>6.3</i>	<i>21.1</i>	<i>21.6</i>		
<u>of which in:</u>								
Africa	0.8	5.2	5.1	1.1	7.0	6.9	0.3	-0.1
America	6.4	17.9	17.9	8.7	27.4	27.6	0.9	0.2
Asia	7.3	55.7	58.2	10.7	89.3	93.3	3.8	4.0
Europe d/	-	10.0	11.2	-	17.0	18.9	0.8	1.9
Oceania	-	2.4	2.2	-	3.6	3.2	0.1	-0.4
7. Other, unallocated	1.2	6.0	6.2	1.7	9.2	9.4	0.4	0.2
	<i>0.6</i>	<i>1.4</i>	<i>1.4</i>	<i>0.5</i>	<i>1.4</i>	<i>1.4</i>		

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 1992 amounted respectively to 2.8, 1.1 and 1.5 million grt.

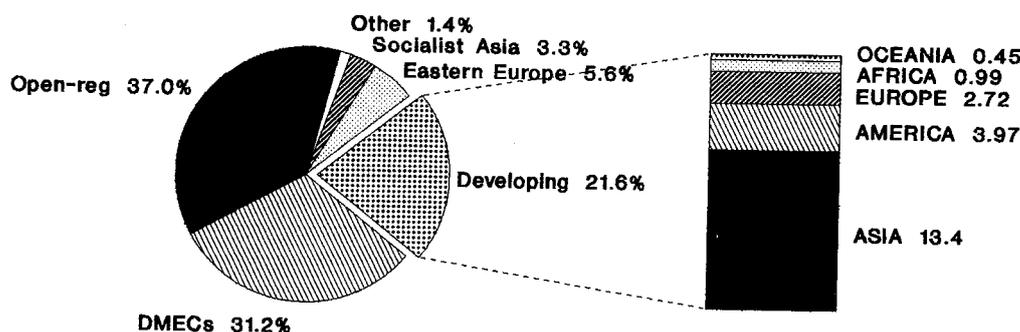
b/ Percentage shares are shown in italics.

c/ Mid-year figure.

d/ Including the former Yugoslavia, classified as from 1986 as a developing country in Europe.

Graph 7

World tonnage by country groups, 1992
Percentage distribution of dwt



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

22. Additional details dealing with ownership trends by vessel type and country groups for the 1980-1992 period are found in table 8. In the largest sector (oil tankers), the share of developed market-economy countries in world tonnage decreased from 52.5 per cent in 1980 to 34.1 per cent in 1992, a reduction which was, however, offset by an increase to 44.4 per cent in the share of tanker tonnage under open registries. Developing countries also increased their share to 17.1 per cent in 1992 from 7.7 per cent in 1980.

23. Ownership of dry bulk carriers follows a similar pattern. For example, developed market-economy countries decreased their share from 52.7 per cent in 1980 to 27.8 in 1992, but open-registry fleets expanded their dwt share to 35.8 per cent in 1992 from 31.7 per cent in 1980. Developing countries' share grew to 25.7 per cent, as compared to only 9.2 per cent in 1980.

24. In the general cargo and container ship sectors, overall dwt share trends differed. For the former, the share of the total world dwt decreased from 17.0 per cent in 1980 to 15.1 per cent in 1992. The proportional share of developed market-economy countries declined by over half and represented 21.5 per cent of the general cargo dwt in 1992. Open-registry fleet dwt share increased to 30.4 per cent while developing countries' share rose to 26.6 per cent in 1992.

25. The container sector expanded to 4.7 per cent of the world dwt in 1992, which is a large change

from 1.6 per cent in 1980. Again, developed market-economy countries' share of the container dwt decreased from 74.3 per cent in 1980 to 42.6 per cent in 1992. Conversely, the open-registry fleets' share expanded to 25.5 per cent in 1992 from 13.5 per cent in 1980. Developing countries too significantly increased their share of the world container fleet to 18.1 in 1992 as compared to only 7.6 per cent in 1980.

26. The 1992 structure of the merchant fleets of the main country groups is shown in table 9. Developed market-economy countries' tonnage in liquid and dry bulk tonnage exceeds 72.3 per cent of the group's total fleet, with general cargo ships amounting to about 10.0 per cent, while containerships account for 6.4 per cent. Open-registry fleets have a greater proportion of their fleets in the tanker and dry bulk carrier sector (combined 78.8 per cent). Also, the general cargo share is higher than in developed market-economy countries (12.4 per cent), but containerships (3.2 per cent) account for less than the developed market-economy countries. Tonnage distribution in developing countries is characterized by a relatively high proportion of conventional general cargo tonnage (18.6 per cent of total fleet), while container ships make up for only 3.9 per cent. Concentration on general cargo tonnage is, however, most pronounced in countries of Central and Eastern Europe (36.8 per cent of total tonnage), where container tonnage accounts for only 1.8 per cent of the fleet. A similar fleet structure can be observed in socialist countries of Asia.

Table 8

Percentage shares of world tonnage by type of vessel and country groups
1980 (as at 1 July), 1991 and 1992 (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
	1991	683.5	100.0	37.6	35.3	15.1	4.3	7.7
	1992	694.7	100.0	37.9	34.5	15.1	4.7	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
	1991	223.0	32.6	36.0	29.2	23.0	44.8	43.9
	1992	216.6	31.2	34.1	27.8	21.5	42.6	43.9
Open-registry countries	1980	212.5	31.1	36.2	31.7	20.8	13.5	17.0
	1991	244.2	35.7	43.5	34.5	28.0	23.1	25.8
	1992	257.2	37.0	44.4	35.8	30.4	25.5	26.4
Countries of Central and Eastern Europe	1980	37.8	5.5	2.8	4.2	12.3	2.9	19.2
	1991	40.8	6.0	2.9	5.3	13.9	2.5	10.2
	1992	39.0	5.6	2.7	4.9	13.7	2.0	9.6
Socialist countries in Asia	1980	10.9	1.6	0.6	1.6	4.7	0.1	1.3
	1991	22.0	3.2	1.1	3.7	7.8	4.0	2.2
	1992	22.6	3.3	1.1	3.9	7.3	3.9	2.5
Developing countries c/	1980	68.4	10.0	7.7	9.2	17.6	7.6	12.0
	1991	144.3	21.1	16.0	25.2	26.9	17.9	17.8
	1992	149.9	21.6	17.1	25.7	26.6	18.1	17.5
<u>of which in:</u> Africa	1980	7.1	1.0	1.1	0.1	2.3	..	2.1
	1991	7.0	1.0	0.8	0.5	2.2	..	3.2
	1992	6.9	1.0	0.8	0.5	2.1	..	2.6
America	1980	21.8	3.2	2.3	3.3	5.6	0.1	3.7
	1991	27.4	4.0	3.1	3.8	7.1	1.6	4.6
	1992	27.6	4.0	3.1	3.7	7.0	2.1	4.7
Asia	1980	39.1	5.7	4.3	5.7	9.8	2.7	5.7
	1991	89.3	13.1	10.0	16.6	13.9	15.5	8.9
	1992	93.3	13.4	10.9	16.9	13.6	15.0	8.9
Europe c/	1980	1.2	..	..	..	0.1	-	-
	1991	17.0	2.5	2.0	3.4	3.0	0.7	0.6
	1992	18.9	2.7	2.2	3.8	3.2	0.9	0.7
Oceania	1980	0.2	..	..	..	0.1	-	-
	1991	3.6	0.5	0.1	0.9	0.7	0.1	0.5
	1992	3.2	0.5	0.1	0.8	0.7	0.1	0.6
Other, unallocated	1980	3.0	0.4	0.2	0.6	0.9	1.6	0.1
	1991	9.2	1.4	0.5	2.1	0.5	7.7	0.1
	1992	9.4	1.4	0.6	1.9	0.5	7.9	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 Fleet.

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

c/ Including Yugoslavia as of 1986.

Table 9

Structure of the merchant marine fleet of the main country groups
as at 31 December 1992 a/
(Million dwt and percentage shares)

	World		Developed market-economy countries		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	694.7	100.0	216.6	100.0	257.2	100.0	149.9	100.0	39.1	100.0	22.6	100.0
of which:												
Oil tankers	263.3	37.9	89.8	41.5	116.7	45.4	45.1	30.1	7.1	18.2	3.0	13.3
Bulk carriers	240.0	34.6	66.7	30.8	86.0	33.4	61.6	41.1	11.7	29.9	9.4	41.6
General cargo	104.9	15.1	22.6	10.4	31.9	12.4	27.9	18.6	14.4	36.8	7.7	34.1
Containerships	32.4	4.7	13.8	6.4	8.3	3.2	5.9	3.9	0.7	1.8	1.2	5.3
Other ships	54.1	7.8	23.7	10.9	14.3	5.6	9.4	6.3	5.2	13.3	1.3	5.8

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 Fleet.

C. The 35 most important maritime countries and territories

27. The 35 most important maritime countries in dwt terms are ranked in table 10. The table lists merchant ships registered under national flag and foreign flag vessels when the controlling interest of the ship is located in the country. These 35 countries control 92.9 per cent of the world merchant fleet through their own register or by control of foreign flag vessels. Moreover, shipowners of five countries or territories, i.e. Greece, Japan, United States, Norway and Hong Kong, control over half the world fleet, and over two-thirds of the world fleet is controlled by the top 10 maritime countries.

28. The trend to flag out tonnage continues unabated. In 1992 total tonnage registered under foreign flags reached 295.7 million dwt. Nearly half the tonnage of the 35 most important maritime countries is thus commercially controlled, but not registered, in the country of domicile of the parent company. This practice is common for all country groups but is particularly noticeable for developed market-economy countries.

D. Open and international registers

29. Open and international registers continue to attract a major part of the world merchant fleet. The combined 1992 tonnage under these registers exceeded 311.1 million dwt or about 48.6 per cent of the world total. This is a slight relative reduction from 1991, when the total dwt was 293.7 million or 46.2 per cent of the world's merchant fleet.

30. Table 11 summarizes the tonnage distribution of the five largest open-registry countries by vessel type. 91.8 million dwt and 73.6 million dwt are flying under the flags of Liberia and Panama, respectively. By vessel type, oil tankers represent 46.2 per cent of total dwt, followed by dry bulk carriers with 32.8 per cent of the total dwt and general cargo ships with 12.0 per cent of the total dwt.

31. The participation of nationals in the registry of open or international registers is indicated in table 12. The information compares the total tonnage registered in selected countries with tonnage owned by nationals of the country of registry. For most open-registry countries the share owned by nationals is minimal or zero, but with international registers ownership exceeds 90 per cent.

32. The true nationality of the five major open-registry fleets is examined in table 13. Ownership is

concentrated in 10 countries or territories which control 81.2 per cent of dwt and 74.7 per cent of the number of vessels. In 1992, Japan replaced Greece as the nationality with the largest share (17.3 per cent) of the five major open-registry fleets. The United States and Hong Kong ranked third and fourth, with 14.2 per cent and 9.2 per cent, respectively.

E. Comparison of cargo turnover and fleet ownership

33. The relationship between cargo volumes generated by different country groups and fleet ownership in 1970, 1991 and 1992 is summarized in table 14. The data indicates a disproportional relationship between cargo generation and ownership. In 1992 developed market-economy countries, either directly or through open-registry countries, controlled 68.2 per cent of the world fleet, while generating 55.9 per cent of the international seaborne trade. At the same time, the share of developing countries in world cargo turnover stood at 38.1 per cent, while their merchant fleet constituted 21.6 per cent of the total world fleet in deadweight. Longer-term comparisons, however, indicate that developing countries have significantly reduced the gap between cargo generation and fleet ownership. Thus, in 1970 the share of world goods loaded and unloaded by developing countries was 40.4 per cent, i.e. a relative level similar to the one observed in 1992, while their share of the world fleet was only 6.3 per cent.

F. Forecasts for world fleet development

34. Forecasts for world fleet development by vessel type are shown in graph 8. The World Fleet Forecast Service (WFFS) projections indicate that the total world fleet will increase from 675.1 million dwt in 1993 to 851.8 million tons by the year 2003. The liner and dry bulk vessel types are expected to increase by 30.0 per cent and 31.3 per cent respectively over the decade. The deadweight tonnage of the world tanker fleet will increase by 22.3 per cent by the year 2003.

Table 10

The 35 most important maritime countries
(as at 31 December 1992) 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	988	1 631	2 619	44 578 038	52 915 630	97 493 668	54.28	15.22
Japan	1 107	1 776	2 883	31 935 672	52 353 491	84 289 163	62.11	13.16
United States	559	685	1 244	17 649 455	40 000 552	57 650 007	69.39	9.00
Norway	925	521	1 446	34 571 512	19 141 218	53 712 730	35.64	8.39
Hong Kong	81	566	647	4 466 386	26 614 708	31 081 094	85.63	4.85
China	1 392	198	1 590	20 096 279	7 295 388	27 391 667	26.63	4.28
United Kingdom	414	458	872	5 543 843	18 093 988	23 637 831	76.55	3.69
Russia	2 622	280	2 902	16 132 427	5 306 625	21 439 052	24.75	3.35
Republic of Korea	467	196	663	10 373 507	7 319 168	17 692 675	41.37	2.76
Germany	580	589	1 169	6 034 251	10 079 427	16 113 678	62.55	2.52
Denmark	432	239	671	7 012 287	5 680 812	12 693 099	44.76	1.98
Italy	597	70	667	10 020 043	2 264 724	12 284 767	18.44	1.92
Sweden	182	149	331	2 936 940	9 317 726	12 254 666	76.03	1.91
Taiwan, Province of China	201	190	391	7 734 200	3 933 926	11 668 126	33.72	1.82
India	396	39	435	10 315 271	654 823	10 970 094	5.97	1.71
Brazil	233	12	245	8 661 680	1 084 193	9 745 873	11.12	1.52
Iran (Islamic Rep.of)	146	3	149	8 256 629	18 863	8 275 492	0.23	1.29
Singapore	276	160	436	5 419 887	2 419 777	7 839 664	30.87	1.22
France	186	111	297	3 170 090	3 784 694	6 954 784	54.42	1.09
Turkey	335	21	356	6 169 011	523 312	6 692 323	7.82	1.04
Ukraine	642	85	727	5 817 996	264 737	6 082 733	4.35	0.95
Netherlands	429	178	607	3 496 979	1 951 771	5 448 750	35.82	0.85
Belgium	44	125	169	191 501	4 900 312	5 091 813	96.24	0.79
Spain	291	92	383	3 159 764	1 931 824	5 091 588	37.94	0.79
Switzerland	17	146	163	574 265	4 480 157	5 054 422	88.64	0.79
Romania	303	15	318	4 287 195	728 998	5 016 193	14.53	0.78
Kuwait	33	9	42	3 491 816	1 007 096	4 498 912	22.39	0.70
Cyprus	39	31	70	3 007 736	1 048 470	4 056 206	25.85	0.63
Finland	103	69	172	1 038 540	2 812 884	3 851 424	73.03	0.60
Philippines	272	14	286	3 682 480	135 123	3 817 603	3.54	0.60
Indonesia	399	74	473	2 504 700	1 199 849	3 704 549	32.39	0.58
Croatia	26	162	188	120 893	3 567 450	3 688 343	96.72	0.58
Poland	263	7	270	3 490 411	66 090	3 556 501	1.86	0.56
Saudi Arabia	64	35	99	876 539	2 554 706	3 431 245	74.45	0.54
Australia	79	19	98	2 784 351	243 264	3 027 615	8.03	0.47
Total (35 countries)	15 123	8 955	24 078	299 602 574	295 695 776	595 298 350	49.67	92.94
Percentage	62.8	37.2	100	50	50	100		
World total	17 950	9 730	27 680	329 444 905	311 102 407	640 547 312	48.57	100.00
Percentage	64.9	35.2	100	51	49	100		

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

a/ Vessels of 1,000 grt and above, excluding United States reserve fleet and United States and Canada Great Lakes fleet.

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 1992)

Country	Oil tankers		Dry bulk carriers		General cargo		Containerships		Others		1992 Total		1991 Total	
	Ships	'000 dwt	Ships	'000 dwt	Ships	'000 dwt	Ships	'000 dwt	Ships	'000 dwt	Ships	'000 dwt	Ships	'000 dwt
Liberia	418	50 035	460	27 985	290	4 986	90	2 653	250	6 098	1 508	91 757	1 465	88 045
Panama	303	28 679	549	23 350	1 425	13 789	158	3 678	496	4 089	2 931	73 585	2 783	68 302
Cyprus	93	8 669	454	18 230	525	4 957	50	669	84	849	1 206	33 374	1 165	33 566
Bahamas	163	17 652	144	7 630	353	4 432	37	853	204	1 412	901	31 979	844	30 448
Bermuda	20	4 084	8	344	16	140	1	29	31	870	76	5 467	75	5 201
Total	997	109 119	1 615	77 539	2 609	28 304	336	7 882	1 065	13 318	6 622	236 162	6 332	225 562

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 the country of registry in the total fleet of the most important open and international registers
(Thousand dwt as at 31 December 1992) a/

Country of registry or register	Total tonnage registered in the country of register	Tonnage owned by nationals of the country of registry	Share of tonnage owned by nationals in the total registered fleet (%)
Liberia	91 757	0	0.0
Panama	73 585	63	0.1
Norwegian International Ship Registry	34 864	32 717	93.8
Cyprus	33 374	2 990	9.0
Bahamas	31 979	104	0.3
Malta	14 334	5	0.0
Danish International Ship Registry	6 692	6 688	99.9
Bermuda	5 467	0	0.0
Vanuatu	2 935	0	0.0

Source: See table 11.

a/ See table 11.

Table 13

True nationality of major open-registry fleets
As at 31 December 1992

Flag country Country or territory of domicile	Liberia			Panama			Cyprus			Bahamas			Bermuda			Subtotal			Total foreign-flag fleet	
	dwt '000	No of vessels	%	dwt '000	No of vessels	%	dwt '000	No of vessels	%	dwt '000	No of vessels	%	dwt '000	No of vessels	%	dwt '000	No of vessels	%	dwt '000	No of vessels
Greece	9 457	124	10.3	6 524	284	8.9	20 339	664	60.9	4 226	106	13.2	-	-	0.0	40 546	1 178	17.2	52 916	1 631
Japan	10 193	252	11.1	29 654	1 141	40.3	120	17	0.4	963	39	3.0	-	-	0.0	40 930	1 449	17.3	52 353	1 776
United States	20 265	241	22.1	2 506	126	3.4	148	10	0.4	8 597	119	26.9	2 102	10	38.5	33 618	506	14.2	40 001	685
Hong Kong	9 871	150	10.8	11 203	273	15.2	541	11	1.6	109	5	0.3	-	-	0.0	21 724	439	9.2	26 615	566
Norway	8 782	177	9.6	2 071	67	2.8	2 307	20	6.9	3 595	117	11.2	225	8	4.1	16 980	389	7.2	19 141	521
United Kingdom	4 953	85	5.4	1 045	60	1.4	315	13	0.9	2 881	97	9.0	1 408	30	25.8	10 602	285	4.5	18 094	458
Germany	4 002	85	4.4	1 414	27	1.9	1 935	189	5.8	352	11	1.1	54	1	1.0	7 757	313	3.3	10 079	589
Republic of Korea	1 703	21	1.9	5 237	148	7.1	-	-	0.0	-	-	0.0	-	-	0.0	6 940	169	2.9	7 319	196
China	1 671	32	1.8	3 347	90	4.6	88	4	0.3	34	1	0.1	-	-	0.0	5 140	127	2.2	7 295	198
Sweden	5 010	33	5.5	145	15	0.2	-	-	0.0	1 496	36	4.7	945	5	17.3	7 596	89	3.2	9 318	149
Taiwan, Province of China	2 416	27	2.6	2 408	146	3.3	342	3	1.0	132	1	0.4	-	-	0.0	5 298	177	2.2	3 934	190
Finland	-	-	0.0	20	4	0.0	254	1	0.8	2 372	47	7.4	-	-	0.0	2 646	52	1.1	2 813	69
France	617	4	0.7	443	17	0.6	47	6	0.1	1 702	43	5.3	-	-	0.0	2 809	70	1.2	3 785	111
Switzerland	944	15	1.0	756	51	1.0	321	13	1.0	546	14	1.7	-	-	0.0	2 567	93	1.1	4 480	146
Denmark	778	13	0.9	436	24	0.6	53	9	0.2	1 071	85	3.4	-	-	0.0	2 338	131	1.0	5 681	239
Saudi Arabia	1 352	5	1.5	152	11	0.2	-	-	0.0	510	2	1.6	21	2	0.4	2 035	20	0.9	2 555	35
Singapore	297	12	0.3	727	70	1.0	-	-	0.0	418	5	1.3	-	-	0.0	1 442	87	0.6	2 420	160
Belgium	480	9	0.5	27	4	0.0	192	12	0.6	136	5	0.4	-	-	0.0	835	30	0.4	4 900	125
Subtotal	82 791	1 285	90.2	68 115	2 538	92.6	27 002	972	80.9	29 140	733	91.1	4 755	56	87.0	211 803	5 604	89.7	273 699	7 844
Others	8 966	223	9.8	5 470	373	7.4	6 372	234	19.1	2 839	168	8.9	712	20	13.0	24 359	1 018	10.3	37 403	1 886
TOTAL	91 757	1 508	100.0	73 585	2 931	100.0	33 374	1 206	100.0	31 979	901	100.0	5 467	76	100.0	236 162	6 622	100.0	311 102	9 730

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

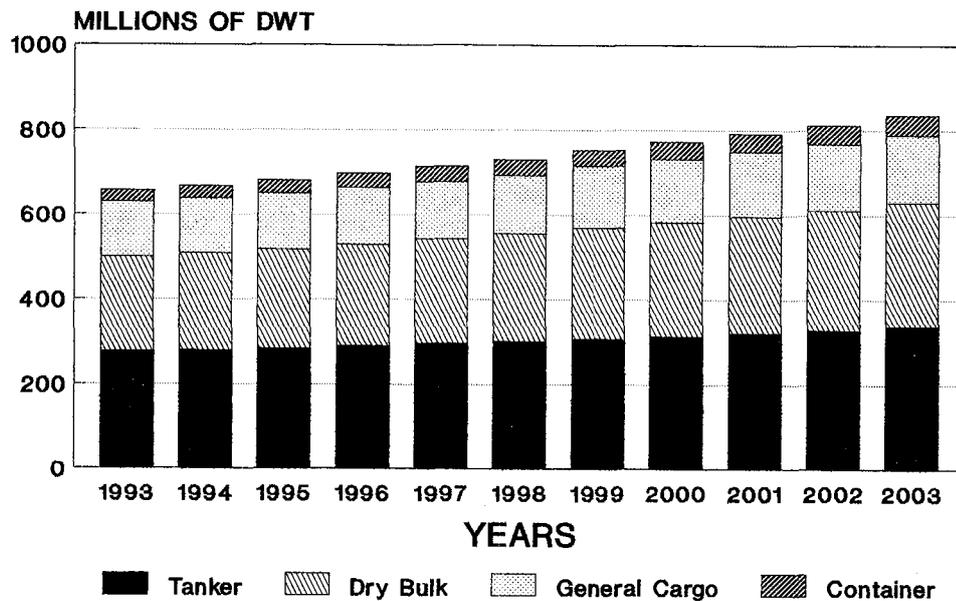
Table 14

Comparison between total cargo turnover and fleet ownership
by groups of countries, 1970, 1991 and 1992

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 open-registry countries	1970	802.7	2 010.4	2 813.1	282.2	54.8	86.5
	1991	1 821.0	2 878.0	4 699.0	467.2	56.2	68.4
	1992	1 845.0	2 933.0	4 778.0	473.8	55.9	68.2
Developing countries	1970	1 643.3	431.6	2 074.9	20.5	40.4	6.3
	1991	2 031.0	1 115.0	3 146.0	144.3	37.6	21.1
	1992	2 100.0	1 154.0	3 254.0	149.9	38.1	21.6
Countries of Central and Eastern Europe (including the former USSR)	1970	145.4	57.4	202.8	20.5	4.0	6.3
	1991	184.0	166.0	350.0	40.8	4.2	6.0
	1992	177.0	161.0	338.0	39.0	4.0	5.6
Socialist countries of Asia	1970	13.4	30.2	43.6	1.2	0.9	0.4
	1991	84.0	86.0	170.0	22.0	2.0	3.2
	1992	88.0	87.0	175.0	22.6	2.1	3.3
World total ^{a/}	1970	2 604.8	2 529.6	5 134.4	326.1		
	1991	4 120.0	4 245.0	8 365.0	683.5		
	1992	4 210.0	4 335.0	8 545.0	694.7		

Source: As per tables 3 and 8.

^{a/} Including unallocated tonnage indicated in annex III.

Graph 8Forecast of world fleet by principal type
1993 to 2003

Source: DRI/LMIS World Fleet Forecast Service.

Box 3Liner trade growth changes direction

Container trade growth to the end of the century is set to outstrip that of other shipping markets, with intra-Asia trade leading the way. However, growth in the supply of tonnage means the problem of overcapacity may be around for some time. This was the message from the *World Sea Trade Outlook* conference held recently in Amsterdam and hosted by Dr. Douglas Beck, Research Director of DRI/McGraw-Hill.

Michael L. Sclar, Senior Consultant at DRI/McGraw-Hill, presented forecasts from the World Sea Trade Service (WSTC), an important forecasting tool for several major liner companies. To the end of this century, total world seaborne trade is expected to grow at an average of 3.37 per cent per year. Within this, liner trades are expected to grow 5.8 per cent per year. Higher growth, 6.3 per cent per year, is forecast for unitized trade, expanding from 28 million TEU per year today to surpass 40 million TEU/year in 1998, increasing to 45 million TEU per year by 2000. This growth rate would be an enormous strain on ports and surface transport systems.

A narrowing of the gap between rates of growth in trade into the United States, Canada and Europe on the one hand and Japan and the newly industrialized economies on the other is expected.

On specific trades, the most striking projection is for steady growth in the Atlantic from 1993 onwards of both east- and west-bound shipments. By the year 2000, more than 800,000 TEU/year may be shipped in both directions. On the transpacific, east-bound trade is projected to outstrip west-bound movements by more than 1 million TEU per year by 2000. Intra-Asian container traffic will continue to enjoy the strongest growth rate of any trade, and is forecast to double to around 7 million TEU per year at the end of the decade, an average increase of 8.5 per cent per year.

Source: *Lloyd's Shipping Economist* (London), November 1992, p. 10.

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 per dwt, ton-miles performed and surplus tonnage by main shipping market sectors.

A. Estimate of tons and ton-miles per dwt

35. Operational productivity indicators for the world fleet continued to improve in 1992 (see table 15 and graph 9). Tons of cargo carried per dwt reached 6.06 tons, and ton-miles performed per dwt continued the upward trend to reach 26,314. The incremental gains can be attributed to the growing expansion of world seaborne trade, better utilization of shipping capacity and a quadrupling of scrapping of obsolete and inefficient tonnage in 1992.^{23/} Tables 16 and 17 provide additional details on ton-miles performed by tanker, bulk carriers and combined carriers. The former experienced the largest gains over 1991, as ton-miles of oil and grain carried by tankers grew by 3.9 per cent. Ton-mile performance by the remaining bulk fleet shows minimal operational productivity change.

B. Supply and demand in world shipping

36. Excess capacity expanded to 10.1 per cent of the world merchant fleet in 1992. Table 18 provides a summary of tonnage oversupply for the 1983-1992 period. The total surplus reached 71.7 million dwt, compared to 64.2 million dwt in 1991. By sector (see table 19) the tanker trades continued to have the largest proportion of excess tonnage, followed by dry bulk, while the conventional and unitized fleet had less than 5.0 per cent surpluses (see graph 10 for sector comparisons).

37. Surplus capacity in the tanker sector reached its highest levels since 1988. A total of 41.8 million dwt or 14.8 per cent of the total world tanker fleet was in excess in relation to oil seaborne transport demand. This was slightly higher than in 1991, when 14.6 per cent of the fleet was surplus but considerably less than the 1983 high of 42.0 per cent. The growth in excess capacity is primarily due to a shift from tankers being employed in oil storage to active service.

38. Tanker tonnage engaged in oil storage declined over the full calendar year 1992. In January, tankers used for storage purposes amounted to 11.9 million dwt and by year-end the total was

9.2 million dwt - a 22.7 per cent decline. Most of the reduction came from activating VLCCs and ULCCs that had been used for short-term storage since the Gulf crisis. Table 20 indicates the long-term declining trend in tankers used for storage. For example, in the peak period (July 1981) 26.9 million dwt were employed in oil storage compared to the recent low in November 1992 of 8.8 million dwt.

39. Overcapacity in the dry bulk sector expanded to 25.1 million dwt. This represents a 21.3 per cent increase over 1991 and amounts to about 10 per cent of the world dry bulk fleet. The disequilibrium can be explained by declining outputs in the steel industry and a corresponding drop in the demand for coal and iron ore. This, combined with a small dwt increase (0.98 per cent) in the bulk fleet, contributed to the highest surplus since 1987.

40. Surplus capacity in the conventional general cargo and unitized sectors is normally less than the bulk trades. This is because the shipowners are catering to a more constant trading pattern and are less involved in the volatile spot markets. In 1992 only 4.3 per cent of the conventional general cargo vessels' total dwt was in excess of demand. The unitized fleet surplus was even less, with 1.6 per cent. Moreover, these 1992 surplus ratios are well below the 10-year annual averages of 5.8 per cent and 3.6 per cent, respectively.

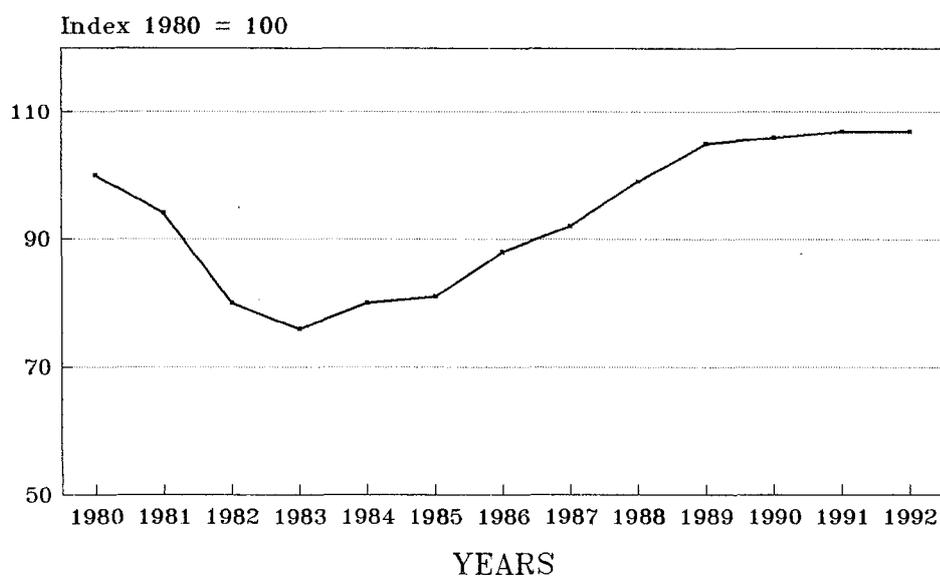
Table 15

Cargo carried and ton-miles performed per dwt of the total world fleet, 1980-1992

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
1980	682.8	3 704	16 777	5.42	24 571
1981	688.8	3 555	15 840	5.16	22 990
1982	693.5	3 273	13 699	4.72	20 460
1983	686.0	3 230	12 850	4.71	18 340
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	4 210	18 280	6.06	26 310

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 1980-1990, year-end data for 1991 and 1992); total cargo carried: UNCTAD data bank; ton-miles: Fearnleys, *Review* (Oslo), various issues.

Graph 9

Index of ton-miles performed per dwt total world fleet (1980-1992)

Source: UNCTAD calculations based on table 15, *Review of Maritime Transport, 1992* (TD/B/CN.4/8).

Table 16

Estimated productivity of tankers, bulk carriers, combined carriers a/ and the residual fleet, b/ 1980-1992
(Ton-miles performed per dwt)

Year	Ton-miles of oil and grain by tankers (thousands of millions) c/	Ton-miles per dwt of tankers	Ton-miles 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
1980	9 007	27 560	2 009	14 470	1 569	32 430	4 192	24 830
1981	8 009	24 800	2 169	14 730	1 518	32 140	4 144	24 260
1982	5 893	18 400	2 422	15 660	1 310	28 920	3 874	22 350
1983	5 230	17 380	2 640	15 600	1 016	23 570	3 694	21 380
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	4 075	18 840	1 050	33 650	4 965	26 620

Source: Compiled on the basis of Fearnleys, *Review, World Bulk Trades and World Bulk Fleet* (Oslo) 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. This factor largely accounts for the significant revision of the 1988 estimates published here, in relation to those found in previous issues of this annual report.

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/.

c/ Excluding grain since 1982, as data are not available.

Table 17

Estimated productivity of tankers, bulk carriers, combined carriers and the residual fleet, a/ 1980-1992
(Tons carried per dwt)

Year	Tons of oil and grain carried by tankers (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 <u>b/</u> (millions)	Tons carried per dwt of the residual fleet
1980	1 564	4.79	396	2.85	282	5.83	1 406	8.33
1981	1 419	4.39	421	2.86	262	5.53	1 404	8.22
1982	1 191	3.72	455	2.94	232	5.12	1 321	7.62
1983	1 132	3.76	493	2.90	196	4.55	1 272	7.36
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	1 545	5.93	700	3.24	192	6.15	1 770	9.49

Source: As for table 16.

a/ See footnote a/ to table 16.

b/ See footnote b/ to table 16.

Table 18

Tonnage oversupply in the world merchant fleet, 1983-1992
(Million dwt and percentages)

	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992
	Million dwt									
World merchant fleet (as at mid-year)	686.0	674.5	664.8	639.1	632.3	627.9	638.0	658.4	683.5 _{c/}	694.7 _{c/}
Surplus tonnage _{a/}	195.8	171.2	161.5	108.0	101.1	83.4	62.3	63.7	64.2	71.7
Active fleet _{b/}	490.2	503.3	503.3	531.0	531.2	544.5	575.7	594.7	619.3	624.4
	Percentages									
Surplus tonnage as a percentage of the world merchant fleet	28.5	25.4	24.3	16.9	16.0	13.3	9.8	9.7	9.4	10.1
Surplus tonnage as a percentage of the active world merchant fleet	39.9	34.0	32.1	20.3	19.0	15.3	10.8	10.7	10.4	11.3

Source: 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. As of March 1989, *Lloyd's Shipping Economist* (London) (the main source for estimates of surplus tonnage in the world fleet shown in the present paper) changed the base for its calculation of slow-steaming bulk carriers (see the March 1989 issue of *Lloyd's Shipping Economist* (London), p. 10). Thus the figures for the bulk carriers' surplus fleet for 1982-1985 in this table are estimated in accordance with the method used before March 1989. Estimates for 1986-1992 are based on a new method which show considerably lower figures.

_{b/} World fleet minus surplus tonnage.

_{c/} Year-end figure.

Table 19

Analysis of tonnage oversupply by main vessel type, 1983-1992
(Average year figures in million dwt) a/

	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992
Supply of world tanker fleet <u>b/</u>	319.4	296.7	273.0	261.7	255.1	250.6	253.9	266.2	273.5	283.4
Total tanker surplus fleet <u>c/</u>	134.0	111.7	100.9	68.8	65.8	54.7	41.0	40.9	39.8	41.8
Share of surplus fleet in the world tanker fleet (per cent)	42.0	37.7	37.0	26.3	25.8	21.8	16.2	15.4	14.6	14.8
Supply of world dry bulk fleet <u>b/</u>	202.9	215.0	222.7	215.4	213.8	220.6	225.4	228.7	235.0	237.3
Dry bulk fleet surplus <u>c/</u>	52.0	50.3	50.1	30.8	28.0	23.4	17.0	19.4	20.7	25.1
Share of surplus in the world dry bulk fleet (per cent)	25.6	23.4	22.5	14.3	13.1	10.6	7.5	8.5	8.8	10.6
Supply of world conventional general cargo fleet	82.1	79.8	74.9	69.7	65.6	64.7	63.4	63.6	63.5	63.0
Conventional general cargo fleet surplus	8.3	7.6	5.8	4.3	3.6	2.9	2.2	2.1	2.2	2.7
Share of surplus in the world conventional general cargo fleet (per cent)	10.1	9.5	7.7	6.2	5.5	4.5	3.5	3.3	3.5	4.3
Supply of world unitized fleet <u>d/</u>	25.2	27.3	29.9	31.2	32.9	34.4	35.8	37.5	40.3	43.0
Surplus of unitized fleet	1.5	1.6	1.7	1.5	1.7	0.8	0.8	0.5	0.4	0.7
Share of surplus in the world unitized fleet (per cent)	6.0	5.9	5.7	4.8	5.2	2.3	2.2	1.3	1.0	1.6

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

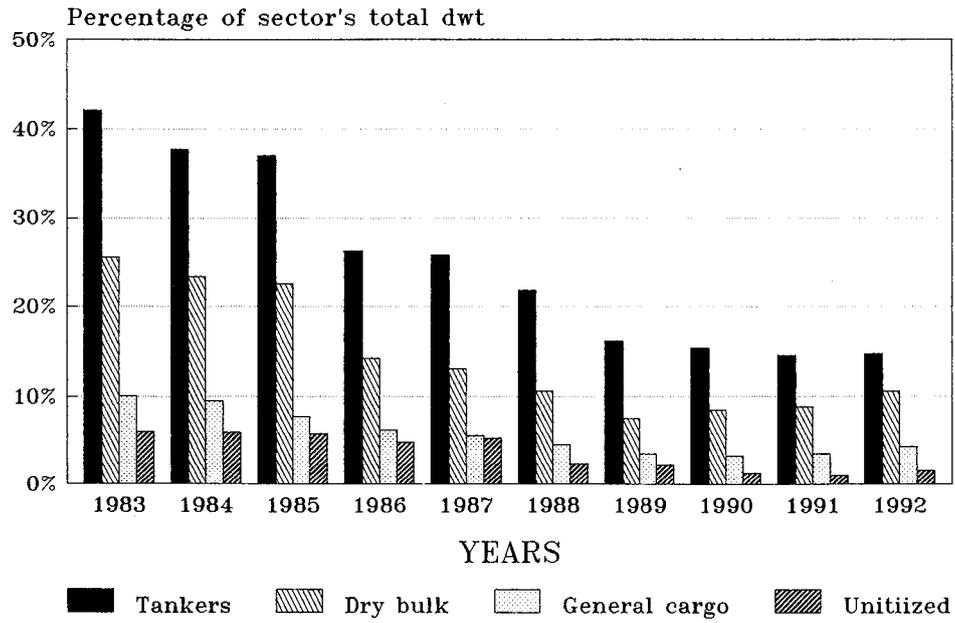
a/ Aggregates for all sectors as shown in the present table are averages for the years shown and therefore differ from the world figures in table 18, which indicate estimates at mid-year. Table 19 excludes tankers and dry bulk carriers of less than 10,000 dwt and conventional general cargo/unitized vessels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

b/ Including combined ore/bulk/oil carriers on the basis of actual supply (e.g. December 1992, total of 32.9, of which 15.6 as tanker and 17.3 as dry bulker).

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

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

Graph 10

Trends in surplus capacity by main vessel types 1983-1992

Source: UNCTAD, based upon table 19.

Table 20

Tanker tonnage engaged in oil storage, 1981-1992
(Capacity in thousand dwt)

Date	Semi-permanent		Short-term		Total	
	No.	Dwt	No.	Dwt	No.	Dwt
July 1981	52	10 649	62	16 205	114	26 854
January 1982	58	12 682	45	11 772	103	24 454
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
January 1992	34	6 325	27	5 588	61	11 913
February 1992	32	6 013	25	5 124	57	11 137
March 1992	32	6 013	23	4 371	55	10 384
April 1992	33	6 147	25	4 986	58	11 133
May 1992	34	6 301	25	5 343	59	11 644
June 1992	33	6 076	24	5 217	57	11 293
July 1992	36	6 425	25	5 734	61	12 159
August 1992	38	6 852	23	4 569	61	11 421
September 1992	35	6 331	21	4 172	56	10 503
October 1992	33	6 063	16	3 157	49	9 220
November 1992	32	5 983	15	2 844	47	8 827
December 1992	34	6 299	16	2 886	50	9 185

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

Chapter IV

SHIPBUILDING, SECOND-HAND MARKET AND DEMOLITION

The chapter reviews the supply side of the world shipping industry. This includes newbuilding orders, new ship prices, and deliveries of new tonnage on order. Second-hand prices for major sectors are also reviewed, as are deductions from the world fleet due to demolition.

A. Newbuilding orders

41. Total newbuilding contracts decreased by 36.7 per cent in 1992. The downward trend began mid-year, and in December only 412,000 dwt of orders were placed (see table 21). The decline mirrors many owners' uncertainty over global recession and the short-term growth prospects for world trade. The decrease was particularly significant for tankers, where orders declined by 49.4 per cent from 1991. Moreover, a major shift to meet IMO double-hull regulations did not occur, although an emphasis on quality and environmental features was evident. The larger tanker orders reported included 13 VLCCs, 8 Suezmax, 15 Aframax and 4 Panamax tankers. ^{24/}

42. New orders for dry bulk carriers declined 38.7 per cent from the previous year. Within the Panamax sector, tonnage increased, but Capesize and handy-size orders were less than half those of 1991. Conversely, general cargo and container tonnage newbuilding orders increased 59.9 per cent and 79.7 per cent, respectively (see table 21). Many of the general cargo/container orders were for replacement of older, less efficient vessels. The remaining new orders were spread over car carriers (12), a few refrigerated ships, passenger/ferries (7) and cruise vessels (3). ^{25/}

B. Ship prices

43. Despite a strong reduction in the demand for new ships, newbuilding prices did not decline by more than 10 per cent from the end of 1991. ^{26/} As shown in table 22, the prices of the principal types and sizes of ships, except 1,200 TEU ro/ro and 2,500 TEU full containerships, decreased or remained unchanged. Larger 250,000 dwt tankers' and 125,000 m³ LNG carriers' prices decreased from the previous year's 10-year high. Over the calendar year 1992, 250,000 dwt tankers remained at the \$90 million level in the first quarter, and the large LNG carriers maintained the \$US 240-260 million level in the first six months, but fell towards year-end. Smaller bulk carriers of 70,000 dwt and 120,000 dwt followed the same overall downward trend for all ship types in 1992.

C. Deliveries of newbuildings

44. Table 23 indicates that the total tonnage of newbuildings delivered in 1992 reached 18.6 million grt. This represents a 15.8 per cent growth over the previous year's figure, although the number of newbuildings decreased from 1,574 units in 1991 to 1,506 units in 1992. Oil tankers dominated newbuilding deliveries, as gross-ton tonnage increased by 37.4 per cent from 1991, reaching 9.0 million grt. Containerships increased by 13.8 per cent to 2.2 million grt in 1992, but the "other ships" category declined 7.2 per cent to 2.1 million dwt.

45. Deliveries of newbuildings by country groupings - according to country of build - are indicated in table 24. Shipyards of developed market-economy countries maintained their predominant position in the delivery of newbuildings. Tonnage delivered in 1992 increased by 4.9 per cent as compared to the previous year to reach 11.07 million grt or 60.6 per cent of all newbuilding deliveries, of which 7.56 million grt were delivered by Japanese shipyards.

46. The amount of tonnage delivered by developing countries' yards increased considerably in 1992, rising by 34.0 per cent over the previous year and reaching 5.2 million grt. The newbuildings, however, were highly concentrated in only one developing country, namely the Republic of Korea; with 4.7 million grt delivered by its yards, the Republic of Korea accounted for 90.2 per cent of the newbuildings delivered by all developing countries in 1992.

D. Tonnage on order

47. The backlog of newbuilding orders is reflected in table 25. The information indicates a declining trend from the record high of 64.8 million dwt in March 1992 to 56.0 million dwt at year-end. The downward trend reflects the dearth of new orders and the completion of ships under construction. The order books are dominated by tanker tonnage (28.9 million dwt), followed by dry bulk carriers (15.7 million dwt).

48. Table 26 indicates that tonnage on order in developed market-economy countries and open-registry countries at the end of 1992 amounted to 15.6 million dwt and 30.5 million dwt, respectively. This represented 27.9 per cent and 54.4 per cent of the world total tonnage on order and was about the same proportion as the previous year. Developing countries' share stood at 8.0 per cent of the world total tonnage on order in 1992, versus 8.1 per cent in 1991. The share of countries of Central and Eastern Europe fell to 3.2 per cent in 1992 from 4.1 per cent in 1991, while socialist countries of Asia gained 1.8 per cent, reaching 4.1 per cent in 1992.

49. By country of registry, developed market-economy countries and open registries taken together had the largest portion of ships on order for all types of newbuildings. The 1992 combined share in the orders for dry bulk carriers and containerships increased to 78.3 per cent and 79.3 per cent, respectively. Conversely, the share in the 1992 order book for oil tankers and general cargo ships was reduced to 87.3 per cent and 54.2 per cent respectively.

50. Developing countries increased their share in the ships on order in 1992 for oil tankers and general cargo ships to 7.5 per cent and 17.5 per cent respectively. In the other sectors, however, a decrease in orders occurred. For example, the proportion of dry bulk carriers and containerships amounted to 4.8 per cent and 12.3 per cent, respectively. Moreover, Asian developing countries were the source of more than half of the group's tonnage on order, followed by Latin America with 35.8 per cent.

E. Sale and purchase of second-hand tonnage

51. In the second-hand market, prices of five-year-old tankers and dry bulk carriers were conspicuously marked down as shown in table 27. The lower prices reflect the fact that the average freight rates of tankers throughout 1992 were the lowest both on spot and period markets for the three principal sizes, compared to those of the last three years, 1989-1991. Similarly, the prices for second-hand dry bulk carriers declined significantly from 1991. For example, ships in the 60,000 dwt group fell 21.7 per cent, and 120,000 dwt vessels dropped 24.3 per cent. Handy-size dry bulk carriers, however, decreased only 7.4 per cent. The overall decreases reflect the parallel declines in the dry bulk freight markets. ^{27/}

52. Table 28 indicates monthly fluctuations of sales and purchases of second-hand tankers, dry bulk

carriers and combination carriers. In the tanker sector, the decrease in values occurred despite the very active market stimulated by Norwegian owners. Moreover, the total amount of tanker tonnage traded slightly exceeded the 1991 volume by 3.2 per cent. VLCC/ULCCs dominated the market through the year, with 25 vessels sold for further trading and 25 vessels sent to demolition. Also, the Suezmax, Aframax and handy-size tankers were traded in an unexpectedly large number. Dry bulker prices were influenced by overcapacity and depressed freight charter rates throughout most of 1992. In the combination carriers market, total transactions dropped significantly from a total of 26 ships in 1991 to about 13 during 1992, with total tonnage declining by 69.9 per cent. ^{28/}

Table 21

Newbuilding contracts placed for the main types of ship a/ during 1988-1992
(Thousands of dwt)

Year	Tankers		Bulk carriers		Combined carriers		General cargo ships		Container vessels		Passenger/ferries		Total b/	
	No	Dwt	No	Dwt	No	Dwt	No	Dwt	No	Dwt	No	Dwt	No	Dwt
1988	216	8 427	111	8 021	6	24	253	1 556	79	1 827	101	106	766	19 961
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	26	1 340	6	260	-	-	10	54	8	216	10	21	60	1 891
January	17	1 033	11	998	-	-	19	105	16	344	26	7	89	2 487
February	20	1 551	12	613	-	-	23	153	9	207	9	13	73	2 537
March	25	979	16	930	-	-	29	180	4	122	9	3	83	2 214
April	17	1 571	5	741	-	-	4	28	12	182	5	7	43	2 529
May	23	848	18	883	-	-	25	201	13	302	12	9	91	2 243
June	17	221	14	607	-	-	14	121	9	210	7	1	61	1 160
July	12	1 066	13	721	-	-	42	204	6	245	7	1	80	2 237
August	18	706	16	841	-	-	11	52	10	291	12	6	67	1 896
September	13	615	5	336	-	-	20	88	27	801	4	6	69	1 846
October	4	56	5	204	-	-	14	135	6	177	8	7	37	579
November	14	64	5	127	-	-	14	81	7	130	5	10	45	412
December	206	10 050	126	7 261	0	0	225	1 402	127	3 227	114	91	798	22 031
Total 1992	206	10 050	126	7 261	0	0	225	1 402	127	3 227	114	91	798	22 031

Source: Institute of Shipping Economics and Logistics (Bremen), 1993, 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 1988-1992
(Millions of dollars)

Type and size of vessel	1980	1985	1988	1989	1990	1991	1992	Percentage change 1991/1992
30 000 dwt bulk	17	11	19	22	24	24	24	0
32 000 dwt tanker	19	18	23	27	29	30	30	0
70 000 dwt bulk	24	14	24	27	32	32	30	-6.3
80 000 dwt tanker	28	22	33	38	42	43	42	-2.3
120 000 dwt bulk	32	27	33	42	45	47	44	-6.4
250 000 dwt tanker	75	47	63	75	90	95	86	-9.5
125 000 m ³ LNG	200	200	150	190	225	260	237	-8.9
75 000 m ³ LPG	77	44	57	68	78	83	80	-3.6
1 200 TEU ro/ro	44	28	28	32	36	38	40	5.3
15 000 dwt general cargo ship	14	12	17	22	24	24	24	0
2 500 TEU full containership	..	26	32	41	52	58	59	1.7

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

Table 23

Distribution of deliveries of newbuildings by principal types of ships, 1991-1992
(Number of ships, thousands of grt) *a/*

Ship types	1991		1992	
	No.	Grt	No.	Grt
Oil tankers	151	6 567	215	9 022
		<i>40.8</i>		<i>48.4</i>
Bulk carriers	75	3 231	77	3 342
		<i>20.1</i>		<i>17.9</i>
General cargo	421	2 084	360	1 958
		<i>13.0</i>		<i>10.5</i>
Containerships	78	1 910	88	2 173
		<i>11.9</i>		<i>11.7</i>
Other ships	849	2 303	766	2 138
		<i>14.3</i>		<i>11.5</i>
World total	1 574	16 095	1 506	18 633
		<i>100.0</i>		<i>100.0</i>

Source: Lloyd's Maritime Information Services Ltd. (LMIS), 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, 1991-1992
(Thousands of grt) a/ b/

Country grouping	1991	1992
Developed market-economy countries	10 548	11 067
	<i>66.2</i>	<i>60.6</i>
Developing countries	3 902	5 230
	<i>24.5</i>	<i>28.7</i>
Countries of Central and Eastern Europe	683	594
	<i>4.3</i>	<i>3.3</i>
Socialist countries of Asia	293	363
	<i>1.8</i>	<i>2.0</i>
Other, unallocated	511	999
	<i>3.2</i>	<i>5.5</i>
World total	15 937	18 253
	<i>100.0</i>	<i>100.0</i>

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 includes ships of 100 grt and over.

Table 25

World tonnage on order at the end of each quarter, 1990, 1991 and 1992
(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 1990	51.5	15.9	23.7	29.5	14.6	0.7	13.2	8.3
30 June 1990	59.7	3.7	30.7	12.7	14.7	-16.3	14.3	4.2
30 September 1990	61.9	-4.2	34.6	0.9	12.3	-13.8	14.9	-7.4
31 December 1990	59.3	-7.3	34.9	-7.5	10.6	-16.0	13.8	-0.7
31 March 1991	55.0	4.9	32.3	8.1	8.9	4.5	13.7	-1.5
30 June 1991	57.7	3.5	34.9	0.3	9.3	23.7	13.5	-2.2
30 September 1991	59.7	8.4	35.0	6.6	11.5	26.1	13.2	-2.3
31 December 1991	64.7	0.2	37.3	-3.5	14.5	13.1	12.9	-3.9
31 March 1992	64.8	-3.6	36.0	-4.7	16.4	0.0	12.4	-4.8
30 June 1992	62.5	-4.6	34.3	-6.4	16.4	-4.9	11.8	0.9
30 September 1992	59.6	-6.0	32.1	-10.0	15.6	0.6	11.9	-4.2
31 December 1992	56.0		28.9		15.7		11.4	

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

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

Table 26

World tonnage on order as at the end of 1992
(Thousands of dwt) a/

Countries of registry	All ships	Oil tankers	Bulk carriers	General cargo	Container ships	Other ships
<u>World total</u>	56 032	28 918	15 666	2 725	4 734	3 989
Developed market-economy countries	15 622	6 835	4 011	865	1 807	2 104
Open-registry countries	30 502	18 417	8 249	612	1 947	1 276
<u>Subtotal</u>	46 124	25 252	12 260	1 477	3 754	3 380
Countries of Central and Eastern Europe	1 804	366	704	639	48	47
Socialist countries of Asia	2 275	702	1 100	116	330	28
Developing countries, total	4 508	2 163	751	478	584	532
<u>of which in:</u>						
Africa	14	0	-	-	-	14
America	1 616	1 189	203	85	98	41
Asia	2 733	862	548	386	460	477
Europe	145	112	-	7	26	-
Oceania	-	-	-	-	-	-
Unallocated	1 321	435	851	15	18	1

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

Table 27

Second-hand prices for five-year-old vessels, 1986-1992
(as at end of year)
(Millions of United States dollars)

	1986	1987	1988	1989	1990	1991	1992	Percentage change 1991/1992
30 000 dwt tanker	11.0	13.0	16.0	20.0	21.5	20.0	14.5	-27.5
80 000 dwt tanker	13.0	16.0	22.0	34.0	34.0	32.0	22.0	-31.3
130 000 dwt tanker	13.8	20.0	28.0	40.0	37.0	36.0	29.0	-19.4
27 000 dwt dry bulk carrier	4.0	7.0	11.0	14.0	11.0	13.5	12.5	-7.4
60 000 dwt dry bulk carrier	7.8	13.0	17.0	21.5	18.5	23.0	18.0	-21.7
120 000 dwt dry bulk carrier	12.0	19.5	27.5	32.0	28.0	37.0	28.0	-24.3

Source: Fearnleys (Oslo), *Review 1992*.

Table 28

Development of sales and purchases of second-hand bulkers in 1992
(Thousand dwt)

Type	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total 1992	Total 1991	Percentage change 1991/1992
Tankers	2 035	1 052	1 802	1 899	2 383	1 206	1 025	1 436	702	1 215	1 256	1 545	17 556	17 010	3.2
Dry bulk carriers	1 763	678	773	609	1 587	1 137	927	608	839	1 433	1 481	1 262	13 097	17 608	-25.6
Combi	132	-	384	-	331	234	-	-	49	-	127	78	1 335	4 429	-69.9
Total	3 930	1 730	2 959	2 508	4 301	2 577	1 952	2 044	1 590	2 648	2 864	2 885	31 988	39 047	-18.1

Source: Drewry Shipping Consultants Ltd. (London), *Shipping Statistics and Economics*, 1992, 1993, various issues.

F. Demolition of ships

53. A dramatic change in the volume of ship demolition occurred in 1992. Total tonnage sold (see tables 29 and 30) was higher than in the four previous years and reached 19.0 million dwt. The surge in demolition can be attributed to poor earning prospects for shipowners in freight markets, scrap incentive schemes, obsolescence of older bulk carriers and tankers and the expansion of ship breaking activities in Bangladesh and China. Despite the tremendous increase of tonnages sold for demolition, the average age of broken-up ships increased marginally for tankers and dry bulk carriers. Only the average age of scrapped general cargo ships increased markedly from 24.8 years in 1991 to 25.7 years in 1992. Table 31 indicates comparative trends for the 1985-1992 period.

54. Dry bulk carriers and tankers combined represented 82.7 per cent of the 1992 world

demolition sales, as compared with 72.7 per cent in 1991 (see table 30). Dry bulk carrier sales increased the most, up from 0.7 million dwt in 1991 to 4.1 million dwt in 1992. Most of the ships sold for demolition comprised larger dry bulk carriers with an average size of about 64,000 dwt in 1992.^{29/} The tonnage of tankers sold to shipbreakers also increased from 2.7 million dwt in 1991 to 11.6 million dwt in 1992. This included 25 VLCCs, of which 16 were sold to China, 5 to Pakistan and the remaining 4 to Bangladesh.

55. Table 32 indicates a downward trend in demolition prices in the three main markets. India and Bangladesh paid the highest prices. By the end of the first quarter of 1992, the average price was \$US 175.0 per ldt, but when supply increased, breakers managed to lower prices down to \$US 137.5 per ldt.

Table 29

Broken-up tonnage trends, 1980, 1985-1992

	1980	1985	1986	1987	1988	1989	1990	1991	1992
Tonnage sold for breaking (million dwt)	10.0	41.7	31.2	16.3	5.7	3.3	3.3	4.7	19.0
Share of broken-up tonnage in the total world fleet (percentage)	1.5	6.3	4.9	2.6	0.9	0.5	0.5	0.7	2.7

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

Table 30

Tonnage reported sold for breaking by type of vessel, 1987-1992 (Thousand dwt and percentage shares)

Type of vessel	Thousand dwt						Percentage shares					
	1987	1988	1989	1990	1991	1992	1987	1988	1989	1990	1991	1992
Tankers	6 549	2 570	1 567	1 000	2 714	11 561	40.1	44.6	48.1	29.9	57.3	60.9
Combined carriers	950	293	108	378	426	1 580	5.8	5.1	3.3	11.3	9.0	8.3
Dry bulk carriers	5 539	846	510	649	728	4 141	33.9	14.7	15.6	19.4	15.4	21.8
Other dry cargo ships	3 310	2 050	1 076	1 317	870	1 693	20.3	35.6	33.0	39.4	18.4	8.9
Total	16 348	5 759	3 261	3 344	4 738	18 975	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 1985-1992 a/
(years)

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

Source: Institute of Shipping Economics and Logistics (Bremen), *Shipping Statistics*, 1993, No. 2.

a/ Ships of 300 grt and over.

Table 32

Demolition prices in 1990-1992
(Dollars per ldt)

Month	Market								
	Far East			Pakistan/India			Southern Europe		
	1990	1991	1992	1990	1991	1992	1990	1991	1992
January	215.0	160.0	155.0	260.0	180.0	180.0	120.0	107.5	82.5
February	215.0	160.0	160.0	260.0	160.0	172.5	120.0	85.0	77.5
March	202.5	160.0	155.0	252.5	175.0	175.0	122.5	85.0	80.0
April	202.5	157.5	150.0	260.0	185.0	157.5	122.5	90.0	80.0
May	202.5	157.5	140.0	262.5	180.0	150.0	122.5	80.0	80.0
June	202.5	155.0	140.0	260.0	180.0	142.5	122.5	80.0	80.0
July	202.5	155.0	140.0	262.5	157.5	152.5	122.5	80.0	80.0
August	202.5	155.0	140.0	252.5	157.5	150.0	120.0	82.0	80.0
September	192.5	155.0	142.5	232.5	157.5	150.0	117.5	82.5	80.0
October	190.0	155.0	142.5	210.0	160.0	150.0	117.5	82.5	80.0
November	180.0	155.0	142.5	195.0	160.0	137.5	117.5	82.5	80.0
December	160.0	155.0	142.5	180.0	170.0	150.0	107.5	82.5	80.0
Annual average	197.3	156.7	145.8	240.6	168.5	155.6	119.4	85.0	80.0
Annual average change (%)	-19.0	-20.6	-7.0	-4.8	-30.0	-7.7	-6.3	-28.8	-5.9

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

Box 4New tankers expected to keep rates low

A stronger United States economy and relatively high levels of scrapping are expected to provide some upward pressure on freight rates, but the large number of new tankers coming on line is expected to keep 1993 rates around 1992's low levels. The low rates will translate into more financial pressure on shipowners.

Although just about everybody agrees 1993 looks like a tough year for tanker owners, there remain a lot of wild cards in the market that could send it spiking up or down. The first is scrapping, which turned out to be one of the bright spots for owners in 1992. After years of hoping, at least 23 very large crude carriers headed for the scrap heap in 1992.

Marsoft Inc. in Boston estimates that about 12 million deadweight tons of tankers and combination carriers were scrapped in 1992 and about the same amount will go to the breaker's yard in 1993. With about 20 million dwt worth of new tankers coming on the market, that yields a net gain of only 8 million dwt, or a 3 per cent growth of the fleet. "We see demand growing just a little bit fast," said Kevin Hazel, Marsoft's senior shipping economist. The key element of the demand growth will come from the United States, where Marsoft predicts oil imports will be up 8 per cent. United States oil consumption "should increase a little, and production should go down a bit," Mr. Hazel said.

Rates could plunge even lower, SS&Y Research Services Ltd. warned in a recent edition of its shipping review. Political factors are always a significant unknown for the tanker market, most immediately the possibility that Iraq could return to the world oil trade. Iraqi oil moved by pipeline to Turkey has a much shorter trip to Europe than Persian Gulf crude and demands fewer ships to move it.

Similarly, the increase in capacity of the Sumed pipeline will put downward pressure on tanker demand. And, as always, slower-than-expected growth in the major industrial nations could set back the tanker market, SS&Y warned.

Source: *The Journal of Commerce*, International Edition, February 1993.

Chapter V

PORT DEVELOPMENT

This chapter covers recent developments in global container port traffic, including expanded coverage and new world records in reported TEU movements. A review of the evolution of the role of ports is also featured.

A. Container port traffic

56. Table 33 gives the latest available figures on world container port traffic in developing countries and territories for 1991. The figures given for the world total reported have been improved due to the increased coverage of the survey.

57. The world rate of growth for 1990/1991 was 8.8 per cent, which is more than that achieved for 1989/1990 (5.5 per cent).

58. The rate of growth for developing countries and territories was more than double that of the world, reaching 18.1 per cent in the period 1990/1991, and showed a strong increase in comparison with the 12.2 per cent attained in the period 1989/1990. The growth is uneven from year to year due in some cases to improved data or lack of it, and in other cases to violent fluctuations in trade.

B. Port development - from a transport centre to a logistic platform

59. Today ports can be classified into three different categories or generations. This categorization is not based on the size or the geographical location of the port, or on the public or private nature of its organization. It is based on three criteria: (a) port development policy, strategy and attitude; (b) the scope and extension of port activities, especially in the area of information; and (c) the integration of port activities and organization.

60. Port development policy, strategy and attitude are fundamental points when distinguishing a new generation port from an old one. Until the 1960s, ports were merely the interface locations for cargo between land and sea transport. The traditions and habits of those years have conditioned the thinking of many people involved in port activities. Apart from cargo loading/discharging and storing, other activities were not usually carried out in the port area. Today, this way of thinking still exists and limits the conception of the port to a fixed and limited role, which in turn tends to make decision-makers at the government, municipality or enterprise levels favour conservative or passive policies. Consequently, Governments may restrict the activities of ports to a

minimum, for example loading/discharging, storage and some navigational services. Investments are concentrated on waterfront infrastructures, without any awareness of what is happening to the vessels and cargo outside that waterfront area. Such attitudes and the resulting restricted scope of activities have led ports of the first generation towards organizational isolation.

61. Second generation ports are different. In this category of ports, Governments, port authorities and those who provide port services have a broader understanding of the functions of seaports. The port is regarded as a transport, industrial and commercial service centre. Thus, ports are allowed to undertake and offer industrial or commercial services to their users which are not directly connected to the traditional loading/discharging activity. Based on a broader conception and management attitude, port policies, legislation and development strategies are made.

62. As a result, the scope of port activities is extended to commercial activities or any other relevant service such as cargo packing and marking and industrial services such as cargo transformation. Industrial facilities are built up within the port area. The port thus develops and expands towards its hinterland with industries such as iron and steel, heavy metallurgy, refineries and basic petrochemicals, aluminium, paper pulp making, fertilizers, sugar and starch, flour milling and various agro-food activities. The second generation ports are not only transport centres but also industrial and commercial centres.

63. Organization within a second generation port is different from that of a first generation one. Second generation ports enjoy a closer relationship with transport and trade partners who have built their cargo transformation facilities in the port area. However, only the big shippers or shipowners benefit from that activity. The number of privileged port users is small and their relationship with the port organization is quite simple and direct. Second generation ports also have a closer relationship with the municipality, since they are more dependent on the surrounding city as regards land, energy, water and manpower supply, as well as the land transport connection systems. Inside the port organization,

Table 33
Container port traffic of developing countries and territories, 1991 and 1990

Country or territory	Container traffic 1991 (TEUs)	Container traffic 1990 (TEUs)	Percentage change 1990/1991	Percentage change 1989/1990
Singapore	6 354 000	5 223 500	21.6	19.6
Hong Kong	6 161 912	5 100 637	20.8	14.3
Republic of Korea	2 694 115	2 348 475	14.7	8.8
United Arab Emirates	2 073 125	1 563 297	32.6	14.4
Philippines	1 463 223	1 408 034	3.9	7.5
Thailand	1 170 697	1 078 290	8.6	14.8
Indonesia	1 156 265	923 663	25.2	20.9
Malaysia	1 074 295	888 157	21.0	21.8
Saudi Arabia	1 044 661	788 567	32.5	3.9
India	679 114	686 833	-1.1	10.1
Sri Lanka	669 489	583 811	14.7	7.1
Brazil <u>a/</u>	623 446	691 034	-9.8	-23.0
Egypt	565 858	350 090	61.6	62.0
Pakistan	458 829	390 391	17.5	14.0
Mexico <u>a/</u>	344 494	307 220	12.1	23.2
Cyprus	328 520	384 279	-14.5	4.0
Panama	233 450	180 053	29.7	18.1
Argentina	221 000	209 150	5.7	-4.1
Nigeria	210 144	208 144	1.0	21.6
Chile <u>a/</u>	207 671	177 722	16.9	8.5
Malta	207 636	135 790	52.9	235.7
Honduras	190 100	180 253	5.5	-6.7
Morocco	185 838	173 332	7.2	41.3
Côte d'Ivoire	179 501	181 037	-0.9	n.a.
Jamaica	164 636	144 576	13.9	-8.7
Oman	156 439	168 465	-7.1	1.8
Kenya	135 541	136 406	-0.6	5.2
Colombia <u>a/</u>	135 157	113 889	18.7	39.0
Lebanon	131 175	n.a.	n.a.	n.a.
Qatar	129 753	20 725	526.1	n.a.
Costa Rica	123 254	106 286	16.0	-38.9
Ecuador	113 463	97 030	16.9	n.a.
Martinique	108 500	n.a.	n.a.	n.a.
Peru	104 899	65 610	59.9	n.a.
Guadeloupe	99 929	102 140	-2.2	7.3
Papua New Guinea	97 825	90 361	8.3	2.9
Netherlands Antilles	91 174	95 130	-4.2	14.9
Bahrain	84 254	75 066	12.2	n.a.
Syrian Arab Republic	82 832	67 340	23.0	22.9
Jordan	72 725	83 283	-12.7	7.6
Mauritius	72 271	62 272	16.1	4.1
Cameroon	71 102	91 379	-22.2	4.7
Ghana	70 723	64 157	10.2	7.9
Kuwait	65 058	124 466	-47.7	-33.5
Uruguay	55 524	51 443	7.9	27.0
Tunisia	54 105	37 891	42.8	0.1
Haiti	40 348	45 724	-11.8	n.a.
Fiji	38 890	25 423	53.0	n.a.
Barbados	36 010	36 701	-1.9	-0.1
French Polynesia	34 957	32 451	7.7	4.3
New Caledonia	30 980	27 799	11.4	n.a.
Other reported <u>b/</u>	294 628	289 171	1.9	4.8
Total reported <u>c/</u>	31 195 526	26 418 933	18.1	12.2
World total reported	93 100 738	85 596 903	8.8	5.5

Source: Derived from information printed in *Containerisation International Yearbook, 1993*.

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.

different activities become more integrated, in keeping with the increase in quantity and the quick turn-over of cargo throughout the port. However, the integration of second generation ports is often spontaneous rather than organized.

64. The third generation ports emerged in the 1980s, principally due to world-wide large-scale containerization and intermodalism combined with the growing requirements of international trade.

65. The policy-makers, managers and operators of third generation ports have a very different understanding and attitude towards the running and development of their ports. They see their port as a dynamic node in the complex international production/distribution network. Based on this thinking, people have changed their management attitude from the rather passive offer of facilities and services to that of active concern and participation in the overall international trade process. These efforts necessarily are directed towards promoting trade and transport activities which, in turn, generate new revenue-making and value-adding business. As a result of such efforts, the ports have been turning into integrated transport centres and logistic platforms for international trade.

66. Activities and services in such third generation ports are specialized, variable and integrated. They are subdivided into four different categories, as described below.

(a) Traditional port services

67. The traditional port services such as cargo handling are and will remain the backbone of port activities. The difference is that in a third generation port, logistic and total distribution services are also provided to port users. Moreover, all conventional services are carried out with information distribution, and therefore port infrastructure is planned with equal consideration for the "port infostructure". (information processing facilities).

(b) Industrial/environmental services

68. Industrial services in a third generation port can relate to ships or cargoes. Ship-related services, such as ship repairing industries and other engineering and technical services, are of great importance to building up a good reputation. Cargo-related services allow others to establish industries within the port area to generate more cargo throughput and more value added for the port. In some countries, export

processing zones have been established in or near the port area with attractive commercial conditions.

69. Modern ports should be equipped with the necessary facilities for environmental protection. Ships and cargoes have long been sources of pollution in the port area (e.g. ship's wastes and refuse and dangerous cargoes), and with industrial activities in the port area, environmental problems are becoming one of the major concerns of port managers.

(c) Administrative and commercial services

70. The administrative services in a third generation port are considerably upgraded, in line with the closer relationship between the port and trade. Documentation, regulations and the writing schedule of the port are the three areas in which bold measures have to be introduced. Commercial services, such as banks, insurance, legal services and communications, are usually highly developed in third generation ports.

(d) Logistics and distribution services

71. Again, the rationale for these services stems from the needs of trade. It is essential to distinguish between distribution and storage to understand what port users really need. As explained by the logistics manager of a distribution company in the port of Rotterdam: "Demand from the Far East and the United States for central distribution facilities has increased, ... if I were just to offer warehouse accommodation, I would not have any clients. What they require is an integrated logistic service".^{30/}

72. The provision of these services is usually encompassed under the heading of port distribution centre. This means that the port provides the infrastructure and organization that allow companies to undertake activities in respect of warehousing, transport connections (air, water, land), logistics, electronic data interchange, and other value-adding activities.

73. It is difficult for a port to become a third generation port without undertaking some organizational changes regarding the relationship between activities within the port area and the relationship between the port and the municipality (and local and/or central government). As a distribution and logistic service centre, the port is becoming more and more dependent on and integrated in the life of the surrounding city. With their much enlarged dimensions and activities, ports can no longer afford to keep the simple and somewhat independent relationship they had with the city in the past.

Excellent city-port relations and the full support of the former is one of the most important conditions for the success of any port. To this end, port organizers must bear in mind two things: first, they must adopt an active approach by presenting their port development plans to the city and government and explaining fully their needs and difficulties. Secondly, they must convince the authorities that the city/region stands to gain from the development of the port.

74. In many countries, the fact that the port and the city make their own separate and independent plans has brought about urban degradation. In fact the city and the port are largely interdependent and share mutual interests. The port may be a large job supplier, and it has various positive effects on the local social and economic life, while the city provides basic conditions for the port such as commercial services, telecommunications, land transport, water supply, housing, etc. In today's world, the city and port ought more than ever to work closely together; each should look at the problem of development from the other's point of view and consider the other's problems as its own. The city should consider providing the necessary space for the port's new activities, such as distribution centres, and improve rail/road transport and telecommunication systems. Ports should think more about the well-being of the local community and make their own contribution. Many ports no longer use old quays and docks which are often located close to the city centre. When the relationship between the port and city is good, the reconversion of these assets is easier to achieve.

75. Ports, especially those dealing with general cargo, have been undergoing an evolution from the first generation to the second and third generations, with an increasing role in the transport chain and international trade. There are two very important factors to be borne in mind when building a third-generation port, namely timing and coordination of actions. Timing is essential, since the third generation port requires fundamental changes which can only be achieved effectively after years of effort. The most difficult task is, very often, ensuring the motivation of the whole port community and the establishment, among all parties, including each docker in the port area, of a common consciousness of the port's development. The building of a third-generation port depends on the quality of the joint work of the port community, government authorities, the municipality and even the people living in the city. Making people aware of the desirability of such a port, as shown by past experiences in industrialized countries, needs several years of constant effort. This is partly because the benefits of a third-generation port are obtained only after a period of four to six years; even a computerized information system (or an EDI system) usually needs four to six years before it is considered fully integrated and functional. Coordination means that a third-generation port can only be built through actions being taken systematically, not independently one of the other. In other words, the services previously mentioned concerning a third-generation port should all be established in a coordinated manner.

Box 5

Restructuring of ports in Latin America and the Caribbean a/

The Economic Commission for Latin America and the Caribbean collaborated with member States on a study to improve port productivity and reduce related costs. The study presents an analysis of options for private sector participation in public-sector ports and the main issues arising from such involvement, and suggests economic, legal and social measures Governments might adopt to deal with them. Probably the most important findings to come out of the study are that: (i) any effort to restructure public-sector ports must be supported by a market-oriented institutional framework composed of deregulation, decentralization, anti-monopoly laws and specific legislation which defines how private investors are to participate, or a public-sector monopoly could easily be transferred to private interests; (ii) economists and attorneys must join forces to elaborate the required legal measures which create that framework, or the desired economic consequences of any restructuring endeavour will be distorted by dominant interest groups trying to recover their historical privileges and benefits; and (iii) commercial goals and social equity can both be achieved through the participation of port administrators and dock labour in the resulting private enterprises and through the utilization of various programmes to compensate them for the forfeiture of acquired rights.

a/ United Nations, *The restructuring of public-sector enterprises: The case of Latin American and Caribbean ports*, Sales No. E.92.II.G.9.

Chapter VI

FREIGHT MARKETS

This chapter presents conditions and trends in freight markets. Coverage is by main cargo sectors, liner freight as a percentage of selected commodities, estimates of global freight costs and marine bunker trends.

A. Freight rates of main cargo sectors

76. Broad freight rate trends for the three main shipping markets are found in table 34. The monthly freight indices cover the 1990-1992 period for selected liner rates, dry cargo time and voyage charters and tanker world scale indices for five types of petroleum cargoes.

77. The 1992 liner freight index peaked in May at 81 but declined slightly to 79 by year-end. The monthly average rate was 78 which, compares to 79 in the previous year and 75 in 1990. The stability of the liner market can be explained by the bias of the index, which is based only upon freight rates in the Antwerp/Hamburg range, the decline in European industrial production and the deceleration of the subregion's (OECD-Europe) seaborne trade.

78. More global indicators within the liner sector are containership charter rates and major conference container rates. For the former, smaller 500 TEU capacity container vessels experienced a 9.2 per cent increase over 1991. Larger 1,000 TEU capacity vessels reached about \$US 11,500 per day by year end, or a 4.5 per cent rise from January 1992.^{31/} Conference unit rates (\$/TEU) increased slightly on three routes with a maximum gain of 4.8 per cent on the transpacific route, while, the Europe-Australia route declined 4.6 per cent during 1992. Graph 11 presents medium-term trends. The information indicates that major conference container rates experienced limited change over the 1988-1992 period.^{32/}

79. In the dry bulk sector, both time and voyage charter annual average indices decreased significantly from 1991. For example, time charters rates dropped 20.7 per cent, while voyage charter rates fell 5.9 per cent. Much of the reduction is attributable to the steep decline in global steel production, particularly in Japan, which in turn dampened the demand for coal and iron ore transport. Steam coal and grain shipments, however, increased, and there was also a large increase in scrapping, preventing a further decrease in dry bulk shipping rates.

80. Another indicator of dry bulk freight rates in world shipping markets is the Baltic Freight Index

(BFI). The index is weighted to reflect the importance of the major dry bulk routes. The composition of the index during 1992 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	T/c	10 per cent
3 US North Pacific-Japan	Grain	7.5 per cent
3a Transpacific round	T/c	7.5 per cent
4 US Gulf-Venezuela	Grain	5 per cent
5 Continent-South America-Far East	T/c	5 per cent
6 H Roads-R Bay-Japan	Coal	7.5 per cent
7 H Roads-North Continent	Coal	5 per cent
8 Queensland-Rotterdam	Coal	5 per cent
9 US West Coast-Continent	Petcoke	5 per cent
10 Tubarao-Rotterdam	Iron ore	5 per cent
11 Casablanca-WC India	Phosrock	2.5 per cent
12 Aqaba-WC India	Phosrock	5 per cent

Graph 12 shows the BFI for 1992 and selected routes/commodities that are important to the trades of developing countries. The 1992 BFI indicates the volatility of the dry bulk spot market. The year started with uncertainty over grain trade shipments to the CIS and weak markets in iron ore and coal due to recessionary pressures, as a result of which the larger-sized vessel rates were particularly depressed. Following a slight improvement in the late spring, due to grain demand and the effects of port congestion, this was soon reversed. The market continued to be poor until late October when a significant recovery occurred following demand for grain from the CIS. This was then followed by a much firmer market, with continued demand for grain but also for iron ore and coal. The year closed better than expected but with uncertainty for 1993.

81. Table 35 indicates the highest and lowest freight rates reported during 1991 and 1992 in the leading dry bulk trades. Both high and low freight rates for all the commodities except grain were down compared to the previous year. Moreover the range between the year's high and low rates for grain, sugar and fertilizers decreased considerably from those of 1991. Conversely, the spreads between the low and high for fertilizers and ore increased.

Table 34
Freight rate indices, 1990-1992
 (Monthly figures)

Period	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/ Small crude and product carriers																	
	VLCC/ULCC			Medium-size crude carriers			Handy size clean			Handy size dirty			VLCC/ULCC			Medium-size crude carriers			Small crude and product carriers			Handy size clean			Handy size dirty		
	1990	1991	1992	1990	1991	1992	1990	1991	1992	1990	1991	1992	1990	1991	1992	1990	1991	1992	1990	1991	1992	1990	1991	1992	1990	1991	1992
January	76	78	76	130	97	98	208	198	202	61	98	49	132	137	91	190	183	134	292	271	195	280	291	185	280	291	185
February	74	78	77	129	101	106	203	199	195	63	93	41	108	151	84	153	206	141	209	337	168	207	250	209	207	250	209
March	75	79	80	127	121	100	176	207	192	79	61	34	113	110	81	152	166	116	182	254	154	204	195	158	204	195	158
April	76	82	80	116	131	101	203	205	191	62	46	41	107	102	72	143	140	110	183	184	147	213	176	161	213	176	161
May	75	82	81	114	132	105	198	205	195	57	75	39	109	112	70	159	156	105	205	178	160	214	213	155	214	213	155
June	76	84	79	109	148	103	191	205	190	53	86	36	95	109	69	139	149	104	204	162	154	206	179	172	206	179	172
July	75	82	77	94	136	84	190	206	191	64	61	44	99	104	75	140	131	110	203	135	155	189	185	178	189	185	178
August	73	80	75	92	114	83	197	206	191	57	60	45	96	94	72	144	124	114	221	140	162	204	165	165	204	165	165
September	75	79	74	97	125	82	195	205	191	66	53	43	99	92	73	151	115	113	297	142	162	240	152	156	240	152	156
October	76	78	76	85	125	86	197	206	193	54	59	50	106	85	79	158	130	116	358	172	149	252	163	165	252	163	165
November	76	76	80	86	120	100	199	208	196	69	53	57	111	87	65	170	119	117	303	165	177	269	173	174	269	173	174
December	77	74	79	88	104	107	215	208	194	72	38	52	125	87	98	177	121	139	299	184	193	338	152	163	338	152	163
Annual average	75	79	78	106	121	96	198	205	193	63	65	44	108	106	77	156	145	118	246	194	165	235	191	170	235	191	170

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

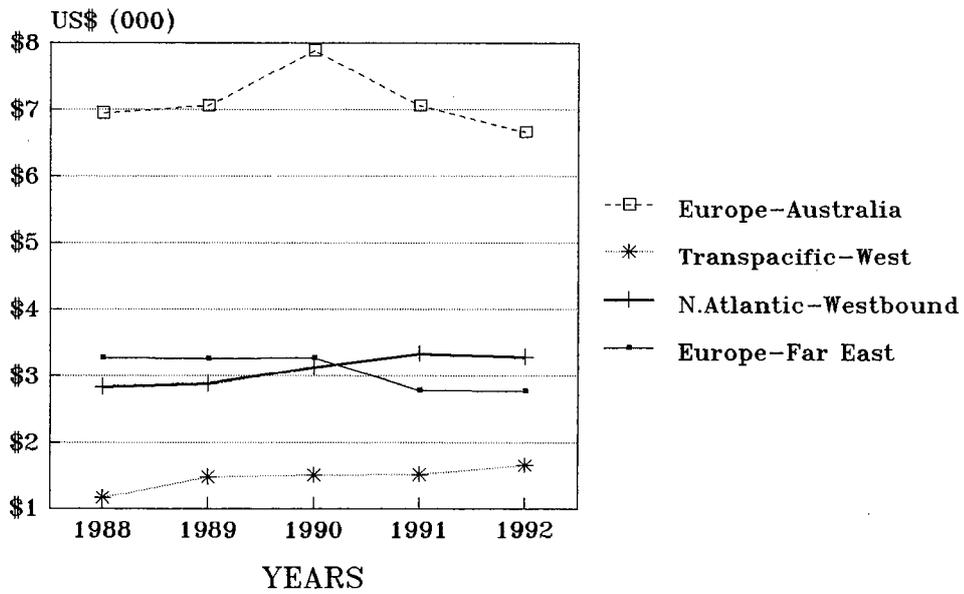
a/ Liner index compiled by the Ministry of Transport of Germany. Monthly weighted assessments of freight rates on cargoes loaded or discharged by liners of all flags at ports in the Antwerp/Hamburg range.

b/ Compiled by the Ministry of Transport of Germany.

c/ Compiled and published by Lloyd's Ship Manager. Worldscales = 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

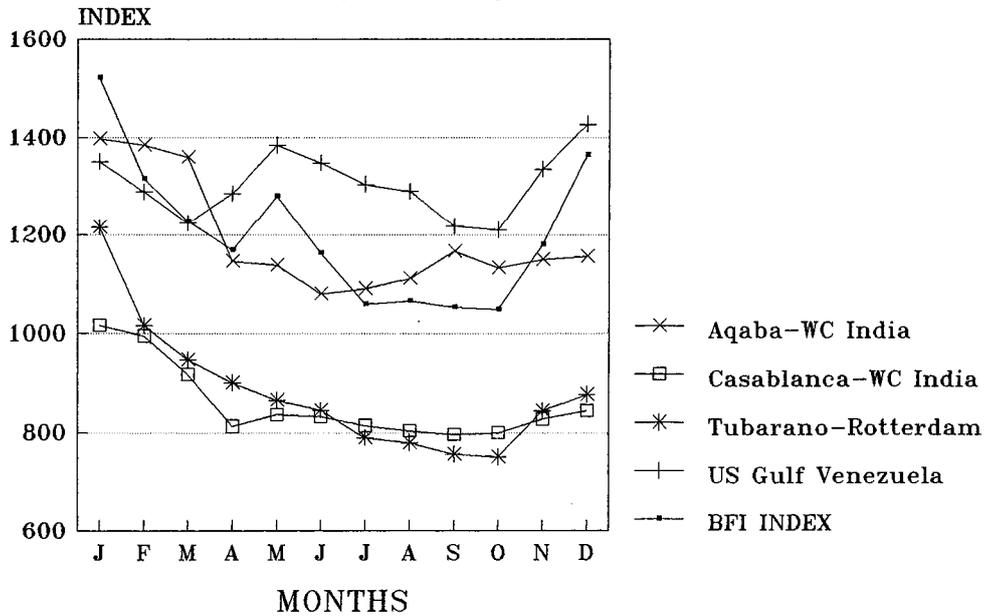
Major conference rates 1988-1992
Average annual rate per TEU



Source: *Lloyd's Shipping Economist*, April 1993, p. 35 and previous issues.

Graph 12

Baltic freight index and selected routes, 1992
(Mid-month figures)



Source: London Commodity Exchange.

Table 35

Comparative freight rates for selected commodities, 1992 versus 1991

Commodity	Route	Freight rate range			
		1991 (\$US/ton)		1992 (\$US/ton)	
		High	Low	High	Low
Grain	United States (Gulf of Mexico)/Venezuela	20.00	11.00	19.00	13.00
Sugar	Queensland/Japan	19.90	17.25	18.75	16.75
Fertilizers	Aqaba/West Coast India	25.50	18.95	16.00	15.00
Fertilizers	United States (Gulf of Mexico)/West Coast India	48.50	39.50	37.00	36.50
Fertilizers	Continental Europe/West Coast India	41.25	39.00	39.00	34.25
Ore	Brazil/Japan	13.70	11.40	9.85	6.95
Ore	Brazil/Continental Europe	8.10	6.50	6.25	3.50

Source: *Lloyd's List*, London, 10 February 1992 and 14 June 1993.

82. Freight rates for the five types of ships in the tanker sector reached a low point in the middle of 1992, before recovering in the fourth quarter. The rise in rates reflected the increase in world crude oil shipments from 1,333 million tons in 1991 to 1,390 million tons in 1992, with most of the growth from the Middle-East/Gulf region. Also, world total oil shipments increased slightly from 457 million tons to 460 million tons (see table 3).

83. The VLCC market fluctuated within the Worldscale 40s range from January to September 1992 and quickly escalated to WS 52 by December. The year-end improvement in Worldscale rates was caused by expanding oil-products shipments, delays at Red Sea terminals and more fixtures on the long routes between the Gulf and Europe. The annual average VLCC/ULCC Worldscale rate, however, was significantly less than 1990 and 1991. Table 34 shows a drop of 21 points in the large tanker average index in 1992.

84. Medium-sized crude carrier rates followed a similar pattern to the larger VLCC/ULCCs. The Worldscale rate declined during the first half of the year and moved upward as winter approached the Northern hemisphere. The firming of rates reflected a growth in crude shipments and a relative balance between the supply of medium-sized tonnage and oil shipping demand. The 1992 average monthly rates were also less than in the two previous years, with a decline in Worldscale of about 27.4 per cent.

85. For small crude and product carriers, the Mediterranean market fluctuated in the WS 80s and

WS 90s during the first 10 months of the year. The usual winter upturn raised the rate level into the WS 120s in December. In the Caribbean, rate levels for the 70-75,000 ton class were between WS 125 and WS 150 in the first quarter. The second and third quarters saw the rates consistently below WS 120, but by year-end rates had increased to the WS 120s range.

86. In the market for handy-size clean or dirty, the rates for 30,000 tonnes Caribbean-United States fluctuated widely up to WS 250 in January then down to the WS 150s in May and ended up at an average of below WS 220 in December.

87. The time charter market for tankers reflected the depressed rate levels in 1992. Owners were reluctant to accept long-term fixtures at low rates, and most activity focused on modern tonnage for short periods. These conditions characterized both the crude and clean markets for all major oil/petroleum trades.

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

88. Table 36 indicates liner freight rates as a percentage of prices for selected commodities and trade routes in 1970-1992. Over the entire period the ratio increased on all commodities/routes. The ratios for jute, cocoa beans from Ghana and Brazil and coffee from Colombia more than doubled during the period. Higher-value commodities such as tin, coconut oil and tea experienced minimal change.

Table 36

The 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	1991	1992
Rubber	Singapore/Malaysia-Europe	10.5	18.5	8.9	n.a.	15.5	12.6	13.1
Tin	Singapore/Malaysia-Europe	1.2	1.6	1.0	n.a.	1.7	1.9	1.1
Jute	Bangladesh-Europe	12.1	19.5	19.8	6.4	21.2	25.0	24.1
Cocoa beans	Ghana-Europe	2.4	3.4	2.7	1.9	6.7	6.2	6.9
Coconut oil	Sri Lanka-Europe	8.9	9.1	12.6	12.6	n.a.	10.6	8.7
Tea	Sri Lanka-Europe	9.5	10.4	9.9	6.9	10.0	10.9	9.1
Coffee	Brazil-Europe	5.2	9.7	6.0	5.0	10.0	9.3	8.8
Coffee	Colombia (Atlantic)-Europe	4.2	5.7	3.3	6.7	6.8	7.2	7.9
Cocoa beans	Brazil-Europe	7.4	8.2	8.6	6.9	11.0	12.2	18.5
Coffee	Colombia (Pacific-Europe)	4.5	6.3	4.4	6.1	7.4	7.8	8.4

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 1990-1992).

a/ C.i.f. prices were quoted for coffee (Brazil-Europe and Colombia-Europe) and coconut oil. For cocoa beans (Ghana-Europe and Brazil-Europe) and tea, averages of the daily prices in London were quoted. Prices of the remaining commodities are quoted on f.o.b. 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 1990-1992, the prices of the commodities were taken from UNCTAD, *Monthly Commodity Price Bulletin*, the March 1993 issue.

89. In 1992 the freight level for tin, jute, coconut oil and tea were unchanged from 1991. The prices, however, for these commodities increased, thus reducing the freight ratio in 1992. The freight for rubber and cocoa beans remained at almost the same level as in 1991. The prices, however, decreased and consequently the freight ratios increased. Conversely the freight level on the trade routes from Brazil and Colombia (Atlantic and Pacific) fell very drastically, but the prices for coffee and cocoa beans decreased more and thus the ratio of freights for these commodities increased.

C. Estimates of global freight costs

90. Global payments for maritime services increased slightly (3.0 per cent) in 1991 from the previous year. Table 37 estimates total freight payments for imports and their percentage of import value by country groups. Freight payments as a proportion of import value declined from 6.6 per cent

in 1980 to 5.2 per cent in 1991. The developed market-economy countries' proportion was about half that of developing countries, but the ratio has decreased more rapidly for developing countries. For example, in 1980 the developed market-economy countries' proportion was 5.5 per cent and by 1991 it was 4.35 per cent. The developing countries' proportion, however, decreased from 10.4 per cent in 1980 to 8.5 per cent in 1991.

91. The proportional difference between the country groups is attributed to several factors. These include, *inter alia*, greater bargaining power on the part of developed market-economy countries when dealing with shipowners/conferences, greater cargo volumes, more efficient infrastructure facilities at ports and inland distribution systems, and generally longer trade routes for developing countries. Graph 13 compares freight as a percentage of c.i.f. values for the world, developed market-economy countries and developing countries.

Table 37

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

Year	Country group	Estimate of total freight costs of imports (millions of dollars)	Value of imports (c.i.f.) (millions of dollars)	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
	<u>of which:</u>			
	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	
1990	1. World total	173 102	3 314 298	5.22
	2. Developed market-economy countries	117 004	2 661 650	4.40
	3. Developing countries - total	56 098	652 648	8.60
	<u>of which:</u>			
	in Africa	9 048	81 890	11.05
	America	9 626	117 769	8.17
	Asia	35 054	427 926	8.19
	Europe	1 909	21 303	8.96
Oceania	461	3 760	12.26	
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
	<u>of which:</u>			
	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	

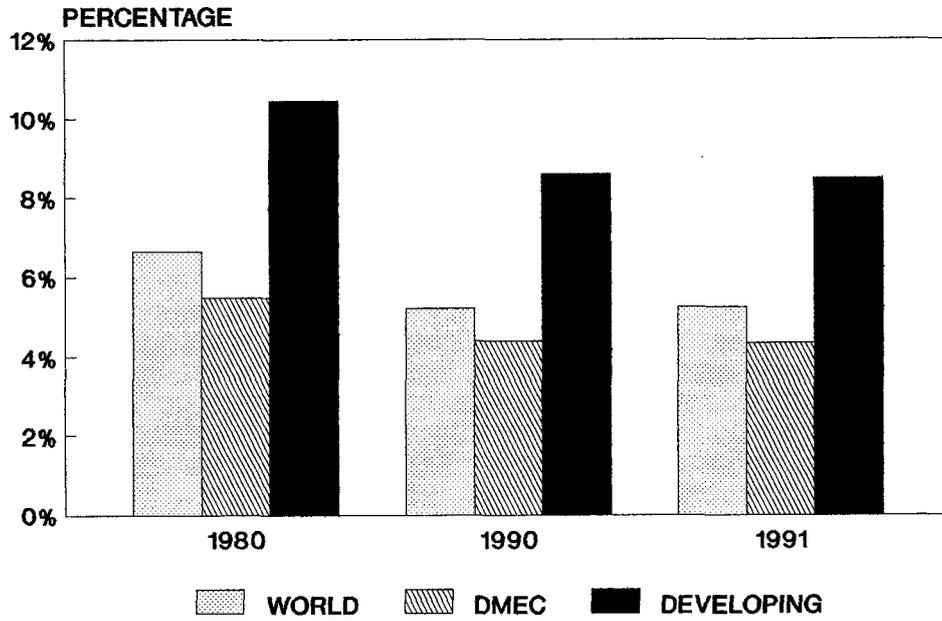
Source: Derived from IMF c.i.f./f.o.b. factors and IMF import data.

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

b/ The estimates presented here reflect the inclusion of the former Yugoslavia in this review in "developing countries in Europe" as of 1986. In previous years the former Yugoslavia was classified as a developed market-economy country.

Graph 13

Estimates of total freight costs in world trade by groups



Source: IMF, *International Yearbook*.

D. Marine bunker prices

92. Marine bunker prices surged from the first quarter to the last quarter 1992. In all major markets the average price for intermediate fuel oil and high viscosity fuel oil increased by 33.9 per cent and

37.0 per cent, respectively. The largest changes occurred in the United States and North-West Europe. Marine diesel oil prices, however, experienced comparatively small increases and in some markets (Rotterdam and Ras Tanura) remained unchanged. Table 38 provides details on the 1990-1992 period.

Table 38

Fluctuations in marine bunker fuel prices a/ 1990-1992
(\$US per ton)

		1990	1991	1992				1992 Percentage change (fourth quarter to first quarter)
		4Q	4Q	1Q	2Q	3Q	4Q	
Persian Gulf (Ras Tanura)	IFO	160	91	75	84	100	102	36.0
	MDO	308	202	207	207	207	207	0.0
Mediterranean (Genoa)	HVF	151	92	82	90	99	105	28.1
	IFO	162	102	91	98	109	113	24.2
	MDO	335	226	195	200	209	215	10.3
North West Europe (Rotterdam)	HVF	139	82	69	80	90	93	34.8
	IFO	147	88	76	86	94	97	27.6
	MDO	263	172	157	163	166	157	0.0
Gulf of Mexico (Houston)	HVF	135	72	57	72	91	88	54.4
	IFO	139	77	61	76	94	91	49.2
	MDO	258	172	150	158	172	173	15.3
West Coast of United States (Los Angeles)	HVF	140	76	62	75	99	89	43.6
	IFO	146	81	67	80	105	94	40.3
	MDO	290	192	182	192	201	192	5.5
Far East (Singapore)	HVF	147	82	70	82	95	87	24.3
	IFO	151	86	73	86	98	92	26.0
	MDO	295	178	159	162	165	166	4.4

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

a/ Average prices for each quarter.

HVF - High viscosity fuel oil (380 cSt)
IFO - Intermediate fuel oil (180 cSt)
MDO - Marine diesel oil

Chapter VII**MULTIMODAL TRANSPORT AND TECHNOLOGICAL DEVELOPMENTS**

Chapter VII updates developments in the field of multimodal transport. Topics covered include a summary report of the meeting of an UNCTAD Group of Experts on Multimodal Transport, innovations in double-stack container train networks, new container standards and information on container production.

A. Group of Experts on Multimodal Transport

93. In accordance with resolution 67 (XIV) of the Committee on Shipping, adopted on 29 June 1990, a Group of Experts on Multimodal Transport was convened by UNCTAD from 9 to 13 March 1992. The Group examined developments in the field of multimodal transport and containerization, as well as the main problems experienced by users and providers of these services. Bearing in mind in particular the needs of developing countries and countries with economies in transition, the experts prepared proposals on a future programme of work for UNCTAD in the field of multimodal transport, containerization and technological development, which was put before the newly established UNCTAD Standing Committee on Developing Services Sectors.

B. Second Seminar on Container Dimensions

94. The second Seminar on the Impact of the Increasing Dimensions of Loading Units on Combined Transport was convened by the Executive Secretary of the Economic Commission for Europe in September 1992. The Seminar was particularly important because it provided an opportunity for worldwide consultations on the acute problem of container standards, vital for the development of multimodal transport. The participation of all interests and the taking into account of their views in considering this problem was particularly useful in avoiding dominance of any one group of interests. For that reason the UNCTAD secretariat supported the convening of the Seminar and assisted in obtaining broad participation by inviting its member countries, particularly the developing ones, to participate in it.

95. The Seminar reconfirmed that the existing ISO series I containers, which particularly in developing countries had been the basis for recent large-scale investment in infrastructure, rolling stock and handling equipment, should continue to be the main container standard, which should be improved in line with emerging market requirements.

C. Further development of the double-stack container train network in North America

96. In November 1992, Canadian Pacific Rail completed a \$US 15 million tunnel clearance project to increase the vertical clearance through tunnels and other structures in British Columbia and Ontario. The increased clearances will allow Canadian Pacific to move any double-stack combination of domestic and international containers from coast to coast. An additional Canadian Pacific tunnel clearance project in Wisconsin, which was scheduled for completion in February 1993, will extend the railway's double-stack capabilities to the United States Midwest. Canadian Pacific is taking delivery of 170 new double-stack cars by March 1993, bringing its total number of double-stack cars to 220.

97. Similarly, the other Canadian rail system, Canadian National Railways, completed a \$US 5 million clearance programme through 22 tunnels and five rocksheds in September 1992, about the same time that it finished work on its \$US 15 million Fraser River Bridge rehabilitation project. In October 1992, it opened a new \$US 19 million Vancouver Intermodal Terminal, relocating its west coast intermodal operations from Vancouver to Surrey, thereby providing improved highway access and state-of-the-art systems to speed loading and unloading. Canadian National's \$US 15 million bridge project improves height clearances for double-stack trains, increases the bridge speed limit and allows heavier loads. The work is also expected to reduce the number of disruptive maintenance closures and extend the bridge's life expectancy by 25 years.

98. A further development in double-stack container train operations is expected in the north-south corridors, particularly as a result of the United States-Canada Free Trade Agreement and prospectively the North American Free Trade Agreement involving also Mexico.

99. American President Lines (APL) operates a unit train three times a week for the Ford Motor Company between Detroit and Hermosillo, Mexico, and a double-stack train six times a week between

Mexico City and the Midwest with Union Pacific and Ferrocarriles Nacionales de Mexico. APL recently teamed up with Canadian National North America to offer what the two companies said was the first intermodal container service linking the United States, Canada and Mexico. The company will extend its double-stack service between Mexico City and Chicago to Canada via Canadian National North America's rail system. By offering departures from Mexico City six days per week and transit time of seven days to Toronto and eight days to Montreal, American President Lines and Canadian National believe they are competitive with over-the-road service.

100. It is felt that as intermodal rail technology and services improve, the distance at which intermodal rail services become competitive with trucking is shortened. The threshold distance used to be 700-800 miles in North America, but some now say it has been reduced to 500 and the Florida East Coast Railroad has a strong intermodal service between Jacksonville and Miami with a distance of only 365 miles.

D. Rail landbridges

101. A new railway route linking China through Kazakhstan, the Russian Federation, Belarus, Poland and Germany with the ports in Belgium and Netherlands was officially inaugurated on 1 December 1992. It starts from the Chinese port of Lianyungang in Jiangou province. The new route became possible with the completion in September 1990 of the connection of the Chinese railway system with the railway network of Kazakhstan. The new route is about 3,000 kilometres shorter than the Trans-Siberian route.

102. Yet another landbridge proposal has been suggested for the Central American isthmus. Coming on top of existing and competing proposals for landbridges in Costa Rica, Mexico and Panama, the Governments of Honduras and El Salvador have signed a bilateral agreement to develop a 320-kilometre-long intermodal rail link between Puerto Cortes on the Gulf of Mexico and the Salvadorian port of Acajutla on the Pacific. Parts of the proposed link already exist in the two countries but would have to be upgraded and modernized to make them compatible with the new rail infrastructure which is required to link the two lines. It is hoped that the project will commence by May 1993, with completion scheduled for early 1994.

E. Introduction of 9'06" as a standard container height

103. At its sixteenth session in May 1991 in Seoul, Republic of Korea, the ISO Technical Committee TC 104 confirmed its decision to introduce an additional standard container height of 9 feet 6 inches (2.9 meters) into the ISO 668 and other international standards with the designation IAAA (40-foot) and IBBB (30-foot) containers. The new dimensions were circulated as a draft international standard (DIS) by the ISO secretariat to all ISO member bodies for a vote on 19 March 1992. According to the new ISO Directives (1992 Edition), a draft International Standard having been circulated for voting is approved if:

(a) A two-thirds majority of votes cast by the P-members of the technical committee or sub-committee are in favour; and

(b) Not more than one-quarter of the total number of votes cast are negative.

104. Abstentions, as well as negative votes not accompanied by technical reasons, are excluded when votes are counted. In accordance with these conditions the draft standard was approved, since among 21 P-members of the TC 104, 15 votes were in favour (71 per cent) and among the 24 ISO member bodies voting 6 cast negative votes (25 per cent).^{23/}

105. The result of the voting on the introduction of the new standard container height of 9-foot 6-inches was unprecedented and controversial. Indeed, of the 26 ISO member bodies participating in the vote, six cast negative votes, two abstained and the votes of two other member bodies came after the time-limit (19 September 1992) and, therefore, were not taken into account. Among the P-members of the Technical Committee 104 which cast negative votes, one finds Australia, Belgium, Cuba, the Czech Republic, India and the United Kingdom - countries with non-negligible container traffic.

F. World container population

106. According to the census carried out by *Cargoware International*, the world's container population by mid-1992 amounted to 7,320,400 TEUs of all types. The previous census carried out in mid-1990 showed the world container population at 5,874,084 TEUs. Though the total number of containers increased by about 25 per cent, the composition of the world container population in terms of dimensions (length and height) did not

change significantly. The overwhelming majority of the fleet is represented by 20- and 40-foot-long, 8-foot 6-inch-high containers with a further increased share of 40-foot stock. Except for a significant increase of 9-foot 6-inch-high high-cube containers, which had reached 684,064 TEUs or 9 per cent of the total container population by mid-1992, there has been no meaningful proliferation of non-ISO standard containers, through there was a further decrease in the number of 8-foot-high containers. Containers with lengths other than 20 and 40 feet were represented mainly by 45-, 48- and 53-foot length containers. Their share in the total fleet was about 2.1 per cent in 1992, whereas in the 1990 census it was 1.8 per cent. An analysis of the world container fleet by length and height is reproduced in table 39.

107. Over 20 per cent of high-cube containers are either 45, 48 or 53 feet in length, while the other 80 per cent are 40-foot containers. Contrary to the growth in the absolute number and share of 9-foot 6-inch high-cube containers, the number and share of 8-foot-high containers continue to fall. Their number had fallen by one third since the 1990 census, and their share in the world fleet is now under 1.4 per cent. Table 40 gives a comparison of the world container population by length/height for the period 1990-1992.

108. As regards geographic distribution, North American owners control 72.5 per cent of all non-ISO length containers, and their fleet of 40-foot containers is twice the size of their fleet of 20-foot-long containers. All other regions, except the Mid-East/India, have a high proportion of 20-foot containers. High-cube containers are more commonly encountered in North America and North Asia, where they account for 13 per cent of all inventories. These two regions together control 80 per cent of all high cube containers of the world.

G. Container production

109. The global production of containers grew by 26 per cent in 1992 in comparison with production in 1991 and reached 1.15 million TEUs, 240,000 TEUs more than the 1991 total (see table 41). Despite predictions of overcapacity, the industry was still able to raise its output. Many new-generation plants, particularly in Indonesia, Malaysia, China, the Philippines and Thailand, made a major contribution to the registered growth of world production. A few factories are still at the construction stage in these countries. Certain estimates suggest that, during the coming one to two years, new factories, primarily in China and India, could add a further 100,000 TEUs to

the annual capacity. It may also be added that in general the present production capacity already outstrips manufacturing levels, sometimes significantly. According to *Cargoware International*, current production in different countries ranges from 33 to 82 per cent of the potential capacity and on average represents 53 per cent. Total production in Asia rose by about 200,000 TEUs in 1992 over 1991, and more than 75 per cent of this growth was attributed to newly operational factories.

110. 1992 was another record year for the manufacturers in the Republic of Korea, with their overall production reaching 372,000 TEUs against 340,000 TEUs in 1991. Nevertheless, the share of this country in global production fell from 37.4 per cent in 1991 to 32.3 per cent in 1992.

111. Manufacture of standard dry freight containers (including high-cube) exceeded 1 million TEUs. It is interesting to note the fall in the production of non-ISO length containers from 15,000 TEUs in 1990 to 10,000 in 1991 and 8,000 TEUs in 1992. A survey conducted by the UNCTAD secretariat among certain manufacturers revealed a similar trend. There has, on the other hand, been a significant growth in the production of refrigerated containers - from 35,000 TEUs in 1992 to 64,000 in 1992, while the output of reefer containers in the Republic of Korea in 1992 doubled.

112. The world container manufacturing industry was also characterized by price movement, as revealed by another survey conducted by *Cargoware International* (table 42). This survey shows that dry freight container prices fell worldwide in 1992, for both 20-foot and 40-foot containers, reflecting the growing competition among the producers of containers because of the unprecedented growth of production capacities. All evidence suggests that the downward pressure on prices is set to continue in 1993.

Table 39Analysis of world container fleet by length and height
(TEUs)

Length	8 ft	8 ft 6 in	9 ft 6 in	Other	Total
20 ft	97 936	3 157 339	1 833	34 549	3 291 657
40 ft	2 924	3 290 166	538 720	10 698	3 842 508
24 ft	-	14 319	-	-	14 319
45 ft	-	11 304	77 967	-	89 271
48 ft	-	-	60 174	-	60 174
53 ft	-	-	4 770	-	4 770
Other	555	16 246	600	300	17 701
Total	101 415	6 489 374	684 064	45 547	7 320 400

Source: *Cargoware International Census*, December 1992, p. 10.

Table 40Analysis of change in world container population by length/height

	1992	1990	Indexed change (1990=100.0)
Length			
20 foot	3 291 657	2 846 027	115.7
40 foot	3 842 508	2 921 056	131.5
Other	186 235	107 001	174.0
Height			
8 foot	101 415	162 755	62.3
8 foot 6 inches	6 489 374	5 242 131	123.8
9 foot 6 inches	684 064	419 011	163.3
Other	45 547	50 187	90.8
Total	7 320 400	5 874 084	124.6

Source: *Cargoware International Census*, December 1992, p. 9.

Table 41

Breakdown of annual container production by region/country for 1990-1992
(in TEUs)

Region/country	1992	1991	1990	Current production split	
				Standard (per cent)	Special (per cent)
<u>Asia</u>					
Republic of Korea	372 000	340 000	349 000	91.0	9.0
China	180 000	120 000	55 000	100.0	-
Taiwan, Province of China	105 000	110 000	107 000	95.0	5.0
Thailand	70 000	45 000	36 000	100.0	-
Malaysia	70 000	45 000	10 000	100.0	-
Indonesia	60 000	10 000	1 000	100.0	-
India	40 000	35 000	25 000	100.0	-
Japan	18 000	10 000	16 000	-	100.0
Singapore	10 000	8 000	2 000	80.0	20.0
Philippines	-	7 000	14 000	-	-
Subtotal	925 000	730 000	615 000	93.8	6.2
<u>Europe</u>					
Italy	32 000	30 000	43 000	20.0	80.0
CIS	29 000	31 000	29 000	100.0	-
Scandinavia	21 000	10 000	7 000	95.0	5.0
United Kingdom	14 000	17 000	18 000	10.0	90.0
Germany	12 000	10 000	17 000	20.0	80.0
Poland	9 000	9 000	8 000	75.0	25.0
Spain/Portugal	8 000	8 000	8 000	50.0	50.0
Hungary	3 000	3 000	5 000	50.0	50.0
Benelux	1 000	2 000	8 000	-	100.0
Others	6 000	5 000	7 000	70.0	30.0
Subtotal	135 000	125 000	150 000	56.0	44.0
<u>Others</u>					
Central/South America	40 000	18 000	2 000	100.0	-
South Africa	22 000	18 000	20 000	90.0	10.0
North America	12 000	12 000	10 000	-	100.0
Turkey	11 000	3 000	-	100.0	-
Other	5 000	4 000	3 000	60.0	40.0
Subtotal	90 000	55 000	35 000	82.2	17.8
WORLD TOTAL	1 150 000	910 000	800 000	88.5	11.5

Source: *Cargoware International*, February 1993, p. 25.

Table 42

Comparison of standard freight container prices for 1991 and 1992

Region/country	1991 (\$US)	1992 (\$US)	Change (per cent)
<u>20-foot container</u>			
Republic of Korea	2 668	2 634	-1.3
Taiwan, Province of China	2 910	2 725	-6.4
China	2 530	2 360	-6.7
ASEAN	2 640	2 590	-1.9
India	2 505	2 380	-5.0
Europe	3 050	2 900	-4.9
World	2 640	2 500	-5.3
<u>40-foot container</u>			
Republic of Korea	4 412	4 079	-1.5
Taiwan, Province of China	4 775	4 425	-7.3
China	4 075	3 850	-5.5
ASEAN	4 250	3 885	-8.6
India	4 190	3 900	-6.9
Europe	5 150	4 600	-10.7
World	4 285	3 985	-7.0

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

Box 6Increasing emphasis on quality control in transport services!

New quality control guidelines are being adopted by many maritime sector organizations. This trend is occurring because a principal factor in the performance of an organization is the quality of its products or services. There is a world-wide trend towards more stringent customer expectations with regard to quality. Quality is a tool for improved competitiveness. This applies also to transport services. Increasing trade liberalization results in stiffer competition not only in manufactured goods but also in transport services which deliver those products to customers. Customers require just-in-time reliable deliveries, with minimum transit time, error-free documentation and cargo-tracking information.

The implementation of quality management in transport services is sometimes perceived as a luxury rather than a necessity. The benefits of a quality management improvement programme not only result from cost cutting; the simplification and standardization of office and/or shipping procedures which quality management offers provide significant productivity gains and reduced costs (through less waste) as an important by-product.

A company's total quality costs cover three elements: failure costs, inspection costs and prevention costs.

Failure costs comprise major and minor losses which result from substandard operations. Inspection costs comprise resources committed to checking that a product and/or service offered to a customer meets the required standard. Prevention costs comprise the resources needed to establish and maintain the system/procedures necessary to prevent rather than cure problems as encompassed within a quality management system.

Source: ITC/ISO, Export Quality Management ISO 9000 Quality Management Systems, ITC/177/AO/93-1.

Chapter VIII

OTHER DEVELOPMENTS

The final chapter reviews the status of various international conventions dealing with the shipping industry, summarizes the new ICC Rules for multimodal transportation documents and outlines UNCTAD's initiatives in technical assistance and training.

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

113. The United Nations Convention on a Code of Conduct for Liner Conferences came into force on 6 October 1983. Up to mid-1993 the number of Contracting Parties reached 76, 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; 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.

B. United Nations Convention on International Multimodal Transport of Goods

114. This Convention,^{34/} 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 1992 no additional States became Contracting Parties to the Convention, and it thus had six Contracting Parties, viz. Chile, Malawi, Mexico, Rwanda, Senegal and Zambia. Another three countries - Morocco, Norway and Venezuela - have signed the Convention subject to ratification.

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

115. Following the twentieth accession in October 1991 by Zambia, the United Nations Convention on the Carriage of Goods by Sea, 1978 ("The Hamburg Rules") entered into force on 1 November 1992. The Contracting Parties to the Convention are: Barbados, Botswana, Burkina Faso, Chile, Egypt, Guinea, Hungary, Kenya, Lebanon, Lesotho, Malawi, Morocco, Nigeria, Romania, Senegal, Sierra Leone, Tunisia, Uganda, United Republic of Tanzania and Zambia.

116. It is interesting to note that countries such as Canada and Australia, which are not contracting parties to the Convention, have made provision in their new Carriage of Goods by Sea Act for the possible entry into force of the Hamburg Rules at a later stage. Thus the Australian Carriage of Goods by Sea Act 1991, in force as of 7 November 1991 and replacing the Sea Carriage of Goods Act 1924, not only adopts the Hague Rules as amended by the Visby Protocol, but in Section 2 provides for the implementation of the Hamburg Rules which are scheduled to the Act. The mechanism provided is for Parliament to make a proclamation that the Hamburg Rules are to come into force to replace the Hague-Visby Rules. Section 2(3) states that if no proclamation or resolution repealing or postponing the implementation of the Hamburg Rules is made, the Rules will automatically come into force at the expiration of three years, i.e. on 7 November 1994. In the case of Canada, Section 4 of the Carriage of Goods by Water Bill C-83 (Projet de Loi) sets out that the Minister of Transport shall, within six years after entry into force of the Act, consider whether the Hague-Visby Rules should be replaced by the Hamburg Rules, and prepare a report setting out the results of that consideration to be laid before each House of Parliament.

117. As part of the secretariat's mandate to monitor the implementation of international shipping instruments adopted under the auspices of the United Nations and currently in force, the secretariat is collecting relevant information from Contracting Parties to the Hamburg Rules. Furthermore, and upon

request, guidance will be provided to States wishing to make the necessary changes in transport documentation and other important issues to adjust the current practice to accommodate the new liability regime.

D. United Nations Convention on Conditions for Registration of Ships

118. 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.^{35/} 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.

119. By the end of June 1993 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. Maritime liens and mortgages

120. Following General Assembly resolution 46/213, a United Nations/International Maritime Organization Conference of Plenipotentiaries was held in Geneva from 19 April to 7 May 1993 for consideration and adoption of the Draft Convention on Maritime Liens and Mortgages. The Draft Convention

was prepared by the Joint UNCTAD/IMO Intergovernmental Group of Experts during its six sessions held from 1986 to 1989. By a note of 15 May 1992, Governments were invited to submit comments on the Draft Convention to be published as part of the pre-session documentation for the Conference. On the basis of replies received the secretariat prepared a compilation of comments and proposals by Governments and by intergovernmental and non-governmental organizations.

121. The objectives of the Draft Convention are: (i) to provide a generally acceptable legal framework governing the recognition and enforcement of maritime liens and mortgages and thus to promote international uniformity, and (ii) to strengthen the international position of the mortgagee and financiers of shipbuilding and ship purchase and thereby improve conditions for ship financing at the international level.

122. Following the UN/IMO Conference of Plenipotentiaries on Maritime Liens and Mortgages and subject to agreement by the Joint UNCTAD/IMO Intergovernmental Group of Experts on Maritime Liens and Mortgages and Related Subjects, a possible amendment of the 1952 Convention on Arrest of Ships will be examined jointly with IMO.

F. General average

123. Pursuant to the request of the thirteenth session of the UNCTAD Working Group on International Shipping Legislation, held in November 1991 to examine the subject of general average, the secretariat, in close collaboration with the International Maritime Committee (CMI), approached the insurance industry and international organizations involved with general average to study the extent to which insurance arrangements could simplify the operation of the general average system. On the basis of the research and investigations carried out the secretariat will prepare a report towards the end of 1993 for submission to the second session of the Standing Committee on Developing Services Sectors: Postering Competitive Services Sectors in Developing Countries - Shipping.

G. UNCTAD Minimum Standards for Shipping Agents

124. The Minimum Standards, which are non-mandatory in nature and are intended to serve as guidelines for national authorities and professional associations in establishing their own standards,

continued to receive worldwide support. The objectives of these standards are:

(a) To uphold a high standard of business ethics and professional conduct among shipping agents;

(b) To promote a high level of professional education and experience, essential in providing an efficient service;

(c) To encourage the operation of financially sound and stable shipping agents;

(d) To contribute to combating maritime fraud by ensuring improved services by better-qualified shipping agents;

(e) To provide guidelines for national authorities/professional associations in establishing and maintaining a sound shipping agency system.

125. The UNCTAD secretariat, upon request, provides legal advice to national authorities and professional associations wishing to set up national standards for shipping agents based on the above-mentioned objectives. In addition, the Minimum Standards are being promoted through seminars and technical assistance projects.

H. The new UNCTAD/ICC Rules for Multimodal Transport Documents

126. The new Rules, which became operational as of 1 January 1992, will only apply when they are referred to in the multimodal contract. It is possible to refer to the Rules even for port-to-port traffic and when unimodal transport is intended. Parties having referred to the Rules, and thereby incorporated the Rules into their contract, must avoid inserting stipulations which derogate from the Rules.

127. The Rules only cover a part of the customary contents of a multimodal transport contract. Thus, an MTO wishing to use the Rules as a basis for his multimodal transport contract would have to add other clauses dealing with matters such as: optional stowage, routing, freight and charges liens, both-to-blame collision, general average, jurisdiction and arbitration and applicable law to satisfy his particular needs. Such additions could also be made with respect to matters covered by the Rules, but only to the extent that they are not contradictory thereto or decrease the responsibility or obligations of the MTO as established by the Rules.

128. The rules retained the network liability system to the effect that the MTO, and not only the consignor, may invoke the mandatory liability rules of international conventions and national law which would have applied if a separate and direct contract had been made for the particular stage of the transport where the loss or damage occurred.

129. The basis of liability of the Rules is the so-called vicarious liability: the MTO is responsible for the acts and omissions of his servants or agents, when any such servant or agent is acting within the scope of his employment, or of any other person of whose services he makes use for the performance of the contract, as if such acts and omissions were his own (liability for presumed fault or neglect).

130. The particular defences for carriage by sea or inland waterways are contrived in Rule 5.4 pursuant to which the MTO shall not be responsible for loss, damage or delay in delivery caused by the so-called nautical fault defence or fire, unless caused by the actual fault or privity of the carrier. When loss or damage has resulted from unseaworthiness of the ship, the MTO is only relieved from liability if he can prove that due diligence has been exercised to make the ship seaworthy at the commencement of the voyage.

131. It is important to note that the MTO shall not be liable for loss following from delay in delivery unless the consignor has made a declaration of interest in timely delivery which has been accepted by the MTO. As to the conversion of delay into final loss, Rule 5.3 contains a provision converting pending delay into a right for the claimant to treat the goods as lost. The period starts to run from the agreed time for delivery or, in the absence of such agreement, from the time which it would be reasonable to require of a diligent MTO. The period chosen by the Rules for the conversion is 90 days, in order to avoid conversion occurring under the multimodal transport contract before such a conversion has been possible under any underlying multimodal transport contract, the purpose being to facilitate recourse actions by the MTO against his subcontractors. Furthermore, conversion will only take place in the absence of evidence that the goods have not been lost.

132. The provisions relating to limitation of liability follow the Hague-Visby Rules limits (666.67 SDR per package or unit or 2 SDR per kilogram of gross weight of the goods lost or damaged, whichever is the higher) and the so-called "container formula". If the multimodal transport does not, according to the contract, include carriage of

Box 7Adoption of the International Convention on Maritime liens and Mortgages, 1993

On 6 May 1993 a new Convention on Maritime Liens and Mortgages was successfully concluded. The Convention was adopted by consensus by the United Nations/International Maritime Organization Conference of Plenipotentiaries, which met in Geneva under UNCTAD auspices for a period of three weeks. Sixty-five States participated in the Conference, which was chaired by Dr. Walter Müller of Switzerland.

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.

According to the core Article of the Convention (Article 4) only five types of claims against the owner, demise charterer, manager or operator of the vessel shall be secured by a maritime lien on the vessel and thus have priority over the mortgages, which is traditionally the main source of ship financing. These claims relate to (a) wages and other sums due to the crew; (b) loss of life and personal injury in connection with the operation of the vessel; (c) reward for the salvage of the vessel; (d) port, waterway and pilotage dues; and (e) physical loss or damage caused by the operation of the vessel other than that of cargo, containers and passengers' effects.

The priority ranking of these maritime liens is spelled out in Article 5. In the event of the forced sale of a stranded or sunken vessel, all claims secured by a maritime lien are superseded by payments to be made to a public authority to cover the costs of the removal in the interest of safe navigation or the protection of the marine environment (Article 12, para. 3).

The Convention, in Article 6, provides a State Party with the possibility of granting other maritime liens under its law, but only under strict conditions and with an extinction of a maximum of six months. And, in any case, such liens rank only after the maritime liens provided for in Article 4 of the Convention and mortgages (as defined in Article 1).

The interests of the mortgagees are further protected by Article 10, according to which compensation payable to the owner of the vessel under an insurance contract should not go to maritime lien holders but to the mortgagee.

For the first time an international legal instrument contains provisions on temporary change of flag in case of bareboat charter registration, a practice which is becoming increasingly common in shipping and which has created uncertainty for mortgagees. Article 16 of the Convention clearly states that rights are determined by the law of the State in which the vessel was registered immediately prior to the change of flag.

The Convention will be open for signature at the United Nations Headquarters in New York from 1 September 1993. It will enter into force six months following the date on which 10 States have expressed their consent to be bound by it.

Following a resolution adopted by the Conference, both organizations are requested to reconvene the Joint Intergovernmental Group to examine the possible review of the International Convention of 1952 for the Unification of Certain Rules Relating to the Arrest of Sea-going Ships.

goods by sea or by internal waterways, the liability of the MTO is limited to an amount not exceeding the equivalent of the freight. The provisions on loss of the right to limit liability conform with article 8 of the Hamburg Rules and article 21 of the MT Convention. The time-loss has been set at nine months to ensure that the MTO would have adequate possibilities to institute recourse actions against the performing carrier.

133. Although the new UNCTAD/ICC Rules for Multimodal Transport Documents are based on the Hague/Hague-Visby Rules system, a new situation has developed since the entry into force of the Hamburg Rules. This occurs because the Rules are for voluntary adoption by the commercial parties, but are superseded by mandatory international or national law. This means that an MTO cannot use the Rules to circumvent unpleasant provisions in a national law or international Convention. Consequently, if the trade covered by the MTO is subject to the Hamburg Rules regime, then the limits of liability of that convention will apply and the particular defences of nautical fault and of fire retained by the UNCTAD/ICC Rules will be superseded by the Convention.

134. It is important to note that the old ICC rules will no longer have the backing of the ICC and they may be rejected by the banks. To facilitate the change-over to the new Rules, ICC has established an "ICC Bill of Lading Review Committee" which will verify that documents submitted to the Committee are in conformity with the UNCTAD/ICC Rules for Multimodal Transport Documents. Documents verified will be entitled to bear the ICC logo. For further information, interested parties are requested to contact the ICC in Paris.

135. On 16 October 1992 the Government of India promulgated its Multimodal Transport of Good Ordinance 1992 to provide a legal régime to govern multimodal transport operations in its foreign trade (except for the State of Jammu and Kashmir). The Ordinance is broadly based on the United Nations MT Convention and the UNCTAD/ICC Rules for Multimodal Transport Documents. However there are certain departures from these, which are as follows: (1) although the provisions relating to the liability of the MTO are broadly based on the Hague/Hague-Visby Rules, there is no specific provision for exempting the MTO from liability for loss, damage or delay in delivery in respect of goods carried by sea in those cases where the ocean carrier is exempted from the Hague/Hague-Visby Rules. This would seem to mean that the MTO who becomes liable in such cases may not succeed in recourse action against the

responsible ocean carrier; (2) "air transport" is not included in the different modes of transport used under multimodal transport; (3) there is no provision relating to the liability of the consignor; (4) there is no provision relating to non-contractual liability (action in tort); (5) while the MTO is liable for the acts and omissions of his servants and agents, there is no mention of his liability for such acts and omissions of his subcontracting unimodal carriers. It may be, however, that such subcontracting carriers are included in the concept of "servants and agents". The Ordinance has generally been welcomed by exporters, importers, shipowners and freight forwarders, as well as by other agencies involved in trade and transport of goods.

I. Technical cooperation and training

136. UNCTAD's technical cooperation and training programme in shipping, ports and multimodal transport declined somewhat during 1992. A total of 32 projects were being executed during the year, with a total expenditure of \$2.0 million (compared to 37 projects totalling \$3.2 million in 1991).

137. Half of these projects were TRAINMAR projects designed to help training centres in developing countries provide a wide range of maritime management training using a methodology which establishes professional standards at local centres and provides mechanisms for cooperation among these centres. Although two new subregional projects, one in South America and one in the Caribbean, were initiated in 1992, eight other projects were terminated during the year and most activities are now conducted by the developing country centres themselves or with the help of supporting bodies but without project support.

138. A number of policy seminars on Multimodal Transport, Container Terminal Development and Management, Equipment Maintenance and Strategic Planning for Shipping were delivered by UNCTAD during the year, and funds were obtained for the development of a new policy seminar on the Commercial Role of Ports.

139. A new project was initiated in Pakistan to facilitate trade through the streamlining and rationalization of the transport sector. It will involve strengthening the institutional framework within which new transport-related technology can be introduced and multimodal transport promoted. New legislation will be drafted and technical information disseminated on all aspects of multimodal transport.

140. A small regional project was undertaken by UNCTAD in 1992 in connection with the launching of the United Nations Transport and Communications Decade in Africa. A brochure was produced to help create a greater awareness among African Governments, subregional organizations and the providers and users of shipping, ports, inland waterways and multimodal transport services of the strategies proposed to achieve the Decade's objectives. Proposals were made to group projects awaiting financing into a series of integrated programmes.

141. In 1992 the development and implementation of the Advance Cargo Information System (ACIS) was pursued in a larger number of African countries than in the previous year. The World Bank (IDA) is financing the installation of certain modules in Sudan, Senegal and Burkina Faso.

142. In addition to the continuing work in Africa, two Asian countries, namely Bangladesh and Viet Nam, have requested the installation of the railway module of ACIS, the RailTracker. In the case of Bangladesh, the German Government, through its Bank for Reconstruction (KfW), has agreed to provide DM 1.3 million for the installation of the RailTracker on Bangladesh Railways. UNCTAD will implement this project in close collaboration with the Economic and Social Commission for Asia and the Pacific (ESCAP). Discussions are advanced with the French Government regarding the funding of ACIS in Viet Nam.

143. In order to ensure sustainability, UNCTAD and CIM (GTZ-Germany) agreed to an arrangement through which CIM would sponsor the attachment of German Experts to a number of ACIS user-institutions in Africa. Ghana Ports and Harbours Authority and the Kenya Ports Authority have been the first beneficiaries of this scheme.

144. The UNCTAD secretariat has been involved in updating and harmonizing the maritime legislation of various countries at the subregional level (MINCONMAR member States and Central American countries) and the national level (Ethiopia), with the aim of providing a legal framework for more effective maritime transport. Training of nationals at various levels forms an integral part of the projects.

145. Marine insurance is another area where the secretariat will be helping MINCONMAR member States. Thus pursuant to resolution 149/11/92,^{36/} a draft technical assistance project document has been prepared for promoting the growth of the marine insurance industry in the subregion and fostering

co-insurance and reinsurance of marine transport risks through the harmonization of marine insurance laws and practices.

146. In the area of ship registration and at the request of JUNAC (Commission of the Cartagena Agreement), UNCTAD assisted member States (Bolivia, Colombia, Ecuador, Peru and Venezuela) in the drafting of a project for an international registry of ships. The request was made in the context of recent changes in policy in the subregion directed towards obtaining a complete liberalization in international trade. The purpose of the project should be viewed as an important step in keeping the existing tonnage within the subregion and giving shipowners competitive facilities equal to those of other international carriers.

147. At the request of the Mexican Government, the UNCTAD secretariat participated in a panel to explore the feasibility and convenience of setting up an International Mexican Ship Register in order to attract flagged-out ships of Mexican owners back to the national register.

148. Members of the UNCTAD secretariat also lectured on various aspects of maritime law and international trade and transport at a number of seminars, conferences and workshops.

149. Funding for UNCTAD's technical cooperation and training activities in shipping, ports and multimodal transport was provided by the United Nations Development Programme (UNDP), the European Community and the Governments of Belgium, France, Germany, the Netherlands, Norway and the United States and by the recipient countries themselves.

J. New classification of ships by type reviewed

150. An effort to establish an international classification of ships by type was initiated at an ad hoc UNCTAD-EEC meeting of the secretariats of national and international organizations interested in 'type of ship' classifications, held in Geneva in October 1987. It was agreed that there was a need for a universally accepted hierarchical type-of-ship classification and a clear definition of ship types. A small group was commissioned to prepare a report setting out a new classification which would take account of the views expressed at the meeting. The study group's report was presented to the second ad hoc UNCTAD-EEC meeting, held to discuss the classification of ships by type, in Luxembourg in October 1988 and is contained in annex V.

Notes

- 1/ IMF, *World Economic Outlook - Interim Assessment*, January 1993, p. 9 (estimate for 1992).
- 2/ Ibid.
- 3/ GATT, preliminary estimates, March 1993. Note: volume means in constant US dollars.
- 4/ R.S. Platou Economic Research, *The Platou Report, 1993*, p. 5.
- 5/ OECD, *Main Economic Indicators*, March 1993, p. 15.
- 6/ *Petroleum Economist*, January 1993, p. 48.
- 7/ OECD/IEA, Quarterly oil statistics and energy balances, Fourth quarter 1992, p. 10.
- 8/ R.S. Platou Economic Research, *The Platou Report, 1993*, p. 17.
- 9/ Fearnleys (Oslo), *Review 1992*, p. 4.
- 10/ International Iron and Steel Institute, *Estimates 1992*.
- 11/ *Lloyd's Shipping Economist* (London), April 1993, p. 32.
- 12/ UNCTAD staff paper.
- 13/ International Wheat Council, *Grain Market Report*, GMR 212 (London), 30 April 1993.
- 14/ International Fertilizer Industry Association.
- 15/ *Phosphorus and Potassium*, No. 184, March-April 1993, pp. 7 and 17.
- 16/ International Primary Aluminium Institute, IPAI Form, ISO, 20 April 1993.
- 17/ DRI/McGraw Hill, *World Seatrade Services Review*, First Quarter 1993, p. III-1.
- 18/ OECD, *Indicators of industrial activity*, January 1993, p. 26.
- 19/ UNCTAD calculation based upon UNSO, *International Sea-borne Trade Statistics Yearbook, 1986*, New York (United Nations publication, Sales Number E.88.XVII.13).
- 20/ Lloyd's Maritime Information Services Ltd., (London).
- 21/ Fearnleys (Oslo), *Review 1992*, p. 28.

22/ The International Development Strategy for the Third United Nations Development Decade in the field of Transport identifies a 20 per cent share of world tonnage as the target for developing countries (United Nations General Assembly resolution 35/36).

23/ Fearnleys (Oslo), *Review 1992*, p. 28.

24/ Fearnleys (Oslo), *Review 1992*.

25/ Fearnleys (Oslo), *Review 1992*, p. 27..

26/ Fearnleys (Oslo), *Review 1992*.

27/ *Lloyd's Shipping Economist* (London), April 1993.

28/ Fearnleys (Oslo), *Review 1992*.

29/ Fearnleys (Oslo), *Review 1992*, p. 28.

30/ European Business Magazine, Rotterdam 1991, and "Anvers, centre de distribution japonaise", Le Lloyd, 29 August 1991.

31/ *Lloyd's Shipping Economist*, June 1993, p. 20.

32/ *Lloyd's Shipping Economist*, June 1993, p. 35.

33/ For rejection it was necessary to have more than 25 per cent of the negative votes among the member bodies.

34/ 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)).

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

36/ Adopted by the Eighth Ordinary session of the Ministerial Conference of West and Central African States on Maritime Transport, in Ouagadougou, Burkina Faso, 27-28 November 1992.

Annex IClassification of countries and territories

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

Code 8.3	<u>Eastern Africa</u> 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	<u>Caribbean and North America</u> 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	<u>Central America</u> Belize Costa Rica El Salvador Guatemala	Honduras Mexico Nicaragua Panama
Code 9.3	<u>South America - Northern Seaboard</u> Guyana French Guyana Netherlands Antilles	Suriname Venezuela
Code 9.4	<u>South America - Western Seaboard</u> Chile Colombia	Ecuador Peru
Code 9.5	<u>South America - Eastern Seaboard</u> Argentina Bolivia (L) Brazil	Falkland Islands (Malvinas) b/ Paraguay (L) Uruguay
Code 10 - 10.1	<u>Western Asia</u> Bahrain Cyprus Iran (Islamic Republic of) Iraq Jordan Kuwait Lebanon	Oman Qatar Saudi Arabia Syrian Arab Republic United Arab Emirates Yemen

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

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 Oceania: Code 12.

In certain tables, where appropriate, five 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, 1970, 1990 and 1991
(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		
<u>Developed market-economy countries</u>									
North America	1970	0.7	5.3	308.0	314.0	73.4	103.6	170.0	347.0
	1990	1.4	25.8	515.1	542.3	274.9	100.8	227.6	603.3
	1991	1.4	25.2	538.6	565.2	289.2	102.9	242.1	634.2
Japan	1970	-	1.3	41.6	41.9	170.4	30.4	235.1	435.9
	1990	-	1.2	81.9	83.1	201.2	82.0	440.7	723.9
	1991	-	1.2	84.2	85.4	209.3	81.8	455.8	746.9
Australia and New Zealand	1970	-	1.3	92.3	93.6	18.8	2.9	15.4	37.1
	1990	9.2	1.5	266.3	277.0	8.6	7.2	18.1	33.9
	1991	9.5	1.6	273.8	284.9	8.7	7.3	18.7	34.7
Europe	1970	28.6	82.3	244.8	355.6	621.0	100.4	469.0	1 190.4
	1990	162.1	124.2	482.2	768.5	446.8	172.7	763.2	1 382.7
	1991	166.3	124.0	495.2	785.5	462.6	171.8	792.3	1 426.7
South Africa	1970	-	-	13.2	13.2	8.8	2.6	6.2	17.6
	1990	-	-	82.5	82.5	21.9	0.3	9.6	31.8
	1991	-	-	83.2	83.2	22.3	0.3	9.5	32.1
Subtotal: developed market-economy countries	1970	29.3	89.2	699.9	818.3	892.4	239.9	895.7	2 028.0
	1990	172.7	152.7	1 428.0	1 753.4	953.4	363.0	1 459.2	2 775.6
	1991	177.2	152.0	1 475.0	1 804.2	992.1	363.9	1 518.4	2 874.4
<u>Countries of Central and Eastern Europe</u>									
Countries of Central and Eastern Europe (excluding the former USSR)	1970	0.2	3.4	34.8	38.5	10.8	3.0	29.2	43.0
	1990	-	8.5	41.2	49.7	27.2	0.8	58.2	86.2
	1991	-	5.5	42.2	47.7	24.4	0.6	59.1	84.1
Former USSR	1970	38.0	22.9	46.0	106.9	2.5	-	11.9	14.4
	1990	58.6	46.8	44.0	149.4	7.0	0.5	79.0	86.5
	1991	53.0	41.5	41.5	136.0	5.4	0.3	75.4	81.1
<u>Socialist countries of Asia</u>									
Socialist countries of Asia	1970	-	0.1	13.3	13.4	5.4	0.4	24.4	30.2
	1990	32.0	4.0	46.1	82.1	3.9	1.3	80.4	85.6
	1991	33.0	4.1	46.9	84.0	4.0	1.3	81.0	86.3
<u>Developing countries and territories</u>									
Northern Africa	1970	221.4	5.6	28.3	255.4	9.9	5.9	17.9	33.8
	1990	182.7	31.5	32.0	246.2	63.4	4.3	57.8	125.5
	1991	190.2	31.8	33.1	255.2	64.2	4.0	59.5	127.7
Western Africa	1970	60.5	1.0	61.5	123.0	3.6	4.0	14.8	22.4
	1990	127.1	3.4	55.2	185.7	4.0	3.2	27.7	34.9
	1991	132.3	3.2	57.4	192.9	4.1	2.9	28.6	35.6

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		
<u>Developing countries and territories (cont.)</u>									
Eastern Africa	1970	-	1.2	16.1	17.3	5.5	2.6	8.3	16.4
	1990	-	0.6	9.3	9.9	6.4	2.6	16.0	25.0
	1991	-	0.6	9.6	10.2	6.5	2.4	16.2	25.1
Caribbean and North America	1970	-	1.4	28.4	29.8	23.5	4.5	11.2	39.2
	1990	14.0	11.8	28.9	54.7	29.7	8.4	20.0	58.1
	1991	14.6	11.7	30.0	56.3	30.2	8.0	20.7	58.9
Central America	1970	-	3.7	11.9	15.6	6.0	5.5	6.5	18.0
	1990	81.3	7.0	18.6	106.9	4.0	2.8	15.4	22.2
	1991	84.6	6.8	19.3	110.7	4.1	2.5	15.7	22.3
South America: Northern Seaboard	1970	131.1	11.8	36.0	278.9	63.1	3.0	6.7	72.9
	1990	58.3	24.2	17.0	99.5	-	1.5	18.8	20.3
	1991	60.8	24.3	17.7	102.8	-	1.4	19.4	20.8
South America: Western Seaboard	1970	4.6	1.6	29.8	35.9	4.1	1.5	5.9	11.5
	1990	17.4	8.2	36.0	61.6	3.5	1.3	14.4	19.2
	1991	18.1	8.3	37.4	63.8	3.6	1.2	14.7	19.5
South America: Eastern Seaboard	1970	0.1	1.1	54.3	55.5	18.8	1.0	19.8	39.6
	1990	0.1	4.3	197.8	202.2	37.8	2.8	26.9	67.5
	1991	0.1	4.4	206.1	210.6	38.4	2.5	27.9	68.8
Western Asia	1971	588.7	65.6	3.3	658.6	0.1	1.0	13.1	14.2
	1990	463.9	74.8	30.5	569.2	15.6	7.1	107.0	129.7
	1991	487.4	71.3	30.2	588.9	15.0	6.0	105.0	126.0
Southern and Eastern Asia (n.e.s)	1970	35.0	23.7	89.3	148.0	148.0	23.3	61.9	139.9
	1990	78.6	88.4	253.0	420.0	150.4	41.6	362.9	554.9
	1991	81.8	90.1	267.6	439.5	154.6	40.2	385.2	580.9
Developing countries in Europe	1970	-	1.0	-	..	-	0.3	0.7	1.0
	1990	0.3	1.1	7.4	8.8	8.7	2.4	17.7	28.8
	1991	0.3	1.2	7.6	9.1	8.8	2.2	18.1	29.1
Oceania (n.e.s.)	1970	-	0.2	9.5	9.7	0.6	1.6	2.9	5.1
	1990	-	0.3	8.0	8.3	-	2.3	3.6	5.9
	1991	-	0.3	8.2	8.5	-	2.1	3.6	5.7
Subtotal: Developing countries	1970	1 041.4	216.9	368.4	1 627.7	189.9	5.5	169.7	414.0
	1990	1 023.9	255.6	693.7	1 973.0	323.5	80.3	688.2	1 092.0
	1991	1 070.3	254.0	724.2	2 048.5	329.5	75.4	714.6	1 119.5
<u>World total</u>	1970	1 110.0	330.0	1 165.0	2 606.0	1 101.0	302.0	1 127.0	2 530.0
	1990	1 287.2	467.6	2 253.0	4 007.4	1 315.0	445.9	2 365.0	4 125.9
	1991	1 333.5	457.1	2 329.8	4 120.4	1 355.4	441.5	2 449.5	4 245.4

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 1992
(in grt)

	Total fleet	Oil tankers	Bulk carriers	General cargo c/	Container ships	Other types
World total d/	444 866 914	138 733 660	133 289 190	81 782 592	29 162 132	61 899 340
<u>Developed market-economy countries</u>						
Australia	2 721 439	799 674	993 395	144 983	121 040	662 347
Austria	139 940	..	71 482	68 458	..	..
Belgium	257 791	3 893	..	5 897	..	248 001
Canada	1 097 069	130 660	56 538	100 385	8 040	801 446
Denmark	5 436 755	836 169	528 080	823 684	1 740 115	1 508 707
Finland	1 204 561	256 306	67 659	279 298	..	601 298
France	4 081 822	1 764 133	348 400	388 190	661 948	919 151
Germany	5 362 520	88 334	497 216	1 515 044	2 331 910	930 016
Gibraltar	492 667	318 780	73 367	77 581	..	22 939
Greece	25 758 473	10 875 289	11 622 356	1 376 558	416 388	1 467 882
Iceland	177 250	146	..	30 211	..	146 893
Ireland	199 124	8 387	..	80 104	24 718	85 915
Israel	663 665	394	22 476	84 627	547 573	8 595
Italy	7 513 195	2 115 118	2 183 502	980 561	350 557	1 883 457
Japan	25 136 039	7 167 682	7 542 971	4 203 326	1 343 969	4 878 091
Luxembourg	1 655 551	105 634	878 839	61 732	121 178	488 168
Netherlands	4 241 985	395 607	379 428	1 231 417	771 709	1 463 824
New Zealand	253 395	80 486	12 775	41 562	..	118 572
Norway	22 254 825	9 219 777	6 256 120	2 110 746	149 941	4 518 241
Portugal	976 254	656 135	69 080	78 388	11 974	160 677
South Africa	336 655	1 270	..	445	210 460	124 480
Spain	2 644 050	911 746	463 356	355 280	73 810	839 858
Sweden	3 056 590	691 199	208 973	1 027 637	31 446	1 097 335
Switzerland	349 770	..	311 534	17 570	..	20 666
Turkey	4 140 425	827 049	2 261 473	829 063	..	222 840
United Kingdom	6 075 939	2 202 688	440 599	415 015	1 014 892	2 002 745
United States	16 058 456	6 986 122	994 081	2 003 966	2 827 421	3 246 866
<u>Subtotal</u>	142 286 205	46 442 678	36 283 700	18 331 728	12 759 089	28 469 010
<u>Open-registry countries</u>						
Bahamas	20 684 008	9 811 891	4 578 179	3 311 431	843 114	2 139 393
Bermuda	3 339 955	2 058 123	199 479	115 605	50 412	916 336
Cyprus	20 501 062	4 676 685	10 849 109	3 624 368	617 192	733 708
Liberia	55 917 675	27 435 312	16 130 988	4 701 419	2 503 422	5 146 534
Panama	52 558 308	16 450 045	15 165 478	13 556 510	3 467 522	3 918 753
<u>Subtotal</u>	153 001 008	60 432 056	46 923 233	25 309 333	7 481 662	12 854 724
<u>Central and Eastern Europe and former USSR</u>						
Albania	59 060	..	..	57 598	..	1 462
Armenia	..	..	..	..	..	..
Azerbaijan	637 232	197 125	..	85 040	..	355 067
Belarus	..	..	..	..	..	..
Bulgaria	1 348 991	284 060	612 778	356 642	19 097	76 414
Czech Republic	237 777	..	153 220	84 557	..	..
Estonia	679 909	5 594	159 598	266 845	..	247 872

Annex III(a) (continued)

	Total fleet	Oil tankers	Bulk carriers	General cargo <u>g/</u>	Container ships	Other types
Hungary	92 005	..	17 252	74 753	..	..
Georgia	..	..	..	..	..	..
Kazakhstan	..	..	..	..	..	..
Kyrgyzstan	..	..	..	..	..	..
Latvia	1 206 565	532 655	..	414 363	..	259 547
Lithuania	668 471	16 699	111 607	261 208	..	278 957
Moldova	..	..	..	..	..	..
Poland	3 111 759	89 471	1 666 870	1 020 174	..	335 244
Romania	2 970 336	517 410	1 082 470	1 131 453	15 160	223 843
Russian Federation	16 315 035	2 435 660	1 912 793	5 604 898	472 771	5 888 913
Tajikistan	..	..	..	..	..	..
Turkmenistan	191	..	..	..	..	191
Ukraine	5 227 894	79 695	1 199 077	2 665 640	142 183	1 141 299
Former USSR <u>g/</u>	1 104 957	391 667	269 077	144 300	10 702	289 211
Uzbekistan	..	..	..	..	..	..
Subtotal	33 660 182	4 550 036	7 184 742	12 167 471	659 913	9 098 020
<u>Socialist countries of Asia</u>						
China	13 902 274	1 720 197	5 453 689	4 780 055	968 276	980 057
Democratic People's Republic of Korea	601 785	112 824	84 418	358 990	..	45 553
Viet Nam	616 551	15 215	21 366	357 742	..	222 228
Subtotal	15 120 610	1 848 236	5 559 473	5 496 787	968 276	1 247 838
<u>Developing countries of Africa</u>						
Algeria	921 496	28 326	172 259	203 875	..	517 036
Angola	93 942	2 052	..	68 902	..	22 988
Benin	1 662	..	..	105	..	1 557
Cameroon	34 833	..	..	24 120	..	10 713
Cape Verde	21 723	445	..	16 817	..	4 461
Comoros	1 897	..	..	1 304	..	593
Congo	9 093	..	..	..	..	9 093
Côte d'Ivoire	75 231	300	..	60 406	..	14 525
Djibouti	3 642	..	..	1 882	..	1 760
Egypt	1 172 118	165 910	343 079	487 152	..	175 977
Equatorial Guinea	6 527	..	..	6 412	..	115
Ethiopia	69 585	3 809	..	64 730	..	1 046
Gabon	25 171	652	..	21 055	..	3 464
Gambia	2 720	..	..	..	..	2 720
Ghana	135 088	965	..	62 779	..	71 344
Guinea	5 426	..	..	808	..	4 618
Guinea-Bissau	4 225	..	..	952	..	3 273
Kenya	14 232	4 224	..	..	..	10 008
Libyan Arab Jamahiriya	720 752	580 913	..	76 654	..	63 185
Madagascar	45 404	8 863	..	24 857	..	11 684
Malawi	..	..	..	..	..	..
Mauritania	42 881	..	..	2 911	..	39 970
Mauritius	121 592	..	74 411	31 937	..	15 244
Morocco	479 355	13 954	92 339	87 023	4 608	281 431
Mozambique	39 185	885	..	12 967	..	25 333
Nigeria	517 994	234 191	..	204 753	..	79 050
St. Helena	..	..	..	..	..	..
Sao Tome and Principe	2 584	..	..	1 591	..	993

Annex III(a) (continued)

	Total fleet	Oil tankers	Bulk carriers	General cargo c/	Container ships	Other types
Senegal	57 986	..	..	13 852	..	44 134
Seychelles	4 465	..	..	2 973	..	1 492
Sierra Leone	25 569	799	..	1 488	..	23 282
Somalia	17 340	..	..	9 582	..	7 758
Sudan	45 445	832	..	42 653	..	1 960
Togo	12 191	..	..	11 118	..	1 073
Tunisia	280 429	27 030	37 230	47 436	..	168 733
Uganda	..	..	..	..	..	..
United Republic of Tanzania	40 990	3 383	..	30 399	..	7 208
Zaire	28 624	..	..	13 980	..	14 644
<u>Subtotal</u>	5 081 397	1 077 533	719 318	1 637 473	4 608	1 642 465
<u>Developing countries of America</u>						
Anguilla	5 304	..	..	3 634	..	1 670
Antigua and Barbuda	803 575	5 490	39 244	563 434	144 378	51 029
Argentina	896 755	217 022	61 419	334 023	55 512	228 779
Barbados	50 516	44 466	..	1 921	..	4 129
Belize	37 459	4 051	..	24 546	..	8 862
Bolivia	9 610	..	..	9 610	..	..
Brazil	5 406 153	1 972 415	2 431 699	430 312	146 898	424 829
Cayman Islands	363 492	30 672	64 432	177 000	..	91 388
Chile	582 796	4 167	278 908	78 182	..	221 539
Colombia	250 489	5 697	62 565	161 052	..	21 175
Costa Rica	7 884	..	..	873	..	7 011
Cuba	671 679	66 983	30 341	400 427	..	173 928
Dominica	1 992	..	..	1 758	..	234
Dominican Republic	12 468	674	..	9 153	..	2 641
Ecuador	347 964	112 489	22 010	171 238	..	42 227
El Salvador	1 836	..	..	..	..	1 836
Falkland Islands f/	13 904	..	..	506	..	13 398
Grenada	1 031	..	..	923	..	108
Guatemala	1 797	..	..	..	..	1 797
Guyana	16 937	125	..	6 388	..	10 424
Haiti	916	..	..	199	..	717
Honduras	1 048 574	144 627	80 136	671 029	10 229	142 553
Jamaica	11 196	1 887	2 496	5 235	..	1 578
Mexico	1 115 496	474 354	..	54 439	..	586 703
Montserrat	711	..	..	711	..	..
Nicaragua	3 784	..	..	498	..	3 286
Paraguay	32 818	..	..	13 785	..	19 033
Peru	431 673	131 394	63 832	84 806	..	151 641
St. Kitts and Nevis	300	..	..	300	..	..
St. Lucia	1 891	..	..	1 534	..	357
St. Vincent	4 728 436	834 282	1 833 213	1 633 115	126 456	301 370
Suriname	13 175	1 800	..	7 215	1 343	2 817
Trinidad and Tobago	24 442	..	..	8 694	..	15 748
Turks and Caicos Islands	3 798	853	..	1 155	..	1 790
Uruguay	127 059	46 227	..	3 473	41 452	35 907
Venezuela	870 346	454 922	112 081	165 451	499	137 393
Virgin Islands British	7 393	734	..	3 181	..	3 478
<u>Subtotal</u>	17 905 649	4 555 331	5 082 376	5 029 800	526 767	2 711 375

Annex III(a) (continued)

	Total fleet	Oil tankers	Bulk carriers	General cargo c/	Container ships	Other types
<u>Developing countries of Asia</u>						
Bahrain	137 774	1 841	..	87 259	20 526	28 148
Bangladesh	400 366	51 065	..	310 283	..	39 018
Brunei Darussalam	364 635	239	..	1 855	..	362 541
Cambodia	..	..	..	..	..	..
Hong Kong	7 311 357	915 710	4 927 239	424 836	787 268	256 304
India	6 562 628	2 019 004	2 911 875	981 144	..	650 605
Indonesia	2 368 985	584 826	163 817	1 052 683	82 755	484 904
Iran, Islamic Rep. of	4 572 178	2 942 526	1 046 501	418 308	..	164 843
Iraq	910 891	719 563	..	70 587	..	120 741
Jordan	61 266	50 490	..	9 888	..	888
Kuwait	2 259 779	1 705 979	..	215 944	85 594	252 262
Lebanon	292 627	1 536	55 120	226 613	2 912	6 446
Malaysia	2 049 935	256 306	441 064	429 559	321 473	601 533
Maldives	51 884	5 644	11 301	31 189	..	3 750
Myanmar	947 200	2 481	518 995	366 451	24 415	34 858
Oman	20 424	..	..	13 328	..	7 096
Pakistan	380 242	50 445	16 639	291 179	..	21 979
Philippines	8 470 115	380 880	6 014 020	1 642 309	99 172	333 734
Qatar	392 724	124 964	..	132 064	118 128	17 568
Republic of Korea	7 410 411	612 182	3 835 640	1 034 468	1 126 577	801 544
Saudi Arabia	1 024 300	261 631	..	480 645	67 109	214 915
Singapore	9 912 252	4 181 619	2 596 859	1 468 144	1 232 148	433 482
Sri Lanka	284 516	74 322	92 979	107 612	..	9 603
Syrian Arab Republic	143 819	..	23 522	119 218	..	1 079
Thailand	918 138	172 274	67 126	513 611	75 559	89 568
United Arab Emirates	884 434	457 440	51 552	125 083	170 260	80 099
Yemen	16 924	1 886	..	3 903	..	11 135
<u>Subtotal</u>	58 149 804	15 574 853	22 774 249	10 558 163	4 213 896	5 028 643
<u>Developing countries of Europe</u>						
Croatia	210 832	7 149	29 340	71 433	35 219	67 691
Malta	11 008 539	3 085 582	5 187 348	2 126 035	244 808	364 766
Slovenia	2 319	..	..	..	..	2 043
Yugoslavia	2 520	..	..	276	..	2 520
<u>Subtotal</u>	11 224 210	3 092 731	5 216 688	2 197 744	280 027	437 020
<u>Developing countries of Oceania</u>						
Fiji	63 827	4 440	..	42 692	..	16 695
Kiribati	4 829	..	..	4 708	..	121
Nauru	5 374	..	..	4 426	..	948
Papua New Guinea	46 226	2 905	..	33 445	..	9 876
Solomon Islands	7 739	..	..	3 240	..	4 499
Tonga	10 666	..	..	7 110	..	3 556
Tuvalu	12 336	..	..	1 043	..	11 293
Vanuatu	2 064 392	184 406	1 040 529	624 757	26 301	188 399
Western Samoa	6 253	..	..	4 339	..	1 914
<u>Subtotal</u>	2 221 642	191 751	1 040 529	725 760	26 301	237 301
<u>Developing TOTAL</u>	94 582 702	24 492 199	34 833 160	20 148 940	5 051 599	10 056 804
<u>Other unallocated</u>	6 216 207	968 455	2 504 882	328 333	2 241 593	172 944

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 1992
(in dwt)

	Total fleet	Oil tankers	Bulk carriers	General cargo c/	Container ships	Other types
World total d/	694 690 623	263 333 748	239 972 602	104 933 251	32 408 377	54 042 645
<u>Developed market-economy countries</u>						
Australia	3 952 018	1 336 918	1 667 444	170 924	130 846	645 886
Austria	226 142	..	122 494	103 648	..	..
Belgium	220 232	3 253	..	6 961	..	210 018
Canada	686 081	201 736	93 807	88 602	7 011	294 925
Denmark	7 306 673	1 678 559	993 966	978 385	1 961 812	1 693 951
Finland	1 082 581	429 339	106 101	284 123	..	263 018
France	5 744 903	3 453 682	602 750	438 432	720 477	529 562
Germany	6 554 199	168 257	816 091	1 972 952	2 876 435	720 464
Gibraltar	859 252	598 739	126 950	107 508	..	26 055
Greece	47 712 282	21 871 686	21 866 883	2 134 295	527 582	1 311 836
Iceland	110 928	201	..	49 103	..	61 624
Ireland	216 658	14 218	..	122 090	28 281	52 069
Israel	825 235	785	35 570	117 732	666 667	4 481
Italy	10 569 903	3 664 734	3 978 634	1 022 098	371 352	1 533 085
Japan	37 455 406	13 017 422	14 237 017	5 324 248	1 292 532	3 584 187
Luxembourg	2 659 491	174 539	1 629 464	64 262	139 256	651 970
Netherlands	5 236 820	621 384	625 217	1 765 462	756 674	1 468 083
New Zealand	280 364	125 395	20 118	63 831	..	71 020
Norway	37 485 315	18 456 604	11 338 119	2 428 826	184 914	5 076 852
Portugal	1 639 846	1 246 533	113 420	126 835	18 172	134 886
South Africa	281 634	1 187	..	..	198 602	81 845
Spain	3 918 840	1 791 397	848 999	566 409	99 042	612 993
Sweden	3 305 593	1 218 609	358 512	987 408	34 680	706 384
Switzerland	606 736	..	545 403	26 862	..	34 471
Turkey	6 944 723	1 526 570	4 018 845	1 271 168	..	128 140
United Kingdom	7 637 405	4 002 764	741 664	511 567	975 874	1 405 536
United States	23 073 869	14 140 885	1 818 685	1 876 703	2 815 405	2 422 191
<u>Subtotal</u>	<u>216 593 129</u>	<u>89 745 396</u>	<u>66 706 153</u>	<u>22 610 434</u>	<u>13 805 614</u>	<u>23 725 532</u>
<u>Open-registry countries</u>						
Bahamas	33 837 183	18 793 335	8 152 689	4 559 895	858 035	1 473 229
Bermuda	5 493 736	4 084 443	343 563	140 039	44 991	880 700
Cyprus	36 188 355	9 179 771	19 857 856	5 505 146	766 479	879 103
Liberia	98 369 597	53 594 364	30 387 966	5 321 084	2 739 565	6 326 618
Panama	83 338 991	31 091 108	27 270 272	16 403 192	3 849 372	4 725 047
<u>Subtotal</u>	<u>257 227 862</u>	<u>116 743 021</u>	<u>86 012 346</u>	<u>31 929 356</u>	<u>8 258 442</u>	<u>14 284 697</u>
<u>Central and Eastern Europe and former USSR</u>						
Albania	80 954	..	..	80 954	..	..
Armenia	..	..	..	..	..	..
Azerbaijan	489 691	255 910	..	95 339	..	138 442
Belarus	..	..	..	..	..	..
Bulgaria	1 954 004	459 384	967 885	453 036	18 282	55 417
Czech Republic	367 813	..	252 459	115 354	..	..
Estonia	701 182	9 639	259 695	315 046	..	116 802
Hungary	132 974	..	28 757	104 217	..	..

Annex III(b) (continued)

	Total fleet	Oil tankers	Bulk carriers	General cargo <u>c/</u>	Container ships	Other types
Georgia	..	..	..	..	..	..
Kazakhstan	..	..	..	..	..	..
Kyrgyzstan	..	..	..	..	..	..
Latvia	1 355 460	803 476	..	401 601	..	150 383
Lithuania	633 518	24 180	160 212	278 946	..	170 180
Moldova	..	..	..	..	..	..
Poland	4 263 899	156 312	2 726 090	1 178 799	..	202 698
Romania	4 329 038	900 633	1 778 983	1 491 884	16 870	140 668
Russian Federation	17 235 762	3 800 488	3 038 084	6 455 567	487 316	3 454 307
Tajikistan	..	..	..	..	..	..
Turkmenistan	..	..	..	..	..	..
Ukraine	6 176 656	118 707	2 026 125	3 272 217	134 114	625 493
Former USSR <u>e/</u>	1 314 984	581 906	427 752	136 054	10 600	158 672
Uzbekistan	..	..	..	..	..	..
<u>Subtotal</u>	39 035 935	7 110 635	11 666 042	14 379 014	667 182	5 213 062
<u>Socialist countries of Asia</u>						
China	20 693 584	2 751 679	9 197 783	6 542 957	1 250 594	950 571
Democratic People's Republic of Korea	954 126	229 288	134 062	557 941	..	32 835
Viet Nam	954 785	28 565	36 014	552 156	..	338 050
<u>Subtotal</u>	22 602 495	3 009 532	9 367 859	7 653 054	1 250 594	1 321 456
<u>Developing countries of Africa</u>						
Algeria	1 093 363	46 410	288 145	296 577	..	462 231
Angola	123 479	2 286	..	108 527	..	12 666
Benin	210	..	..	..	..	210
Cameroon	39 797	..	..	33 509	..	6 288
Cape Verde	30 921	562	..	28 584	..	1 775
Comoros	2 959	..	..	2 295	..	664
Congo	10 892	..	..	..	..	10 892
Côte d'Ivoire	100 306	150	..	86 634	..	13 522
Djibouti	4 090	..	..	3 740	..	350
Egypt	1 644 761	288 550	565 499	677 341	..	113 371
Equatorial Guinea	6 699	..	..	6 699	..	..
Ethiopia	84 326	5 818	..	78 336	..	172
Gabon	30 186	742	..	27 312	..	2 132
Gambia	2 029	..	..	..	..	2 029
Ghana	132 023	1 167	..	82 488	..	48 368
Guinea	1 749	..	..	285	..	1 464
Guinea-Bissau	1 846	..	..	540	..	1 306
Kenya	14 055	6 412	..	..	..	7 643
Libyan Arab Jamahiriya	1 216 782	1 092 537	..	94 888	..	29 357
Madagascar	50 635	13 859	..	31 193	..	5 583
Malawi	..	..	..	..	..	..
Mauritania	24 734	..	..	4 570	..	20 164
Mauritius	175 158	..	127 232	39 349	..	8 577
Morocco	603 345	24 826	162 910	125 950	10 071	279 588
Mozambique	32 051	1 620	..	22 103	..	8 328
Nigeria	751 686	456 644	..	249 854	..	45 188
St. Helena	..	..	..	..	..	..
Sao Tome and Principe	2 277	..	..	1 285	..	992

Annex III(b) (continued)

	Total fleet	Oil tankers	Bulk carriers	General cargo c/	Container ships	Other types
Senegal	39 585	..	..	18 849	..	20 736
Seychelles	3 337	..	..	2 441	..	896
Sierra Leone	18 384	1 835	..	2 456	..	14 093
Somalia	18 496	..	..	12 695	..	5 801
Sudan	62 244	1 222	..	60 198	..	824
Togo	20 633	..	..	20 553	..	80
Tunisia	443 440	47 200	58 572	61 824	..	275 844
Uganda	..	..	..	..	..	..
United Republic of Tanzania	49 519	5 911	..	39 446	..	4 162
Zaire	31 192	..	..	15 949	..	15 243
<u>Subtotal</u>	6 867 189	1 997 751	1 202 358	2 236 470	10 071	1 420 539
<u>Developing countries of America</u>						
Anguilla	6 145	..	..	6 051	..	94
Antigua and Barbuda	1 281 375	13 688	67 622	905 902	202 885	91 278
Argentina	1 207 713	350 865	104 989	486 931	75 310	189 618
Barbados	80 302	76 219	..	4 018	..	65
Belize	57 769	7 025	..	42 060	..	8 684
Bolivia	15 765	..	..	15 765	..	..
Brazil	9 077 853	3 586 936	4 250 166	543 936	181 793	515 022
Cayman Islands	485 120	52 920	107 362	247 337	..	77 501
Chile	818 775	6 254	521 786	97 267	..	193 468
Colombia	378 867	9 681	129 882	222 572	..	16 732
Costa Rica	2 895	..	..	688	..	2 207
Cuba	863 656	97 557	49 888	549 543	..	166 668
Dominica	2 833	..	..	2 833	..	..
Dominican Republic	11 258	1 635	..	9 251	..	372
Ecuador	483 551	201 502	37 531	216 769	..	27 749
El Salvador	..	..	..	..	..	..
Falkland Islands f/	8 486	..	..	630	..	7 856
Grenada	1 383	..	..	1 383	..	..
Guatemala	353	..	..	..	..	353
Guyana	13 509	..	..	7 728	..	5 781
Haiti	429	..	..	259	..	170
Honduras	1 595 126	252 646	136 274	1 106 206	11 625	88 375
Jamaica	16 207	3 292	4 440	8 475	..	..
Mexico	1 505 410	797 429	..	63 417	..	644 564
Montserrat	1 016	..	..	1 016	..	..
Nicaragua	1 483	..	..	1 175	..	308
Paraguay	34 270	..	..	17 936	..	16 334
Peru	513 396	231 697	103 814	128 130	..	49 755
St. Kitts and Nevis	550	..	..	550	..	..
St. Lucia	2 070	..	..	2 070	..	..
St. Vincent	7 677 707	1 584 500	3 209 763	2 420 473	151 034	311 937
Suriname	15 721	3 035	..	10 145	1 771	770
Trinidad and Tobago	16 295	..	..	8 627	..	7 668
Turks and Caicos Islands	2 792	1 391	..	1 157	..	244
Uruguay	171 180	93 297	..	3 891	49 510	24 482
Venezuela	1 274 364	760 837	189 608	240 203	1 180	82 536
Virgin Islands British	5 237	1 263	..	3 371	..	603
<u>Subtotal</u>	27 630 861	8 133 669	8 913 125	7 377 765	675 108	2 531 194

Annex III(b) (continued)

	Total fleet	Oil tankers	Bulk carriers	General cargo c/	Container ships	Other types
<u>Developing countries of Asia</u>						
Bahrain	179 705	1 295	..	136 481	20 352	21 577
Bangladesh	551 705	84 888	..	447 336	..	19 481
Brunei Darussalam	350 708	270	..	2 578	..	347 948
Cambodia	..	..	..	..	..	..
Hong Kong	12 353 796	1 707 539	9 037 859	517 467	821 606	269 237
India	10 574 548	3 532 734	4 979 381	1 373 683	..	688 750
Indonesia	3 172 484	980 105	245 243	1 549 821	106 305	291 010
Iran, Islamic Rep. of	8 359 604	5 874 294	1 756 502	569 157	..	159 651
Iraq	1 567 484	1 351 708	..	103 251	..	112 525
Jordan	113 557	97 286	..	16 271	..	..
Kuwait	3 834 059	3 170 363	..	311 405	91 461	260 830
Lebanon	451 506	2 431	92 561	346 854	3 030	6 630
Malaysia	2 959 790	434 321	797 554	657 918	386 511	683 486
Maldives	81 594	11 678	19 536	46 616	..	3 764
Myanmar	1 335 957	4 483	910 317	363 945	25 297	31 915
Oman	10 012	..	..	7 444	..	2 568
Pakistan	549 707	91 137	34 684	411 764	..	12 122
Philippines	13 856 256	733 837	10 645 087	2 168 633	127 642	181 057
Qatar	585 583	234 788	..	207 670	127 151	15 974
Republic of Korea	11 516 246	1 201 833	6 983 681	1 262 553	1 336 755	731 424
Saudi Arabia	1 399 271	434 410	..	678 168	71 653	215 040
Singapore	15 958 392	7 613 521	4 614 897	1 732 570	1 422 296	575 108
Sri Lanka	446 231	131 532	180 225	129 238	..	5 236
Syrian Arab Republic	234 677	..	37 370	197 307	..	..
Thailand	1 393 819	315 379	113 482	797 090	104 361	63 507
United Arab Emirates	1 417 265	826 753	88 747	191 582	217 908	92 275
Yemen	13 653	3 185	..	4 784	..	5 684
<u>Subtotal</u>	93 267 609	28 839 770	40 537 126	14 231 586	4 862 328	4 796 799
<u>Developing countries of Europe</u>						
Croatia	225 175	10 870	50 399	104 872	36 935	22 099
Malta	18 633 622	5 694 325	9 116 775	3 215 524	256 541	350 457
Slovenia	967	..	..	234	..	733
Yugoslavia	625	..	..	..	..	625
<u>Subtotal</u>	18 860 389	5 705 195	9 167 174	3 320 630	293 476	373 914
<u>Developing countries of Oceania</u>						
Fiji	66 751	6 349	..	47 415	..	12 987
Kiribati	3 980	..	..	3 980	..	..
Nauru	5 791	..	..	5 791	..	..
Papua New Guinea	43 020	4 505	..	34 325	..	4 190
Solomon Islands	4 985	..	..	3 186	..	1 799
Tonga	13 740	..	..	11 043	..	2 697
Tuvalu	16 005	..	..	590	..	15 415
Vanuatu	3 076 226	367 599	1 804 643	594 046	32 042	277 896
Western Samoa	6 501	..	..	6 066	..	435
<u>Subtotal</u>	3 236 999	378 453	1 804 643	706 442	32 042	315 419
<u>Developing TOTAL</u>	149 863 047	45 054 838	61 624 426	27 872 893	5 873 025	9 437 865
<u>Other unallocated</u>	9 368 155	1 670 326	4 595 776	488 500	2 553 520	60 033

Annex IIINotes

Source: *Lloyd's Register of Shipping - Statistical Tables, 1992* (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 (2.0 million dwt) and 1.5 million grt (2.2 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 IVMajor flows of selected bulk commodities

This annex reviews trade of selected commodities for the most recent years available in the UNCTAD Data Bank. The tonnage volumes are for total trade and in most cases maritime transportation can be assumed to be the dominant mode. 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 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.

<u>Commodity</u>	<u>Floor value (tonnes)</u>	<u>Cut-off (tonnes)</u>
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 2873, rev. 2) by major suppliers (individual flows >50,000 mt)

		TONNES				
		1987	1988	1989	1990	1991
Australia to						
Argentina	.....	223,989	219,705	289,980	205,616	335,308
Canada	.....	925,251	839,754	629,109	956,697	1,125,096
China	.....	305,186	110,532	202,009	535,326	625,304
Fm Yugoslav	.....	-	-	105,109	166,988	-
France	.....	154,389	-	-	-	-
Germany, FR	.....	1,138,560	937,832	857,580	1,422,017	1,455,752
Iceland	.....	142,327	140,525	160,756	160,286	185,456
Indonesia	.....	224,594	285,050	360,043	279,061	182,060
Italy	.....	502,670	666,846	653,329	839,128	919,068
Japan	.....	-	1,240,376	1,438,036	1,424,989	1,246,950
New Zealand	.....	497,517	441,926	509,550	481,964	531,534
Norway	.....	344,573	227,696	190,672	74,489	76,558
Romania	.....	-	-	-	234,000	59,802
Saudi Arabia	.....	-	91,148	139,334	-	-
Spain	.....	-	-	-	71,112	-
Sweden	.....	-	90,355	118,525	-	-
Switzerland	.....	123,249	58,899	124,068	124,219	116,722
USA	.....	4,534,026	5,163,665	5,145,135	5,037,466	4,473,804
Venezuela	.....	-	-	-	1,218,646	-
Brazil to						
Argentina	.....	-	95,049	-	-	-
Canada	.....	-	1,583,237	1,373,715	1,719,134	1,616,963
Fm Yugoslav	.....	-	-	-	51,130	-
France	.....	-	-	50,365	-	-
Italy	.....	-	55,615	-	-	-
Uruguay	.....	318,582	105,943	76,416	-	-
US.Virgin Is.	.....	-	-	100,558	-	-
USA	.....	573,138	916,938	1,446,479	1,988,500	1,938,095
Venezuela	.....	1,812,844	1,958,243	1,636,752	1,697,589	2,136,526
China to						
Canada	.....	-	107,800	87,000	-	-
Fm USSR	.....	-	-	-	-	56,271
France	.....	-	-	64,751	-	57,192
Germany, FR	.....	50,460	60,692	92,111	142,195	105,454
Italy	.....	-	76,327	69,784	82,619	59,046
Japan	.....	136,436	172,778	183,542	148,026	165,923
Netherlands	.....	64,305	164,873	242,546	241,172	167,441
UK	.....	-	61,360	-	-	-
USA	.....	203,935	355,018	425,545	331,725	326,355
Greece to						
Egypt	.....	167,000	-	-	-	-
Fm USSR	.....	489,975	107,592	137,345	-	97,650
France	.....	111,164	109,594	204,216	278,556	433,409
Germany, FR	.....	57,333	-	-	-	-
Netherlands	.....	92,760	-	-	-	71,676
Romania	.....	382,374	256,441	332,365	342,562	401,612
UK	.....	132,964	-	-	-	-

Exports of Bauxite (SITC 2873, rev. 2) by major suppliers (individual flows >50,000 mt)

	TONNES				
	1987	1988	1989	1990	1991
Guinea to	-	-	-	-	-
Brazil	161,943	-	164,669	-	169,031
Cameroon	493,093	341,511	382,582	257,357	439,740
Canada	-	304,313	540,490	229,352	397,591
Fm Yugoslav	488,910	818,856	1,044,217	1,081,091	885,890
France	1,173,649	962,294	1,109,663	775,850	571,717
Germany, FR	1,370,882	1,743,433	1,602,052	1,742,305	1,970,085
Ireland	987,258	716,556	763,022	712,563	676,930
Italy	-	55,210	-	132,371	180,291
Norway	1,565,482	1,309,602	1,620,598	1,627,380	1,837,612
Spain	66,765	70,889	-	-	-
UK	4,153,168	4,526,515	3,504,147	3,842,094	4,007,352
USA	-	-	-	-	-
India to	-	123,533	104,249	-	-
Brazil	-	55,217	n.a.	-	65,165
China	-	-	n.a.	-	-
Egypt	-	-	n.a.	92,291	-
Fm USSR	-	-	n.a.	96,032	-
Indonesia	-	-	n.a.	51,664	-
Romania	-	-	122,000	-	-
Saudi Arabia	-	56,355	75,197	-	-
Sweden	-	-	n.a.	-	53,000
Untd Arab Em.	112,742	83,428	n.a.	133,759	-
USA	-	99,399	n.a.	58,168	125,097
Indonesia to	-	-	-	-	-
Japan	484,000	433,587	549,499	511,237	636,368
USA	67,860	-	293,976	302,400	409,120
Ireland to	-	-	-	-	-
Canada	135,218	55,630	-	-	-
Finland	-	-	-	-	181,121
Germany, FR	-	91,707	172,652	145,469	-
Italy	-	-	-	84,946	-
Netherlands	59,900	-	-	-	-
Norway	207,748	395,358	312,565	228,396	224,296
Poland	99,384	-	-	75,899	53,617
UK	188,337	243,022	306,204	261,900	337,378
Italy to	-	-	-	-	-
Fm USSR	-	-	-	50,146	-
Fm Yugoslav	110,269	79,526	63,864	126,272	141,637
Netherlands	323,593	155,689	230,153	191,171	101,873
UK	97,491	59,889	-	-	-

Exports of Bauxite (SITC 2873, rev. 2) by major suppliers (individual flows >50,000 mt)

	TONNES				
	1987	1988	1989	1990	1991
Jamaica to	-	-	-	-	-
Brazil	547,559	539,506	65,780	66,702	78,141
Canada	912,101	995,846	524,560	503,019	533,199
Fm USSR	-	-	-	-	-
France	-	-	73,031	-	-
Germany, FR	228,630	158,049	195,444	132,455	245,197
Netherlands	578,434	435,339	210,957	88,871	72,187
Norway	147,389	-	136,896	567,434	487,198
Sweden	-	82,139	-	63,725	101,387
UK	116,586	159,563	-	-	-
USA	2,900,226	2,784,949	4,228,471	4,675,716	4,634,081
Sierra Leone to	-	-	-	-	-
Brazil	346,518	287,531	127,759	205,360	355,600
Canada	720,370	686,490	308,790	98,144	336,331
Germany, FR	-	50,513	851,918	744,233	575,681
UK	-	-	-	-	-
USA	-	150,853	167,438	159,258	-
Venezuela	-	-	66,660	-	-
Suriname to	-	-	-	-	-
Brazil	-	166,280	124,640	99,247	177,081
Fm Yugoslavia	-	-	-	54,588	-
France	-	-	-	78,801	-
Germany, FR	-	70,177	69,685	-	-
Netherlands	263,008	298,179	275,165	321,220	285,171
Norway	678,060	376,079	503,060	727,039	575,691
USA	403,727	414,483	209,296	173,304	242,048
Venezuela	97,913	-	-	-	-
U.S.A. to	-	-	-	-	-
Brazil	75,178	115,314	-	123,074	-
Canada	615,980	552,961	963,504	736,833	-
Ghana	270,220	183,782	124,782	82,807	-
Mexico	185,832	179,241	136,721	168,883	-
Sweden	-	-	-	62,091	-
Venezuela	102,703	-	-	-	-
Venezuela to	-	-	-	-	-
Brazil	81,066	-	50,650	100,345	84,588
Fm USSR	-	-	-	-	-
Norway	155,076	118,142	101,509	-	-
Sweden	60,982	-	-	-	-
USA	172,042	184,731	-	-	-
Yugoslavia to	-	-	-	-	-
Czechoslovak	n.a.	-	247,489	262,237	n.a.
Fm USSR	n.a.	-	596,570	649,284	n.a.
Romania	n.a.	-	132,371	55,631	n.a.

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

	TONNES				
	1987	1988	1989	1990	1991
Argentina to					
Brazil	1,078,912	860,672	1,035,989	1,809,134	2,822,218
China	799,682	-	1,136,288	753,039	444,859
Fm USSR	541,093	590,315	624,120	482,357	-
Indonesia	-	-	-	301,454	375,550
Iran	500,036	748,326	664,335	1,481,635	359,508
Peru	413,062	514,555	491,200	326,096	612,524
Turkey	-	-	-	425,804	-
Australia to					
China	4,462,657	-	1,476,045	1,260,262	1,322,715
Egypt	2,102,254	1,738,120	1,875,984	1,779,286	1,481,109
Fm USSR	687,723	-	256,508	-	1,008,689
Fm Yemen	372,363	258,823	426,047	-	-
Indonesia	695,261	790,230	1,222,838	853,706	802,856
Iran	2,262,661	1,634,988	1,140,434	1,944,940	1,566,276
Iraq	1,173,212	1,065,975	1,426,481	1,024,048	-
Japan	1,012,491	892,073	1,240,282	1,098,583	950,978
Korea Rep.	408,206	-	-	509,580	1,136,536
Malaysia	415,624	354,331	665,062	555,244	504,603
Pakistan	-	-	492,247	-	-
Untd Arab Em.	-	-	368,779	-	-
Yemen	-	-	-	884,849	426,956
Canada to					
Algeria	669,090	785,714	536,450	572,345	627,419
Bangladesh	417,062	289,127	-	332,300	408,274
Belgium-Lux	260,633	-	-	-	279,050
Brazil	831,109	-	-	347,506	1,043,479
China	5,868,213	7,221,157	1,628,323	4,232,769	4,854,273
Cuba	1,105,530	681,133	373,855	543,226	354,082
Fm USSR	3,810,681	4,267,821	1,890,206	4,029,652	7,120,969
Indonesia	-	-	297,041	-	368,593
Iran	664,210	519,172	1,110,406	916,528	1,017,799
Iraq	745,480	818,652	902,630	423,063	-
Italy	521,733	491,325	359,048	348,443	260,348
Japan	1,464,154	1,256,307	1,338,439	1,482,100	1,329,128
Korea D P Rp.	-	-	-	-	454,988
Korea Rep.	1,487,668	-	-	382,264	1,017,286
Peru	337,930	-	-	-	-
Philippines	-	-	-	334,635	-
S.Afr. Cus. Un.	-	-	-	432,107	328,486
UK	442,903	522,161	-	300,818	302,419
USA	447,266	351,652	261,096	628,940	560,408
Venezuela	350,813	556,504	-	345,529	653,765

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

	TONNES				
	1987	1988	1989	1990	1991
Denmark to	-	-	-	-	-
Egypt	-	-	-	294,957	-
Fm USSR	-	-	-	410,984	-
Germany, FR	-	314,321	275,657	-	-
France to	-	-	-	-	-
Algeria	300,124	-	579,330	1,216,890	921,861
Bangladesh	263,344	448,499	318,272	-	-
Belgium-Lux	859,747	995,584	705,004	1,688,922	1,332,951
Brazil	614,009	-	-	-	-
Ghana	408,438	-	1,429,022	1,013,509	1,867,392
Cuba	-	268,900	-	-	-
Egypt	394,070	696,442	276,114	935,994	-
Ethiopia	-	485,657	-	-	-
Fm USSR	3,004,538	1,908,561	1,549,798	1,475,505	2,511,777
Germany, FR	826,560	817,596	1,158,905	1,127,052	893,021
Greece	285,239	285,109	-	257,169	-
Iran	-	293,485	744,687	-	-
Italy	2,644,520	2,984,928	3,641,103	2,652,672	3,219,914
Korea Rep.	-	471,946	-	-	-
Libya	-	-	-	-	307,716
Morocco	-	-	461,733	493,414	540,037
Netherlands	861,685	1,487,080	711,585	2,238,964	1,088,777
Portugal	-	-	-	-	451,269
Romania	-	-	-	-	304,495
Spain	395,575	574,526	-	313,414	773,693
Syria	270,142	250,861	425,682	651,839	-
Tunisia	327,670	-	402,787	391,484	-
Turkey	-	-	532,440	650,002	-
UK	677,037	618,131	-	291,649	255,114
Germany to	-	-	-	-	-
Belgium-Lux	-	-	290,187	278,563	386,680
Fm USSR	924,124	1,394,429	898,115	-	-
Iran	-	-	265,042	-	-
Netherlands	-	330,922	443,000	331,867	573,773
Poland	296,225	-	1,089,854	567,649	-
Greece to	-	-	-	-	-
Italy	-	335,626	909,599	474,333	960,948
Italy to	-	-	-	-	-
Algeria	-	603,416	691,369	-	-
Saudi Arabia to	-	-	-	-	-
Special	-	2,058,139	1,602,538	-	-
U.K. to	-	-	-	-	-
Belgium-Lux	-	250,136	300,459	316,853	-
China	-	-	258,464	718,245	-
Cuba	-	-	293,369	-	-
Fm USSR	1,091,333	-	310,677	1,171,773	-

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

	TONNES				
	1987	1988	1989	1990	1991
U.K. to					
Germany, FR	343,122	-	370,526	-	-
Iran	-	-	433,056	-	-
Italy	503,159	323,742	250,960	452,254	1,250,760
Korea Rep.	-	283,906	-	-	461,574
Netherlands	-	-	-	449,157	262,026
Poland	424,036	-	-	-	-
Spain	-	-	-	411,772	973,007
U.S.A. to					
Algeria	1,821,775	1,437,779	960,162	883,425	1,047,324
Bangladesh	799,030	484,653	890,175	466,742	-
China	1,820,137	6,263,063	7,301,252	3,691,677	4,586,557
Colombia	255,438	338,367	467,636	359,546	478,899
Ecuador	342,314	363,194	318,995	380,350	364,456
Egypt	2,310,710	2,616,925	3,254,907	1,654,005	-
El Salvador	-	-	-	-	316,668
Fm USSR	4,569,924	7,595,929	5,212,691	3,690,372	-
Fm Yugoslav	414,980	-	-	-	-
Guatemala	-	-	302,963	-	250,820
Honduras	-	-	1,054,614	3,960,857	1,198,807
India	-	1,749,544	-	-	-
Iraq	813,530	850,304	953,173	335,086	-
Israel	511,092	364,406	503,834	495,500	-
Italy	346,944	311,047	491,039	435,032	376,126
Japan	2,842,466	2,774,782	2,736,086	2,837,416	3,279,595
Jordan	272,785	-	398,358	600,679	446,775
Korea Rep.	1,808,901	1,941,568	1,738,212	1,596,913	1,669,294
Mexico	-	809,005	415,088	359,021	-
Morocco	1,923,687	1,244,583	745,282	548,498	473,541
Pakistan	-	731,438	1,880,076	894,969	727,280
Peru	-	394,111	-	-	-
Philippines	826,728	926,959	904,884	1,088,630	-
Poland	829,309	989,072	600,995	-	-
Sri Lanka	309,379	486,549	-	514,026	-
Sudan	363,342	-	-	-	-
Tunisia	306,598	576,835	251,179	330,762	354,528
Turkey	-	-	523,075	-	-
Venezuela	509,076	430,554	647,995	633,055	-
Special	-	338,063	919,228	657,244	-

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

	TONNES				
	1987	1988	1989	1990	1991
Australia to					
Belgium-Lux	610,799	843,100	646,006	1,397,045	1,213,678
Brazil	1,598,457	1,644,001	1,328,041	1,248,978	1,773,450
Chile	-	-	-	-	680,966
China	-	-	-	508,651	-
Denmark	2,863,375	1,351,308	1,864,249	1,577,331	2,004,470
France	3,709,984	2,699,982	2,653,195	3,095,525	4,042,019
Germany, FR	695,035	-	-	-	525,954
Greece	687,587	-	-	-	-
Hong Kong	2,923,423	2,372,748	2,897,733	3,360,756	3,572,471
India	2,883,446	4,139,909	-	-	-
Indonesia	993,138	942,575	705,802	-	-
Israel	681,554	503,557	-	-	670,144
Italy	2,291,452	1,888,879	1,245,545	980,690	1,269,776
Japan	46,567,536	50,627,627	53,394,204	57,404,793	60,831,633
Korea Rep.	7,477,024	8,369,602	7,904,950	9,162,153	11,329,251
Malaysia	-	535,830	696,126	697,128	613,231
Netherlands	5,911,912	4,243,550	3,739,283	5,337,845	5,853,106
Pakistan	505,849	689,240	648,178	733,496	848,600
Philippines	-	568,502	-	586,607	-
Romania	1,898,855	1,627,267	1,764,827	1,533,110	713,185
Spain	1,179,212	921,718	1,009,941	869,407	1,128,402
Sweden	1,072,790	1,136,782	893,386	-	607,625
Turkey	2,069,738	1,572,533	515,360	1,415,893	1,808,507
UK	3,653,195	2,706,059	2,980,096	3,962,198	4,746,650
Canada to					
Brazil	1,181,939	1,558,518	1,358,232	1,227,973	1,283,216
Denmark	-	-	757,858	-	763,231
France	599,480	-	602,659	-	-
Japan	16,660,568	19,371,430	19,990,609	19,616,479	18,562,757
Korea Rep.	3,765,798	4,635,112	4,916,013	5,213,905	5,675,419
Netherlands	-	-	521,439	523,660	670,051
UK	-	-	804,320	884,379	903,164
USA	714,294	889,349	880,689	1,361,184	1,350,078
China to					
France	-	-	646,096	1,532,699	1,656,306
Hong Kong	2,816,739	2,189,270	2,115,057	2,629,501	2,645,118
Indonesia	-	-	-	636,115	-
Japan	4,418,247	4,661,676	4,407,832	5,283,353	5,798,586
Korea D P Rp.	1,815,395	1,797,174	1,596,919	1,728,077	1,912,890
Korea Rep.	-	-	-	1,942,717	3,197,225
Malaysia	-	794,568	1,106,379	641,984	-
Netherlands	-	-	1,129,167	555,785	-
Philippines	1,696,530	2,855,230	1,875,915	844,614	-
UK	-	-	-	-	514,178

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

	TONNES				
	1987	1988	1989	1990	1991
Colombia to					
Denmark	2,295,615	2,268,313	2,585,129	2,028,089	2,623,484
Finland	-	-	-	-	630,454
France	956,489	-	1,255,275	1,935,233	1,743,719
Hong Kong	-	-	551,297	-	-
Ireland	-	607,445	583,863	693,962	651,632
Israel	-	-	592,555	-	566,102
Italy	-	-	520,093	-	-
Morocco	-	635,998	-	-	-
Netherlands	531,263	1,703,956	1,823,988	1,809,189	2,883,008
Spain	-	-	683,410	-	782,637
UK	-	-	767,301	2,390,534	1,819,130
USA	1,026,238	1,294,464	1,274,286	1,074,118	1,892,656
Fm Czechoslovakia to					
Austria	595,743	659,348	772,016	745,592	773,997
Germany, FR	2,348,073	1,982,158	2,153,112	2,312,752	3,182,505
Hungary	-	-	-	-	861,172
Germany to					
Belgium-Lux	1,811,399	1,873,167	1,999,840	1,758,928	1,277,781
France	2,206,106	1,569,196	1,654,915	1,835,321	1,387,009
Italy	1,383,396	1,141,396	1,493,696	1,089,378	695,117
Netherlands	1,425,597	1,694,190	1,926,555	1,672,917	1,640,864
Spain	-	-	-	517,778	-
Indonesia to					
Hong Kong	-	-	-	638,159	1,468,934
Japan	-	-	-	947,552	2,473,923
Malaysia	-	-	-	777,691	885,799
Netherlands to					
Belgium-Lux	615,285	675,051	571,459	683,627	642,368
France	502,616	-	-	-	-
Germany, FR	-	562,599	-	1,373,834	1,477,177
UK	-	-	-	-	-
Poland to					
Austria	1,913,852	1,848,331	1,721,175	1,887,397	2,150,712
Belgium-Lux	504,634	524,000	-	-	-
Brazil	1,942,000	1,959,000	1,646,000	2,176,000	1,414,611
Czechoslovak.	1,150,000	1,677,000	1,399,011	1,609,000	-
Denmark	2,103,000	1,658,000	835,000	977,600	705,781
Finland	1,983,000	2,038,000	2,599,000	2,820,000	2,601,373
Fm German DR	605,000	620,000	601,000	-	-
Fm USSR	9,583,000	11,725,000	9,947,000	8,637,000	-
France	561,000	-	-	-	-
Germany, FR	2,211,558	2,011,784	1,808,000	3,611,198	4,936,667
Hungary	-	668,804	569,000	-	1,064,874

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

	TONNES				
	1987	1988	1989	1990	1991
Poland to					
Ireland	663,000	722,000	581,000	-	-
Italy	1,276,223	847,261	789,445	736,827	598,989
Netherlands	786,000	789,000	790,000	1,216,000	820,326
Romania	1,717,000	1,309,000	1,363,000	-	-
Sweden	888,000	975,000	759,000	735,000	-
UK	1,057,000	1,277,000	1,270,000	945,000	539,989
U.K. to					
Denmark	1,022,300	-	520,550	-	-
U.S.A. to					
Algeria	825,777	642,194	671,149	-	599,780
Argentina	645,887	553,239	672,970	580,785	-
Austria	-	584,814	517,053	-	-
Belgium-Lux	4,153,049	5,887,976	6,437,986	7,709,990	5,435,843
Brazil	5,216,069	4,764,625	5,153,269	5,297,347	6,822,301
Canada	14,579,635	17,398,935	15,220,405	14,090,698	11,704,962
Chile	-	-	856,216	-	-
Denmark	847,004	2,543,937	2,882,906	2,892,017	4,702,816
Egypt	-	-	530,848	586,177	-
Fm Yugoslav	806,513	1,174,938	1,369,785	846,073	-
France	2,618,251	3,902,632	5,911,843	6,240,618	8,678,652
Germany, FR	-	636,426	675,438	959,140	1,444,242
Ireland	1,296,151	1,332,960	1,131,776	1,322,362	1,284,316
Israel	-	-	-	579,688	-
Italy	8,661,453	10,042,314	10,209,819	10,838,610	10,222,232
Japan	9,615,236	12,859,312	12,561,455	12,093,294	12,024,401
Korea Rep.	3,651,349	3,573,582	3,480,036	3,627,660	3,544,326
Morocco	-	-	747,252	682,427	845,962
Netherlands	3,713,458	4,613,542	5,512,148	7,588,851	6,292,995
Portugal	1,167,095	801,403	1,291,835	1,620,189	1,542,577
Romania	996,449	1,318,299	1,416,760	1,558,662	1,093,022
Spain	2,207,628	2,305,928	3,029,523	3,483,748	4,813,105
Sweden	606,345	650,985	665,637	785,367	1,068,187
Turkey	700,145	1,835,655	1,529,868	1,920,775	-
UK	2,348,395	3,329,945	4,103,283	4,696,926	4,967,295

Exports of Phosphates (SITC 2713, rev. 2) by major suppliers (individual flows >50,000 mt)

TONNES

	1987	1988	1989	1990	1991
Algeria to					
Austria	73,969	165,337	-	-	352,387
China	-	-	-	-	52,766
Czechoslovak	71,308	-	-	-	-
Fm USSR	-	-	-	107,734	152,784
Fm Yugoslav	-	62,395	-	-	134,677
France	-	-	-	-	-
Hungary	60,691	56,482	63,430	-	-
Poland	91,239	-	80,900	-	-
Romania	101,633	183,429	-	-	88,983
Switzerland	-	-	-	-	69,928
Turkey	-	66,263	-	-	-
UK	117,597	-	-	-	91,239
China to					
Japan	-	-	-	-	100,470
Korea D P Rp	-	-	-	-	141,752
Korea Rep.	-	-	69,039	73,989	100,980
Malaysia	-	75,439	83,639	146,151	168,475
Jordan to					
Bangladesh	62,000	98,200	-	-	-
Czechoslovak	72,935	115,770	-	-	-
Fm Yugoslav	543,010	707,190	420,166	-	-
France	132,350	103,920	-	69,300	-
Greece	-	64,760	-	79,960	-
India	1,138,270	1,134,650	-	1,218,379	78,068
Indonesia	394,300	518,700	468,750	479,850	1,036,764
Italy	71,650	65,815	-	-	743,280
Japan	316,500	251,800	221,400	237,650	218,000
Korea Rep.	145,250	163,400	140,537	117,393	123,780
Malaysia	86,980	174,750	206,916	110,408	73,469
Pakistan	231,725	234,780	206,443	257,243	167,664
Poland	899,250	508,030	860,931	59,141	-
Romania	503,405	538,550	172,767	-	-
Turkey	491,640	653,710	527,436	468,696	-
Morocco to					
Australia	292,665	413,106	221,951	119,244	-
Austria	65,505	-	-	-	-
Bangladesh	99,973	-	-	-	-
Belgium-Lux	1,407,070	1,358,867	1,172,000	1,260,000	1,139,500
Brazil	94,500	95,800	94,926	87,500	56,184
Bulgaria	69,001	250,412	224,000	103,993	94,826
Canada	155,784	-	-	-	-
China	213,223	240,477	266,000	222,940	201,627
Czechoslovak	124,936	221,716	180,000	103,145	-
Denmark	133,784	168,977	174,163	73,681	-
Fm German DR	129,028	190,604	228,000	57,515	-

Exports of Phosphates (SITC 2713, rev. 2) by major suppliers (individual flows >50,000 mt)

	TONNES				
	1987	1988	1989	1990	1991
Morocco to					
Fm Yugoslav	496,390	437,810	551,040	369,042	271,676
France	878,207	641,904	626,000	387,000	541,600
Germany, FR	483,284	201,501	129,000	195,000	268,600
Greece	177,793	218,277	245,000	223,000	206,600
Hungary	124,900	151,876	148,000	-	-
India	214,270	316,786	265,808	509,494	576,512
Indonesia	355,122	314,672	378,000	574,478	364,069
Iran	-	-	171,581	79,789	-
Italy	191,318	422,008	344,554	413,712	82,311
Japan	436,436	290,044	209,862	193,318	193,592
Korea Rep.	-	-	-	60,500	59,128
Malaysia	-	144,467	74,205	109,169	72,494
Mexico	976,186	1,139,762	925,785	943,180	703,713
Netherlands	615,606	812,904	729,000	684,161	430,500
New Zealand	75,485	88,500	209,700	116,710	136,346
Norway	86,363	115,400	186,543	157,320	111,600
Pakistan	-	-	-	-	106,561
Philippines	414,943	-	118,860	190,759	-
Poland	815,041	1,219,982	439,137	844,220	193,511
Portugal	250,123	168,827	154,210	109,156	88,936
Romania	555,351	578,837	606,000	576,605	259,947
Spain	2,093,269	2,300,800	1,706,000	1,508,229	1,404,363
Sweden	290,275	236,346	278,824	258,804	236,041
Turkey	-	-	-	-	52,000
UK	430,131	519,723	476,000	494,000	420,500
USA	95,880	728,416	683,024	407,903	663,234
Venezuela	54,000	67,640	68,000	74,382	76,084
Netherlands to					
Germany, FR	123,057	146,889	188,615	199,827	124,768
Saudi Arabia to					
Special	-	-	102,120	-	-
Senegal to					
France	167,788	300,587	166,466	54,656	88,606
Greece	57,389	130,702	139,541	123,421	134,741
India	115,300	163,733	285,229	312,030	295,316
Iran	-	n.a.	-	208,425	n.a.
Japan	56,800	70,800	71,287	-	58,368
Philippines	230,057	366,781	356,374	310,433	-
Spain	83,761	178,546	218,153	115,347	-
UK	129,837	163,510	-	-	53,675
Sweden to					
Norway	99,206	72,353	80,328	-	-

Exports of Phosphates (SITC 2713, rev. 2) by major suppliers (individual flows >50,000 mt)

	TONNES				
	1987	1988	1989	1990	1991
Syria to					
Austria	n.a.	n.a.	158,134	n.a.	n.a.
China	-	73,587	52,803	56,507	-
Fm German DR	n.a.	n.a.	252,908	n.a.	n.a.
Fm Yugoslav	-	253,149	187,582	-	-
France	163,559	219,549	258,622	364,227	328,170
Italy	105,443	-	52,456	-	-
Lebanon	n.a.	n.a.	84,761	n.a.	n.a.
Romania	n.a.	n.a.	354,041	n.a.	n.a.
Switzerland	n.a.	n.a.	214,174	n.a.	n.a.
UK	n.a.	n.a.	222,419	n.a.	n.a.
Togo to					
Australia	-	141,250	261,653	-	n.a.
Belgium-Lux	-	54,850	-	-	-
Br. Ind. Oc. Tr.	-	-	-	-	n.a.
Canada	258,403	840,006	890,380	91,760	698,543
Cyprus	50,747	110,210	-	802,766	n.a.
Fm Yugoslav	51,183	66,630	65,625	-	-
France	285,750	301,850	319,840	301,381	311,587
Greece	-	-	-	81,773	135,730
India	88,928	137,600	178,700	252,767	95,700
Italy	176,427	239,747	258,688	171,410	218,733
Mexico	-	-	80,800	86,600	n.a.
Netherlands	215,492	-	-	-	-
Philippines	115,180	223,700	285,116	225,299	-
Poland	277,982	351,918	291,680	67,750	-
Spain	281,324	283,575	384,865	241,307	259,695
UK	248,770	404,787	296,800	-	n.a.
USA	391,261	-	-	54,450	-
Tunisia to					
Belgium-Lux	52,080	-	-	-	-
Brazil	-	-	-	-	59,935
Bulgaria	77,223	155,188	97,881	-	-
Czechoslovak	54,780	-	-	-	-
France	184,114	188,489	155,012	168,887	90,357
Greece	199,597	147,763	185,269	-	-
Indonesia	95,948	131,606	99,344	64,961	69,078
Poland	124,751	70,287	107,971	-	84,556
Romania	231,918	121,529	71,368	65,885	-
Turkey	104,563	137,285	151,264	144,134	-
Uruguay	56,000	-	-	-	-

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

	TONNES				
	1987	1988	1989	1990	1991
Australia to					
Austria	276,312	-	-	-	-
Belgium-Lux	1,431,851	-	-	-	-
China	7,892,928	3,271,234	4,130,135	5,068,266	14,594,323
France	3,179,626	2,134,975	1,547,434	1,981,274	3,226,120
Germany, FR	5,473,060	4,629,445	3,529,397	3,644,377	4,056,008
Italy	1,678,117	558,629	1,231,293	1,967,366	1,862,541
Japan	43,489,688	18,060,816	35,767,850	53,592,213	60,769,222
Korea Rep.	6,502,774	3,996,755	4,633,503	4,720,022	12,743,939
Netherlands	861,049	-	-	-	-
Pakistan	280,011	501,981	562,005	415,578	636,135
Philippines	1,833,016	-	430,114	860,965	1,232,071
Spain	621,210	262,482	-	-	726,643
Turkey	374,856	-	-	-	-
UK	3,290,326	2,158,167	1,915,890	1,788,630	2,036,026
Brazil to					
Argentina	3,579,723	3,240,386	4,370,805	3,184,638	3,112,166
Australia	-	-	488,220	593,890	354,806
Austria	365,995	923,008	293,264	508,314	266,521
Bahrain	-	-	277,599	475,700	-
Belgium-Lux	4,285,331	6,757,257	6,583,818	6,988,711	7,552,398
Canada	659,200	575,259	294,133	408,305	-
China	2,834,863	3,049,483	2,302,263	2,702,957	4,238,248
Czechoslovak	1,865,988	2,556,115	2,928,129	1,236,531	975,339
Egypt	620,132	1,094,829	1,010,320	804,070	785,493
Fm German DR	1,027,284	270,161	953,533	645,810	-
Fm Yugoslav	-	794,790	1,210,586	523,879	-
France	4,202,145	5,718,709	6,356,328	6,263,478	18,593,470
Germany, FR	14,712,047	18,661,828	20,295,229	18,572,491	600,987
Indonesia	651,715	403,635	863,297	1,001,388	1,175,533
Iran	-	-	477,892	408,399	6,507,740
Italy	4,937,086	5,863,515	4,928,900	6,225,187	29,449,521
Japan	26,558,893	30,113,290	32,639,584	29,603,738	8,107,869
Korea Rep.	5,121,673	5,785,625	5,429,590	7,263,684	908,231
Libya	-	-	537,357	592,228	1,011,503
Malaysia	697,031	768,415	583,292	940,953	-
Mexico	-	686,856	482,329	-	-
Netherlands	2,790,695	2,575,559	1,905,902	2,306,393	2,342,159
Nigeria	-	-	833,112	-	-
Pakistan	-	402,600	530,279	-	375,198
Paraguay	251,869	-	-	-	-
Philippines	1,902,925	1,989,413	1,891,203	2,252,173	1,918,203
Poland	2,843,440	2,146,781	643,205	749,107	1,217,985
Qatar	-	629,052	572,033	267,671	274,343
Romania	326,832	839,282	1,376,937	834,177	764,848
Saudi Arabia	1,147,721	1,554,317	1,264,093	1,207,712	1,306,658
Spain	2,534,733	2,486,658	3,717,590	3,402,430	3,763,434

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

	TONNES				
	1987	1988	1989	1990	1991
Brazil to					
Trinidad Tbg.....	391,155	803,200	752,617	601,243	755,311
Turkey.....	1,250,437	560,117	424,412	863,322	574,498
UK.....	3,251,464	3,063,965	2,471,617	3,533,608	3,778,185
Untd Arab Em.....	-	-	389,793	534,515	-
USA.....	3,520,344	5,393,457	5,132,359	4,260,058	2,900,258
Canada to					
Austria.....	448,257	344,652	-	-	-
Belgium-Lux.....	565,997	737,272	878,312	469,106	1,247,932
France.....	2,324,405	2,762,155	2,332,604	2,064,983	2,101,035
Germany, FR.....	3,032,320	3,057,427	3,918,860	4,049,209	4,970,008
Italy.....	1,784,580	1,483,828	1,211,201	1,189,666	854,995
Japan.....	2,204,900	2,189,801	2,471,014	1,797,293	1,880,306
Korea Rep.....	-	636,094	548,260	664,822	1,162,277
Netherlands.....	1,564,376	1,939,196	2,697,814	2,656,226	4,016,122
Philippines.....	614,574	412,971	424,317	489,184	422,933
Portugal.....	350,016	-	-	285,062	-
Romania.....	257,257	-	-	-	-
Spain.....	299,656	353,382	682,649	549,620	693,830
Sweden.....	-	-	-	-	301,491
UK.....	7,044,537	5,718,598	4,839,223	3,254,294	3,902,604
USA.....	8,878,037	10,206,695	9,639,866	9,222,190	7,229,527
Chile to					
France.....	-	254,745	662,119	439,902	517,623
Germany, FR.....	-	847,110	855,601	1,186,996	996,230
Japan.....	4,560,094	5,021,144	4,409,139	3,956,740	3,403,257
Korea Rep.....	-	-	-	519,929	1,152,638
Mexico.....	-	-	-	250,866	-
USA.....	409,995	-	-	-	-
France to					
Belgium-Lux.....	3,737,355	3,724,591	3,461,693	3,280,117	3,152,602
India to					
Australia.....	-	304,046	n.a.	309,444	422,556
Belgium-Lux.....	-	277,833	-	-	-
China.....	-	-	277,333	-	597,627
Fm German DR.....	628,787	520,709	n.a.	-	-
Fm Yugoslav.....	311,719	291,969	316,394	-	-
France.....	464,874	604,755	n.a.	463,506	345,741
Hungary.....	-	-	n.a.	-	-
Indonesia.....	-	-	n.a.	-	316,810
Iran.....	-	-	n.a.	-	-
Italy.....	823,442	1,127,663	1,243,557	324,104	1,056,492
Japan.....	20,433,906	21,636,790	21,219,380	1,457,500	1,094,461
Korea D P Rp.....	-	613,050	-	21,602,096	18,642,935
Korea Rep.....	2,771,410	3,103,725	3,907,356	718,491	516,603
Netherlands.....	-	-	458,362	3,063,496	2,771,736
Pakistan.....	-	344,169	309,330	743,501	539,102
				418,381	406,228

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

	TONNES				
	1987	1988	1989	1990	1991
India to					
Romania	2,101,436	2,173,210	2,702,000	1,138,913	-
Turkey	-	369,310	448,731	389,404	410,741
Liberia					
Belgium-Lux	888,561	1,463,543	994,267	-	-
France	991,759	1,113,202	999,223	504,389	709,802
Germany, FR	5,355,812	5,441,239	5,301,712	3,157,532	-
Italy	3,701,794	2,778,072	2,604,302	1,123,594	-
Japan	-	297,367	-	-	-
Romania	-	-	997,000	702,000	-
Spain	1,099,610	737,300	837,990	-	-
USA	994,435	-	-	-	-
New Zealand to					
Japan	1,794,393	1,463,457	1,441,218	894,535	1,002,645
Norway to					
France	338,817	-	392,177	563,304	326,774
Germany, FR	446,108	298,529	422,320	258,148	866,809
UK	1,181,456	839,142	913,464	958,163	689,544
Peru to					
Fm Yugoslav	286,911	-	-	287,706	n.a.
Japan	499,564	-	-	666,339	540,871
Korea Rep.	1,693,055	-	-	1,399,115	1,686,802
Philippines					
Japan	4,201,748	4,764,452	4,507,224	4,849,456	4,864,255
South African C.U.					
Austria	-	324,218	1,137,135	1,314,651	1,259,309
France	-	-	986,743	778,166	501,119
Germany, FR	452,711	879,175	1,845,197	1,166,260	493,986
Italy	589,829	768,605	1,738,079	1,714,768	1,437,204
Japan	5,583,602	4,900,424	4,852,591	4,804,779	4,993,303
Netherlands	-	293,363	288,518	592,753	-
Romania	-	-	-	-	576,046
Turkey	819,936	617,010	1,132,817	939,992	-
UK	1,577,775	2,094,750	2,209,683	1,785,501	1,977,330
Spain to					
Belgium-Lux	-	-	-	-	307,038
France	552,346	513,352	312,675	253,444	329,916
Netherlands	780,003	776,933	666,618	406,779	502,138
Romania	-	-	-	379,030	-
UK	418,306	632,589	397,650	326,182	815,643
Sweden to					
Austria	983,646	868,568	512,392	-	-
Belgium-Lux	2,809,762	2,987,345	3,073,751	2,966,827	2,617,433
Egypt	-	-	292,502	363,295	-
Finland	1,284,072	1,468,879	1,918,105	1,817,044	1,746,439
Fm German DR	410,930	526,342	303,125	303,125	-
France	817,881	725,111	518,339	530,164	593,911

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

	TONNES				
	1987	1988	1989	1990	1991
Sweden to					
Germany, FR	5,437,906	6,251,276	6,314,891	5,723,459	5,793,586
Indonesia	746,218	559,461	945,593	1,018,121	949,938
Japan	959,897	929,852	777,658	438,745	-
Libya	-	-	-	-	590,822
Netherlands	1,590,476	1,388,612	1,482,504	1,503,291	1,343,756
Norway	-	259,209	-	-	-
Qatar	415,506	-	-	263,246	268,794
Saudi Arabia	333,682	432,589	251,119	345,399	342,121
UK	-	322,991	356,922	383,264	409,289
U.S.A. to					
Canada	5,091,729	5,276,567	5,345,439	3,709,957	4,782,934
Venezuela to					
Belgium-Lux	1,684,250	1,786,628	1,527,152	1,541,426	1,632,650
France	785,536	791,796	1,068,756	936,345	1,194,348
Germany, FR	924,986	618,581	638,341	743,291	667,425
Italy	946,953	1,003,023	1,286,135	1,114,073	1,662,979
Japan	339,850	443,502	540,492	1,798,060	1,407,405
Netherlands	-	-	461,217	426,998	431,517
Poland	402,000	-	477,107	301,568	-
Romania	-	-	949,000	618,000	-
Spain	729,493	793,975	604,756	820,646	1,036,624
Trinidad Tbg.	-	-	362,369	271,857	-
Turkey	-	-	289,440	-	-
UK	776,681	943,125	1,166,006	1,071,055	512,099
USA	2,639,892	3,568,487	4,232,015	3,502,946	2,762,155

Exports of Raw Sugar (SITC 0611, rev. 2) by major suppliers (individual flows >30,000 mt)

	TONNES				
	1987	1988	1989	1990	1991
Argentina to	-	-	56,755	-	-
Brazil	-	-	-	-	-
Bulgaria	37,085	-	-	-	-
China	-	120,165	-	-	-
Morocco	-	-	-	40,417	-
USA	32,931	70,929	74,261	96,004	85,540
Australia to					
Canada	312,649	413,489	408,628	492,252	451,804
China	408,682	425,751	196,406	141,451	105,508
Japan	642,005	676,411	673,697	657,879	578,771
Korea Rep.	256,640	477,094	496,906	394,914	280,582
Malaysia	409,269	490,865	368,944	551,092	503,384
New Zealand	-	60,108	95,981	55,213	110,872
Singapore	102,203	117,608	132,312	132,306	147,006
USA	-	-	-	-	140,411
Brazil to					
Algeria	70,950	-	-	-	-
Bulgaria	-	65,546	-	-	-
China	-	264,175	-	-	-
Egypt	-	-	84,878	140,341	154,915
Finland	36,000	-	-	-	-
Fm USSR	293,305	44,500	44,091	152,406	39,470
India	53,750	-	-	-	-
Indonesia	33,100	-	-	-	-
Mexico	-	-	-	-	-
Morocco	97,300	112,590	87,250	165,457	32,512
Portugal	-	42,000	-	-	270,841
Switzerland	-	171,913	-	-	-
UK	-	-	31,361	-	-
USA	105,155	122,247	-	395,566	223,694
Venezuela	245,550	-	-	-	40,125
Yemen	-	-	-	-	-
Special	-	-	163,447	-	-
Colombia to					
China	-	61,750	-	-	-
Morocco	-	45,500	-	-	-
USA	54,172	86,147	292,336	340,180	74,371
Venezuela	-	-	-	-	72,245
Fiji to					
China	62,000	50,000	-	-	-
Japan	-	31,500	47,199	31,387	60,973
Malaysia	113,610	66,628	93,453	110,088	103,117
New Zealand	41,324	58,381	-	39,234	-
UK	169,261	186,085	187,952	158,150	200,932

Exports of Raw Sugar (SITC 0611, rev. 2) by major suppliers (individual flows >30,000 mt)

	TONNES				
	1987	1988	1989	1990	1991
Guatemala to					
Bulgaria	40,302				
China		37,875			
Ecuador			118,373	47,500	50,645
Egypt					120,428
Fm USSR		178,297	196,816		
Jamaica				54,964	
Kenya				47,782	
Mexico			191,027		64,200
Sri Lanka		35,000			70,347
Trinidad Tbg.		44,869			
USA	53,777		83,126	88,741	201,863
Honduras to					
Fm USSR		38,761			
USA			207,634	271,105	201,557
Mauritius to					
Canada	89,400	59,986			
France	70,213				
UK	421,195	494,283	483,088	456,386	477,341
Mexico to					
Fm USSR		322,085	76,087		
Morocco		42,000			
UK	40,800	55,013	119,951		
USA	320,518	176,708	123,905		
Nicaragua to					
Brazil					
Fm USSR			46,948		30,864
USA					85,003
Special					106,373
Philippines to					30,864
USA		142,485		239,436	209,991
Reunion to					
France	138,220	174,005	188,027	197,786	143,297
Portugal	44,500				
Thailand to					
China	842,630	675,831	325,450	177,013	276,904
Fm USSR	104,345		589,094	93,193	136,016
Iran			42,254	60,359	489,339
Japan	433,220	469,357	530,017	528,714	603,693
Korea Rep.	317,642	334,157	375,649	469,056	225,019
Malaysia	86,146	37,198	218,584	154,036	
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 247, rev. 2) by major suppliers (individual flows >50,000 mt)

	TONNES				
	1987	1988	1989	1990	1991
Austria to	-	-	95,224	234,637	99,092
Fm Yugoslav	-	-	467,433	467,244	409,054
Italy	404,771	422,303	-	65,290	-
Romania	-	-	-	-	-
Belgium/Luxmbrg to	-	-	-	-	-
France	67,058	99,367	76,276	116,263	198,454
Germany, FR	376,263	508,233	665,980	503,829	361,396
Italy	58,354	-	55,659	101,459	204,405
Netherlands	171,771	215,806	224,224	269,665	269,483
Canada to	-	-	-	-	-
China	256,571	327,521	64,782	-	-
Italy	-	-	-	71,812	-
Japan	1,330,630	0	625,004	360,726	362,165
Korea Rep.	193,896	-	-	-	-
USA	394,907	328,290	-	-	-
Chile to	-	-	-	-	-
China	133,435	319,755	77,289	-	-
Italy	-	-	-	65,415	64,322
Japan	221,643	89,129	82,803	525,988	538,482
Korea Rep.	288,481	337,783	399,288	502,838	413,583
Sweden	-	-	-	69,165	-
Turkey	472,011	380,806	159,563	310,725	228,432
China to	-	-	-	-	-
Japan	-	106,011	73,230	50,362	87,818
Korea D P Rp.	1,165,235	-	-	-	-
France to	-	-	-	-	-
Belgium-Lux	193,689	1,594,368	1,656,153	1,575,363	1,460,242
Finland	-	-	90,476	-	-
Germany, FR	227,686	306,612	351,356	295,518	219,041
Italy	455,877	634,065	745,971	793,264	869,744
Portugal	-	56,842	59,684	-	-
Spain	317,465	570,053	821,511	773,811	793,832
Sweden	-	152,740	151,185	-	-
Switzerland	66,085	176,086	168,705	118,650	115,275
Germany to	-	-	-	-	-
Austria	596,854	845,207	1,036,028	1,337,452	2,415,403
Belgium-Lux	-	69,913	58,800	79,673	83,717
Czechoslovak.	-	-	-	-	232,854
Denmark	80,099	52,429	90,025	77,173	104,359
Finland	-	-	114,708	155,124	192,201
France	-	-	51,676	100,917	416,689
Hungary	-	-	-	119,911	155,825
Italy	163,895	254,601	292,431	402,523	791,595
Netherlands	85,940	112,592	86,169	76,021	87,037
Romania	-	-	-	86,659	110,551
Sweden	-	774,218	969,394	557,257	922,824
Switzerland	-	111,732	119,963	79,507	73,485
Turkey	-	-	-	104,476	277,462

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

	TONNES				
	1987	1988	1989	1990	1991
Malaysia to					
China	652,028	363,745	151,287	388,471	803,292
Hong Kong	462,697	339,011	355,568	369,829	366,949
India	756,301	546,122	618,775	908,291	480,688
Indonesia	-	-	-	116,060	-
Japan	10,526,576	6,182,331	8,206,490	7,308,987	6,490,863
Korea Rep.	2,722,519	1,757,110	2,237,745	2,184,558	2,253,857
Philippines	-	-	247,513	186,888	197,974
Singapore	-	-	56,372	-	-
Thailand	165,143	138,037	533,982	536,092	456,374
New Zealand to					
China	-	119,348	243,212	148,179	120,484
Japan	383,756	433,375	647,392	1,060,892	1,483,990
Korea Rep.	82,162	251,161	447,918	951,954	1,169,218
Norway to					
Sweden	-	502,304	805,692	384,357	450,515
Papua-N Guinea to					
China	-	-	-	-	52,315
Japan	708,198	641,374	764,756	425,643	527,029
Korea Rep.	374,198	336,917	307,128	349,371	422,331
Switzerland to					
Austria	79,361	-	-	67,652	57,352
Italy	459,529	479,874	538,036	670,291	719,398
U.S.A. to					
Austria	418,571	584,705	548,048	390,308	270,820
Canada	1,361,640	1,256,920	n.a.	n.a.	n.a.
China	2,489,423	4,928,784	1,942,884	991,681	189,263
Finland	439,116	-	-	913,075	855,520
Fm Yugoslav	-	216,834	210,658	166,688	-
Germany, FR	106,267	91,045	n.a.	n.a.	n.a.
Hong Kong	179,957	190,441	n.a.	n.a.	n.a.
Hungary	-	-	-	-	367,824
Italy	-	307,776	259,680	278,043	191,636
Japan	9,487,342	9,356,502	3,673,321	3,405,333	3,012,890
Korea Rep.	2,116,783	2,657,016	-	-	81,537
Norway	-	167,687	183,317	121,044	79,413
Poland	63,671	69,218	58,200	-	-
Sweden	-	2,110,719	1,874,754	1,084,019	1,097,975
Turkey	217,173	112,979	n.a.	n.a.	n.a.
USSR to					
Barbados	-	896,050	-	-	-
China	2,170,684	4,510,728	1,784,104	1,338,526	1,472,080
Germany, FR	118,569	110,102	110,789	94,411	78,683
Italy	-	-	-	-	52,519
Japan	6,801,613	0	7,720,173	7,239,426	6,342,527
Korea Rep.	1,915,739	-	-	2,562,210	2,402,248
Turkey	-	233,113	-	-	-

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

	TONNES				
	1987	1988	1989	1990	1991
Algeria to	-	-	-	-	-
Belgium-Lux	2,995,391	2,168,352	2,048,417	2,207,948	3,659,575
France	2,219,365	3,010,304	3,112,222	3,080,506	-
Germany, FR	3,944,085	2,893,339	2,679,040	-	4,991,720
Italy	3,191,963	3,675,309	5,316,400	6,629,770	2,422,906
Netherlands	5,866,118	2,657,754	2,710,923	2,180,497	2,028,115
Spain	30,051,612	6,725,830	6,953,632	7,858,141	8,336,825
USA	-	-	-	-	-
Canada to	-	-	-	-	-
USA	19,824,972	34,035,354	30,895,077	29,725,430	36,556,138
Indonesia to	-	-	-	-	-
Australia	2,151,702	-	-	-	2,389,384
China	2,175,082	-	-	-	3,508,983
Japan	11,448,732	21,184,076	21,393,567	22,825,998	20,640,154
Korea Rep.	-	-	-	2,332,186	4,437,945
Singapore	-	-	-	-	-
USA	2,534,972	9,767,021	9,839,162	5,757,408	5,185,780
Iran to	-	-	-	-	-
Belgium-Lux	2,667,324	5,450,081	8,396,510	7,214,337	7,870,762
Brazil	4,431,637	-	2,892,422	4,954,025	6,972,268
France	7,068,326	2,630,731	7,546,454	8,677,842	8,895,714
Germany, FR	11,666,878	-	2,049,918	2,744,855	2,615,588
Greece	-	-	2,797,620	3,033,820	4,608,244
India	-	-	-	3,164,000	4,225,000
Indonesia	-	-	-	2,628,402	-
Italy	7,406,838	4,053,298	5,156,113	9,005,505	10,499,015
Japan	3,548,559	9,679,659	14,189,307	19,408,762	18,944,695
Korea Rep.	4,823,175	10,353,728	8,312,181	7,287,007	7,502,520
Netherlands	6,678,786	-	8,700,000	3,820,000	8,750,239
Romania	10,829,532	3,402,477	2,832,749	-	3,406,620
Singapore	2,225,372	4,310,310	6,237,450	5,456,028	2,446,796
Spain	11,929,196	5,448,289	-	-	4,917,452
Sweden	6,390,091	2,121,332	-	-	2,773,530
Switzerland	2,198,881	-	-	3,156,262	-
Turkey	3,359,000	2,887,675	2,887,675	2,982,359	-
UK	-	-	-	-	-
USA	2,225,372	-	-	-	2,005,482
Iraq to	-	-	-	-	-
Belgium-Lux	11,929,196	11,077,094	2,247,187	-	-
Brazil	6,390,091	4,924,921	12,431,698	7,428,856	-
Fm Yugoslav	2,198,881	6,103,222	2,898,141	-	-
France	3,359,000	-	5,759,753	3,072,980	-
Germany, FR	6,589,277	-	-	-	-
India	4,938,870	-	-	2,381,000	-
Indonesia	2,160,222	6,059,640	2,251,071	-	-
Italy	-	7,215,694	2,917,408	-	-
Japan	-	-	9,963,360	7,162,681	-
Jordan	-	-	2,326,847	2,331,434	-
Morocco	-	2,213,800	2,969,070	-	-

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

		TONNES				
		1987	1988	1989	1990	1991
Iraq to						
Netherlands		-	-	4,865,578	5,971,207	-
Spain	4,936,883	3,461,046	5,389,149	3,597,954	-	-
Turkey	7,909,482	12,100,183	11,788,945	7,027,687	-	-
USA	2,978,521	11,358,555	-	24,568,698	-	-
Libya to						
Belgium-Lux	2,572,686	-	-	-	-	-
France	2,030,935	3,740,359	2,417,671	2,782,774	3,874,249	
Germany, FR	7,076,431	11,190,248	11,013,975	11,492,540	12,265,968	
Greece				2,098,274	2,948,126	
Italy	14,779,059	18,936,579	19,385,523	23,345,835	25,780,559	
Spain	4,747,233	4,402,818	4,155,663	4,961,786	5,567,077	
Turkey	2,060,104	-	-	2,553,186	-	
Mexico to						
France	4,248,822	2,096,462	2,865,021	2,676,887	-	-
Honduras			2,435,985	-	-	-
Japan	8,909,800	4,231,011	8,326,849	7,655,907	7,069,544	
Spain	10,190,972	4,856,149	9,819,762	11,164,277	12,317,485	
UK	2,514,128	-	-	-	-	-
USA	32,501,873	17,510,597	36,206,887	34,283,658	37,837,525	
Nigeria to						
Canada		2,084,698	2,816,664	2,583,203	2,734,799	
France	4,025,450	4,073,219	3,217,827	2,943,297	3,923,584	
Germany, FR	4,748,554	4,553,396	4,409,033	6,127,025	6,793,523	
Italy			2,253,268	-	2,705,347	
Netherlands	2,690,335	3,512,722	2,728,443	2,408,672	4,365,059	
Portugal			2,422,944	2,810,362	-	
Spain	5,891,987	7,528,598	9,199,516	8,250,136	10,802,776	
UK			-	2,002,340	-	
USA	20,555,398	24,336,177	-	36,543,462	33,002,426	
Norway to						
Canada			3,382,730	7,020,809	5,275,031	
Denmark			-	-	3,098,604	
Finland			-	-	2,681,463	
France	3,428,658	3,616,671	7,847,758	5,384,448	5,400,627	
Germany, FR			-	-	3,563,091	
Netherlands	5,864,131	5,277,790	5,242,914	6,603,016	8,552,469	
Sweden	3,978,872	4,164,012	5,745,612	4,398,920	4,971,387	
UK	23,370,713	28,369,372	33,412,453	30,960,887	40,220,887	
USA			4,365,655	4,984,798	2,944,246	
Saudi Arabia to						
Belgium-Lux	2,951,101	3,627,531	2,915,332	-	4,525,900	
Brazil	6,489,470	8,802,872	5,251,175	8,326,169	9,430,941	
Canada			-	3,070,989	3,524,805	
France	6,819,481	11,331,670	13,074,900	14,735,556	19,959,383	
Germany, FR	3,294,935	4,741,721	5,173,069	6,008,583	7,769,242	
Greece	3,987,346	-	-	-	-	
India	3,247,000	9,126,000	-	6,779,000	6,885,000	

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

	TONNES				
	1987	1988	1989	1990	1991
Saudi Arabia to					
Indonesia	3,861,444	3,248,142	-	-	4,193,439
Italy	6,177,777	5,693,181	6,045,840	7,637,099	13,290,919
Japan	33,988,909	29,362,777	31,133,121	38,232,555	46,342,449
Korea Rep.	4,559,641	-	4,385,097	6,215,166	18,297,618
Netherlands	6,810,550	6,549,724	8,794,736	7,794,736	19,198,791
New Zealand	-	-	-	-	2,035,389
Pakistan	2,022,285	2,297,858	2,207,744	2,328,067	2,287,850
Romania	-	-	4,385,000	4,303,000	2,464,616
Singapore	5,240,224	9,685,236	13,930,280	15,897,186	20,002,478
Spain	4,608,090	2,501,452	3,273,395	2,637,372	6,673,080
Turkey	-	-	-	2,573,539	-
UK	2,459,607	-	2,683,493	4,614,873	8,291,518
USA	17,628,008	27,205,619	-	59,721,537	84,044,267
U.A.E. to					
France	-	-	2,356,039	2,429,459	2,924,929
India	4,165,000	4,785,000	-	3,826,000	6,557,000
Italy	3,519,379	-	2,273,430	-	-
Japan	28,918,320	32,385,751	35,984,546	41,094,073	52,499,698
Korea Rep.	3,023,927	5,182,037	6,315,484	6,425,244	6,240,153
Morocco	-	-	-	-	-
Singapore	3,398,045	4,990,006	5,934,972	2,028,708	8,242,574
Thailand	-	2,101,055	2,074,006	8,416,764	-
USA	4,112,159	3,465,627	-	5,003,601	3,834,298
U.K. to					
Belgium-Lux	2,055,950	-	-	-	-
Canada	6,344,655	8,995,732	5,816,689	4,966,140	4,378,614
France	13,215,955	11,089,736	4,344,687	5,365,768	6,865,227
Germany, FR	11,775,373	9,863,943	9,801,879	10,572,429	10,189,361
Italy	3,279,369	-	-	-	-
Netherlands	15,144,823	11,223,233	9,871,940	10,046,568	10,351,763
Sweden	4,497,337	-	-	-	-
USA	16,317,003	14,713,083	12,603,780	14,748,590	10,215,962
fm USSR to					
Belgium-Lux	2,538,238	-	-	2,283,645	-
Cuba	-	-	8,679,531	-	-
Finland	8,556,748	8,377,486	8,272,920	5,263,822	3,382,067
Fm Yugoslav	-	3,196,130	5,704,321	6,082,921	-
France	5,088,507	9,565,770	5,098,943	5,088,963	-
Germany, FR	4,816,326	5,953,988	5,853,865	5,625,521	15,251,688
Greece	2,454,476	-	-	-	-
India	3,817,000	-	-	2,309,000	-
Italy	6,665,469	8,204,944	7,038,539	6,062,691	3,418,834
Netherlands	-	2,089,001	2,370,297	2,573,660	-
Poland	13,590,000	-	13,075,000	10,751,586	-
Romania	-	-	4,001,000	2,474,000	-
Spain	3,466,594	5,608,028	4,922,539	4,898,440	-
Sweden	2,200,035	-	-	2,574,107	-

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

TONNES					
	1987	1988	1989	1990	1991
Venezuela to	-	-	-	-	-
Brazil	4,548,998	5,021,413	4,744,066	4,654,433	2,359,644
Germany, FR	-	-	2,178,031	3,030,443	5,679,477
Honduras	-	-	-	2,141,482	-
Nicaragua	-	-	-	33,361,335	-
USA	23,594,935	21,800,952	-	-	35,489,822

Annex V

INTERNATIONAL CLASSIFICATION OF SHIPS BY TYPE *

Interim report

Preparation of this document

1. The preparation of this annex was initiated at an ad hoc UNCTAD-EEC meeting of the secretariats of national and international organizations interested in 'type of ship' classifications, held in Geneva in October 1987, where it was agreed that there was a need for a universally accepted hierarchical type-of-ship classification and a clear definition of ship types. A small group was commissioned to prepare a report setting out a new classification which would take account of the views expressed at the meeting.
2. The study group's report was presented to the second ad hoc UNCTAD-EEC meeting held to discuss the classification of ships by type, which met in Luxembourg in October 1988.
3. The International Classification of Ships by Type (ICST) given in this annex is based on the construction characteristics of the marine structure and not upon its particular use or cargo carried at a point in time. The text is based partly on the papers presented and comments made at the Luxembourg meeting and partly upon further deliberations and contributions from those attending the two meetings.

Introduction

4. The term 'classification' in this text is used in its statistical sense of collating together items with similar attributes into groups and not in the sense associated with marine insurance. Currently, ship types are classified in many ways in publications. There is a common underlying thread to many of the groupings used but it is often not possible to compare figures from different sources because of the way in which specific ship types have been grouped.
5. A type-of-ship classification is required for the production of statistics relating to marine matters: composition of the merchant fleet of a country, new constructions, scrapping, accidents, ship traffic, etc. The degree of detail required will vary from a very detailed breakdown (e.g., for an analysis of fishing vessels) to a high degree of aggregation (e.g. for the UNCTAD publication *Review of Maritime Transport*). In addition, any system needs to be compatible with the Lloyd's Register of Shipping database, since many publications providing information on ships by type have used, as their source material, the information given in *Lloyd's Statistical Tables*. Since 1989 the ship type groupings used in *Lloyd's Statistical Tables* have been compatible with the classification set out in this annex.
6. For vessel statistics, a ship use classification will also be required. Such a classification has already been discussed and adopted by the UNECE Working Party on Facilitation of International Trade Procedures at its twenty-third session in 1986 (*Recommendation 21 Codes for Types of Cargo, Packages and Packaging Materials - EEC/TRADE/158*).

International Classification of Ships by Type (ICST)

7. There appears to be general agreement amongst marine statisticians on the need of identify separately tankers, dry bulkers and other dry cargo vessels, since these are the vessels which engage in international trade. There remain other ships, of which those comprising the fishing fleet are probably the most numerous. Differences in current statistical groupings occur where groups at the level of 'tankers', 'bulkiers', etc., need to be subdivided. However, a classification of this nature should start at the top by covering all marine structures.

* This document was prepared by the ad hoc group for review and comment and is reproduced here for information purposes for the maritime community.

8. All marine structures form Level 0 of the ICST. At the next level (Level 1), the division is into:
- merchant ship structures
 - naval (military) craft
 - non-ship structures.

The 'merchant ships' group is divided into four basic groups at Level 2:

- liquid
- dry bulk
- other dry cargo
- miscellaneous types (for all other vessels).

No proposals are made at present for the further breakdown of non-ship structures below Level 2 or naval vessels below Level 1.

9. The classification for merchant ships has been fully defined for Levels 2 to 4, although for many purposes it is likely that a Level 3 degree of detail will suffice. Level 5 has been defined only for some 'other dry cargo' types and 'miscellaneous types' at this stage. A further expansion of Level 5 could be made at a subsequent revision of this classification if it was thought generally useful and desirable.

10. The breakdown at Level 3 for the 'liquid' category is into five groups:

- oil tanker
- chemical tanker
- liquefied gas carrier
- tanker barge
- other tankers

It would be at variance with the philosophy of the classification to include at Level 4 a cargo coding which was not specific by virtue of the ship's construction. At Level 4, oil tankers separately identify crude oil tankers and oil products (i.e. not built to carry crude).

11. Bulk carriers are divided at Level 3 into those constructed to carry oil and those not. Bulk carriers are further divided at Level 4 into ore and other bulk carriers.

12. For other dry cargo vessels, those constructed to carry cargo of a specific type (e.g. vehicles) form a group (specialized carrier) at Level 3. Other groups identified at this level are:

- fully cellular container ship
- passenger vessel
- dry cargo barge
- general cargo vessel

13. At Level 4, six specific types of specialized dry cargo carrier are identified, and three types of dry cargo barge. General cargo ships are divided into six groups: reefers, Ro-Ro passenger, Ro-Ro cargo, other general cargo (Lo-Lo) ships - being divided into - general cargo/passenger (those with accommodation for more than twelve passengers), single-deck vessels and other multi-deck general cargo vessels. At Level 5 the non-passenger Ro-Ro and general cargo vessels are further divided to identify those with container capacity (fixed or portable guides built into part of the vessel).

14. The 'miscellaneous types' group is divided into three groups at Level 3:

- fish processing and catching
- offshore production and support
- other types

15. At Level 4, the group 'fish catching' takes on board the classification set out in the Technical Paper 267 of the Food and Agriculture Organization of the United Nations *Definition and classification of fishing vessel types (1985)*. The major types of fishing vessel identified in that publication form the groups at Level 5 of this classification. The further division of fishing vessel types in the FAO classification would logically fit into this classification at Level 6 and below. Fish processing vessels (motherships, factory ships, etc. in the FAO classification) are not presently divided at Level 5, as it is understood that the classification of these vessels is currently under consideration.

16. Level 5 is also used to identify specific types of vessel in the remainder of Level 2 - 'miscellaneous types' group. At Level 4, drilling ships and offshore support vessels form two groups. The groups separately identified at Level 4 within the Level 3 'other types' group are tugs, research ships, dredgers, and a residual 'other nei' (nei = not elsewhere identified).

17. The degree of disaggregation down to Level 4 is set out in the attached appendix. In response to requests made when this classification was being prepared, a three-digit numerical coding system covering Levels 2 and 4 of the merchant ship structures is included. If required, a further digit could be prefixed to indicate Level 1 and an additional digit for Level 5.

18. Port authorities, particularly those in developing countries, who wish to classify ship traffic by type of vessel may prefer to use an alphabetic code. For example, the following eight types should be readily identifiable in all ports of the world. A more detailed alpha code could be readily compiled.

•	Liquid	-	TK
•	Dry bulk	-	BC
•	Container	-	CO
•	Specialized Carrier	-	SC
•	General Cargo	-	GC
•	Dry cargo barge	-	BA
•	Passenger	-	PA
•	Miscellaneous	-	OT

Note on the 'trading/non-trading' concept

19. It is often useful to use the concept of a cargo-carrying 'trading' fleet governed by ideas of international trade and sea transport as a foreign currency earner (e.g. for balance-of-payments purposes). For most purposes, the first three groups of merchant vessels at Level 2 (liquid, dry bulk, and other dry cargo) would comprise such a 'trading' fleet. The division of a trading fleet into tankers, bulkers and other dry cargo vessels follows past precedents. Certain vessel types would not be included in the 'trading' fleet concept, either because they are not basically designed to carry cargo or passengers for commercial purposes, or because they are, by construction, designed for work in coastal or estuarial waters. However, there can be no disputing the potential economic importance of fishing vessels or supply vessels and their functions, including the carriage of supplies. Although it is desirable and useful to be able to discriminate between vessels constructed for the relatively homogeneous 'trading fleet' and other vessels, such a concept should not be included as part of a hierarchical classification of ship types. Rather, it should form a note to the classification. Furthermore, for most purposes, it would be desirable to remove from the 'trading' fleet those vessels which, although constructed for trading purposes, may be in long-term usage for non-trading purposes, e.g. storage.

Note on Lloyd's Statistical Tables

20. Many publications providing information on ships by type have used as their source material the ship types given in Table 2 of *Lloyd's Register of Shipping Statistical Tables*. As a consequence, much of the analytical work on ship type has been conditioned by the information provided in the Statistical Tables. This will, in all probability, also hold in the future. It is, therefore, important for analysts to know how the groupings which appear in Lloyd's Statistical Tables fit into the ICST. In the 1989 version of Lloyd's Statistical Tables, 21 groups of principal ship types of merchant vessels were used in the Table 2 analysis. These groupings follow the ICST at Level 3 for all groups, with a further breakdown to Level 4 for the general cargo group. The following table shows the correspondence between Lloyd's nomenclature for their groups and the ICST nomenclature.

Groups used in Lloyd's Statistical Tables from 1989ICST nomenclature

Oil tanker
 Oil/chemical tanker
 Chemical tanker
 Tanker barge
 Other tanker
 Liquefied gas carrier
 Bulk/oil carrier
 Bulk carrier
 Container (fc)
 Specialized carrier
 Reefer
 Ro-Ro passenger
 Ro-Ro cargo
 General cargo/passenger
 General cargo - single deck
 General cargo - multi deck
 Dry cargo barge
 Passenger
 Fish processing and catching
 Offshore production and support
 Other types

Lloyd's nomenclature

Oil tankers
 Oil/chemical tankers
 Chemical tankers
 Tank barges
 Other tankers
 Liquefied gas carriers
 Ore/bulk/oil carriers
 Ore and bulk carriers
 Container ships
 Specialized cargo
 Refrigerated cargo
 Passenger Ro-Ro
 Ro-Ro cargo
 General cargo/passenger
 General cargo - single deck
 General cargo - multi deck
 General cargo barges
 Passenger
 Fishing
 Offshore supply
 All other types

Appendix

CLASSIFICATION OF SHIPS BY TYPE

<input type="checkbox"/>	Marine structures	ICST Code
<input checked="" type="checkbox"/>	Merchant ship structures	
<input checked="" type="checkbox"/>	Liquid	
<input type="checkbox"/>	Oil tanker	
<input type="checkbox"/>	Crude oil tanker	111
<input type="checkbox"/>	Crude/products tanker	112
<input type="checkbox"/>	Oil products tanker	113
<input type="checkbox"/>	Oil/chemical tanker	114
<input type="checkbox"/>	Chemical tanker	120
<input type="checkbox"/>	Liquefied gas carrier	
<input type="checkbox"/>	LPG carrier	131
<input type="checkbox"/>	LNG carrier	132
<input type="checkbox"/>	Other liquefied gas carrier	139
<input type="checkbox"/>	Tanker barge	
<input type="checkbox"/>	Single hull	141
<input type="checkbox"/>	Double hull	142
<input type="checkbox"/>	Independent tanks	143
<input type="checkbox"/>	Other tanker	
<input type="checkbox"/>	Asphalt, bitumen tanker	151
<input type="checkbox"/>	Molasses tanker	152
<input type="checkbox"/>	Vegetable oil tanker	153
<input type="checkbox"/>	Other tanker	159
<input checked="" type="checkbox"/>	Dry bulk	
<input type="checkbox"/>	Bulk/oil carrier	
<input type="checkbox"/>	Ore/bulk/oil	211
<input type="checkbox"/>	Ore/oil	212
<input type="checkbox"/>	Bulk/oil	213
<input type="checkbox"/>	Bulk carrier	
<input type="checkbox"/>	Ore carrier	221
<input type="checkbox"/>	Other bulk carrier	229

<input type="checkbox"/>	Marine structures (continued)	ICST Code
<input checked="" type="checkbox"/>	Merchant ship structures (continued)	
<input checked="" type="checkbox"/>	Other dry cargo	
<input type="checkbox"/>	Container	310
<input type="checkbox"/>	Specialized carrier	
<input type="checkbox"/>	Barge carrier	321
<input type="checkbox"/>	Chemical carrier	322
<input type="checkbox"/>	Irradiated fuel carrier	323
<input type="checkbox"/>	Livestock carrier	324
<input type="checkbox"/>	Vehicle carrier	325
<input type="checkbox"/>	Other specialized carrier	329
<input type="checkbox"/>	General cargo	
<input type="checkbox"/>	Reefer	331
<input type="checkbox"/>	Ro-Ro passenger	332
<input type="checkbox"/>	Ro-Ro cargo	333
<input type="checkbox"/>	General cargo/passenger	334
<input type="checkbox"/>	General cargo - single deck	335
<input type="checkbox"/>	General cargo - multi deck	336
<input type="checkbox"/>	Dry cargo barge	
<input type="checkbox"/>	Deck barge	341
<input type="checkbox"/>	Hopper barge	342
<input type="checkbox"/>	Other dry cargo barge	349
<input type="checkbox"/>	Passenger	
<input type="checkbox"/>	Cruise	351
<input type="checkbox"/>	Other passenger	359
<input checked="" type="checkbox"/>	Miscellaneous types	
<input type="checkbox"/>	Fish processing and catching	
<input type="checkbox"/>	Fish processing	411
<input type="checkbox"/>	Fish catching	412
<input type="checkbox"/>	Offshore production and support	
<input type="checkbox"/>	Offshore drilling and exploration	421
<input type="checkbox"/>	Offshore support	422
<input type="checkbox"/>	Other types	
<input type="checkbox"/>	Tug	491
<input type="checkbox"/>	Research/survey	492
<input type="checkbox"/>	Dredger	493
<input type="checkbox"/>	Other	499

	ICST Code
□ Marine structures (continued)	
■ Naval (military craft)	-
■ Non-ship structures	-
● Land structure	-
● Floating docks	-
● Submersibles	-
● Semi-submersibles	-
● Air cushion vehicles	-
● Platforms	-
● Diving systems etc	-
● Buoys	-

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