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of Maritime Transport  
1990**

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## NOTE

This *Review* has been prepared by the UNCTAD secretariat in accordance with item VI of the programme of work of the Committee on Shipping. Any factual and editorial corrections that may prove necessary in the light of 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
dwt	Deadweight tons
EEC	European Economic Community
FEU	Forty-foot equivalent unit
fob	Free on board
GDP	Gross domestic product
grt	Gross registered tons
LDT	Light displacement tons
NVO-MTO	Non-vessel-operating multimodal transport operator
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 VI of the programme of work of the Committee on Shipping.<sup>\*/</sup> 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 1990 issue, however, includes several new features. These are: (1) standardized ship groups (see box 1); (2) an expanded shipbuilding chapter (chapter IV), with a review of trends affecting the supply of shipping; (3) a special section focusing on the activities of regional organizations in the maritime transport field; and (4) a chapter on the growing concern about the maritime environment.

### Summary of main developments in 1990

- International seaborne trade continued to expand for the fifth consecutive year, reaching 4 billion tons (a 3 per cent gain over 1989).
- Total ton-miles for all cargoes reached a record level of 17,035 billion, a 3.8 per cent increase over 1989.
- Oil cargoes showed the most important growth over 1989 both in terms of goods loaded (+4.4 per cent) and ton-miles (+6.1 per cent). Coal and grain trade continued to expand, showing an increase in ton-miles of 4.3 per cent and 2.7 per cent respectively, while trade in iron ore decreased by 3.4 per cent after three years of steady growth.
- Due to a significant increase in newbuilding deliveries (22.2 per cent over the previous year's figure) and the slow pace of activity in demolition (only 2.5 per cent higher than in 1989, when it stood at its lowest level in the last decade), the world merchant fleet expanded for the second consecutive year, reaching 658.4 million dwt.
- Ownership of the merchant fleet remained concentrated in the developed market-economy and open-registry countries, with a combined tonnage amounting to 67.4 per cent of the total deadweight tonnage of the world merchant fleet. The share of developing countries increased slightly to 21.2 per cent, 69.5 per cent of which was concentrated in 10 countries. Countries of Eastern Europe and socialist countries of Asia owned 6.7 per cent and 3.4 per cent respectively of the world merchant fleet.
- The disparity between developing country fleet ownership and cargo generation is significant. In fact, in 1990 developing countries were the origin for 48.3 per cent of all goods in seaborne trade, but owned only 21.2 per cent of the world fleet. At the same time developed market-economy countries, either directly or indirectly through open-registry countries, controlled 67.4 per cent of the world fleet while they were the origin for 44.3 per cent of seaborne trade.
- The proportion of total freight costs to c.i.f. import values of world trade remained unchanged at 5.27 per cent. For developing countries this ratio continued to be nearly double that for developed market-economy countries.
- The level of freight rates significantly increased in the tanker sector, with the most significant growth for VLCCs and ULCCs but with a decline for dry cargo ships.
- The use of electronic data processing for trade and maritime transport continued to expand, with more organizations using EDIFACT and other systems.

<sup>\*/</sup> Official records of the Trade and Development Board, Tenth Session, Supplement No. 5 (TD/B/S01), annex III.

## Box 1

New vessel groupings used in the Review of Maritime Transport

Five vessel groupings have been used throughout most shipping tables in this year's Review. The groups aggregate the 20 principal types of vessel categories found in table 2 of the Lloyd's Register of Shipping Statistical Tables, 1990. For cross reference please note:

Review Group	Vessel included from Lloyd's Register statistical tables
Oil tankers	Oil tanker
Bulk carriers	Ore and bulk carriers, ore/bulk/ore 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

Source: Lloyd's Register of Shipping.

## Chapter I

### THE DEVELOPMENT OF INTERNATIONAL SEABORNE TRADE

1. In 1990 the pace of activity in the world economy decelerated as compared to previous years. World output, which grew by 4.3 per cent in 1988 and by more than 3 per cent in 1989, is estimated to have risen by approximately 2.5 per cent in 1990.<sup>1</sup>

2. Reflecting the overall development of the world economy, international seaborne trade continued to expand for the fifth consecutive year. As shown in table 1 and illustrated in graph 1, the total volume of international seaborne trade (goods loaded) in 1990 amounted to a record-breaking 4 billion tons. This represented an increase of 3 per cent over the previous year, compared with 5 per cent in 1989. Trade in both of the main cargo types (tanker and dry cargoes) showed an increase, though the development of trade varied considerably between commodities. The annual rate of change for all types of cargoes in 1990 was considerably lower than that achieved in the previous year. In 1990 the annual rate of change for tanker cargoes amounted to 4.4 per cent as compared to 6.3 per cent the year before and the dry bulk sector grew at only 1.9 per cent versus 4.1 per cent in 1989.

3. In 1990 tanker cargoes accounted for 44.4 per cent of the total amount of international seaborne trade. This share changed slightly from 1989, when tanker cargoes represented 43.8 per cent. Oil seaborne trade showed quite strong activity in the first half of the year, followed by a dramatic reduction connected with Iraq's invasion of Kuwait in early August 1990 and a recovery of trade towards the end of the year. This recovery reflected the increase of crude oil production in the OPEC countries, which reached 23.67 million barrels per day in December as compared to 20.12 million barrels per day in August. This increase should be attributed mostly to the extraordinary growth of output in Saudi Arabia (from 5.6 million barrels per day in August to 8.35 million barrels per day in December 1990) and a moderate but steady increase in output by African and Latin American OPEC member countries.<sup>2</sup>

4. The main dry bulk cargoes as a group showed a marginal increase of 0.6 per cent versus 2.9 per cent in the previous year. The annual rate of change within this group varied significantly. Coal shipments continued to increase in 1990 (a 4.4 per cent increase from 1989), with the strongest growth for thermal coal deliveries to new power plants. Grain shipments showed a minor increase of 1.6 per cent, while iron ore shipments decreased by 3.3 per cent, reflecting the increase of scrap-based production.<sup>3</sup>

5. Table 2 shows world seaborne trade by types of cargo in terms of ton miles. Total 1990 ton-miles increased by 3.8 per cent as compared to the previous year's level and reached 17,035 billion, which is the highest figure for the last decade. All cargo groups except iron ore experienced growth. Oil cargoes showed the most important growth from 1989 (6.1 per cent), totalling 7,720 billion ton-miles in 1990. This increase was caused not only by actual growth in the oil trade but also by certain reorientations made by oil suppliers in connection with the beginning of the Gulf crisis.

6. The distribution of world seaborne trade by goods loaded/unloaded, broad commodity classifications and country groupings is given in table 3 and in graph 2. Globally, dry cargoes constituted 55.6 per cent of goods loaded in 1990, while crude oil, taken as the largest cargo group, accounted for 32.3 per cent. Developed market-economy countries continued to dominate in world seaborne trade. In 1990 they generated 44.3 per cent of all goods loaded, a decrease of 0.1 per cent from the previous year. In addition, developed market-economy countries accounted for 67.3 per cent of all goods unloaded, an increase of 0.2 per cent from 1989. The share of countries of Eastern Europe decreased slightly for both goods loaded and goods unloaded and stood at 5.4 per cent and 4.1 per cent respectively, while the share of socialist countries of Asia remained unchanged, standing at 2 per cent for goods loaded and 2.1 per cent for goods unloaded.

7. Developing countries expanded their seaborne exports in 1990. Their share in all goods loaded increased by 0.4 per cent from 1989 and reached 48.3 per cent. This growth should be attributed mainly to the further development of exports of liquid hydrocarbons by developing countries, which accounted for 76.2 per cent of crude oil and 54.8 per cent of petroleum products loaded in 1990, compared to 75.6 per cent and 54.4 per cent respectively in 1989. With respect to goods unloaded, the share of developing countries remained at the level of the previous year, *viz.* 26.5 per cent.

8. A forecast of world seaborne trade by cargo sector from 1990 to 2000 is presented in graph 3. Total trade is estimated at 3.72 billion tons in 1991 and is expected to increase by an average of 3 per cent per year, reaching 5 billion tons by 2001.<sup>4</sup> Containerized cargo is expected to reach approximately 500 million tons. Estimated growth by the year 2001 for the dry bulk and the tanker sectors is 1.92 and 1.81 billion tons, respectively.

Table 1

Development of international seaborne trade,<sup>a/</sup> 1970 and 1980-1990  
(Estimates of goods loaded)

Year	Tanker cargo		Dry cargo				Total (all goods)	
	Millions of tons	Percentage annual change	Total		of which: main bulk commodities <sup>b/</sup>		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	755	-5.8	3 273	-8.0
1983	1 461	-1.4	1 770	-1.3	732	-3.7	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	1 518	0.3	1 987	2.2	875	4.9	3 505	1.3
1988	1 616	6.5	2 119	6.6	940	7.4	3 735	6.6
1989	1 718	6.3	2 205	4.1	967	2.9	3 923	5.0
1990 <sup>c/</sup>	1 794	4.4	2 246	1.9	973	0.6	4 040	3.0

Sources: Based on data from the United Nations Statistical Office; Fearnleys, World Bulk Trades 1989 (Oslo), UNCTAD data bank and other specialized sources.

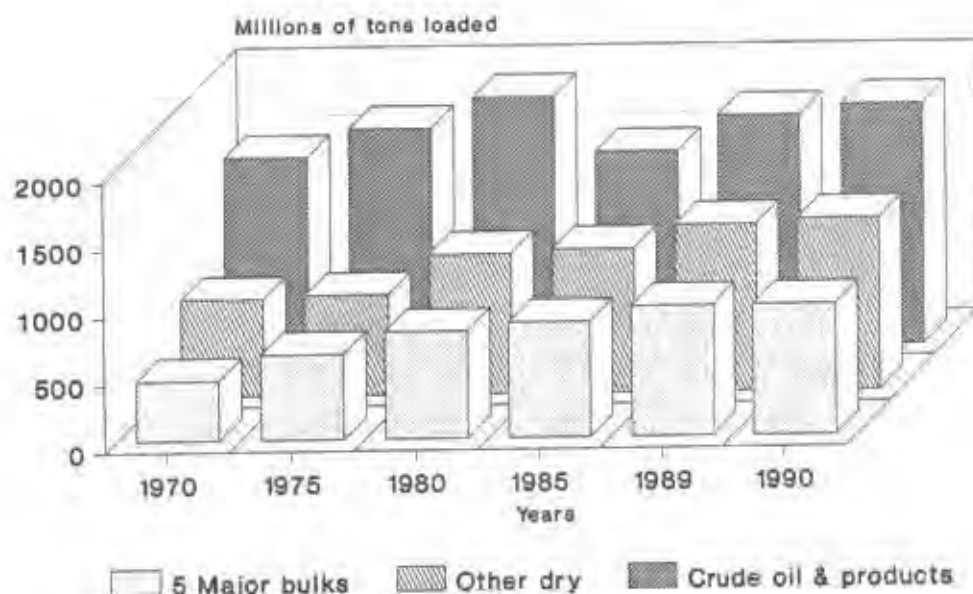
<sup>a/</sup> Including international cargoes loaded at ports of the Great Lakes and St. Lawrence system for unloading at ports of the same system.

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

<sup>c/</sup> UNCTAD preliminary estimates.

Graph 1

## International seaborne trade for selected years



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

Table 2

World seaborne trade by types of cargo, 1970 and 1980-1990  
(Billions of ton-miles)

Year	Oil		Iron Ore	Coal	Grain <sup>a/</sup>	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	6 110	1 610	1 915	1 875	1 125	4 400	17 035

Source: Fearnleys Review 1990 (Oslo).

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



Table 3

World seaborne trade<sup>a</sup> in 1970, 1988, 1989 and 1990 (est.)  
by type of cargo and country groups<sup>b, c</sup>

Country group	Year	Goods loaded			Goods unloaded				
		Oil		Total all goods	Oil		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
	1988	1 160	456	2 119	3 735	1 196	422	2 248	3 866
	1989	1 245	473	2 205	3 923	1 285	438	2 329	4 052
	1990	1 307	487	2 246	4 040	1 345	450	2 365	4 160
(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
	1988	31.1	12.2	56.7	100.0	30.9	10.9	58.2	100.0
	1989	31.7	12.1	56.2	100.0	31.7	10.8	57.5	100.0
	1990	32.3	12.1	55.6	100.0	32.3	10.8	56.9	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
	1988	16.5	29.3	63.4	44.7	72.5	81.6	61.2	66.9
	1989	15.8	29.3	63.9	44.4	72.6	82.3	61.5	67.1
	1990	15.6	29.6	64.2	44.3	72.8	81.4	61.7	67.3
Countries of Eastern Europe (including USSR)	1970	3.4	8.0	6.9	5.6	1.2	1.0	3.8	2.3
	1988	5.5	15.3	4.2	6.0	3.1	0.4	6.1	4.5
	1989	5.2	14.6	4.1	5.7	2.8	0.3	5.9	4.3
	1990	4.9	14.0	3.9	5.4	2.6	0.3	5.8	4.1
Socialist countries of Asia	1970	-	-	1.2	0.5	0.5	0.1	2.0	1.2
	1988	3.6	1.8	1.3	2.1	0.3	0.3	3.5	2.1
	1989	3.4	1.7	1.2	2.0	0.3	0.3	3.4	2.1
	1990	3.3	1.6	1.2	2.0	0.3	0.3	3.4	2.1
Developing countries	1970	94.6	64.9	31.9	62.8	17.9	19.4	15.1	16.6
	1988	74.4	53.6	31.1	47.3	24.2	17.7	29.3	26.5
	1989	75.6	54.4	30.8	47.9	24.3	18.1	29.2	26.5
	1990	76.2	54.8	30.7	48.3	24.3	18.0	29.1	26.5
of which in:									
Africa	1970	25.5	2.4	9.1	15.2	1.7	4.7	3.6	2.9
	1988	23.4	7.3	4.9	10.9	5.7	2.4	4.3	4.6
	1989	23.9	6.9	4.6	11.0	5.5	2.4	4.3	4.5



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		
America	1970	12.2	35.4	13.8	16.0	10.5	5.6	4.4	7.2
	1988	13.9	11.3	13.0	13.1	5.5	4.1	4.3	4.5
	1989	13.7	11.8	13.0	13.1	6.0	4.1	4.1	4.7
Asia	1970	56.9	27.0	8.1	31.3	5.5	8.5	6.7	6.4
	1988	37.1	34.6	12.5	22.8	12.4	10.0	20.0	16.5
	1989	38.0	35.4	12.7	22.0	12.2	10.5	19.9	16.4
Europe	1970	-	-	-	-	-	0.1	0.1	-
	1988	-	0.2	0.4	0.2	0.7	0.6	0.7	0.7
	1989	-	0.2	0.3	0.2	0.7	0.6	0.8	0.7
Oceania	1970	-	0.1	0.8	0.4	-	0.5	0.3	0.2
	1988	-	0.1	0.4	0.2	-	0.6	0.1	0.2
	1989	-	0.1	0.4	0.2	-	0.6	0.1	0.2

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

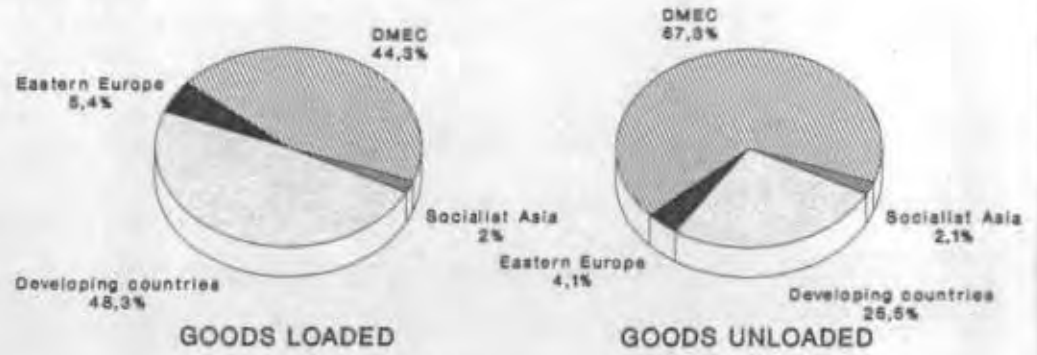
a/ Including international cargoes loaded at ports of the Great Lakes and St. Lawrence system for unloading at ports of the same system, but excluding such traffic in main bulk commodities.

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

c/ 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 2

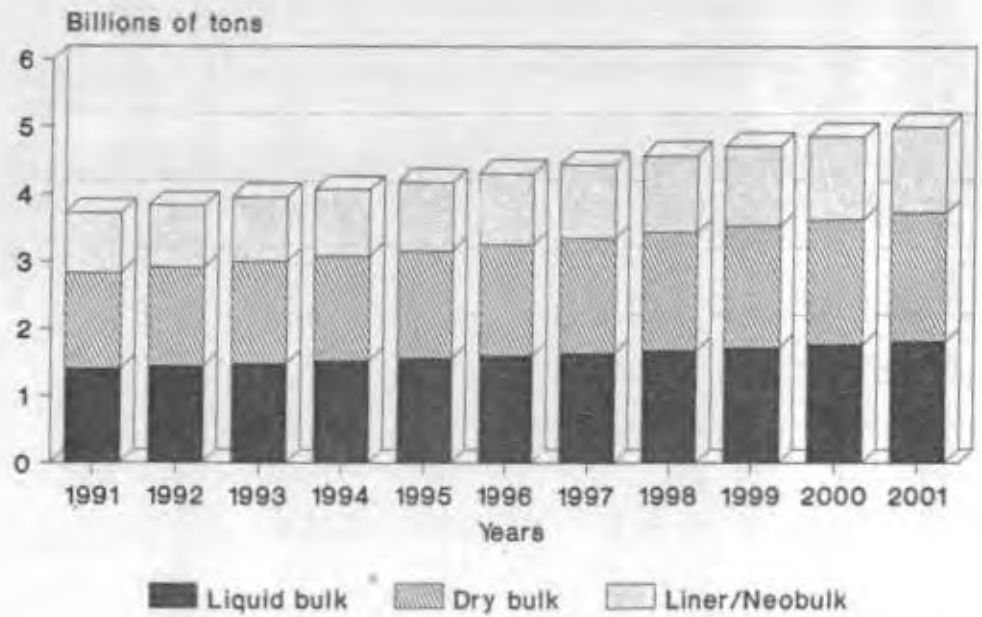
World seaborne trade by country groups, percentage distribution of tonnage, 1990



Source: UNCTAD data bank.

Graph 3

Forecast of world seaborne trade 1991 to 2001



Source: World Sea Trade Service.

## Box 2

GATT economists estimate continued high trade growth for 1990 despite mid-East crisis

While the general situation remains highly uncertain, GATT's economists believe that the growth in the volume of world trade in 1990 is unlikely to be seriously affected by the Gulf crisis and that merchandise exports should be in the order of 6 per cent higher than in 1989. Highlights from the GATT report entitled International Trade are:

- A 7.5 per cent increase in the value of world merchandise trade in 1989 - nearly identical to the 7 per cent volume increase - brought merchandise trade to a new record of \$US 3.1 trillion (thousand billion).
- World trade in commercial services - including transportation, tourism, telecommunications, banking, insurance and other professional services - is estimated to have grown by 9 per cent last year to \$US 680 billion, accounting for nearly one-fifth of the total value of world exports.
- While the 7 per cent growth in the volume of merchandise exports in 1989 represented a slow-down from 1988's very rapid expansion, it was more than 50 per cent faster than that in world merchandise production for the fourth consecutive year. On a volume basis, exports of manufactures out-performed exports of agricultural and mining products last year by a wide margin.
- Increased petroleum prices produced a sharp rise in the value of exports of mining products (12 per cent) alongside a moderate increase in volume. The volume of agricultural exports also grew moderately in 1989 (by 4 per cent), but modest increases in prices kept the rise in the value of exports to 5 per cent compared to 14 per cent in the previous year.
- Merchandise exports from 15 highly indebted countries increased 10 per cent in value terms last year, a sharp deceleration from the 17 per cent increase recorded in 1989 but well above the increase for total world merchandise exports. The combined foreign exchange earnings of these countries from merchandise exports were almost \$US 20 billion above the pre-debt crisis peak in 1981. Although last year's 8.5 per cent increase in imports marked the third consecutive year of import growth, debt service needs kept imports more than \$US 20 billion below the 1981 peak.

Source: GATT secretariat's annual report International Trade, 1990.

## Chapter II

### DEVELOPMENT OF THE WORLD FLEET

#### A. Size and ownership of the world fleet

9. A summary of the world merchant fleet distribution by country groupings for the years 1970, 1989 and 1990 is shown in table 4 and graph 4. The world merchant fleet continued to expand for the second consecutive year. At mid-year 1990, the total deadweight tonnage of the world merchant fleet stood at 658.4 million tons, as compared to 638 million tons in the previous year. The 20.4 million ton increase over the 1989 mid-year figure is above the average annual growth of 16.6 million tons for the 1970-1990 period. Thus, last year, the tonnage of the world merchant fleet grew by 3.2 per cent, as compared to a 1.6 per cent increase in 1988-1989. This upswing in the world fleet deadweight capacity was derived mostly from an increase in deliveries of newbuildings and slack demolition of ships.

10. Table 4 indicates that ownership of the 1990 world merchant fleet remained concentrated largely in the five major open-registry countries and the developed market-economy countries, which accounted for 34.1 per cent and 33.3 per cent of the world merchant fleet respectively. The combined total of these two country groupings stood at 67.4 per cent of the world fleet, as compared to 67.5 per cent in the previous year; however, their tonnage increased by 13.1 million dwt, or by 3 per cent, over 1989. The share of the Eastern European countries in the total world fleet decreased by 0.2 per cent to 6.7 per cent, while that of the socialist countries in Asia increased by 0.1 per cent to 3.4 per cent of the world fleet. Graph 5 illustrates distribution of world tonnage (in terms of deadweight) by country groups as at mid-1990.

11. The total fleet of developing countries increased by 4.7 million dwt, or 3.5 per cent, from mid-1989 and stood at 139.7 million dwt in mid-1990. However, it should be noted that a certain amount of the tonnage registered in developing countries related to vessels bareboat chartered-in rather than effectively owned by the developing countries concerned. This increase in tonnage led to a 0.1 per cent growth of the developing countries' share in the world merchant fleet, which reached 21.2 per cent in 1990, and is mainly attributable to the growth of tonnage registered in developing countries of Europe and Oceania and to a certain extent in Asia. Nevertheless, the amount of tonnage owned by African countries remained at the same level as in the previous year and that of the Latin American countries increased only marginally. Within the group of developing countries, Asian countries (mostly NICs) accounted for 64.1 per cent of the total tonnage (65.9 per cent in 1989), followed by Latin American

countries (18.2 per cent, versus 18.8 per cent in 1989) and developing countries of Europe (9.9 per cent versus 8.5 per cent in 1989). The share of African countries stood at 5.2 per cent (5.4 per cent in 1989), and that of developing countries in Oceania at 2.6 per cent (1.4 per cent in 1989).

12. Forecasts for world fleet development by vessel type are shown in graph 6. The WFFS<sup>2</sup> projections indicate that the total world fleet deadweight will increase from 684.4 million dwt in 1991 to 853.4 million tons by the year 2001. The liner and dry bulk vessel types are expected to increase by 34.4 and 34.0 per cent respectively over the decade. The deadweight of the world tanker fleet will increase by 23.3 per cent by the year 2001.

#### B. The 35 most important maritime countries and territories

13. Table 5 shows the influence the 35 most important maritime countries and territories have on the world merchant fleet. It lists merchant fleets by country of domicile, viz. the country of true nationality of the parent company owning ships which are registered under the national flag, as well as under flags of other countries. As shown in the table, the parent companies located in 35 countries or territories controlled more than 94 per cent of the world merchant fleet in mid-1990. Shipowners of only two countries (Greece and Japan) controlled over 27 per cent of world tonnage, while the 10 most important countries and territories controlled 68.95 per cent of the world fleet and the next 10 countries controlled a further 15.01 per cent. Graph 7 shows the fleets of the 10 most important maritime countries or territories under national and foreign flags as at mid-1990.

14. Table 5 indicates that 44.2 per cent of the fleet controlled by the above-mentioned 35 countries and territories is registered in other countries and territories. Although registration of tonnage under foreign flags is now practised by many developed and developing countries alike, the share of the flagged-out fleet in any one country's total tonnage varies greatly. For some countries and territories it considerably exceeds the share of the national flag. For example, for Hong Kong it stands at 88.84 per cent, for Switzerland - 88.36 per cent, for Pakistan - 80.09 per cent, for Canada - 76.89 per cent, for Finland - 72.85 per cent, for the United Kingdom - 68.3 per cent. World-wide estimates show that in 1990 foreign flags were flown by 29.6 per cent of merchant vessels, accounting for 42.8 per cent of world tonnage.

Table 4

Distribution of world tonnage (grt and dwt) by groups of countries  
of registration, 1970, 1989 and 1990<sup>a/</sup>  
(Mid-year figures)

Flags of registration by groups of countries	Tonnage and percentage shares <sup>b/</sup>						Increase in tonnage (mill. of dwt)	
	In grt (millions)			In dwt (millions)			1970-1990 1988-1990 average	
	1970	1989	1990	1970	1989	1990		
1. World total	217.9 (100.0)	404.2 (100.0)	417.6 (100.0)	326.1 (100.0)	638.0 (100.0)	658.4 (100.0)	16.6	20.4
2. Developed market- economy countries	141.8 (65.1)	134.5 (33.3)	141.5 (33.9)	209.7 (65.0)	206.1 (32.3)	219.0 (33.3)	0.6	12.9
3. Open-registry countries	40.9 (18.8)	129.0 (31.9)	130.2 (31.2)	70.3 (21.6)	224.4 (35.2)	224.6 (34.1)	7.7	0.2
Total 2 & 3	182.0 (83.9)	263.5 (65.2)	271.7 (65.1)	282.2 (86.6)	430.5 (67.5)	443.6 (67.4)	8.1	13.1
4. Countries of Eastern Europe including the USSR	18.6 (8.5)	36.2 (9.0)	37.4 (9.0)	22.7 (6.2)	43.6 (6.9)	44.3 (6.7)	1.1	0.7
5. Socialist countries of Asia	0.9 (0.4)	14.3 (3.5)	14.8 (3.5)	1.2 (0.4)	21.3 (3.3)	22.1 (3.4)	1.1	0.8
6. Developing countries <sup>c/</sup>	14.5 (6.7)	85.0 (21.0)	87.9 (21.0)	20.5 (6.3)	135.0 (21.1)	139.7 (21.2)	6.0	4.7
<u>of which in:</u>								
Africa	0.8	5.3	5.3	1.1	7.3	7.3	0.3	-
America	6.4	16.6	16.7	8.7	25.4	25.5	0.9	0.1
Asia	7.3	55.0	55.2	10.7	89.0	89.5	4.0	0.5
Europe <sup>d/</sup>	-	7.0	8.3	2.2	11.5	13.8	0.6	2.3
Oceania	-	1.1	2.4	-	1.8	3.6	-	1.8
7. Other, unallocated	1.2 (0.5)	5.2 (1.3)	5.8 (1.4)	1.7 (0.5)	7.6 (1.2)	8.7 (1.3)	0.4	1.1

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.

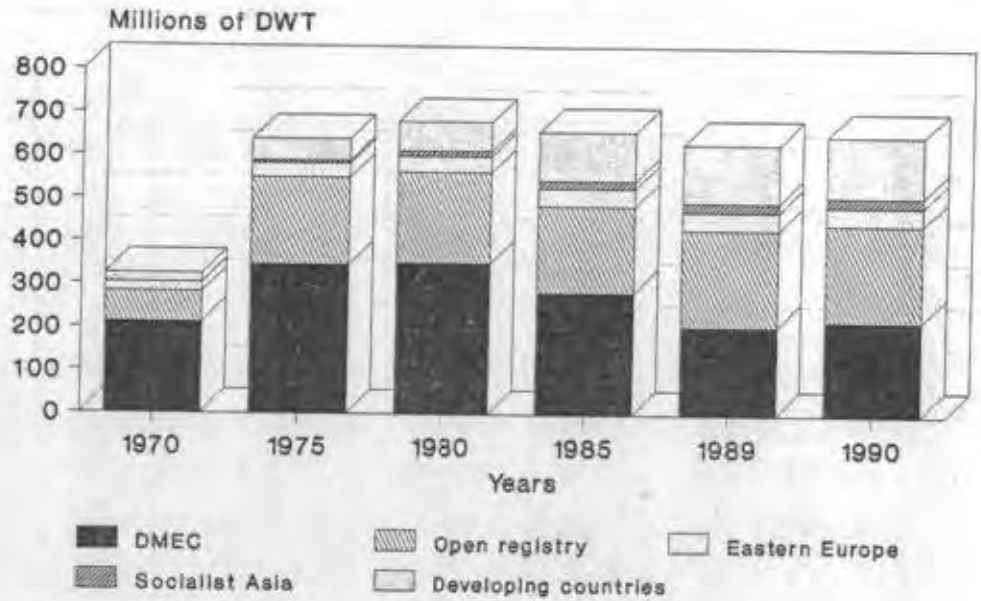
<sup>a/</sup> Excluding the United States Reserve Fleet and the United States and Canadian Great Lakes fleets, which in 1990 amounted respectively to 3.2, 1.2 and 1.6 million grt.

<sup>b/</sup> Percentage shares are shown in brackets.

<sup>c/</sup> Including Yugoslavia, classified as from 1986 as a developing country in Europe.

Graph 4

World fleet capacity by country groups  
Selected years 1970 to 1990



Source: Lloyd's Maritime Information Services, Ltd. (London), as at mid-year.

Graph 5

World tonnage by country groups:  
mid-year 1990, dwt

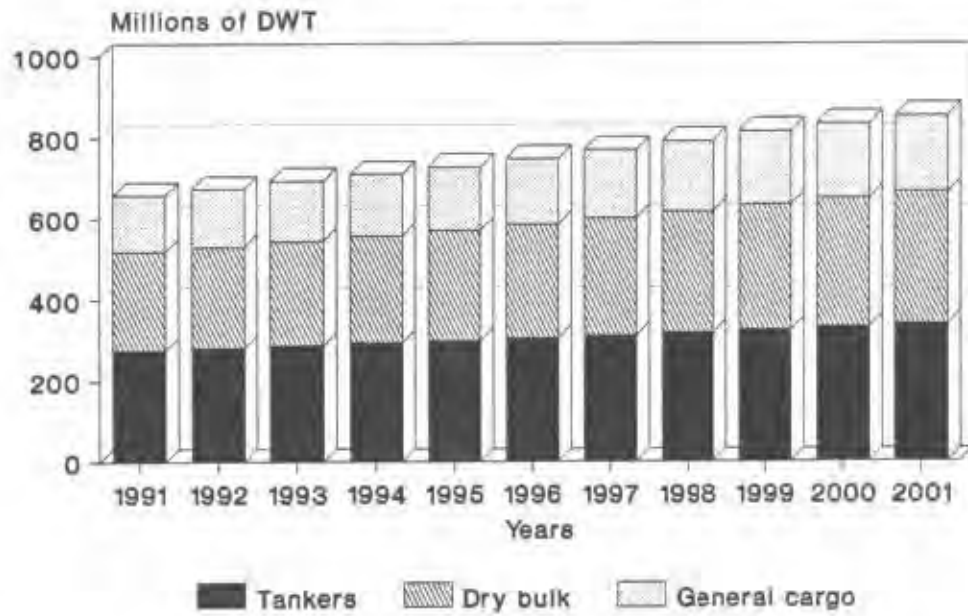


Source: Lloyd's Maritime Information Services Ltd. (London).



Graph 6

Forecast of world fleet by principal type of vessel  
1991 to 2001



Source: World Fleet Forecast Service.



Table 5

The 35 most important maritime countries  
(as at 1 July 1990) <sup>a/</sup>

Country of domicile <sup>b/</sup>	Number of vessels			Deadweight tonnage				
	National flag <sup>c/</sup>	Foreign flag	Total	National flag	Foreign flag	Total	Foreign flag as percentage of total	Total as percentage of world total
Greece	836	1 385	2 221	35 671 510	46 305 383	81 976 893	56.49	13.76
Japan	1 187	1 661	2 848	35 283 965	45 023 806	80 307 771	56.08	13.48
United States	533	605	1 138	18 497 870	36 609 969	55 107 839	66.43	9.25
Norway	916	482	1 398	36 794 082	18 286 939	55 081 021	33.20	9.24
Hong Kong	61	603	664	3 324 449	26 470 856	29 795 305	88.84	5.00 50.73 <sup>d/</sup>
USSR	4 283	22	4 305	28 529 891	737 253	29 267 144	2.52	4.91
United Kingdom	465	453	918	7 976 654	17 674 355	25 651 009	68.90	4.31
China	1 409	138	1 547	20 113 492	4 982 736	25 096 228	19.85	4.21
Republic of Korea	470	111	581	11 469 603	4 247 734	15 717 337	27.03	2.64
Germany	476	423	899	4 756 600	7 989 665	12 746 265	62.68	2.14 68.94
Italy	602	37	639	10 901 718	791 971	11 693 689	6.77	1.96
Denmark	359	198	557	6 872 868	4 659 105	11 531 973	40.40	1.94
India	395	21	416	10 335 360	446 566	10 781 926	4.14	1.81
Taiwan, Province of China	201	162	363	6 734 465	3 800 010	10 534 475	36.07	1.77
Brazil	290	3	293	9 528 079	358 325	9 886 404	3.82	1.66 78.08
Iran (Islamic Rep. of)	143	4	147	8 595 409	23 476	8 618 885	0.27	1.45
Singapore	215	163	378	4 653 640	2 863 027	7 516 667	38.09	1.26
Turkey	354	21	375	5 865 055	703 409	6 568 464	10.71	1.10
Cyprus	52	22	74	5 147 637	1 011 174	6 158 811	16.42	1.03
France	185	82	267	3 045 861	3 085 485	6 131 346	50.32	1.03 83.95
Yugoslavia	273	16	289	5 768 581	272 962	6 041 543	4.52	1.01
Belgium	89	89	178	2 489 694	3 257 161	5 746 855	56.68	0.96
Sweden	203	97	300	2 693 018	2 840 766	5 533 784	51.33	0.93
Netherlands	423	164	587	3 244 520	2 268 722	5 513 242	41.15	0.93
Spain	368	74	442	4 899 844	244 320	5 144 204	4.75	0.86
Kuwait	50	38	88	2 855 288	1 792 004	4 647 292	38.56	0.78
Poland	327		327	4 160 819		4 160 819	0.00	0.70
Switzerland	15	120	135	461 238	3 502 136	3 963 374	88.36	0.67
Philippines	251	22	273	3 280 253	188 470	3 468 723	5.43	0.58
Finland	103	73	176	934 107	2 505 949	3 440 056	72.85	0.58
Australia	74	15	89	2 769 666	193 142	2 962 808	6.52	0.50
Argentina	154	10	164	2 456 169	279 605	2 735 774	10.22	0.46
Pakistan	32	46	78	501 445	2 016 663	2 518 108	80.09	0.42
Indonesia	310	53	363	1 554 369	840 531	2 394 900	35.10	0.40
Canada	156	45	201	350 263	1 830 568	2 380 831	76.89	0.40
Total (35 countries)	16 360	7 458	23 818	312 717 522	248 104 243	560 821 765	44.2	94.14
Percentage	68.7	31.3	100	55.8	44.2	100		
World total	18 754	7 877	26 631	340 889 126	254 834 979	595 724 105	42.8	100.0
Percentage	70.4	29.6	100	57.2	42.8	100		

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

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

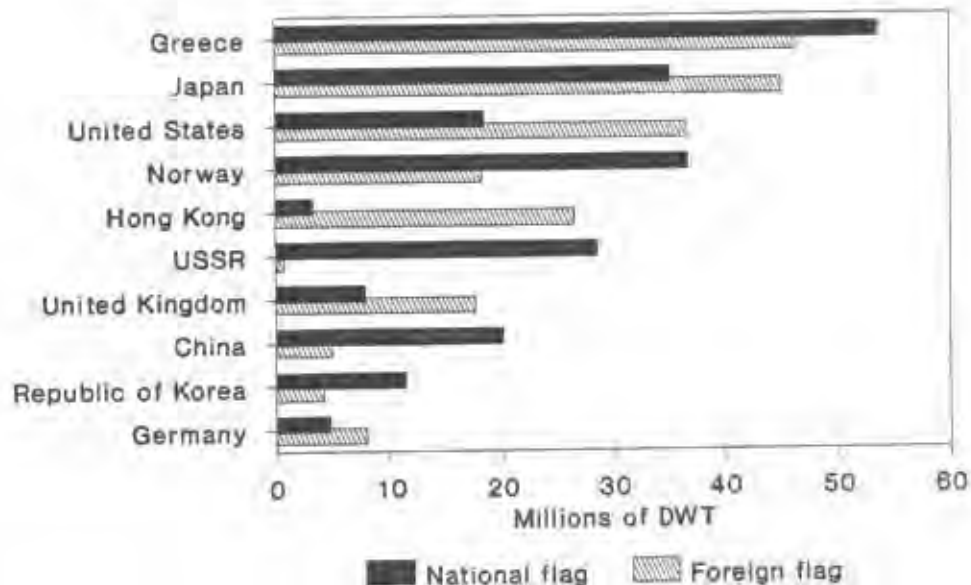
<sup>b/</sup> The country of domicile indicates where the controlling interest of the fleet is located, in terms of the parent company. In several cases, this has required certain judgements to be made. Thus, for instance, Greece is shown as the country of domicile with respect to vessels owned by a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

<sup>c/</sup> 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 8 as an open-registry country) and Hong Kong (shown separately in the present table).

<sup>d/</sup> Figures in this column show cumulative totals.

Graph 7

The 10 most important maritime countries and their shares under national and foreign flags: dwt under control



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

#### C. Major open-registry countries' fleets and international registries

15. As indicated in table 6, between mid-1989 and mid-1990 the five major open-registry countries' fleets grew both in terms of number of ships and their deadweight capacity. The fleet registered in the most important open-registry country - Liberia - showed a marked increase and reached 89.3 million dwt in 1990 versus 76.9 million dwt in 1989 (up 16.2 per cent). Its share in the total fleet of the main open-registry countries grew from 39.6 per cent to 44.2 per cent. During the same period, the fleet under the flag of the second most important open-registry country - Panama - decreased by 11.2 per cent to 54.5 million dwt, decreasing Panama's share in the total fleet from 31.6 per cent in 1989 to 27 per cent in 1990. The deadweight of the flag fleet of Cyprus decreased slightly by 2.8 per cent, with its share in the total fleet declining to 14.6 per cent, while the Bahamas showed a 15.5 per cent increase and its share reached 10.4 per cent. With 2.2 per cent growth, Bermuda's fleet share remained practically unchanged and stood at 3.8 per cent of the open-registry total tonnage.

16. The largest category of the open-registry fleet (in terms of deadweight in 1990) was oil tankers (47 per cent), followed by dry bulk carriers (33.7 per cent) and

general cargo ships (11.6 per cent). Containerships accounted for 2.6 per cent of the total fleet. General cargo ships were the most numerous category, accounting for 39.2 per cent of the total number of vessels.

17. In addition to the five major open-registry countries shown in table 6, a number of other countries have taken measures to attract ships to their national ship registers during recent years. In some cases such efforts are largely directed at retaining ships owned by nationals on the register or reattracting such ships to the national register. A recent guide to international ship registers indicates that 22 such offshore or international registers exist.<sup>27</sup>

Table 6

Tonnage distribution of major open-registry fleets<sup>a/</sup>  
As at 1 July 1990

Country	Oil tankers		Dry bulk carriers		General cargo		Containerships		Others		Total		1989 Total	
	Ships	'000 dwt	Ships	'000 dwt	Ships	'000 dwt	Ships	'000 dwt	Ships	'000 dwt	Ships	'000 dwt	Ships	'000 dwt
Liberia	397	50 387	484	26 722	316	5 038	70	1 979	202	5 225	1 469	89 351	1 208	76 920
Panama	221	15 847	552	20 603	1 268	12 174	133	2 749	438	3 110	2 612	54 483	2 752	61 335
Cyprus	90	9 646	381	14 809	462	4 265	29	296	47	452	1 009	29 468	1 013	30 323
Bahamas	116	12 366	117	5 724	195	1 757	11	211	152	876	591	20 934	512	18 120
Bermuda	28	6 632	5	288	19	180	1	29	26	650	79	7 779	83	7 609
TOTAL	852	94 878	1 539	68 146	2 260	23 414	244	5 264	865	10 313	5 760	202 015	5 568	194 307

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

a/ Ships of 1,000 grt and above; figures have been rounded to the nearest thousand. This table is not fully comparable with table 4, which takes ships of 100 grt and above as its base.

18. Table 7 shows information on the true nationality of major open-registry fleets as at mid-1990. As in previous years, true ownership of the five major open-registry fleets remained concentrated in a relatively small number of countries. Thus, in 1990 10 countries owned 84 per cent of this fleet, particularly dominated by three countries and one territory (Greece, the United States of America, Japan and Hong Kong) which together owned 63.2 per cent of the combined tonnage of the major open-registry countries' fleet. A certain shift in relative positions, however, occurred in comparison with the previous year. Although Greece remained at the top with 38.8 million dwt, its share in the total tonnage registered in the five major open-registry countries decreased from 20.1 per cent in 1989 to 19.2 per cent in 1990. Tonnage with true ownership in Japan increased from 29 million dwt in 1989 to 34.6 million dwt in 1990, which moved Japan to the second place of the table with 17.1 per cent of total open-registry tonnage (versus 14.9 per cent in 1989). Tonnage with true ownership in the United States decreased from 31.9 million dwt in 1989<sup>2/</sup> to 31.5 million dwt in 1990 (15.6 per cent versus 16.4 per cent in 1989).

19. The Norwegian International Register continued to expand rapidly. As at mid-1990 it recorded 722 vessels having a total tonnage of more than 36.3 million dwt (versus 449 vessels with a total tonnage of 23 million dwt in 1989). The major part of this fleet (96.6 per cent) was under Norwegian ownership. The Danish International Register recorded 242 vessels with total tonnage of 6.6 million dwt versus 204 vessels for a total of 5.9 million dwt in 1989, practically all of these vessels being under Danish ownership.

#### D. Types of vessel

20. A more detailed presentation of the world merchant fleet by principal types of vessel for the 1988-1990 period is found in table 8 and graph 8. From mid-1989 to mid-1990 the total tonnage of the principal types of vessel increased by 20 million dwt or by 3.1 per cent, as compared to 9.7 million dwt or 1.5 per cent for the mid-1988-mid-1989 period. The most significant annual change in 1990 was shown by ferries and passenger vessels (+10 per cent over the previous year's figure).

21. The share of oil tankers, ore and bulk carriers and fully cellular containerhips increased slightly (to 38.6 per cent, 30.1 per cent and 3.9 per cent respectively), while the share of bulk/oil carriers, general cargo ships and ships attributed to the other vessels category decreased (to 5.7 per cent, 15.8 per cent and 2.8 per cent respectively). The share of liquified gas carriers, chemical carriers, miscellaneous tankers, ferries and passenger vessels remained unchanged. As in previous years, four types of vessel, i.e. oil tankers, ore and bulk carriers, bulk/oil carriers and general cargo

ships constituted the main part of the world fleet in 1990. Their combined deadweight amounted to 601.7 million tons or 90.2 per cent of the world fleet.

22. The distribution of world tonnage by country groups and by types of vessel is listed in table 9. In 1990, developed market-economy countries continued to control, directly and through open-registry countries, the major share of all types of vessel. Thus, they owned 78.9 per cent of the world oil tanker fleet, 62.7 per cent of bulk carriers, 49.3 per cent of general cargo ships, 67.6 per cent of containerhips and 69.4 per cent of tonnage included in the other vessels category. However, it should be noted that the combined share of developed market-economy countries and open-registry countries in terms of world fleet deadweight remained static as compared with the previous year for oil tankers, while it increased by 0.9 per cent for the other ships category and decreased by 0.8 per cent for bulk carriers, by 0.6 per cent for general cargo ships and by 0.9 per cent for containerhips.

23. During the period from mid-1989 to mid-1990, developing countries showed a certain increase in ownership of all types of vessels (except the other ships category where their share decreased from 19.2 per cent in 1989 to 17.4 per cent in 1990). The share of developing countries reached 26.2 per cent of the world deadweight for general cargo ships (versus 25.9 per cent in 1989), 25.6 per cent for bulk carriers (25.2 per cent in 1989), and 16.0 per cent for containerhips (versus 15.3 per cent in 1989). They accounted for 16.3 per cent of the world oil tanker fleet.

24. In 1990 the share of developing countries in the world merchant fleet increased to 21.2 per cent and amounted to 139.7 million dwt. However the distribution of this fleet among the developing countries remained unbalanced: 10 countries or territories<sup>2/</sup> represented 97 million dwt or 69.5 per cent of the aggregated deadweight owned by developing countries, while the next 10 most important developing countries<sup>3/</sup> owned a further 17 per cent.

25. As at mid-1990, Eastern European countries owned 3.2 per cent of the world oil tanker fleet (3.4 per cent in 1989), 6.1 per cent of the bulk carriers fleet (same share as in 1989), 15.5 per cent of the general cargo fleet (15.1 per cent in 1989), 3.2 per cent of the container fleet (3.3 per cent in 1989) and 10.9 per cent of other ships (12.1 per cent in 1989). The share of Asian socialist countries in the world fleet was at the same level as the previous year for such types of vessels as oil tankers (1.1 per cent), bulk carriers (3.6 per cent) and general cargo ships (8.5 per cent); for the containerhip and other ships categories, it increased to 4.2 per cent and 2.2 per cent respectively (versus 3.6 per cent and 1.9 per cent in 1989).

Table 7

True nationality of major open-registry fleets  
As at 1 July 1990

Flag country  Country or or territory of domicile	Liberia			Panama			Cyprus			Bahamas			Bermuda			Sub-total			Total foreign-flag fleets	
	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	11 751	156	13.2	5 849	291	10.7	17 369	579	58.9	2 827	64	13.5	1 035	2	13.2	38 829	1 092	19.2	46 305	1 385
Japan	12 056	277	13.5	21 682	1 031	39.8	63	11	0.2	814	34	3.9	-	-	-	34 615	1 353	17.1	45 024	1 661
United States	20 700	234	23.2	1 636	107	3.0	310	11	1.1	5 001	66	23.9	3 855	13	49.6	31 502	431	15.6	35 610	605
Hong Kong	14 293	181	16.0	7 814	293	14.3	432	14	1.5	356	5	1.7	-	-	-	22 895	493	11.3	26 471	603
Norway	8 925	180	10.0	1 717	58	3.2	1 294	19	4.4	2 509	71	12.0	237	9	3.0	14 682	337	7.3	18 287	482
United Kingdom	5 579	87	6.2	901	47	1.7	305	14	1.0	1 471	78	7.0	2 351	35	30.2	10 607	261	5.5	17 154	379
Germany	3 149	62	3.5	1 753	47	3.2	1 404	150	4.8	51	5	0.2	-	-	-	6 357	264	3.1	7 990	423
Republic of Korea	1 313	14	1.5	2 531	81	4.7	-	-	-	-	-	-	-	-	-	3 844	95	1.9	4 248	111
Taiwan, Province of China	636	21	0.7	2 192	122	4.0	632	5	2.2	69	1	0.3	-	-	-	3 529	149	1.7	3 800	162
China	1 023	21	1.1	1 921	62	3.5	-	-	-	-	-	-	-	-	-	2 944	83	1.5	4 983	138
Finland	-	-	-	25	3	0.1	254	1	0.9	2 066	43	9.9	-	-	-	2 345	47	1.2	2 506	73
France	530	3	0.6	237	12	0.4	-	-	-	1 516	35	6.2	-	-	-	2 083	50	1.0	3 560	113
Switzerland	893	16	1.0	565	37	1.0	422	16	1.4	137	8	0.7	-	-	-	1 791	32	0.9	2 017	46
Pakistan	1 321	24	1.5	65	3	0.1	-	-	-	405	6	1.9	-	-	-	1 764	100	0.9	2 863	163
Singapore	558	21	0.6	831	74	1.5	-	-	-	375	5	1.8	-	-	-	1 681	91	0.8	4 692	238
Denmark	641	11	0.7	502	23	0.9	47	10	0.2	491	47	2.3	-	-	-	1 514	29	0.7	3 257	89
Belgium	810	16	0.9	-	-	-	194	11	0.7	510	2	2.4	-	-	-	1 402	34	0.7	2 841	97
Sweden	447	5	0.5	-	-	-	-	-	-	955	29	4.6	-	-	-	-	-	-	-	-
Subtotal	84 625	1 329	94.7	50 221	2 290	92.2	22 726	841	77.1	19 353	499	92.4	7 476	59	96.1	184 401	5 018	91.3	236 090	6 888
Others	4 726	140	5.3	4 262	322	7.8	6 741	168	22.9	1 582	92	7.6	303	20	3.9	17 614	742	8.7	22 748	731
Total	89 351	1 469	100.0	54 483	2 612	100.0	29 467	1 009	100.0	20 935	591	100.0	7 779	79	100.0	202 015	5 760	100.0	258 838	7 619

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



Table 8

World fleet by principal types of vessel, 1988-1990<sup>a</sup>  
(thousands of dwt)<sup>b</sup>

Principal types	1988	1989	1990	Percentage change 1989/1990
1. Oil tankers	245 036 (38.5)	248 355 (38.4)	257 413 (38.6)	+3.6
2. Liquefied gas carriers	10 000 (1.6)	10 358 (1.6)	10 892 (1.6)	+5.2
3. Chemical carriers	5 946 (0.9)	5 850 (0.9)	6 026 (0.9)	+3.0
4. Miscellaneous tankers	376 (0.1)	558 (0.1)	536 (0.1)	-4.0
5. Bulk/oil carriers (incl. ore/oil carriers)	38 009 (6.0)	37 835 (5.8)	37 821 (5.7)	-0.1
6. Ore and bulk carriers	192 090 (30.1)	193 540 (29.9)	201 060 (30.1)	+3.9
7. General cargo (incl. passenger cargo)	98 075 (15.4)	104 141 (16.1)	105 433 (15.8)	+1.2
8. Containerships (fully cellular) and lighter carriers	24 207 (3.8)	24 647 (3.8)	26 070 (3.9)	+5.8
9. Ferries and passenger vessels	2 871 (0.4)	2 927 (0.5)	3 220 (0.5)	+10.0
10. All other vessels	20 469 (3.2)	18 599 (2.9)	18 356 (2.8)	-1.3
World total	637 079 (100.0)	646 810 (100.0)	666 827 (100.0)	+3.1

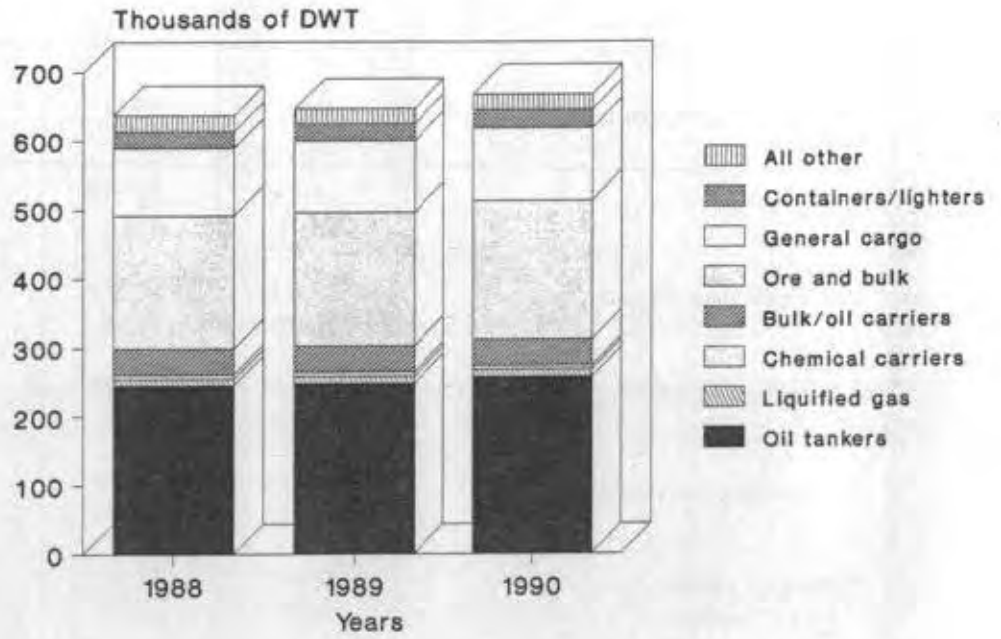
Source: Lloyd's Maritime Information Services Ltd. (LMIS), London.

a/ The totals in this table are not comparable with those in table 4, because they include the United States Reserve Fleet and the United States and Canadian Great Lakes fleets.

b/ Percentage shares are shown in brackets.

Graph 8

World fleet by principal types of vessel  
(1988-1990 mid-year)



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



**Table 9**  
**Percentage shares of world tonnage by type of vessel and country groups**  
**(as at 1 July), 1980, 1985, 1989 and 1990<sup>a/</sup>**  
**(In terms of dwt)**

Country group	Year	Total dwt		Oil tankers	Bulk carriers <sup>b/</sup>	General cargo ships	Container ships	Other ships
		Millions of dwt	Percentage of world total					
World total	1980	682.8	100	49.7	27.2	17.0	1.6	4.5
	1985	664.8	100	39.3	34.9	15.9	3.0	6.9
	1989	638.0	100	37.2	35.6	15.8	3.9	7.5
	1990	658.4	100	37.4	35.6	15.6	3.9	7.5
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
	1985	282.9	42.5	46.8	38.9	34.4	63.4	46.7
	1989	206.1	32.3	36.1	28.4	23.6	46.9	42.9
	1990	219.0	33.3	37.3	29.5	23.1	46.5	45.2
Open-registry countries	1980	212.5	31.1	36.2	31.7	20.8	13.5	17.0
	1985	203.4	30.6	35.5	32.8	20.3	13.0	23.1
	1989	224.4	35.2	42.8	35.1	26.3	21.6	23.8
	1990	224.6	34.1	41.6	33.2	26.2	21.1	24.2
Countries of Eastern Europe	1980	37.8	5.5	2.8	4.2	12.3	2.9	19.2
	1985	41.3	6.2	3.4	4.7	13.9	3.3	14.0
	1989	43.6	6.8	3.4	6.1	15.1	3.3	12.1
	1990	44.3	6.7	3.2	6.1	15.5	3.2	10.9
Socialist countries in Asia	1980	10.9	1.6	0.6	1.6	4.7	0.1	1.3
	1985	17.2	2.6	1.0	2.6	6.9	2.2	1.2
	1989	21.3	3.3	1.1	3.6	8.5	3.6	1.9
	1990	22.1	3.4	1.1	3.6	8.5	4.2	2.2
Developing countries <sup>c/</sup>	1980	68.4	10.0	7.7	9.2	17.6	7.6	12.0
	1985	113.4	17.1	12.9	19.4	24.0	12.1	15.0
	1989	134.9	21.1	16.2	25.2	25.9	15.3	19.2
	1990	139.7	21.2	16.3	25.6	26.2	16.0	17.4
<u>of which in:</u> Africa	1980	7.1	1.1	1.1	0.1	2.3	..	2.1
	1985	8.0	1.2	1.4	0.4	2.5	0.1	2.3
	1989	7.3	1.1	0.9	0.5	2.3	0.2	3.4
	1990	7.3	1.1	1.0	0.5	2.3	0.2	2.9
America	1980	21.8	3.2	2.3	3.3	5.6	0.1	3.7
	1985	23.3	3.5	2.8	3.3	6.0	0.5	3.7
	1989	25.4	4.0	3.0	3.9	6.4	1.6	5.1
	1990	25.5	3.9	3.0	3.8	6.2	1.4	4.7
Asia	1980	39.1	5.7	4.3	5.7	9.8	2.7	5.7
	1985	78.6	11.8	8.5	15.0	14.4	11.5	8.9
	1989	89.0	13.9	10.9	18.1	13.9	12.8	10.0
	1990	89.5	13.6	10.7	17.6	13.7	13.5	9.1
Europe <sup>d/</sup>	1980	1.2	..	..	..	0.1	-	-
	1985	3.0	0.5	0.2	0.6	0.9	-	-
	1989	11.5	1.8	1.3	2.3	2.8	0.5	0.4
	1990	13.8	2.1	1.4	2.8	3.2	0.6	0.4
Oceania	1980	0.2	..	..	..	0.1	-	-
	1985	0.4	0.1	..	0.1	0.2	-	0.1
	1989	1.8	0.3	0.1	0.4	0.5	0.2	0.3
	1990	3.6	0.5	0.2	0.9	0.8	0.3	0.3
Other, unallocated	1980	3.0	0.5	0.2	0.6	0.9	1.6	0.1
	1985	6.7	1.0	0.4	1.6	0.6	5.9	0.1
	1989	7.6	1.2	0.4	1.6	0.6	9.3	0.1
	1990	8.7	1.3	0.5	2.0	0.5	9.0	0.1

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

- <sup>a/</sup> Excluding the United States Reserve Fleet and the United States and Canadian Great Lakes Fleet.  
<sup>b/</sup> Ore and bulk carriers of 6,000 grt and above, including combined ore/oil and ore/bulk/oil carriers.  
<sup>c/</sup> Including Yugoslavia as of 1986.

26. The development of the world container fleet during the last three years (mid-year figures) is summarized in table 10. The total number of containerships increased from 1,122 in 1989 to 1,169 in 1990 (+4.2 per cent) and their TEU capacity rose from 1,408,480 to 1,502,731 (+6.7 per cent). The world container fleet remained concentrated in the developed market-economy countries, which owned 35.1 per cent of the number of ships and 41.2 per cent of their TEU capacity. The five main open-registry countries represented 22.3 per cent and 20.8 per cent of the number of ships and world TEU capacity respectively. In 1990 the share of developing countries in the TEU capacity of the world fleet increased to 15.4 per cent (versus 14.6 per cent in 1989), and these countries accounted for 19.9 per cent of the total number of containerships (versus 19 per cent in 1989). However, it should be noted that a certain proportion of this container fleet was controlled by shipowners domiciled in the developed market-economy countries. More than 84 per cent of the total TEU capacity of containerships registered in developing countries was concentrated in developing countries of Asia. The share of countries of Eastern Europe in world TEU capacity remained unchanged in 1990, i.e. 2.9 per cent, while that of the socialist countries in Asia increased to 3.8 per cent (versus 3.2 per cent in 1989).

#### E. Age distribution of the world fleet

27. The age distribution of the world merchant fleet by type of vessel and country grouping (in terms of dwt) in mid-1990 is shown in table 11. The average age of all ships reached 14.06 years in 1990, as compared to 12.98 years in 1989 (+8.3 per cent). Containerships were the youngest type of ships (10.43 years), with 53.5 per cent of tonnage being less than 10 years old, followed by bulk carriers (12.9 years). Tankers represented the oldest type of vessel (15.34 years), with vessels built 15 and more years ago constituting 49.2 per cent of the available tonnage. By country grouping, developed market-economy countries showed the lowest average age of ship (13.24 years), followed by developing countries (13.44 years), countries of Eastern Europe (13.86 years) and open-registry countries (15.12 years). Socialist countries of Asia had the oldest fleet with an average age of 16.28 years.

#### F. Comparison of cargo turnover and fleet ownership

28. The relationship between cargo volumes generated by groups of countries and fleet ownership is represented in table 12. The data show that the situation remained essentially unchanged in 1990 as compared with the previous year. The developed market-economy countries, either directly or through open-registry

countries, continued to own a considerably larger share of the world merchant fleet as compared to their share in the world cargo turnover. Thus, in 1990 these two country groups combined generated 56.6 per cent of the world's international seaborne trade but owned 67.4 per cent of the world's merchant fleet. By comparison, the share of developing countries in goods loaded and unloaded worldwide amounted to 36.6 per cent in 1990, while their merchant fleet represented 21.2 per cent of the total world deadweight tonnage. The shares of the countries of Eastern Europe in world cargo turnover and the world fleet in 1990 stood at 4.7 per cent and 6.7 per cent respectively, while those for socialist countries of Asia were 2.1 per cent and 3.4 per cent respectively.

Table 10

Distribution of the world fleet and TEU<sup>a</sup> capacity of fully cellular  
containerships by groups of countries,  
at mid-year 1988, 1989 and 1990

Flags of registration by groups of countries	Number of ships			TEU capacity and percentage shares <sup>b/</sup>		
	1988	1989	1990	1988	1989	1990
1. World total	1 075	1 122	1 169	1 292 333 (100.0)	1 408 480 (100.0)	1 502 731 (100.0)
2. Developed market- economy countries	455	406	410	651 094 (50.4)	599 301 (42.5)	618 701 (41.2)
3. Open-registry countries	237	257	261	274 240 (21.2)	305 490 (21.7)	312 055 (20.8)
Total, 2 and 3	692	663	671	925 334 (71.6)	904 791 (64.2)	930 756 (62.0)
4. Countries of Eastern Europe, including the USSR	63	78	78	34 488 (2.7)	40 955 (2.9)	43 227 (2.9)
5. Socialist countries of Asia	47	53	59	39 773 (3.0)	45 677 (3.2)	57 508 (3.8)
6. Developing countries	199	213	233	172 942 (13.4)	205 358 (14.6)	232 199 (15.4)
<u>of which in:</u>						
Africa	4	4	4	1 810 (0.1)	1 810 (0.1)	1 810 (0.1)
America	36	34	36	18 990 (1.5)	19 413 (1.4)	22 954 (1.5)
Asia	146	158	172	146 932 (11.4)	174 928 (12.4)	195 353 (13.0)
Europe	9	10	12	4 197 (0.3)	7 032 (0.5)	9 072 (0.6)
Oceania	4	7	9	1 013 (0.1)	2 175 (0.2)	3 010 (0.2)
7. Other, unallocated	74	115	128	119 796 (9.3)	211 709 (15.1)	239 041 (15.9)

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

a/ Twenty-foot equivalent unit.

b/ Percentage shares are shown in brackets.

**Table 11**  
**Age distribution of the world merchant fleet by type of vessel**  
**as at 1 July 1990**  
 (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) <sup>a/</sup>
World total	All ships	100	11.8	20.2	25.5	42.5	14.06
	Tankers	100	10.6	10.3	29.9	49.2	15.34
	Bulk carriers	100	12.6	29.9	20.9	36.6	12.90
	General cargo	100	8.8	17.1	27.0	47.1	14.97
	Containerships	100	25.2	28.1	23.1	23.6	10.43
	All others	100	14.0	25.1	23.0	37.9	13.13
Developed market-economy countries	All ships	100	12.3	22.9	28.6	36.2	13.24
	Tankers	100	9.0	11.8	38.5	40.7	14.58
	Bulk carriers	100	14.3	33.2	20.2	32.3	12.14
	General cargo	100	11.7	23.7	26.4	38.2	13.46
	Containerships	100	19.6	27.0	24.6	28.8	11.57
	All others	100	15.8	28.6	21.9	33.7	12.36
Open-registry countries	All ships	100	11.1	15.8	22.9	50.2	15.12
	Tankers	100	12.0	6.5	23.2	58.3	16.30
	Bulk carriers	100	7.8	25.3	20.5	46.4	14.59
	General cargo	100	10.6	17.4	29.3	42.7	14.34
	Containerships	100	33.1	26.9	20.0	20.0	9.34
	All others	100	16.2	23.3	23.2	37.3	12.94
Subtotal	All ships	100	11.7	19.4	25.7	43.2	14.18
	Tankers	100	10.5	9.1	30.4	50.0	15.49
	Bulk carriers	100	11.0	29.2	20.4	39.4	13.38
	General cargo	100	11.1	20.5	27.9	40.5	13.91
	Containerships	100	23.7	27.0	23.2	26.1	10.89
	All others	100	15.9	26.8	22.4	34.9	12.56
Countries of Eastern Europe	All ships	100	12.9	20.7	24.5	41.9	13.86
	Tankers	100	15.0	20.8	30.1	34.1	12.87
	Bulk carriers	100	12.7	29.4	31.0	26.9	11.95
	General cargo	100	10.7	14.1	18.7	56.5	15.87
	Containerships	100	27.6	33.6	18.3	20.5	9.61
	All others	100	14.4	15.1	17.0	53.5	15.15
Socialist countries of Asia	All ships	100	6.0	16.5	20.4	57.1	16.28
	Tankers	100	10.4	14.6	23.7	51.3	15.36
	Bulk carriers	100	6.6	21.2	20.2	52.0	15.48
	General cargo	100	3.2	9.5	20.1	67.2	17.92
	Containerships	100	15.6	49.6	4.5	30.3	10.99
	All others	100	2.3	7.3	33.2	57.2	17.12
Developing countries (excluding open-registry countries)	All ships	100	12.4	23.0	26.3	38.3	13.44
	Tankers	100	9.5	14.7	27.6	48.2	15.13
	Bulk carriers	100	18.6	33.5	21.2	26.7	11.13
	General cargo	100	4.3	13.6	33.1	49.0	15.79
	Containerships	100	28.1	21.3	28.8	21.8	10.30
	All others	100	7.0	26.7	28.5	37.8	13.74

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

<sup>a/</sup> 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 12

Comparison between total cargo turnover and fleet ownership  
by groups of countries, 1970 and 1988-1990  
(In terms of dwt)

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	2 812.1	282.2	54.8	86.5
	1988	1 704.9	2 604.4	4 309.3	426.1	56.6	67.8
	1989	1 779.5	2 739.9	4 519.4	430.5	56.7	67.5
	1990	1 826.0	2 818.0	4 644.0	443.6	56.6	67.4
Developing countries	1970	1 643.3	431.6	2 074.9	20.5	40.4	6.3
	1988	1 729.5	1 005.9	2 735.4	131.2	36.1	20.9
	1989	1 842.2	1 053.1	2 895.3	135.0	36.3	21.1
	1990	1 915.0	1 084.0	2 999.0	139.7	36.6	21.2
Countries of Eastern Europe, including the USSR	1970	145.4	57.4	202.8	20.5	3.9	6.3
	1988	223.5	174.7	398.2	43.4	5.2	6.9
	1989	223.3	175.8	399.1	43.6	5.0	6.9
	1990	218.2	170.6	388.8	44.3	4.7	6.7
Socialist countries of Asia	1970	13.4	30.2	43.6	1.2	0.9	0.4
	1988	77.1	80.8	157.9	20.4	2.1	3.3
	1989	77.6	83.2	160.8	21.3	2.0	3.3
	1990	80.9	87.4	168.3	22.1	2.1	3.4
World total <sup>a/</sup>	1970	2 604.8	2 529.6	5 134.4	326.1	100.0	100.0
	1988	3 735.0	3 865.9	7 600.9	627.9	100.0	100.0
	1989	3 922.6	4 052.0	7 974.6	638.0	100.0	100.0
	1990	4 040.0	4 160.0	8 200.0	658.4	100.0	100.0

Source: As per tables 3 and 4.

a/ Including unallocated tonnage indicated in annex III.



## Chapter III

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

A. Productivity of the world fleet

29. Table 13 gives estimates of the productivity of the world fleet in terms of tons carried and ton-miles per dwt. In 1990, the volume of cargo carried per dwt decreased marginally (by 0.16 per cent) to 6.14 tons per dwt, reflecting the difference in the rate of growth of world tonnage and international maritime trade. (However, this figure was the second highest since 1980.) The figures for number of ton-miles per dwt demonstrate another record for the period in question, with 25.87 ton-miles per dwt in 1990 (0.6 per cent increase versus 1989). As shown in table 14, this increase is mainly attributable to the growth of ton-miles per dwt for tankers, which rose by 3.5 per cent as compared with the previous year, and for combined carriers (+2.1 per cent). On the other hand, ton-miles per dwt performed by dry bulk carriers and the residual fleet decreased by 1.7 per cent and 1.5 per cent respectively in relation to 1989. These developments reflected the general development of world trade with the increase in deliveries of tanker cargoes and the more moderate pace of activity in the dry bulk trade, accompanied by substantial growth of tonnage. An analogous trend for changes in the productivity of the main types of ships in terms of tons carried per dwt is shown in table 15.

B. Supply and demand situation in shipping

30. The tonnage balance in shipping slightly improved in 1990. As seen in table 16, in spite of a 2.2 per cent increase in the surplus fleet over the previous year's figure, its share in the world merchant fleet continued to diminish and stood at 9.7 per cent. Although an imbalance between the supply and demand of tonnage still affected practically all sectors of world shipping, the situation varied from sector to sector. As shown in table 17, the tanker sector continued to have the largest excess tonnage, estimated at 41 million dwt, i.e. the level of the previous year. However, with the increase in the world tanker fleet, the share of surplus tonnage decreased from 16.1 per cent in 1989 to 15.4 per cent in 1990. At the same time, with the precautionary building-up of crude oil stocks in VLCCs and ULCCs due to the Gulf crisis, the number of tankers engaged in oil storage increased by the end of 1990. As indicated in table 18, in December 1990 the total tonnage employed for these purposes amounted to 12.6 million dwt (which represents a 21.7 per cent increase over the January figure).

Table 13

Cargo tonnage carried and ton-miles performed per dwt of the total world fleet, 1980-1990

Year	World fleet (millions of dwt)	Total cargo carried (millions of dwt)	Total ton-miles performed (thousands of millions of ton-miles)	Tons of cargo carried per dwt	Ton-miles performed per dwt (thousands)
1980	682.8	3 704	16 777	5.42	24.47
1981	688.8	3 555	15 840	5.16	22.99
1982	693.5	3 273	13 699	4.72	20.46
1983	686.0	3 230	12 850	4.70	18.34
1984	674.5	3 410	13 368	5.06	19.82
1985	664.8	3 382	13 160	5.08	19.80
1986	639.1	3 459	13 856	5.41	21.68
1987	632.3	3 505	14 298	5.54	22.61
1988	628.0	3 735	15 305	5.95	24.37
1989	638.0	3 923	16 402	6.15	25.71
1990	658.4	4 040	17 035	6.14	25.87

Source: World fleet: Lloyd's Register of Shipping: Statistical Tables (London), various issues (mid-year figures); total cargo carried: UNCTAD data bank; ton-miles: Fearnleys, Review (Oslo), various issues.

Table 14

Estimated productivity of tankers, bulk carriers, combined carriers<sup>a/</sup>  
and the residual fleet,<sup>b/</sup> 1980-1990  
 (Ton-miles performed per dwt)

Year	Ton-miles of oil and grain by tankers (thousands of millions) <sup>c/</sup>	Ton-miles per dwt of tankers (thousands)	Ton-miles of dry bulk cargo by dry bulk carriers (thousands of millions)	Ton-miles per dwt of bulk carriers (thousands)	Ton-miles of oil and dry bulk cargo by combined carriers (thousands of millions)	Ton-miles per dwt of combined carriers (thousands)	Ton-miles of the residual fleet <sup>b/</sup> (thousands of millions)	Ton-miles per dwt of the residual fleet (thousands)
1980	9 007	27.56	2 009	14.47	1 569	32.43	4 192	24.83
1981	8 009	24.80	2 169	14.73	1 518	32.14	4 144	24.26
1982	5 893	18.40	2 422	15.66	1 310	28.92	3 874	22.35
1983	5 230	17.38	2 640	15.60	1 016	23.57	3 694	21.38
1984	5 305	18.93	3 041	17.07	1 187	28.13	3 835	22.05
1985	4 853	18.35	3 208	17.08	1 192	29.00	3 812	22.24
1986	5 426	22.67	3 717	18.82	944	26.52	3 769	22.61
1987	5 600	24.03	3 922	20.01	1 022	30.69	3 729	21.94
1988	6 155	26.89	3 475	17.99	1 264	37.51	4 411	25.63
1989	6 960	30.00	3 629	18.56	1 247	37.45	4 566	25.78
1990	7 430	31.04	3 700	18.25	1 235	38.24	4 670	25.38

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 4, 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 15

Estimated productivity of tankers, bulk carriers, combined carriers  
and the residual fleet,<sup>a/</sup> 1980-1990  
 (Tons carried per dwt)

Year	Tons of oil and grain carried by tankers (millions)	Tons carried per dwt of tanker	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 (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	1 465	6.12	650	3.21	214	6.63	1 646	8.95

Source: As for table 14.

a/ See footnote a/ to table 14.



Table 16

Tonnage oversupply in the world merchant fleet, 1981-1990  
(Million dwt and percentages)

	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990
	(Million dwt)									
World merchant fleet (as at mid-year)	688.8	693.5	686.0	674.5	664.8	639.1	632.3	627.9	638.0	658.4
Surplus tonnage <u>a/</u>	149.1	184.1	195.8	171.2	161.5	108.0	101.1	83.4	62.3	63.7
Active fleet <u>b/</u>	539.7	509.4	490.2	503.3	503.3	531.0	531.2	544.5	575.7	594.7
	(Percentages)									
Surplus tonnage as a percentage of the world merchant fleet	21.6	26.5	28.5	25.4	23.4	16.9	16.0	13.3	9.8	9.7
Surplus tonnage as a percentage of the active world merchant fleet	27.6	36.1	39.9	34.0	32.2	20.3	19.0	15.3	10.8	10.7

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 1981-1985 in this table are estimated in accordance with the method used before March 1989. Estimates for 1986-1990 are based on a new method which show considerably lower figures.

b/ World fleet minus surplus tonnage.

Table 17

Analysis of tonnage oversupply by vessel type, 1981-1990  
(Average year figures in million dwt) <sup>a/</sup>

	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990
Supply of world tanker fleet	341.3	335.0	319.4	296.7	273.0	261.7	255.1	250.6	253.9	266.2
Total tanker surplus fleet	107.7	130.7	134.0	111.7	100.9	58.8	65.8	54.7	41.0	41.0
Share of surplus fleet in the world tanker fleet (per cent)	31.5	39.0	41.9	37.6	36.9	26.3	25.8	21.8	16.1	15.4
Supply of world dry bulk fleet	184.0	197.0	202.9	215.0	222.7	215.4	213.8	220.6	225.4	228.7
Dry bulk fleet surplus	36.4	46.4	52.0	50.3	50.1	30.8	28.0	23.4	17.0	19.3
Share of surplus in the world dry bulk fleet (per cent)	19.8	23.5	25.6	23.4	22.5	14.3	13.1	10.6	7.5	8.4
Supply of world general cargo fleet	108.4 <sup>b/</sup>	85.4	82.1	79.8	74.9	69.7	65.6	64.7	63.4	63.1
General cargo fleet surplus	4.4	6.1	8.3	7.6	5.8	4.3	3.6	2.9	2.2	1.8
Share of surplus in the world general cargo fleet (per cent)	4.0	7.1	10.1	9.5	7.7	6.2	5.5	4.5	3.5	2.8
Supply of world unitized fleet <sup>c/</sup>	21.1	22.9	25.2	27.3	29.9	31.2	32.9	34.4	35.8	37.5
Surplus of unitized fleet	0.6	0.9	1.5	1.6	1.7	1.5	1.7	0.8	0.8	0.5
Share of surplus in the world unitized fleet (per cent)	2.8	3.9	5.9	5.9	5.7	4.8	5.2	2.3	2.2	1.3

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.

b/ Average figures for the second half of the year.

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

Table 18

Tanker tonnage engaged in oil storage, 1981-1990  
(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	15 876
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

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

31. Limited growth of dry cargo shipments and an increase in newbuilding deliveries of dry bulk carriers led to a 13.5 per cent increase in dry bulk surplus tonnage, which reached 19.3 million dwt and stood at 8.4 per cent of the world dry bulk fleet (versus 7.5 per cent in 1989).

32. Excess tonnage in the general cargo and unitized fleet sectors continued to decrease in 1990; it stood at 1.8 million dwt for general cargo ships, or 2.8 per cent of the world general cargo fleet (3.5 per cent a year before), and 0.5 million dwt for unitized tonnage, or 1.3 per cent of the world unitized fleet (versus 2.2 per cent in 1989).

33. However, in terms of TEU capacity, the surplus of the container fleet in 1990 was much higher. Most estimates indicate that the world container fleet offered about 20 per cent more capacity than international trade actually needed at the end of 1990. Taking into consideration the total order backlog for containerships, it is expected that the newly built vessels will add about

100,000 twenty-foot containers worth of space by the end of 1992. Most orders are for vessels that can carry more than 2,000 twenty-foot containers - relatively large ships that are usually assigned to high-volume trades. This might increase the surplus in certain main trades to 30 per cent (in terms of TEU capacity).<sup>19</sup>

34. At the end of September 1990, the world supply of full containerships stood at 26.6 million dwt, with 0.8 million dwt envisaged for delivery by the end of 1990 and 2.2 million dwt (or more than 8 per cent of the total 1990 full container fleet figure) for delivery in 1991. A further 1.7 million dwt are due for delivery in 1992. In view of the anticipated stagnation or at best 2.3 per cent growth in seaborne demand for liner capacity over the next few years and the low level of demolition, a further increase in surplus containership tonnage is expected.<sup>20</sup>

C. Imbalance between supply and demand for seafarers

35. An important problem which is facing the world maritime industry is the existing imbalance between supply and demand for seafarers. The detailed analysis undertaken by the Institute for Employment Research at the University of Warwick (United Kingdom)<sup>12</sup> established that the total number of available seafarers is currently around 1.25 million, of which 400,000 are officers and some 840,000 ratings. A very substantial part of the total supply comes from the developing countries of the Indian sub-continent and the Far East, and this is particularly apparent in the case of ratings. Taking into consideration the size of the world fleet and the main principles of its manning, the report suggested that in 1990 there was a shortage of some 50,000 officers and a surplus of over 200,000 ratings. However, it is considered that although there would seem to be no shortage of ratings, this may be illusory, since the estimations might include seafarers who are

strictly speaking not qualified or who would not be prepared to serve on the deep-sea commercial trading fleet. Although it was not possible to analyse how the shortfall affected the operations of the 41,000 vessels trading around the world, there were some reported instances of ships which could not sail due to lack of crew.

36. It is expected that continued growth in world trade is likely to result in a substantial increase in the number of vessels in service, resulting in a demand for seafarers at least up to the year 2000. Furthermore, it is estimated that the growth of the world fleet will lead to an increase in demand of some 90,000 officers or about 20 per cent of existing demand. As for ratings, the requirements are expected to go up by about 8 per cent, or 50,000 persons. It is concluded that a very substantial recruitment and training effort will be required over the next decade if the commercial fleet is to be properly manned by the year 2000.

Box 3

Ship costs to soar in 1990s

Ship operators can look forward to higher costs in the 1990s, says a report by Drewry Shipping Consultants Ltd. The report, "Ship Costs: Their Structure and Significance", predicted a rise in almost every aspect of ship operations. Among the study's highlights:

- Manning costs have been reduced by the emergence of new registries and the strides in automation, "but it appears that the end of the line has now been reached. Crews - quality or otherwise - will be an increasingly scarce resource."
- Repair and maintenance costs are likely to more than double by 2000, Drewry said, as the world's fleet ages and ship repair capacity tightens. By the end of the 1990s, shipowners are likely to pay close to \$US 2 million a year for maintenance and repair of a typical ultra-large crude carrier (ULCC) and about \$US 1 million a year for a 2,000-TEU containership or a medium-sized refrigerated cargo ship.
- Insurance expenses will rise along with increased hull values, higher maintenance costs and mushrooming liabilities from pollution and other environmental risks.
- Port charges have been largely overlooked, but "the 1990s is the decade in which port costs could become a major issue", Drewry said. "The concern for owners is that, unlike virtually every other sphere of their operations, there is no effective competitive environment." Port costs are likely to double by the year 2000 and currency fluctuations make the outlook even more problematic, the report said.
- Acquisition costs "do not look set for a major downturn." The rationalization of shipbuilding and a tighter-fisted attitude by financiers have limited speculative building, but the need for replacement tonnage appears unavoidable, Drewry said.

Source: American Shipper, November 1990.



## Chapter IV

## SHIPBUILDING

A. Ship prices

37. Throughout 1990, the average monthly prices for new tonnage were higher than those of the previous year. Accordingly, the representative newbuilding prices for all types of ship shown in table 19 increased and were at their highest level since 1984. The most significant growth over the previous year's figure was shown by prices for 2,500 TEU full containerships and VLCCs (+27 per cent and +20 per cent respectively). Large increases in prices were also experienced by 70,000 dwt dry bulk carriers and 125,000 m<sup>3</sup> LNG carriers (up to 18 per cent). Prices for 75,000 m<sup>3</sup> LPG carriers, 15,000 dwt general cargo ships and 80,000 dwt tankers grew by 15 per cent, 13 per cent and 11 per cent respectively. Newbuilding prices for other types of ship showed a certain recovery.

38. Table 20 shows the changes in prices for five-year old second-hand bulk carriers during the period 1985-1990. The continued increase in second-hand values which has been recorded for the last three years came to a halt in the first half of 1990, when a reduction in prices for most vessel sizes started. This trend was especially noticeable for dry bulk carriers as the supply/demand situation in this sector became less favourable than in the previous year. The value of older dry bulk carriers declined more substantially: the prices paid in December 1990 for 14 year old 27,000 dwt, 65,000 dwt and 120,000 dwt dry bulk carriers were respectively 35 per cent, 46.1 per cent and 43.6 per cent less than a year previously. The decrease in the second-hand prices for dry bulk carriers should be attributed to depressed freight rates during 1990, especially in the dry cargo tramp time charter sector (for more precise information see paragraph 62). At the same time a sharp drop in the actual volume of sales was registered. On the whole, a total of 204 sales (vessels of more than 25,000 dwt) was reported in 1990, as compared with 309 sales in 1989.

39. The values of five year old second-hand tankers did not show as considerable a decrease in 1990 as that of dry bulk carriers. Prices for 30,000 dwt tankers even rose by 7.5 per cent, while those for medium-size tankers remained at the level of the previous year. However, prices for older second-hand tankers declined considerably. Thus, the values of 10 year old 60,000 dwt and 15 year old 85,000 dwt vessels were respectively 22.4 per cent and 25.7 per cent lower than a year previously, while those of 15 year old 150,000 dwt tankers were 28.1 per cent lower. At the same time, prices for small crude and product carriers

either remained at the level of 1989, as for 15 year old 30,000 dwt vessels, or increased slightly, (2.3 per cent increase for 40,000 dwt vessels), reflecting good demand for this size of vessel. On the whole, the second-hand tanker market experienced the adverse influence of the Gulf crisis. The total number of transactions in 1990 was about 180, versus 225 in the previous year, with the most noticeable drop in the number of transactions during the third and fourth quarters of 1990.<sup>13</sup>

B. Sales and purchases of second-hand bulker tonnage

40. Sales and purchases of second-hand bulker tonnage through 1990 are traced in table 21. This table shows relatively high activity during the first half of the year (64.5 per cent of tonnage sold in 1990), especially during the first quarter, which accounted for 33 per cent of the second-hand tonnage sold throughout the year. The slack third quarter, with 21.2 per cent of the year's total, was followed by an even weaker year end (14.4 per cent of the tonnage sold in 1990). The fourth quarter was especially dull for combined carriers (10.6 per cent of the year's total for this type of ship).

C. Newbuilding orders contracted in 1990

41. A record number of orders for new tonnage was contracted in 1990. As shown in table 22, a total of 982 new vessels with a combined tonnage of 37.5 million dwt was contracted during the year, as compared to 37.1 million dwt in 1989 and 19.9 million dwt in 1988. However, the situation varied significantly during the year. This is shown in graph 9.

42. The first half of 1990 saw new orders being placed at their highest levels since the mid-1970s, with 25.8 million dwt contracted between 1 January and 30 June. The third quarter, which included the period covering the start of the Gulf crisis, saw a certain decrease in new contracting to about 8 million dwt. During the last three months of 1990 the orders for new ships fell to their lowest level for more than 20 years, i.e. 3.8 million dwt, with only 0.6 million dwt placed in December compared to 4.1 million dwt in December 1989. The Gulf crisis has been widely blamed for persuading many owners to postpone their newbuilding plans, and even to withdraw orders placed earlier. Information concerning reported cancellations of newbuilding orders is shown in table 23, which indicates that the volume of cancelled orders was 2.6 times more in 1990 than in previous years. With the end of the war, a revival of interest for newbuildings is anticipated.<sup>14</sup>

Table 19

Representative newbuilding prices, 1980, 1985 and 1987-1990  
(Millions of dollars)

Type and size of vessel	1980	1985	1987	1988	1989	1990	Percentage change 1989/1990
30 000 dwt bulk	17	11	13	19	22	24	9
32 000 dwt tanker	19	18	18	23	27	29	7
70 000 dwt bulk	24	14	18	24	27	32	18
80 000 dwt tanker	28	22	24	33	38	42	11
120 000 dwt bulk	32	27	25	33	42	45	7
250 000 dwt tanker	75	47	46	63	75	90	20
125 000 m <sup>3</sup> LNG	200	200	150	150	190	225	18
75 000 m <sup>3</sup> LPG	77	44	55	57	68	78	15
1 200 TEU ro/ro	44	28	27	28	32	36	13
15 000 dwt general cargo ship	14	12	15	17	22	24	9
2 500 TEU full containership	..	26	32	32	41	52	27

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

Table 20

Second-hand prices for five-year old vessels, 1985-1990  
(as at end of year)  
(Millions of United States dollars)

	1985	1986	1987	1988	1989	1990	Percentage change 1989/1990
30 000 dwt tanker	6.5	11.0	13.0	16.0	20.0	21.5	+7.5
80 000 dwt tanker	9.0	13.0	16.0	22.0	34.0	34.0	0
130 000 dwt tanker	8.3	13.8	20.0	28.0	40.0	37.0	-7.5
27 000 dwt bulk carrier	3.8	4.0	7.0	11.0	14.0	11.0	-21.4
60 000 dwt bulk carrier	6.1	7.8	13.0	17.0	21.5	18.5	-13.9
120 000 dwt bulk carrier	11.0	12.0	19.5	27.5	32.0	28.0	-12.5

Source: Fearnleys (Oslo), Review 1990.



Table 21

Development of sales and purchases of second-hand bulkers in 1990  
(Thousand dwt)

Type	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total 1990
Tankers	3 609	1 292	2 420	4 124	2 929	638	1 230	1 485	1 750	385	1 718	813	22 393
Bulk carriers	1 637	1 583	1 562	1 341	1 265	1 346	655	917	1 489	808	1 218	449	14 270
Combit	548	187	207	123	581	109	258	393	155	-	-	305	2 866
Total	5 794	3 062	4 189	5 588	4 775	2 093	2 143	2 795	3 394	1 193	2 936	1 567	39 529

Source: Drewry Shipping Consultants Ltd. (London), Shipping Statistics and Economics, 1990, 1991, various issues.

Table 22

Newbuilding contracts placed for the main types of ship<sup>a/</sup> during 1987-1990  
(Thousands of dwt)

Year	Tankers		Bulk carriers		Combined carriers		General cargo ships		Container vessels		Passenger/Ferries		Total <sup>b/</sup>	
	No	Dwt	No	Dwt	No	Dwt	No	Dwt	No	Dwt	No	Dwt	No	Dwt
1987	235	12 049	69	4 018	2	198	231	1 675	56	1 768	128	178	721	20 045
1988	216	8 427	111	8 021	6	24	253	1 556	79	1 827	101	106	766	19 957
1989	286	17 995	210	11 590	17	1 975	327	2 077	124	3 255	122	118	1 086	37 096
1990														
January	20	2 482	3	146	-	-	25	270	14	441	1	-	63	3 339
February	30	4 398	16	709	6	570	19	170	6	69	17	34	94	5 950
March	34	3 068	9	627	4	571	22	80	18	508	12	13	99	4 867
April	27	2 284	4	85	-	-	16	150	8	247	6	1	61	2 767
May	34	3 148	21	694	2	220	27	151	22	860	8	15	114	5 088
June	29	2 658	4	249	4	380	31	265	19	192	9	14	96	3 758
July	42	2 805	5	209	2	210	35	165	12	237	7	12	103	3 638
August	38	2 131	7	122	1	75	17	149	1	4	8	5	72	2 486
September	16	400	10	362	4	600	44	282	10	195	4	10	88	1 849
October	30	1 512	4	178	1	100	32	185	5	228	9	12	81	2 215
November	23	753	9	133	-	-	8	67	2	28	7	1	49	982
December	15	237	1	126	-	-	34	156	7	64	5	2	62	585
Total 1990	338	25 876	93	3 640	24	2 726	310	2 090	124	3 073	93	119	982	37 524

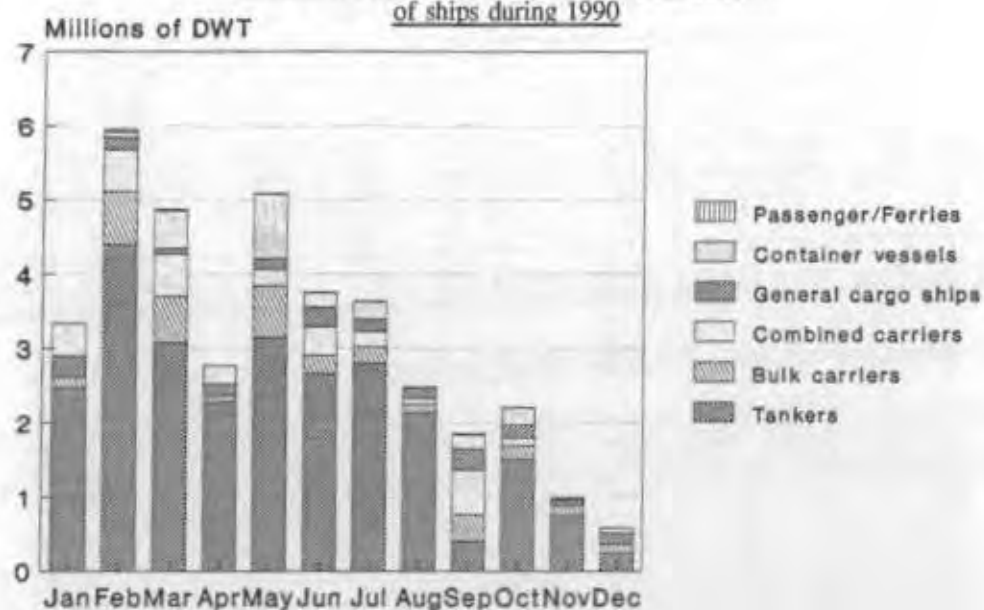
Source: Institute of Shipping Economics and Logistics (Bremen), 1991, No. 1/2, p. 46

a/ Ships of 300 grt and over.

b/ Total does not include the data on newbuilding contracts for other types of ships.

Graph 9

Newbuilding contracts placed for the main types  
of ships during 1990



Source: Institute of Shipping Economics and Logistics (Bremen).

Table 23

Reported cancellations of shipbuilding orders from 1988 to early 1991  
(Million dwt)

	1988	1989	1990	1991 <sup>a/</sup>
Tankers	0.50	0.38	0.83	1.56
Combined carriers	-	-	0.89	-
Dry bulk carriers	0.36	0.32	0.51	-
Others	0.08	0.24	0.22	0.04
<b>TOTAL</b>	<b>0.94</b>	<b>0.94</b>	<b>2.45</b>	<b>1.60</b>

Source: WESCOL International Marine Services (London), World Trade Review and Outlook, March 1991, p. 31.

<sup>a/</sup> January and February 1991.

#### D. Tonnage on order

43. Table 24 summarizes the trends of world tonnage on order during the period 1988-1990 on a quarterly basis. It shows that an extremely high level of newbuilding construction was maintained through much of 1990, to the extent that the world order book at the end of September was at its highest for 13 years. Thus the contract backlog as at 30 September 1990 was nearly double the size it had been in March 1988. Although the fourth quarter of 1990 saw a 4.1 per cent decrease in the tonnage on order, caused mainly by the fall in the intake of new orders, the December 1990 figure was 30.9 per cent higher than one year previously.

44. Oil tankers continued to dominate the world order book, reflecting the growth of maritime oil trade followed by the increase in demand for tanker tonnage. The share of tankers in the total tonnage on order continued to increase during 1990 and reached 58.8 per cent in December as compared to 41.3 per cent one year earlier. At the same time the tonnage of dry bulk carriers on order significantly decreased. After remaining at the level of the fourth quarter of the previous year during the first half of 1990, from the third quarter onwards they started to decrease rapidly and in December 1990 stood at 72.6 per cent of the year start figure. Other ships on order showed a certain increase (+15 per cent) during 1990 and their share in the total fleet stood at 23.3 per cent of the total order book.

45. The distribution of newbuilding orders among country groupings (by country of registry) as at the end of 1990 shown in table 25 indicates that the combined total deadweight of developed market-economy countries and open-registry countries represented 83.3 per cent of the tonnage on order. By comparison, developing countries and countries of Eastern Europe accounted for 8.7 per cent and 4.6 per cent respectively. The share of socialist countries of Asia stood at approximately 0.7 per cent of world tonnage on order.

46. Developed market-economy countries and open-registry countries had the largest portion of orders for all types of newbuildings as at 31 December 1990. These two groups combined accounted for 87.8 per cent of the deadweight tonnage of all oil tanker newbuilding orders, 78.6 per cent of bulk carrier orders, 70.5 per cent of orders for general cargo vessels and 72.9 per cent of containership orders. At the same time, developing countries had only an 8.5 per cent share of the total newbuilding orders for oil tankers, a 4.9 per cent share for bulk carriers, an 8.9 per cent share for general cargo ships and a 14.9 per cent share for containerships, while the share of the countries of Eastern Europe in the newbuilding orders for main types of ship stood at 1.3 per cent, 8.4 per cent, 16.6 per cent and 9.6 per cent respectively.

47. Further analysis of the tonnage on order by country groups and ship type shows that by the end of

1990, developed market-economy countries and open-registry countries had 78.9 per cent of their newbuildings in the bulk sector (both tanker and dry bulk), 13.5 per cent in unit load/general cargo vessels and 7.6 per cent in other vessels. In comparison, developing countries had 67.9 per cent of their newbuilding orders in bulk carriers, mainly oil tankers, 21.5 per cent in unit load/general cargo vessels and 10.6 per cent in the other vessels category. Countries of Eastern Europe and socialist countries of Asia had 49.3 and 76.5 per cent respectively of new orders in bulk carriers, 44 and 20.8 per cent of new orders in unit load/general cargo ships, and 6.7 per cent and 2.7 per cent of new orders in other ships.

#### E. Deliveries of newbuildings

48. Both the number of newbuildings delivered by shipyards and their total gross tonnage increased significantly in 1990 as compared to the previous year. As shown in table 26, the number of newbuildings increased from 1,485 in 1989 to 1,642 in 1990 (up 10.6 per cent), while their tonnage reached 15.7 million grt (up 22.2 per cent). The difference between the change in the number of newbuildings and the change in their tonnage indicates further growth in the size of newbuildings. Unlike previous years, dry bulk carriers dominated newbuilding deliveries. In 1990 their gross tonnage increased by 45 per cent from 1989 and reached 5.5 million tons or 35.1 per cent of the total delivered new tonnage (versus 29.6 per cent of new tonnage delivered in 1989). Although the deliveries of new oil tankers increased to over 5 million grt (up 1.1 per cent from the 1989 figure), the share of this ship type in the total deliveries decreased to 32 per cent, versus 38.7 per cent a year previously. The deliveries of general cargo ships increased during 1990 by 41.8 per cent and reached 3.1 million grt, although this was slightly less than the number in 1988, when general cargo ships amounted to nearly one third of total deliveries. Liquefied gas and chemical carriers shared a 19.3 per cent increase over 1989 deliveries, while deliveries of all other ships increased by 7.1 per cent.

49. Newbuilding deliveries (in terms of grt) by country groupings - according to country of build - are shown in table 27. Developed market-economy countries increased their role as the main recipients of newbuilding deliveries. Tonnage delivered to them during 1990 increased by 33.9 per cent as compared to the previous year's deliveries and reached 10 million grt, or 63.8 per cent of all newbuilding deliveries (versus 58.2 per cent in 1989). The amount of tonnage delivered to developing countries during 1990 was at the same level as 1989, viz. 3.8 million grt, but the developing countries' share in total newbuildings decreased from 30.2 per cent to 24.5 per cent. Countries of Eastern Europe and socialist countries of Asia received more new tonnage than in 1989 (6.5 per cent and 13.2 per cent respectively), but their shares in the newbuilding world total decreased to 5.2 per cent and 2.3 per cent respectively.

Table 24

World tonnage on order at the end of each quarter, 1988, 1989 and 1990  
(Millions of dwt and percentage change)<sup>a/</sup>

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 1988	32.1		17.3		8.3		6.5	
30 June 1988	33.6	+4.6	16.9	-2.2	10.1	+21.3	6.6	+1.4
30 September 1988	35.2	+4.7	17.3	+2.5	11.2	+10.5	6.7	+1.5
31 December 1988	34.8	-1.1	15.9	-8.3	12.3	+9.9	6.6	-0.9
31 March 1989	35.7	+2.4	16.3	+2.3	12.0	-2.2	6.6	+11.3
30 June 1989	39.5	+10.9	17.8	+9.7	13.9	+15.4	7.8	+6.2
30 September 1989	43.3	+9.4	17.8	+0.1	14.5	+4.7	10.9	+39.2
31 December 1989	45.3	+4.7	18.7	+5.1	14.6	+0.5	12.0	+9.8
31 March 1990	51.5	+13.6	23.7	+26.5	14.6	+0.1	13.2	+10.0
30 June 1990	59.7	+15.9	30.7	+29.4	14.7	+0.9	14.3	+8.4
30 September 1990	61.9	+3.6	34.6	+12.9	12.3	-16.5	14.9	+4.4
31 December 1990	59.3	-4.1	34.9	+0.9	10.6	-14.0	13.8	-7.5

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 25

World tonnage on order as at the end of 1990  
(Thousands of dwt)<sup>a/</sup>

Countries of registry	All ships	Oil tankers	Bulk carriers	General cargo	Container ships	Other ships
<u>World total</u>	59 326	34 936	10 587	4 538	4 757	4 508
Developed market-economy countries	16 905	7 103	3 204	1 440	2 491	2 668
Open-registry countries	32 515	23 575	5 115	1 762	977	1 086
<u>Subtotal</u>	49 419	30 678	8 319	3 201	3 467	3 753
Countries of Eastern Europe	2 747	460	893	752	457	184
Socialist countries of Asia	863	251	409	177	3	23
Developing countries, total	5 163	2 987	518	404	707	547
of which in:						
Africa	36	-	-	26	-	10
America	965	582	135	197	-	51
Asia	4 137	2 405	383	180	682	486
Europe	26	-	-	-	26	-
Oceania	-	-	-	-	-	-
Unallocated	1 133	560	447	4	122	-

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

a/ Owing to rounding, the totals do not always add up.

Table 26

Distribution of deliveries of newbuildings by principal types of ships, 1988-1990  
(Number of ships, thousands of grt)<sup>a/</sup>

Ship types	1988		1989		1990	
	No.	Grt	No.	Grt	No.	Grt
Oil tankers	172	4 081 (38.1)	158	4 973 (38.7)	142	5 026 (32.0)
Bulk/oil carriers	2	207 (1.9)	2	37 (0.3)	-	-
Ore/bulk carriers	50	2 093 (19.6)	100	3 807 (29.6)	123	5 521 (35.1)
General cargo	178	3 182 (29.7)	188	2 177 (17.0)	288	3 087 (19.7)
Liquefied gas and chemical carriers	58	167 (1.6)	92	672 (5.2)	122	802 (5.1)
All other ships	1 087	973 (9.1)	945	1 187 (9.2)	967	1 271 (8.1)
World total	1 547	10 704 (100.0)	1 485	12 852 (100.0)	1 642	15 707 (100.0)

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

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



Table 27

Distribution of deliveries of newbuildings by groups of countries  
of build. 1988-1990  
(Thousands of grt)<sup>a/</sup>

Country grouping	1988	1989	1990
Developed market-economy countries	5 806 (54.2)	7 477 (58.2)	10 014 (63.8)
Developing countries	3 521 (32.9)	3 879 (30.2)	3 845 (24.5)
Countries of Eastern Europe	699 (6.5)	770 (6.0)	820 (5.2)
Socialist countries of Asia	234 (2.2)	319 (2.5)	361 (2.3)
Other, unallocated	444 (4.2)	407 (3.1)	667 (4.2)
World total	10 704 (100.0)	12 852 (100.0)	15 707 (100.0)

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

<sup>a/</sup> Percentage shares of the world total are indicated in brackets.

#### F. Demolition of ships

50. The total amount of tonnage sold for demolition reached 3,344,000 dwt in 1990, which represents a 2.5 per cent increase over the previous year's figure. As shown in table 28, the share of broken-up tonnage in the total world fleet stood at 0.5 per cent in 1990, the same level as the previous year, representing a significant reduction in demolition as compared to the previous decade.

51. The present low level of demolition activity should be attributed to the recent general economic recovery, which prompted an increase in demand for the transport of goods by sea. With the resultant increase in demand for shipping, shipowners preferred to use older tonnage alongside newbuildings. The latest developments in the Persian Gulf did not influence this trend considerably. As in the previous year the major proportion of vessels sold for demolition were either damaged or very old, mostly removed from lay-up. Many vessels broken up offered no real alternative, because they were in a state in which repairs would not be profitable and were thus declared constructive total

losses. The average age of undamaged tankers sold for demolition was 28 years, while that of combined carriers stood at 19 years.<sup>12/</sup>

52. Details of the type of tonnage reported as being sold for breaking during the period 1985-1990 are given in table 29 and graph 10. Generally, demolition sales reflected the supply/demand situation in shipping and followed the freight markets. Thus, demolition of tankers showed a significant decrease in 1990 as compared with the previous year (-36.2 per cent). 1990 was the first year since the late 1970s when no VLCCs were scrapped. Demolition sales of dry bulk carriers and of other dry cargo ships increased by 27 per cent and 22.4 per cent respectively. At the same time the combined carrier tonnage sold for scrapping in 1990 was 3.5 times higher than in 1989. As a result, the share of dry bulk carriers in demolished tonnage increased to 19.4 per cent (15.6 per cent in 1989), that of other dry bulk carriers to 39.4 per cent (33 per cent in 1989), and that of combined carriers to 11.3 per cent (3.3 per cent in 1989), while the share of tankers dropped from 48.1 per cent in 1989 to 29.9 per cent in 1990.

53. The annual variations in prices paid by shipbreakers showed significant differences during 1990. Table 30 shows that the scrapping prices were at their highest level during the first half of the year. The highest price of \$US 262.5 per LDT was paid by Indian breakers in May and July. From August the prices started to decrease, until they dropped to their lowest level in three years in December. The main reasons for this decline in prices were increased supply of tonnage during the second half of the year, improving the breakers' negotiating position, and financial factors such as the shortage of foreign currency among shipbreakers and increased import taxes in certain countries. For instance, the cost of the replenishment licence which must be obtained by Indian shipbreakers increased by 15 per cent in September 1990, while the import duty in

India also rose.<sup>16</sup> The combination of these factors pushed down the scrap rates in the Indian market from \$US 260 at mid-year to \$US 180 in December.

54. Consequently, the annual average price in all three main markets decreased as compared to 1989, with the 1990 average 19 per cent less than the year before in the Far East market, 4.8 per cent less in the Pakistan/India region and 6.3 per cent less in South Europe.

55. India was the main demolition area in 1990. With 102 vessels of 2.1 million dwt, it accounted for about 63 per cent of all broken-up tonnage. It was followed by Bangladesh with 0.6 million dwt and Pakistan with 0.3 million dwt. Other demolition markets acquired less significant tonnage.<sup>17</sup>

Table 28

Broken-up tonnage trends, 1980-1990

	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990
Tonnage sold for breaking (million dwt)	10.0	14.6	28.3	32.7	29.2	41.7	31.2	16.3	5.7	3.3	3.3
Share of broken-up tonnage in the total world fleet (percentage)	1.5	2.1	4.1	4.8	4.3	6.3	4.9	2.6	0.9	0.5	0.5

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

Table 29

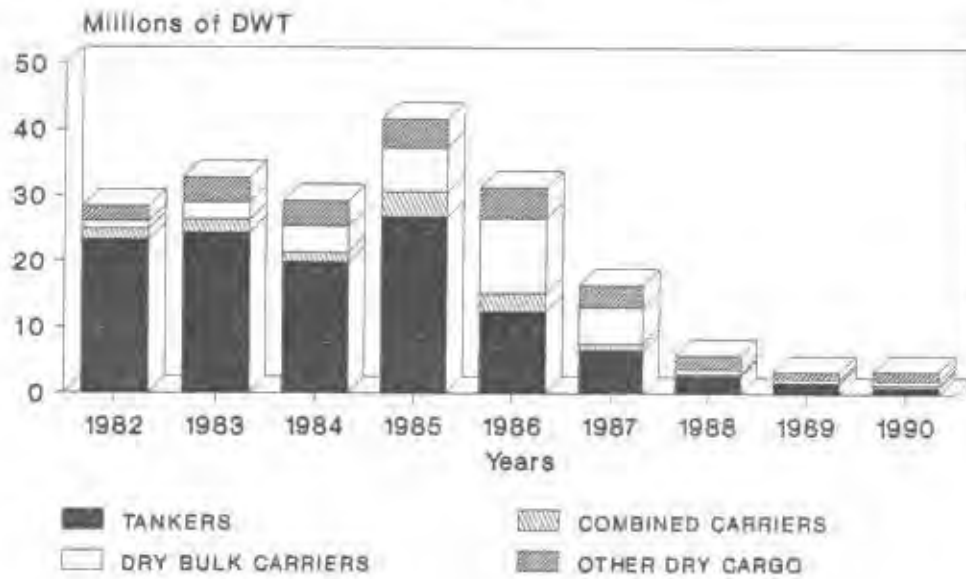
Tonnage reported sold for breaking by type of vessel, 1985-1990  
(Thousand dwt and percentage shares)

Type of vessel	Thousands of dwt						Percentage shares					
	1985	1986	1987	1988	1989	1990	1985	1986	1987	1988	1989	1990
Tankers	26 794	12 306	6 549	2 570	1 567	1 000	64.3	39.4	40.1	44.6	48.1	29.9
Combined carriers	3 794	2 889	950	293	108	378	9.1	9.3	5.8	5.1	3.3	11.3
Dry bulk carriers	6 673	11 365	5 539	846	510	649	16.0	36.4	33.9	14.7	15.6	19.4
Other dry cargo ships	4 414	4 654	3 310	2 050	1 076	1 317	10.6	14.9	20.2	35.6	33.0	39.4
Total	41 675	31 214	16 348	5 759	3 261	3 344	100.0	100.0	100.0	100.0	100.0	100.0

Source: Fearnley's (Oslo) *Review*, various issues.

Graph 10

Tonnage sold for breaking by type of vessel  
1982 to 1990



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

Table 30

Demolition prices in 1988-1990  
(Dollars per LDT)

Month	Market								
	Far East			Pakistan/India			Southern Europe		
	1988	1989	1990	1988	1989	1990	1988	1989	1990
January	200.0	250.0	215.0	195.0	245.0	260.0	95.0	130.0	120.0
February	230.0	250.0	215.0	195.0	250.0	260.0	105.0	130.0	120.0
March	250.0	250.0	202.5	210.0	250.0	252.5	115.0	130.0	122.5
April	240.0	250.0	202.5	220.0	250.0	260.0	115.0	130.0	122.5
May	240.0	250.0	202.5	240.0	260.0	262.5	115.0	130.0	122.5
June	240.0	250.0	202.5	251.0	262.5	260.0	130.0	130.0	122.5
July	240.0	250.0	202.5	245.0	262.5	262.5	130.0	130.0	122.5
August	250.0	250.0	202.5	250.0	262.5	252.5	130.0	130.0	120.0
September	240.0	250.0	192.5	230.0	250.0	232.5	130.0	130.0	117.5
October	250.0	230.0	190.0	240.0	230.0	210.0	130.0	120.0	117.5
November	250.0	230.0	180.0	245.0	250.0	195.0	130.0	120.0	117.5
December	250.0	215.0	160.0	245.0	260.0	180.0	130.0	120.0	107.5
Annual average	237.0	243.7	197.3	227.0	252.7	240.6	119.5	127.5	119.4

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

## Box 4

Prospects for demolition

According to research carried out by Japanese experts, the amount of tonnage sold for demolition will start to rise sharply by 1995 and will exceed 30 million tons in the year 2000. Of this, 20 million tons, or in other words more than 66 per cent of the amount of the tonnage expected to be sold for demolition, will consist of VLCCs.

At the same time the experts warn that, after the recent withdrawal of certain countries and territories such as the Republic of Korea and Taiwan Province of China from ship demolition, the world maritime industry might face a serious shortage of scrapping facilities in the near future.

Source: Lloyd's List (London), 28 September 1990, 11 January 1991.

## Chapter V

### PORT DEVELOPMENT

#### A. Port throughput

56. With about 90 per cent by volume of the international trade of developing countries moving by maritime transport, it is essential that sea ports are developed adequately and operated effectively. Accordingly, many port authorities are realizing that they can play a leading role in the promotion of trade by developing as service centres. Often port authorities have the managerial capabilities, the contacts and the foreign exchange necessary to play a catalytic role in the development of new trades.

57. The growth of containerization in the general cargo trades is continuing, as illustrated in graph 11. Southern and Eastern Asia continues to lead the world in container growth. Table 31 gives the latest available figures on container port traffic in selected developing countries and territories. The world rate of growth for containerized port throughput for 1988-1989 was 6.3 per cent, less than the 8.4 per cent figure achieved in the previous period. The rate of growth for developing countries and territories was more than double that of the world average and reached 13.4 per cent. This was a small reduction in comparison with the 14.4 per cent figure for the period 1987-1988. A major feature is the high throughput of ports in Southern and Eastern Asia which are on two of the major containerized sea routes.

#### B. Impact of containerization

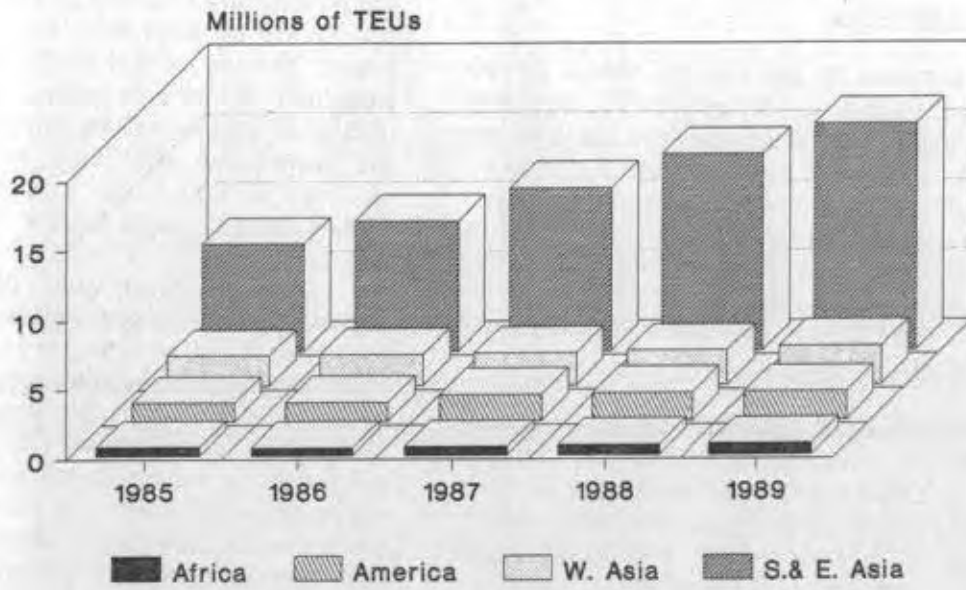
58. The steady increase in containerization over the years reflects the dynamism of the container industry and the importance of containerization in the global economy. Container operations in some developing countries have been improved through institutional change, human resource development, computerization and equipment acquisition. Developing country ports are realizing that they are competing not only with ports in the same country but also with ports in different countries and even whole ranges of ports or entire coastlines. Developing countries are competing for the same export markets, and transport costs and guaranteed service play an important part in the marketing package.

59. With the advent of post-Panamax vessels, many major ports are investing in new ship-to-shore cranes with increased outreach and air draught. These cranes are very costly, and one recent order, for example, for the design, construction and installation of eight cranes was reportedly worth \$US 95 million. Such cranes, with a life expectancy of 15-25 years, require that consideration be given to changes in container standards,

The present oversize containers and post-Panamax ships are affecting the under-boom clearance, boom length, distance between the legs of the gantry cranes, crane productivity and spreader design. As the turning circle of the unit increases with the length of the box handled and manoeuvring areas must be designed for the maximum size of oversize containers, the layout for straddle carrier operation will also be affected.

60. Another problem with the proliferation of container sizes will be with container stacking patterns. Containers should be separated by size in the stack, which will lead to increased area requirements. To limit the paving costs within the terminal, a number of terminals are choosing rubber-tyred gantry systems with gravel beds for storing containers. These beds save money, as the construction cost is about one-tenth of the cost of concrete slabs. As an alternative to the fork lift truck, some developing country terminals are using the reach stacker for stacking containers for low throughput situations. The capacity of a given storage area is increased with this versatile piece of equipment allowing import containers to be stacked four-across as opposed to the two-across for fork lift trucks.

Graph 11

Container port throughput by developing country groups

Source: Containerisation International Yearbooks.



Table 31  
 Container port traffic of developing countries and territories, 1989 and 1988

Country or territory	Container traffic 1989 (TEUs)	Container traffic 1988 (TEUs)	Percentage change 1988/1989	Percentage change 1987/1988
Hong Kong	4 463 709	4 033 427	10.6	16.7
Singapore	4 364 400	3 375 100	29.3	28.1
Republic of Korea	2 158 828	2 065 462	4.5	13.1
United Arab Emirates	1 281 488	1 042 637	22.9	8.8
Philippines	1 159 698	1 096 743	5.7	20.1
Thailand	939 040	795 301	18.1	22.4
Indonesia	784 533	588 267	33.3	1.3
Brazil	761 320	810 858	-6.1	22.4
Saudi Arabia	758 526	822 663	-7.8	0
Malaysia	739 615	589 128	25.5	22.8
India	718 221	549 972	30.5	0
Sri Lanka	544 197	620 940	-12.3	44.6
Cyprus	369 291	291 529	26.7	20.3
Pakistan	342 946	339 807	0	20.4
Kuwait	229 097	219 921	4.1	9.9
Argentina	212 525	191 814	10.8	6.7
Chile	200 264	159 976	25.1	7.1
Honduras	196 322	167 972	16.8	-5.4
Egypt	195 447	186 364	4.8	4.0
Côte d'Ivoire	191 704	178 973	7.1	9.4
Mexico	185 200	177 779	4.2	19.4
Costa Rica	172 110	147 113	17.0	34.2
Nigeria	171 291	171 371	0	7.4
Oman	165 723	148 160	11.8	5.5
Jamaica	152 935	182 069	-16.0	-28.5
Panama	150 000	127 243	17.8	-27.1
Kenya	134 874	112 445	19.9	-2.5
Morocco	116 514	100 876	16.5	n.a.
Bangladesh	112 977	79 437	42.2	9.5
Jordan	99 487	116 672	-14.7	18.3
Guadeloupe	94 878	93 721	1.2	1.4
Guatemala	92 807	73 715	25.9	8.9
Papua New Guinea	90 917	84 061	7.9	-8.4
Cameroon	87 208	84 207	3.5	-7.8
Netherlands Antilles	82 768	71 391	15.9	23.3
Colombia <sup>a/</sup>	73 460	111 114	-33.9	-11.0
Bahrain	68 500	66 794	2.5	-16.0
Trinidad and Tobago	68 457	62 537	9.5	-7.8
United Rep. of Tanzania	63 595	61 943	2.6	32.6
Mauritius	59 880	53 450	12.0	7.5
Syrian Arab Republic	54 798	46 143	18.7	-14.9
Malta	51 780	55 267	-6.3	n.a.
Uruguay	50 587	45 411	11.3	13.5
Ghana	46 003	42 879	7.2	41.3
Zaire	40 790	35 237	15.7	2.3
Togo	40 199	38 607	4.1	0
Yemen	39 644	6 685	59.3	n.a.
Barbados	36 983	33 013	12.0	5.9
Algeria	36 519	36 523	0	14.0
Mozambique	33 487	18 934	76.8	n.a.
Tunisia	33 464	26 356	26.9	n.a.
St. Lucia	32 710	27 286	19.9	n.a.
American Samoa	30 237	27 526	9.8	11.7
Other reported <sup>b/</sup>	395 503	312 069	26.7	12.2
Total reported <sup>c/</sup>	23 777 456	21 004 888	13.2	14.4
World total reported	78 470 653	73 810 483	6.3	8.4

Source: Derived from information printed in Containerisation International Yearbook of 1991.

<sup>a/</sup> Data subject to omissions.

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

<sup>c/</sup> Certain ports did not respond to the background survey, although they were not amongst the largest ports; the total omissions can be estimated at 5-10 per cent.

## Chapter VI

### FREIGHT MARKETS

#### A. Freight rates of main cargo sectors

61. As shown in table 32, freight rates varied greatly by type of vessel during 1990. In view of the growing demand for tanker tonnage, freight rates for tankers continued to increase. VLCCs and ULCCs experienced the highest rates for at least 15 years, while other tanker sizes also showed improvement. Generally, all tanker freight indices showed significant annual increases, with the 1990 annual average for VLCC/ULCCs seeing the largest growth of 23.5 per cent from the 1989 annual figure. At the same time the annual average handy-size dirty tankers index increased by 16.1 per cent and that for handy-size clean tankers increased by 15.7 per cent. The annual indices for small crude and product carriers and for medium-sized crude carriers increased by 10.6 per cent and by 5.9 per cent respectively. With respect to monthly indices for individual tonnage groups, a certain downward trend in tanker freight rates is observed from spring 1990 onwards, but they recovered strongly with the beginning of the Gulf crisis, which caused an increase in demand for tonnage.

62. In the dry bulk sector, the spot market development during the year was characterized by quite a strong start, a larger than usual summer set-back and some strengthening in the last part of the year, so the annual average dry cargo tramp trip index in 1990 was slightly less (-2.9 per cent) than that of 1989. At the same time dry cargo tramp time charter rates decreased over the year, and thus the tramp time charter index fell from 129.5 points in January to 87.9 points in December or by 47.3 percentage points, reflecting an increase in the imbalance in the dry bulk sector. As a result, the 1990 average annual tramp time charter index was 23.8 per cent below the previous year's figure. In the liner sector, all 1990 monthly indices<sup>14</sup> were below those of the previous year, as liner market freight rates were continuously suppressed by oversupply of vessels and increasing competition. Thus, the 1990 annual average liner freight index was 10.7 per cent lower than one year previously.

63. The development of the situation in world shipping during the past year has considerably influenced prices for marine bunker fuels, which are extremely important for shipowners, as the value of marine bunker fuel frequently comprises 50-60 per cent of their operating costs. As shown in table 33, after prices for both marine diesel and fuel oil had undergone a certain decrease during the second quarter of 1990, they considerably increased in the second half of the year, with especially significant growth noted during the fourth quarter. The increase in prices during 1990 ranged from 35.1 per cent to 74.0 per cent, with the most common rise at 50 per cent. Although marine fuel availability was generally good during the year, the

uncertainty over future supply arose in connection with the developments in the Persian Gulf, which directly affected fuel prices and led to their increase. Taken over a two-year period (fourth quarter of 1988 to fourth quarter of 1990), bunker prices generally more than doubled.

64. Table 34 shows examples of dry bulk freight rates recorded during 1989 and 1990 for single voyages in certain leading trades which are of particular interest to developing countries. Both high and low freight rates for almost all dry bulk commodities presented in the table decreased in 1990 as compared to the previous year. The most significant reduction concerned the high and low freight rates for grain from the United States to Venezuela (21 per cent and 26.7 per cent respectively), the high freight rates for fertilizers from the United States to the West Coast of India (16.4 per cent) and the low freight rates for ore from Brazil to Japan and to Continental Europe (21.8 per cent and 19.7 per cent respectively). At the same time, high freight rates for fertilizers from Continental Europe to the West Coast of India (4.8 per cent) and for ore from Brazil to Japan (3.9 per cent) increased slightly. The general decrease in freight rates for most dry bulk cargoes can be attributed to the growing imbalance between supply and demand for the corresponding type of ship. For most of the above dry bulk cargoes, the annual variation in freight rates was significant. The difference between the year's high and low rates stood at 49.4 per cent for grain from the United States to Venezuela and at 46.1 per cent and 41 per cent for ore from Brazil to Continental Europe and to Japan respectively. On the whole the annual fluctuations in freight rates were greater in 1990 than during the previous year.

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

65. For many developing countries, a large part of non-bulk key export and import cargoes is moved by liner services. Liner freight rates may thus have a significant effect on the national income of developing countries, their balance of payments and their competitiveness. Table 35 presents liner freight rates as a percentage of prices for selected commodities in 1990. The ratio of freight rates for the majority of commodities increased in 1990 as compared with the previous year. This can be attributed mainly to a certain decrease in the prices for these commodities, while freight rates showed moderate increases. There was a decrease in the ratio of freight rates to prices in the case of jute (Bangladesh-Europe), where the ratio decreased from 24.8 per cent in 1989 to 21.2 per cent in 1990. This decrease should be attributed to a 19 per cent rise in prices for jute during the period in question, compared with by a 1.6 per cent increase in freight rates.

Table 32  
Freight rate indices, 1988-1990  
(Monthly figures)

Period	Liner freight rates <sup>a/</sup> (1985 = 100)			Dry cargo tramp time charter <sup>b/</sup> (1985 = 100)			Dry cargo tramp trip charter <sup>c/</sup> (July 1965 to June 1966 = 100)			Tanker freight indices <sup>c/</sup>														
	1988	1989	1990	1988	1989	1990	1988	1989	1990	VLCC/ULCC			Medium-size crude carriers			Small crude and product carriers			Handy size dirty			Handy size clean		
										1988	1989	1990	1988	1989	1990	1988	1989	1990	1988	1989	1990	1988	1989	1990
January	78	83	76	100	141	130	193	205	208	34	48	61	76	98	132	123	143	190	169	225	292	167	221	280
February	79	83	74	118	141	129	203	202	203	33	36	63	78	93	108	124	132	153	-	229	209	155	207	207
March	78	84	75	124	141	127	207	212	176	34	35	79	68	89	113	109	139	152	147	213	182	148	224	204
April	80	84	76	126	145	116	209	203	203	37	39	62	72	82	107	111	146	143	149	197	183	148	181	213
May	80	86	75	122	152	114	189	222	198	39	45	57	68	110	109	101	157	159	130	179	205	151	195	214
June	82	86	76	114	143	109	194	202	191	34	52	53	69	101	95	98	134	139	143	181	204	143	191	206
July	84	83	75	104	130	94	184	189	190	41	47	64	77	97	99	101	129	140	162	170	202	148	188	189
August	84	84	73	113	133	92	187	204	197	41	45	57	66	91	96	99	124	144	143	162	221	142	177	204
September	83	86	75	121	136	97	185	193	195	47	52	66	73	103	99	101	114	151	141	186	297	144	194	240
October	82	84	76	119	128	85	196	198	197	53	68	54	78	107	106	105	143	158	146	221	252	155	225	358
November	80	83	76	125	139	86	199	208	199	62	77	69	106	119	111	134	159	170	177	228	269	176	248	303
December	81	80	77	131	134	88	198	204	215	71	65	72	128	133	125	181	194	177	234	269	338	236	267	299
Annual average	81	84	75	118	139	106	195	204	198	44	51	63	80	102	108	116	141	156	158	205	238	160	210	243

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

<sup>a/</sup> 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. (See footnote 18 for comments regarding this index).

<sup>b/</sup> Compiled by the Ministry of Transport of Germany.

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

Table 33

Fluctuations in marine bunker fuel prices<sup>a/</sup> 1988-1990  
(SUS per tonne)

		1988	1989	1990				1990 Percentage change (Fourth quarter to first quarter)
		4Q	4Q	1Q	2Q	3Q	4Q	
Persian Gulf (Ras Tanura)	IFO	70	107	102	84	113	160	56.9
	MDO	154	175	177	160	203	308	74.0
Mediterranean (Genoa)	HVF	68	112	101	79	114	151	49.5
	IFO	77	117	106	85	122	162	52.8
	MDO	151	214	194	171	247	335	72.7
North West Europe (Rotterdam)	HVF	62	101	89	70	102	139	56.2
	IFO	64	104	93	74	107	147	58.1
	MDO	115	164	161	141	196	263	63.7
Gulf of Mexico (Houston)	HVF	61	96	92	76	103	135	46.7
	IFO	66	98	94	78	106	139	47.9
	MDO	154	179	191	160	193	258	35.1
West Coast of United States (Los Angeles)	HVF	60	95	100	79	100	140	40.0
	IFO	67	99	104	82	106	146	40.4
	MDO	128	180	183	171	214	290	58.5
Far East (Singapore)	HVF	64	100	97	76	114	147	51.5
	IFO	70	102	99	79	118	151	52.5
	MDO	130	180	178	161	219	295	65.7

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

### C. Estimates of global freight costs

66. Table 36 shows estimates of total freight costs in world trade in terms of the ratio of ocean freight to the total c.i.f. value of imports by groups of countries. Global payments for maritime transportation were estimated at \$US 150.7 billion in 1989, which is about 8.1 per cent more than in 1988. At the same time, the value of international trade increased by 8 per cent. Consequently, the proportion of freight costs in the total value of world trade remained at the level of the

previous year, i.e. 5.27 per cent. However, the ratio of freight costs to the c.i.f. value of imports continued to differ significantly between developed and developing countries. Thus, for developing countries this ratio continued to be nearly double that for developed market-economy countries, i.e. 8.78 per cent as against 4.42 per cent (see graph 12). The difference is more significant for developing countries in Africa and Oceania, where the ratio is almost three times as great as that for developed countries.



**Table 34**  
Comparative freight rates for selected commodities, 1990 versus 1989

Commodity	Route	Freight rate range			
		1989 (\$US/ton)		1990 (\$US/ton)	
		High	Low	High	Low
Grain	United States (Gulf of Mexico)/China	35.25	33.75	34.00	25.00
Grain	United States (Gulf of Mexico)/Venezuela	27.50	15.00	21.75	11.00
Sugar	Queensland/Japan	23.00	18.75	22.00	16.90
Fertilizers	Aqaba/West Coast India	27.50	19.50	23.00	18.25
Fertilizers	United States (Gulf of Mexico)/West Coast India	54.24	42.00	47.00	35.75
Fertilizers	Continental Europe/West Coast India	42.00	36.50	44.00	32.50
Ore	Brazil/Japan	15.50	12.15	16.10	9.50
Ore	Brazil/Continental Europe	10.00	6.10	9.10	4.90

Source: Lloyd's List, London, 14 January 1991.

**Table 35**

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	1989	1990
Rubber	Singapore/Malaysia-Europe	10.5	18.5	8.9	n.a.	15.2	15.5
Tin	Singapore/Malaysia-Europe	1.2	1.6	1.0	n.a.	1.5	1.7
Jute	Bangladesh-Europe	12.1	19.5	19.8	6.4	24.8	21.2
Cocoa beans	Ghana-Europe	2.4	3.4	2.7	1.9	5.8	6.7
Coconut oil	Sri Lanka-Europe	8.9	9.1	12.6	12.6	15.2	n.a.
Tea	Sri Lanka-Europe	9.5	10.4	9.9	6.9	10.0	10.0
Coffee	Brazil-Europe	5.2	9.7	6.0	5.0	7.1	10.0
Coffee	Colombia (Atlantic)-Europe	4.2	5.7	3.3	6.7	5.8	6.8
Cocoa beans	Brazil-Europe	7.4	8.2	8.6	6.9	9.5	11.0
Coffee	Colombia (Pacific-Europe)	4.5	6.3	4.4	6.1	6.5	7.4

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 1989-1990).

a/ C.i.f. prices were quoted for jute (UK-pwc grade), cocoa beans (Ghana-Europe), and palm kernels. For cocoa beans (Brazil-Europe) and coffee (Colombia-Europe and Brazil-Europe), unit values of exports 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 1989-1990, the prices of the commodities were taken from UNCTAD, Monthly Commodity Price Bulletin, the March 1991 issue.

Table 36

Estimates of total freight costs in world trade<sup>a/</sup> by groups<sup>b/</sup>  
(Estimates in \$US)

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	
1988	1. World total	139 461	2 645 978	5.27
	2. Developed market-economy countries	93 662	2 128 200	4.40
	3. Developing countries - total	45 799	517 778	8.85
	<u>of which:</u>			
	in Africa	7 962	70 445	11.30
	America	9 134	107 724	8.48
	Asia	26 975	321 614	8.39
	Europe	1 299	14 505	8.96
Oceania	429	3 490	12.29	
1989	1. World total	150 710	2 858 581	5.27
	2. Developed market-economy countries	101 668	2 299 840	4.42
	3. Developing countries - total	49 042	558 741	8.78
	<u>of which:</u>			
	in Africa	7 867	69 656	11.29
	America	8 700	103 330	8.42
	Asia	30 539	365 551	8.35
	Europe	1 467	16 392	8.95
Oceania	469	3 812	12.30	

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

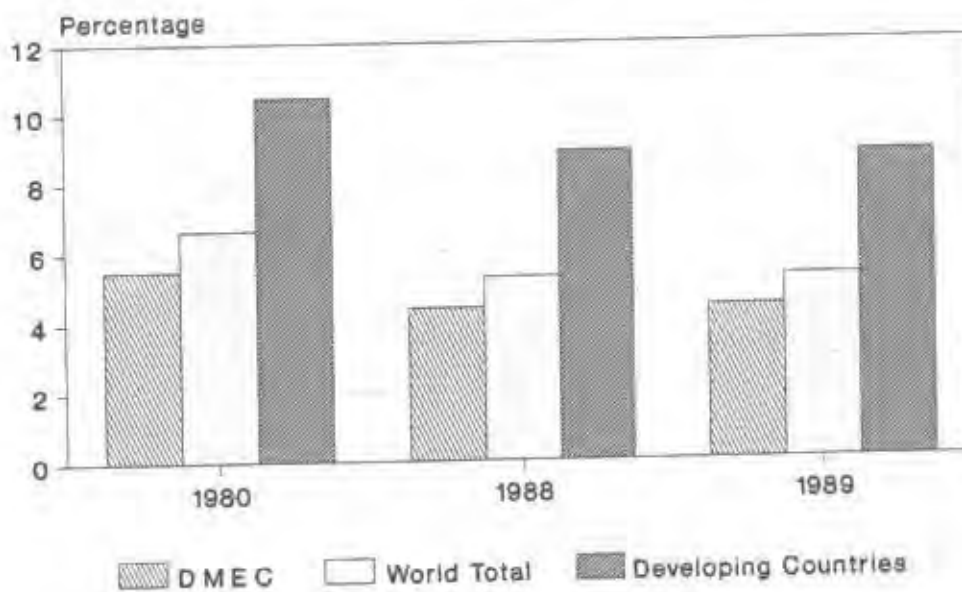
a/ The estimate for the world is not complete, since data for countries which are not members of the IMF are not included.

b/ The estimates presented here reflect the inclusion of Yugoslavia in this review in "developing countries in Europe" as of 1987. In previous years Yugoslavia was classified as a developed market-economy country.



Graph 12

Freight as percentage of c.i.f. import values  
by country groups



Source: IMF, International Financial Statistics Yearbook.

## Box 5

Shipping costs hurt poor lands

Developing countries are making concerted efforts to reduce the tariffs developed countries levy on their exports. But their preoccupation with import duties may have diverted attention from the transport and insurance costs that also constrain trade.

For many developing countries, particularly those distant from markets in industrialized countries, the average tariff now is far less than the average transport rate. Transportation costs, like tariffs, often increase with the level of product processing. The freight rate for Ghana's exports of cocoa beans runs about 5 per cent, but the rate for cocoa powder and cocoa butter is 10 per cent of their value. Brazil's exports of cut timber have a 13 per cent average freight rate while wood manufacturers pay more than twice as much.

There is considerable evidence that this "escalating" structure of freight rates is due to the arbitrary pricing policies of liner shipping cartels that charge what the traffic will bear. Nonetheless, their effect is to create a bias against further commodity processing in developing countries.

One key factor behind the increase is anti-competitive shipping practices, such as cargo reservation schemes. The deterioration of ports and related infrastructure also plays a major role. As a result, countries like Benin, the Congo, Ethiopia, Egypt, Mauritania and Togo pay one quarter to one third of their total annual foreign exchange earnings just for transport services on their imports and exports.

While many developing countries claim their wish to expand their trade with one another, high freight costs are a major constraint to this exchange. Freight rates frequently are more favourable on shipments from developed countries to developing countries than from one developing country to another. Nominal transport cost on Asian, African and Middle Eastern goods exported to Latin America exceed, often by 50 per cent or more, transport charges on similar products shipped from North America or Europe.

The south-north structure of liner conference routes is certainly a factor, since goods traded among developing countries often must be shipped on very indirect and costly routes. The neglect of transport infrastructure and anti-competitive shipping policies also are important.

While some may view transport costs as essentially "natural" or "fixed" and therefore not subject to a high degree of government control, there is considerable evidence to the contrary. In particular, significant freight savings could result from the adoption of policies to encourage active competition in maritime transportation. For example, the cargo reservation schemes adopted by many developing countries may result in associated costs that average 10 times the level of corresponding benefits. The repeal of Chile's cargo reservation system, under which a fixed percentage of exports and imports had to be carried on national ship lines, resulted in a reduction of roughly one quarter in the average liner freight costs for importers and exporters.

Source: The Journal of Commerce, 27 February 1990.

## Chapter VII

### MULTIMODAL TRANSPORT AND TECHNOLOGICAL DEVELOPMENTS

#### A. Technological developments

##### (i) Landbridge services

67. The development of rail landbridge services has received increased attention by Governments and transport providers over the last year. For example, the Trans-Siberian Landbridge is not only in the process of being upgraded, but a new extension to Hong Kong is also being developed.

68. Similarly, the Governments of Argentina, Bolivia, Chile, Paraguay, Peru, and Uruguay have developed new plans for an intermodal landbridge, called "Corredor de los Libertadores", to provide a full multimodal landbridge from the Atlantic to the Pacific. The service will use existing rail links that will gradually be upgraded and expanded while taking advantage of the available road network. Once operational, the initial landbridge will be expanded to include branches to all six countries' rail services and will cover about 10,500 km in all.

69. In Thailand, the Government has recently made a decision to conduct a survey to determine the possibilities for establishing a landbridge across the isthmus of Kra between the Indian Ocean and the Gulf of Thailand to eliminate the all-water route from Europe to East Asia. The proposed development will consist of four ports, as well as railroad and pipeline landbridges across the peninsula, resulting in the development of a major industrial centre along the corridor.

70. India, despite being located on an international crossroads, as a result of containerization and the consequent development of non-stop services has gradually been bypassed by through liners. In response to this, the Government and industry have developed a landbridge operation between Bombay and Madras, which are the main ports on the two coasts of India and are connected by India's comprehensive rail system. Increasing quantities of cargoes are being transported over the landbridge, as European service ships turn west in Bombay and East Asian vessels turn east in Madras.

##### (ii) Block train services and trends in railway container wagon fleets

71. Closely linked to landbridges is the development or expansion of container block train services, which clearly shows that railways have the means to compete with road hauliers through the modernization of their services. Data from a number of Asian countries, for example, indicate substantial increases in railway haulage of multimodal containers over the past five years. With one exception (Indonesia) (see graph 13) these increases are the result of the carriage of international maritime containers and are

consistent with the dramatic growth in the region's port container trade in recent years and with the strengthening of the intermodal transport capabilities of a number of the region's railway systems.

72. In Thailand the haulage of international maritime containers by rail more than doubled in the space of a single year. This development has paralleled recent investments in container-wagon capacity that have been undertaken by the State Railway of Thailand. Furthermore, the railway has almost doubled the number of container wagons, from 154 units in 1985 to 302 in 1989.

73. In Malaysia, rail transport of containers in 1990 reached an estimated 93,313 TEU, an increase of 6.75 per cent over 1989. Six daily block trains operate between Port Kelang and Kuala Lumpur, with additional trains being operated on request. This is in addition to the daily block train operating between Butterworth and Port Kelang. To meet the increasing demand, 300 new bogie container wagons have been ordered, bringing the fleet to more than 1,000 wagons. The new wagons will commence service in March 1991, after which time the speed of the container block trains can be increased. To supplement the movement of maritime containers, all boxcars in the rail system are being replaced by domestic side-door containers on flatcars over the next four years to make the whole system containerized by 1995.

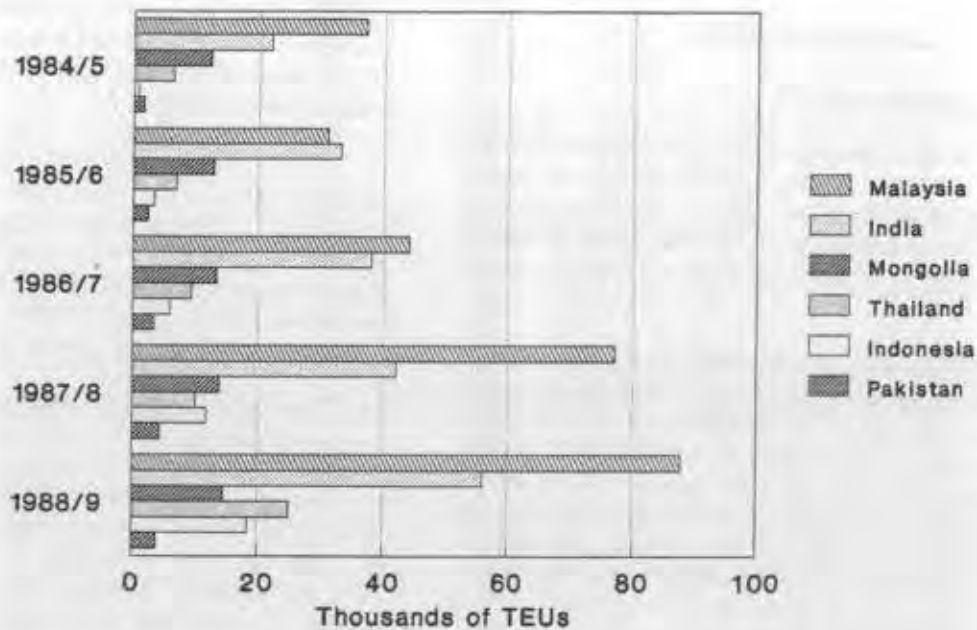
74. Similarly, the Republic of Korea's railways expanded their fleet from 308 units in 1985 to 556 units in 1989, and Bangladesh Railways has been increasing its container services through the acquisition of 80 specialized wagons for 40 ft and high cube containers. In Pakistan the carriage of ISO containers is increasing so much that the railways have built 100 railcars specially designed for the carriage of containers and the railways have won a contract from a major American vessel-operating MTO to operate dedicated container block trains over the 1,220 km rail corridor between Karachi and Lahore Dry Port.

##### (iii) Multimodal container movements in Eastern Europe

75. The Danube plays a major role in the transportation industry of Eastern Europe, and multimodal container movements utilizing the Danube have been rising steadily over recent years. Statistics for 1987 and 1988 (the last report to date) showing multimodal containerized movements utilizing the Danube waterway are given in table 37. Although there are obvious peaks and troughs caused by various local factors in individual States, the overall trend points to a continuing increase in the movement of multimodal containers on this important inland waterway.

Graph 13

Multimodal maritime containers moving by rail  
in selected developing countries



Source: ESCAP, December 1990.

Table 37

Multimodal containerized movements utilizing the Danube waterway  
(Tonnes)

Country	Exports			Imports		
	1987	1988	Change 1987/1988 per cent	1987	1988	Change 1987/1988 per cent
USSR	169 716	196 003	+15	105 691	139 113	+32
Bulgaria	47 621	14 403	-70	31 492	650	-98
Hungary	1 100	1 700	+55	-	-	-
Czechoslovakia	5 884	27 213	+362	7 240	17 218	+138
Austria	14 833	10 110	-32	4 878	6 643	+36
Germany	4 059	7 292	+80	1 264	2 629	+108
<b>TOTAL</b>	<b>243 213</b>	<b>256 721</b>	<b>+6</b>	<b>150 565</b>	<b>166 253</b>	<b>+10</b>

Source: Danube Commission, Budapest, 13 November 1990.

(iv) Large containers

76. While the number of non-ISO containers saw a further increase both in trades to and from and domestically in the United States and in cross-border traffic in Europe, the percentage of the world container fleet that they represent remains very small.

77. The high degree of homogeneity in the world dry cargo container fleet in respect of container dimensions and the constant increase in this homogeneity reflect a very wide voluntary acceptance of the existing ISO container standards by the transport industry. According to the UNCTAD secretariat's report TD/B/C.4/329, about 90 per cent of the world's container population in 1987 consisted of 20 and 40 ft ISO containers with a height of 8 ft 6 ins. The last census made by Cargoware International, the container industry magazine, showed that by the middle of 1990 this share had grown to 93 per cent (4.7 million TEUs out of the world total of 5.1 million TEUs of dry freight containers).

78. The use of larger-than-ISO-standard containers is limited to certain trades, primarily connected with the United States.

79. Some countries actually refuse to accept large non-ISO containers. Moreover, these over-size containers for the most part are unsuited for exports from the United States, which are mainly dense goods that exceed the weight capacity of such containers, especially those 45 ft and longer, when they are loaded to their maximum cubic capacity. Their main utilization is for light voluminous cargo moving into the United States, cargo landbridged across the continent, and domestic cargo, owing to less restrictive State laws.

80. The share of larger-than-ISO containers in the total world population of containers is insignificant (less than 1 per cent). The exception is high-cube (9 ft 6 ins high) containers (about 400,000 TEUs), but their transportation by inland means of transport in Europe and Japan is still considered as exceptional, and they have been considered as specials in inventories.

81. At its London meeting in 1989, Technical Committee 104 - Freight Containers - of the International Organisation on Standardization (ISO/TC 104) decided to recognize the height of 2.9 m (9 ft 6 ins) for 30 and 40 ft containers. However, noting that the inclusion of such a height would constitute a new dimension, and taking into account the concern expressed, the central secretariat of ISO has postponed any further action with regard to this

proposal. It requested ISO/TC 104 to prepare a comprehensive report and evaluation showing that these amendments are in the common interest of all parties concerned. This report will then be drawn to the attention of all ISO members and to the competent United Nations bodies.

82. Nevertheless, within ISO, exploratory work on the "new generation" of freight containers is continuing, and at the session of the ISO/TC 104 in May 1991 a technical report was presented with the following proposals for the main dimensions of future generation containers: height: 2,896 mm (9'6") and 2,591 mm (8'6"); length: 7,430 mm (24'0") and 14,935 mm (49'0"); width: 2,595 mm (8'6").

83. These new containers now under consideration do not yet exist and, as experience proves in relation to the existing larger-than-ISO containers, they cannot easily be accommodated by existing transport systems in most countries. As all non-ISO-sized containers introduced in the past, as well as those introduced only recently, have been designed or selected by their users for commercial reasons rather than for the purposes of uniformity or standardization of dimensions, etc., there may be a problem getting the proposed new standards into universal use.

(v) Container leasing

84. Over the past five years, the container-leasing industry has undergone considerable changes. During 1987 and 1988, several of the big names were the subject of takeovers, leaving fewer lessors. In 1989, the remaining big lessors consolidated their positions and inventories by ordering new equipment to a value of over \$US 1 billion. Most lessors also took this opportunity to match their types of equipment with their perceived markets, which led to an increased proportion of reefer containers in their leasing stocks.

85. The statistics of the Institute of International Container Lessors (IICL), which cover the largest nine lessors, show that the three largest members control 63 per cent of the leased fleet and 27 per cent of the total owned and leased units worldwide. The ownership of the worldwide fleet is shown in table 38. The estimated number of containers available for leasing worldwide by container type as at 1 January 1991 is shown in table 39.



Table 38

Container lessors  
(as at 1 January 1991)

(A) The 'Big Nine' (these nine comprise the current membership of the IICL):

1.	Genstar	USA	940,000	TEU
2.	Tiphook	UK	400,000	"
3.	Transamerica	USA	300,000	"
4.	Triton	USA	200,000	"
5.	Transocean	USA	150,000	"
6.	SeaContainers (Seaco)	UK	80,000	"
7.	I.E.A.	USA	80,000	"
8.	Textainer	USA	75,000	"
9.	Clou	Germany	75,000	"
Sub-total			2,300,000	"

(B) The main smaller lessors (none is a member of IICL):

10.	Interpool	USA	70,000	"
11.	Scandinavian	Sweden	30,000	"
12.	Matson	USA	30,000	"
13.	I.C.E.	USA	25,000	"
Sub-total			155,000	"

(C) At last count there are some 66 small lessors on an average controlling only about 1,500 TEUs each.

Sources: Cargoware International, February 1991; Fairplay, 14 February 1991; International Transportation Journal, 15 February 1991.

Table 39

World container leasing fleet  
by type of container  
as at 1 January 1991

ISO dry 40' (589,303 units)	1,178,606 TEU
ISO dry 20'	1,026,947 TEU
Dry 40' high cubes (67,177 units)	134,354 TEU
Reefers (integral and insulated)	91,655 TEU
Specials	(186,626 TEU)
Open tops	88,644 TEU
Flatracks	60,151 TEU
Tanks	23,214 TEU
Bulk	4,209 TEU
Open tops & sides	1,587 TEU
Various other types & sizes	8,819 TEU
Total	2,618,188 TEU

Sources: Cargoware International, February 1991; Fairplay, 14 February 1991; International Transportation Journal, 15 February 1991.

86. It can be seen from this that the vast proportion of all units available for lease are standard ISO dry containers (86 per cent), supplemented by dry high cubes (5 per cent), with the high cubes being the fastest growing segment of the industry. This contrasts with the ocean carriers' container fleets, which have also shown relatively big increases in high cubes but even bigger proportional increases in reefer containers. This follows the traditional pattern wherein shipping companies tend to own the more specialized and higher valued units and lease a bigger proportion of the more standard and lower-value units.<sup>127</sup>

87. The leasing fleet comes to 47 per cent of the world container fleet. The remainder is under the control of the individual shipowners, except for tank containers which are frequently specially designed and constructed for individual commodities. Over



19,000 TEU of these are owned by producers or users of such commodities, and a large proportion of the 23,214 TEU owned by lessors are leased to cargo interests on a long-term basis and are consequently not readily available in the market (see table 40).

Table 40

Type	World container fleet by ownership and type (TEU) (as at 1 July 1990)	
	Carrier ("owned")	Leasing companies ("leased")
Standard	2,327,832	2,339,907
Integral reefer	184,940	91,640
Insulated	68,510	15
Open top	74,836	10,205
Folding flatrack	19,368	38,138
Fixed flatrack	29,644	8,776
Platform	22,178	16,385
Euro pallet wide	8,604	5,438
Ventilated	37,301	7,975
Bulk	11,385	6,495
Tank	1,859	22,214
Total	2,986,457	2,618,388

Source: Containerisation International 1990, December 1990.

88. It can readily be seen from the foregoing that carriers have chosen to own a large proportion of the specialized types of container that they utilize in niche trades or for special commodities where they can forecast their specific long-term equipment requirements. Significantly, there is a similar concentration of ownership of special containers when the geographical spread of ownership is considered (table 41).

89. From the combination of these last two sets of figures, it can be seen that in general the specialized types of containers are owned and operated mainly by European shipping companies, while American and Asian owners have concentrated their investment in standard containers and have tended to lease-in specials when required. The breakdown by type of the total population of maritime containers worldwide, both owned and for lease, is shown in table 42.

Table 41

Ownership by geographical regions  
(TEUs as at 31 December 1990)

Type	North America	Europe	Asia	Other
Standard	1,990,365	1,804,563	1,035,326	272,309
Integral reefer	116,259	84,734	60,914	15,558
Insulated	1,198	59,613	322	8,347
Open top	51,015	88,821	10,408	5,714
Folding flatrack	9,036	39,626	4,887	2
Fixed flatrack	9,167	20,243	8,866	1,077
Platform	7,315	29,108	171	2,134
Euro pallet wide	38	19,447	-	-
Ventilated	2,717	36,490	2,576	4,519
Bulk	3,563	11,679	5,227	1,482
Tank	3,432	38,050	879	1,866
Total	2,194,105	2,232,365	1,129,576	318,038

Source: Containerisation International 1990, December 1990

Table 42

World container fleet by type and length  
(as at 1 January 1991)

Type	Length	TEU	Units
Standard dry	20 ft	2,454,227	2,454,227
	40 ft	2,567,058	1,283,519
	other	81,298	50,000
Refrigerator	20 ft	135,075	135,075
	40 ft	193,854	96,927
	other	18,016	15,000
Tank	20 ft	42,835	42,835
	40 ft	98	49
	other	1,294	2,500
Other specials <sup>a/</sup>	20 ft	213,890	213,890
	40 ft	150,065	80,033
	other	6,393	5,000
Total	20 ft	2,846,027	2,846,027
	40 ft	2,921,056	1,460,528
	other	107,001	72,500

Source: Cargoware International, February 1991.

<sup>a/</sup> "Other" represents maritime containers not of 20' or 40' length used in quantity by one or more major operator, and/or available for lease from one or more major lessor. These include: 6'07", 8', 10', 24', 27', 28', 30', 35', 43', 45', 46', 48', 53', and perhaps others not recorded. Not many containers of 6'07", 8', 10', 27', and 35' lengths remain in service as maritime containers, but the longer lengths are increasingly being introduced by both shipping lines and lessors for specific commodities and specific trades. As statistics on maritime containers are most frequently provided in TEUs and as there is no universal method for translating non-ISO-dimension containers into TEUs, the number of Units has been estimated from the TEU input.

90. In recent years, the number of steel containers has increased at a faster rate than the total world fleet, indicating that other cladding materials are being phased out faster than they are being replaced. This is despite three factors favouring aluminium cladding: the expanding proportion of trade to the United States, where the tariffs used for road and rail transport favour the lightest tare and gross weights; the fast-expanding Eastbound trans-Pacific trades, where the majority of commodities are bulky high cube/low weight goods most economically carried in large lightweight containers; and the recent big expansion in containerized refrigerated cargoes moving in reefer containers normally having aluminium cladding. This increasing use of steel containers mirrors the expansion of the container concept into all corners of the world, with more and more container services commencing or terminating in developing countries. The less sophisticated handling, transport and storage systems found there strongly favour the more robust steel units. The breakdown in TEU of the container fleet by cladding is shown in table 43.

91. Although the number of containers controlled by shipowners and lessors in the United States has remained steady over recent years, their actual percentage of the world container fleet has declined. This decline has been matched by roughly the same percentage increase

of the European share, with individual countries' shares having fluctuated greatly within the European total. This has been caused partly by cross-border takeovers of some major container-owning shipping companies, and partly by changed policies of others. Similarly, Japan has slightly increased its ownership of containers, while the developing nations and territories of Asia (Taiwan, Province of China; China; Hong Kong; and to a lesser extent, Malaysia; Thailand; and Singapore) have all had large increases in container ownership. Current ownership, as at 1 July 1990, is shown in table 44.

Table 43

World container fleet by cladding  
(as at 1 January 1991)

Type	Steel	Aluminium	GRP/Plywood
Standard	4,663,971	419,152	19,460
Refrigerated	53,524	239,647	53,774
Tank	44,029	198	all phased out
Other specials	371,000	2,956	6,368
Total	5,132,549	661,953	79,582

Source: Cargoware International, February 1991.

Table 44

Ownership of containers by region  
(as at 1 July 1990)

Region	Standard	Specials	Total
Americas	2,108,270	213,028	2,321,298
Europe	1,804,503	427,802	2,232,305
Asia	1,035,324	94,250	1,129,574
Middle-East	93,508	7,104	100,609
Africa	82,487	14,061	96,498
Australasia	18,462	15,276	33,738

Source: Containerware International, February 1991.

92. Since the large increase in container construction in the mid-1980s, the rate of expansion of construction of new containers has slowed (see table 45). At the same time as expansion of the industry has slowed in the major manufacturing countries, construction has spread to more countries and is continuing to increase in those countries in which it has been established more recently. Thus container manufacturing is beginning to be a prominent greenfield industry in developing countries, where manufacturers are concentrating on dry standard ISO steel containers to match the local market need for strong, unsophisticated equipment; table 45 shows the range of manufacturing regions. However, a gradual switch towards the more sophisticated capital-intensive special units such as reefers can be observed.

Table 45

Construction of containers

Region/Country	1988 TEU	1989 TEU	1990 Dry 20/40' TEU	per cent
ASIA				
Rep. of Korea	330,000	347,000	344,000	95
Taiwan, Prov/China	106,000	108,000	100,000	99
China	28,000	40,000	40,000	99
Thailand	10,000	20,000	35,000	100
India	15,000	18,000	25,000	100
Japan	22,000	27,000	16,000	2.5
Malaysia/Indonesia	-	-	15,000	100
Philippines	5,000	12,000	14,000	100
Singapore	-	3,000	5,000	40
Subtotal	510,000	575,000	600,000	94
WESTERN EUROPE				
Italy	25,000	40,000	45,000	70
UK/Ireland	18,000	15,000	20,000	25
Germany, Fed.Rep.of <u>a/</u>	8,500	12,000	10,000	-
Scandinavia	4,000	5,000	7,500	-
Spain/Portugal	6,000	8,000	7,000	70
Benelux	5,000	8,000	6,000	90
France	2,000	3,000	3,500	-
Other	1,000	1,000	1,000	100
Subtotal	70,000	93,000	100,000	48
EASTERN EUROPE				
USSR	32,000	35,000	40,000	100
Poland	8,000	8,000	7,000	80
Hungary	6,000	6,000	7,000	60
German Democratic Rep. <u>a/</u>	6,000	6,000	6,000	100
Yugoslavia	3,000	5,000	6,000	90
Other	5,000	5,000	4,000	100
Subtotal	60,000	65,000	70,000	93
OTHER				
South Africa	10,000	15,000	16,000	90
North America	18,000	15,000	10,000	-
South America	1,000	1,000	2,000	100
Australasia	1,000	1,000	2,000	-
Subtotal	30,000	32,000	30,000	55
WORLD TOTAL	670,000	765,000	800,000	87

Source: Cargoware International, January 1991.

Note: Some minor discrepancies exist in these figures, as they are taken from various sources: some are for 1 January 1991, others for 1 July 1990, some include units owned by neither lessors nor ocean carriers and some do not.

a/ Through accession of the German Democratic Republic to the Federal Republic of Germany with effect from 3 October 1990, the two German States have united to form one sovereign State. As from the date of unification, the Federal Republic of Germany acts in the United Nations under the designation "Germany".

(vi) NVOCC bonding in the United States

93. Non-vessel-operating common carriers (NVOCCs) operating in the United States in foreign trades are now required to post a bond of \$50,000. The new law took effect 16 February 1991, although actual implementation was delayed until 15 April 1991, and it amends the 1984 Shipping Act by prohibiting ocean carriers from "knowingly and willfully" doing business with non-complying non-vessel operators (NVOs).

94. For some time, members of the United Shipowners of America have protested that the new law puts them in a position of policing shippers to determine if they are bonded. This amending regulation has been supported by both United States NVOs and the Federal Maritime Commission (FMC). A senior executive in the United States from the International Association of NVOCCs has voiced support for the law and requested that it be all-embracing. This has led to some unresolved discussion as to when a consolidator becomes a NVOCC.

95. At this stage NVOCCs are waiting for the FMC to draft the regulations, while the British International Freight Association (BIFA), with the support of the French and German forwarders' associations, has been granted 60 days' exemption by the courts. Unfortunately, at the time of going to press, the status and the extent of this bonding has not been clarified.

(vii) Multimodal transport in India

96. Containers are now an integral part of India's international ocean trade. To maximize the benefits of the concept there has been a mushrooming of inland clearance depots (ICDs) (see table 46). The Government of India, through the Ministry of Railways, has set up a public-sector undertaking, named Container Corporation of India (CONCOR), to expand the number and utilization of ICDs. Already the number of ICDs and their individual throughputs are increasing rapidly. A total of 21 are planned. At present the only restraint on the expansion of both the number and the throughput is financial, but that is slowly being overcome.

Table 46

International multimodal containers at ICDs in India

Location	Opened	86-87	87-88	88-89	89-90
Bangalore	Aug.81	4043	4278	5472	6272
Coimbatore	Apr.83	526	1312	1819	2592
Anaparti	Apr.83	1410	354	-	572
Columbore	Dec.83	1747	3049	3000	3528
New Delhi	Mar.84	18180	21805	24593	28375
Guwahati	Nov.85	1744	2220	2360	2376
Landbridge etc.		3388	2794	3483	4888
Total		31250	36523	43063	51300

(viii) Protection and indemnity insurance cover for multimodal operators

97. Traditionally, ocean carriers have utilized mutual associations termed "clubs" for their protection and indemnity (P & I) coverage. Frequently, however, MTOs have found that traditional club coverage was not really suitable for their type of business. Nevertheless, in recent years, one club has developed specifically for those with multimodal interests. The Through Transport Mutual Association Ltd. (the "TT Club") is operated on a non-profit-making basis, providing insurance at cost. The main categories of transport operators insured include: (i) ship operators; (ii) freight forwarders and transport operators; (iii) terminal operators, stevedores and depot operators; (iv) port authorities; and (v) lessors. To qualify, a business must include two or more categories of operation.

B. Technological developments in electronic data processing<sup>20</sup>

98. Electronic data interchange (EDI) is now being introduced in the transport industry for a number of specialized applications, for example, linking branches of the same company, counterparts in the industry, or groups of operational partners (customs and freight forwarders and/or actual carriers, etc.).

99. Global co-ordination of these efforts has been vested in the EDIFACT process. EDIFACT stands for "electronic data interchange for administration, commerce and transport". Actual development work is carried out under the auspices of the ECE Working Party No. 4 (WP4) on Trade Facilitation by a number of "EDIFACT Rapporteur Groups". Until 1990 there were only three such groups: the North American Rapporteur Group consisting of Canada and the United States, the West European Rapporteur Group encompassing most Western European countries, and the East European Rapporteur Group consisting of the CMEA countries of Eastern Europe.

100. In 1990, however, two new Rapporteur Groups were formed. The first consists of Australia and New Zealand, covering the "southern Pacific", and the other of Japan and Singapore, covering "eastern Asia". These five Rapporteur Groups are in charge of the development of what are called "United Nations Standard Messages" (UNSMs), which are the messages used for the electronic transmission of information between partners. A UNSM is a message which has been registered, published and is maintained by the ECE secretariat. In order for a message to be accepted as a UNSM, its development has to follow a rigorous process which ensures that the developed message complies strictly with rules laid down by WP4. A considerable



number of UNSMs are in various stages of development. Two have reached "Status 2", namely the Commercial Invoice (INVOIC) and the Purchase Order (ORDERS), while 18 are at "Status 1" and 20 are at "Status 0", with more than 30 other messages being in earlier stages of development. By September 1991 several of the "Status 1" messages will probably be promoted to "Status 2" level. The messages being developed so far deal mainly with transport, banking and customs matters. In this connection, it may be worth noting that one practical effect of EDI is the recently implemented United States Customs requirement for a unique bill of lading number. From 1 April 1989, all bills of lading lodged with the United States Customs have been required to carry a unique identifier, as has long been the case world-wide for airwaybills. Most ocean carriers serving the United States are now connected electronically to the United States Customs Service's automated manifest system (AMS), and the unique identifier is an essential aid for document processing between the carriers and the Customs Service.

101. Work is continuing within ECE to create a similar unique identifier for more general use. In due course it may be possible to introduce such a system on a world-wide basis.

102. The development of UNSMs continues. At its latest meeting in March 1991, the ECE WP4 received another series of messages that in due course will be released for use by the transport industry. In all, well over 80 messages are under development for use by the transport, banking, construction and trade industries.

103. The work within ECE is, however, as indicated above, almost exclusively a "Western" exercise, with only limited input from the Eastern European countries and no substantive input from developing countries. Membership of ECE is limited to countries of Europe, Canada and the United States, although the ECE secretariat may invite other countries to attend. Countries like Australia, Japan and New Zealand have attended for a number of years on the basis of such invitations, and a few developing countries, notably Nigeria, the Republic of Korea, Singapore and Somalia, have attended on an irregular basis.

104. While it could be said that developing countries - again - have been excluded from the decision-making process, it must be admitted that the development of UNSMs has moved ahead not to exclude developing countries from the process, but to serve one main purpose: to facilitate trade. The development work is extremely expensive, and it is unlikely that many developing countries would have the resources, financial or otherwise, to devote to the process. It may nevertheless be deemed regrettable that so little interest

in the process has been shown by developing countries. UNCTAD has, however, consistently participated in this work and has, when necessary, reminded WP4 of the legitimate preoccupations of developing countries. WP4 recognizes this and has been searching for ways to draw the developing countries more into the work. It seems, however, difficult if not impossible to expect developing countries to be able to devote sufficient financial resources actively to influence the work. The agreement of Singapore to join the East Asian EDIFACT Rapporteur Group may be seen more as an exception than reflecting a genuine change in attitudes.

105. It has informally been suggested that one way of "safeguarding" the interests of developing countries would be to assign UNCTAD a certain EDIFACT Rapporteur function, but even this would appear difficult in view of the not inconsiderable staff resources such a step would require.

106. To govern the rules of conduct and methods of operation between the parties in relation to the interchange of data by teletransmission associated with the supply of goods or services, some kind of "electronic data interchange agreements" have been drafted. For example, the EDI Association of the United Kingdom and the American Bar Association have both drawn up agreements. Work on legal aspects of EDI continues within WP4.

107. In an effort to facilitate the use of EDI by its members, International Federation of Freight Forwarders' Associations (FIATA) has created the FIATA/SITA (Société Internationale de Communication Aérienne) system of EDI. SITA's EDI system, originally created for the airline industry, will link some 370 FIATA members all over the world. The new system allows FIATA members, wherever they are, to access the SITA EDI network on an equal footing with other companies, and at equal cost.

108. In the field of communication between container operators, the Container EDI Council (CEDIC) has been formed to "build consensus between EDI users from various sectors of the container industry on issues such as message design and data coding and also to assess what new messages ought to be developed."<sup>21</sup>

109. The basis for electronic communications between container owners, carriers and depots is intended to be the ISO container equipment data exchange code (CEDEX) (ISO 9897 standard). CEDEX is a code which is to be used for container inspection, repair, and repair authorization communications developed by ISO with inputs from the shipping and leasing industry for incorporation into the UN/EDIFACT system.<sup>22</sup>

110. The Shipping Division of UNCTAD has developed an EDI-based advanced cargo information system (ACIS) under a technical co-operation project involving operational support for the transit transport sector in Africa. Using up-to-date communications links, including micro computers and satellite links, ACIS will provide information to create a network linking all the logistics points located between and at the two ends of various transport routes, i.e. from the loading of cargo in Europe to the delivery thereof in the middle of Africa. ACIS is now also being introduced in Asia. Its introduction in the other regions of the world is expected in the future.

C. UNCTAD/ICC Rules on Multimodal Transport Documents

111. The Committee on Shipping, at its twelfth session in resolution 60 (XII), instructed the UNCTAD secretariat to elaborate a standard form and model provisions for MT documents, in close collaboration with the competent commercial parties and international bodies, based on the existing liability systems as well as existing documents. As a consequence, the secretariat, jointly with the ICC, has been engaged in a process of updating the existing ICC Rules on Combined Transport, which in any case were in need of revision. As the present Review goes to press, this process is almost complete. It is hoped that the secretariat will be able to report positively on this example of co-operation between UNCTAD and the commercial transport industry in 1992.



Chapter VIII

**OTHER DEVELOPMENTS**

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

112. The Convention continues to attract new Contracting Parties. At the time the Convention came into force in October 1983, there were 60 Contracting Parties. During 1990, Mozambique and Portugal acceded to the Convention, bringing the total number of Contracting Parties at the end of 1990 to 75. These are: Algeria; Bangladesh; Barbados; Belgium; Benin; Bulgaria; Burkina Faso; Cameroon; Cape Verde; Central African Republic; Chile; China; Congo; Costa Rica; Côte d'Ivoire; Cuba; Czechoslovakia; Denmark (except Greenland and the Faroe 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; Saudi Arabia; Senegal; Sierra Leone; Somalia; Sri Lanka; Sudan; Sweden; Togo; Trinidad and Tobago; Tunisia; Union of Soviet Socialist Republics; 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; Zaïre; Zambia.

113. In accordance with the provisions of article 52 of the Convention, a Review Conference was convened in Geneva from 31 October to 18 November 1988 in order "to review the working of the Convention, with particular reference to its implementation and to consider and adopt appropriate amendments". All States were invited to attend the Review Conference. The Conference was in fact attended by 102 States, including 63 States Contracting Parties. Major differences between States on procedural questions delayed the commencement of the debate on the substantive issues before the Conference. Since no agreement on the rules of procedure could be reached at the end of the second week, it was agreed to commence discussions on the substantive issues while the President of the Conference was entrusted with the task of trying to find a solution to the outstanding questions relating to the rules of procedure. Principally, these outstanding questions related to the extent to which and manner in which States, non-Contracting Parties, should participate in decision-making at the Review Conference.

114. At the conclusion of the session, a resolution was adopted unanimously requesting the Secretary-General of the United Nations to convene a resumed session of the Review Conference after agreement had been reached between States on the outstanding issues relating to the rules of procedure through consultations to be undertaken by the President of the Conference and the Secretary-General of UNCTAD.

115. The process of consultations was set in motion immediately. In addition to consultations with regional group co-ordinators for shipping and their representatives in Geneva, two rounds of informal consultations were carried out with all States entitled to attend the Review Conference on 2 and 3 July 1990 and 31 October and 1 November 1990, respectively. A meeting of representatives of States entitled to attend the Review Conference, held in Geneva on 5 March 1991, approved a revised set of provisional rules of procedure and recommended their adoption by the Review Conference.

116. The revised rules of procedure provide for voted decisions in respect of amendments to the Convention to be taken by a four-fifths majority of Contracting Parties present and voting, while voted decisions in respect of all other matters of substance would require a two-thirds majority of all States present and voting, at the same time including a four-fifths majority of all Contracting Parties present and voting. The rules also provide for the President, Rapporteur and Chairmen of the two Main Committees and of the Legal Drafting Committee to be elected from representatives of Contracting Parties only, while the fourteen posts of Vice-President are to be open to candidatures from all States participating in the Conference.

117. The UNCTAD Shipping Division continues to provide on request, to Governments and interested commercial parties such as shippers' organizations, liner conferences and national shipping lines, advice and guidance with regard to the implementation of the Convention. Certain recommended guidelines for the application of the Convention were set out in document UNCTAD/ST/SHIP/I in 1986.

## Box 6

United Nations Convention on a Code of Conduct for Liner Conferences  
Result of the Review Conference

1. The resumed session of the Review Conference, which commenced on 21 May 1991, concluded its work on 7 June 1991 with the adoption by consensus of a resolution proposed by the President of the Conference. The adoption of this resolution may be seen as a satisfactory and positive conclusion to a Conference that was marked by sharp and substantial differences between Groups with regard to questions of both substance and procedure. During the course of the deliberations of the Conference, the Group of 77 submitted proposals both for far-reaching amendments to the Convention, and for guidelines to the implementation of the Convention. Group B did not submit any formal proposals, but submitted an informal negotiating paper during informal discussions in the President's Contact Group. All these proposals were superseded by the President's compromise proposals which were finally adopted with some minor modifications. The President's compromise proposals sought to find common ground between the positions of the different Groups.
2. The resolution adopted by the Conference, while reaffirming the continuing validity of the Convention, incorporates six guidelines relating to the implementation of the Convention. Three of the guidelines relate to the modalities of implementation of the Convention. Two of these amplify the role of Governments in Code implementation, while the other recognizes collective consultations by a group of national shippers' councils. The other three guidelines relate to technological and structural changes in liner shipping. Two of them are designed to include multimodal transport services and transshipment services respectively explicitly within the trade-sharing provisions of the Code, while the other is designed to include container slot-chartering and space-chartering within the Code concept of chartered tonnage. It may be noted that all the guidelines adopted are broadly in accordance with recommendations made in the secretariat document TD/CODE.2/4, "Issues for the Review Conference".
3. The resolution also includes two operative paragraphs which deal with the continuing technological and structural changes in liner shipping. One of these calls for the discussion between Contracting Parties and relevant commercial parties on a bilateral, subregional and/or regional basis of the implications for the developing countries of the continuing technological and structural changes in liner shipping, while the other requests UNCTAD and relevant intergovernmental organizations to continue to study within the context of their programmes of work during the 1990s the implications for the developing countries of these changes.
4. In other operative paragraphs, the resolution recognizes the role of the Registrar in providing guidance and assistance to Governments towards the effective implementation of the Convention and requests that the next Review Conference be held in accordance with the provisions of article 52, which would be in 1996, or any time earlier if requested by one-third of all Contracting Parties.

B. United Nations Convention on International Multimodal Transport of Goods

118. This Convention,<sup>25</sup> which was adopted by consensus on 24 May 1980 by the United Nations Conference of Plenipotentiaries, was open 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. By 1 January 1991, the situation had not changed from that of a year earlier. Only five countries - Chile, Malawi, Mexico, Rwanda and Senegal - had ratified or acceded to the Convention, while three countries - Morocco, Norway and Venezuela - had signed the Convention subject to ratification.

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

119. This Convention,<sup>26</sup> which was adopted by consensus on 30 March 1978 by the United Nations Conference of Plenipotentiaries, was open for signature in New York from 31 March 1978 to 30 April 1979 and remained open for accession thereafter. It will enter into force 12 months after 20 States have become contracting parties by definitive signature, ratification or accession. Further progress has been made in regard to this Convention during the period under review. By 1 April 1991 a total of 19 countries - Barbados, Botswana, Burkina Faso, Chile, Egypt, Guinea, Hungary, Kenya, Lebanon, Lesotho, Malawi, Morocco, Nigeria, Romania, Senegal, Sierra Leone, Tunisia, Uganda and the United Republic of Tanzania - had ratified or acceded to the Convention while 22 - Austria, Brazil, Czechoslovakia, Denmark, Ecuador, Finland, France, Germany, Ghana, Holy See, Madagascar, Mexico, Norway, Pakistan, Panama, the Philippines, Portugal, Singapore, Sweden, United States, Venezuela and Zaire - had signed (i) subject to ratification.

120. According to UNCITRAL it is likely that at least one more country will become a contracting party to the Convention in 1991 and that the Convention will thus have the necessary number of contracting States for it to come into force in 1992 in all trades from and to a contracting State.

D. United Nations Convention on Conditions for Registration of Ships

121. 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.<sup>27</sup> 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, stipulated in annex III to the Convention, have become Contracting Parties to it.

122. By the end of January 1991, the Convention had been ratified by Côte d'Ivoire, Haiti, Hungary, Iraq, Libyan Arab Jamahiriya, Mexico and Oman, while the following 10 States had signed the Convention subject to ratification, acceptance or approval: Algeria, Bolivia, Cameroon, Czechoslovakia, Egypt, Indonesia, Morocco, Poland, Senegal, USSR. The total fleet of contracting parties to this Convention amounted to 3.21 million grt, which is equal to 0.837 per cent of the relevant world tonnage stipulated in annex III to the Convention.

E. UNCTAD Committee on Shipping

123. The UNCTAD Committee on Shipping held its fourteenth regular session in Geneva from 21 to 29 June 1990. The work of the Committee was mainly focused on recent developments in multimodal transport and their implications for the international maritime community, in particular for developing countries. Economic co-operation among developing countries in the field of shipping, ports and multimodal transport constituted another main item on the agenda. In addition to these two problems, the Committee considered a large number of issues relating to world shipping, including the question of establishing a more balanced situation between supply and demand in ocean shipping.

124. The Committee adopted four resolutions which reflected the discussions held during its meetings. All resolutions were adopted by consensus, representing a balance of the different interests and constituting a basis



in determining the future direction of shipping development.

125. Taking into consideration the concern expressed by developing countries about possible adverse implications of the rapid expansion of increasingly sophisticated multimodal transport dominated by operators in the developed market-economy countries for their maritime and multimodal transport industries, in its resolution 67 (XIV), the Committee recognized the need to avoid widening the gap between the developed and developing countries with regard to multimodal transport and containerization. Consequently, the Secretary-General of UNCTAD was requested to convene during 1991 a group of experts to analyse the principal problems that are experienced by users and providers of multimodal and/or container transport operations wherever there is a sea link, and to suggest elements of a future programme of work for the Committee in multimodal transport. In order to facilitate this analysis, the UNCTAD secretariat was requested to undertake new studies on several technical topics, as well as on block train services in multimodal transport. The same resolution invited countries which have not yet done so to become Contracting Parties to the United Nations Convention on International Multimodal Transport of Goods and to the Convention on the Carriage of Goods by Sea (Hamburg Rules).

126. In its resolution 64 (XIV) on economic co-operation among developing countries (ECDC) in the field of shipping, ports and multimodal transport, the Committee called upon Governments of developing countries to consider implementing, where appropriate, the recommendations made by a group of shipping experts from government and industry in June 1989. The recommendations were aimed at enhancing ECDC in the four specific areas of operational activities, maritime training, policy matters and institutional activities. The Committee welcomed the report of the Group of Experts, and requested the UNCTAD secretariat to prepare a report on the implementation of the recommendations and make, if appropriate, additional recommendations on how ECDC could be further improved.

127. In its resolution 66 (XIV), the Committee endorsed the draft convention on maritime liens and mortgages, finalized in September 1989 by a joint UNCTAD/IMO Intergovernmental Group of Experts after three years of negotiations, and recommended the convening of a United Nations conference of plenipotentiaries for the consideration and adoption of the convention. This convention aims at introducing greater international uniformity and widely acceptable legal instruments in connection with maritime liens and mortgages.

128. Resolution 65 (XIV) elaborated a work programme in the field of shipping policy, port development, international maritime legislation, technical co-operation and training. In addition to its regular studies in these areas, the UNCTAD secretariat was requested, in preparation for the next session of the Committee, to analyse the ongoing structural and technological developments in the maritime sector and to identify the scale and nature of the technology gap experienced by developing countries. This report should take into account industry developments in all sectors of maritime transport, as well as changes in the shipping policy framework and, in addition, should identify measures for promoting the participation of developing countries by reducing the technology gap and adapting new forms of transport organization. The UNCTAD secretariat was also requested, in the context of negotiations on trade in shipping services, to provide technical assistance to developing countries, pursuant to paragraph 105 (20) of the Final Act of UNCTAD VII related to trade in services.

129. The Committee decided to concentrate the work of the fifteenth session on problems of structural and technological developments in the world maritime sector and issues of multimodal transport and port activities.

#### F. UNCTAD Model Clauses on Marine Hull and Cargo Insurance

130. These Model Clauses, which were drafted by the Working Group on International Shipping Legislation and endorsed by the Trade and Development Board in March 1987, are intended to provide guidelines for insurance markets, particularly those of developing countries wishing to develop their own insurance policy clauses and conditions. They include sets of clauses for both hull and cargo insurance. For hull insurance, two alternative sets of clauses have been formulated: one provides for "all risks" cover and the other is a "named perils" version. For cargo insurance there are three sets of clauses providing "all risks", "named perils" and "intermediate" coverage. The UNCTAD Model Clauses are reproduced in document TD/B/C.4/ISL/50/Rev.1, together with explanations concerning the manner in which they could be used by various insurance markets.

#### G. Maritime liens, mortgages and arrest

131. The Joint Intergovernmental Group of Experts on Maritime Liens and Mortgages and Related Subjects, established by UNCTAD and IMO, reviewed the existing international Conventions on Maritime Liens and Mortgages and prepared a draft set of articles for a new convention. The draft articles cover such issues as: recognition and enforcement of mortgages, hypothèques and charges; claims to be granted maritime lien status

and their priority; rights of retention; extinction of maritime liens; and effects of forced sale and provisions dealing with temporary change of flag.

132. In September 1989, the Joint Group, having completed the preparation of the draft articles for a Convention on Maritime Liens and Mortgages, recommended to the governing bodies of UNCTAD and IMO the convening of a diplomatic conference for their adoption.

133. The Joint Group further considered that, in view of the close interlinkage between the subjects of maritime liens and mortgages and arrest, any amendment to the 1952 Convention on the Arrest of Ships should be postponed until after the adoption of the text of the draft convention on Maritime Liens and Mortgages by the diplomatic conference. The governing bodies of UNCTAD and IMO were therefore requested to consider allocating further meeting time to the Joint Group to carry out the necessary amendment of the 1952 Arrest Convention after the adoption of the Maritime Liens and Mortgages Convention. In 1990, the recommendations of the Joint Group were endorsed by the UNCTAD Committee on Shipping, the Trade and Development Board and the IMO Legal Committee and Council. A request for the convening of a Diplomatic Conference for the Consideration and Adoption of the Draft Convention on Maritime Liens and Mortgages will be submitted to the General Assembly at its forthcoming session in 1991. It is envisaged that such a conference will be held in late 1992 or early 1993.

#### H. Maritime fraud

134. The work of UNCTAD in the field of prevention of maritime fraud has resulted in the establishment of the Maritime Advisory Exchange (MAE). The MAE is to provide a focal point for all information necessary for combating maritime fraud. It was established, under the auspices of UNCTAD, by organizations involved in providing shipping information, namely the Baltic and International Maritime Council (BIMCO), the International Chamber of Commerce (ICC) and Lloyd's of London Press Ltd. The secretariat of the MAE receives all enquiries and transmits them to its operating companies, namely, BIMCO Services, the International Maritime Bureau and Lloyd's Maritime Information Services, for direct reply. The MAE, which is located in London, started operations on 1 December 1988.

#### I. UNCTAD Minimum Standards for Shipping Agents

135. These Standards were prepared by the UNCTAD secretariat in close collaboration with organizations involved in shipping agency matters and have been

endorsed by the Committee on Shipping of UNCTAD. They include provisions regarding "professional qualifications", "financial qualification" and "code of professional conduct". They are intended to serve as guidelines for national authorities and professional associations in the preparation of their own standards for shipping agents. The UNCTAD Minimum Standards are contained in document UNCTAD/ST/SHIP/13.

#### J. Working Group on International Shipping Legislation

136. The subject of charter parties has been examined by the UNCTAD secretariat in document TD/B/C.4/ISL/55, which was submitted for consideration to the twelfth session of the Working Group on International Shipping Legislation, held in October 1990. The document attempts to identify problems which exist in relation to the use of standard charter party forms. In particular it looks at problems arising from the use of the old and outdated charter parties, and from the application of different liability regimes to charter parties and bills of lading. The Working Group, however, could not reach agreement as to the future course of action to be taken on the subject and it is now left for the Committee on Shipping at its fifteenth session to decide on the matter.

#### K. Work of the Ad Hoc Intergovernmental Group of Port Experts and related issues

137. The Ad Hoc Intergovernmental Group of Port Experts, which met in Geneva from 24 to 28 September 1990, adopted the following recommendation that is of interest to many countries and ports: "The foreseeable evolution of international trade and of the transport activities connected with it, in particular shipping activities, puts the port, or to be more precise, the port area and the community that serves it, in a position to play a wider role than in the past, converting itself into a "service centre" and becoming one of the driving forces in the development of the trading activities of the country or region. Governments and ports that have not already done so are recommended to anticipate these changes, to prepare for them and to facilitate their implementation when to do so is in the interest of the country. All the conditions must be favourable for these changes to be beneficial and for the port to be able to play this new role. In essence, the port authorities are called upon to define and apply the changes in structure, in practices and in outlook needed to improve performance and to be more efficient. The authorities under whose jurisdiction the port lies should encourage these improvements by acknowledging the specific nature of the port as a bridge between the country and the outside world; by promoting the decentralization of decision-making,

autonomy, and commercial methods; and, when this is in the interests of the countries concerned, by privatizing some port functions and activities. The controls that are often necessitated by the public nature of some port services and installations should be carried out with circumspection, limiting their number and frequency and without interference in the smooth running of operations."

138. This new role for ports in fact involves the expansion and improved organization and promotion of activities that already exist in certain ports. This is a topic on which the UNCTAD secretariat regularly receives requests for information and advice. It has carried out preliminary investigations for this study, and the following comments indicate its present thinking:

- According to its needs, possibilities and motivations, a port evolves in various directions, but with one common goal: the expansion of the range and quality of services offered;

- This expansion of the role of the port area is based on one principle: the need to be better equipped for increased competition among ports, whether regional (e.g. among Northern European ports) or international (products competing on world markets), that is leading to the progressive disappearance of the "captive" hinterlands;

- The area of the port is expanding. A third zone, additional to the operational and storage zones, is being added that exceeds the customary limits of the port. Here, commercial or industrial operations that add value to goods (long-term storage and distribution, assembly or transformation, upkeep/repairs, etc.) will take place;

- Whether by conviction or reasoning, the port community must be united, directed and motivated. To earn a greater share of the market implies that all the port actors, without exception, make the necessary effort. However, there are often practices, and sometimes privileges, which are difficult to eliminate. In a modern port, there is no room for "leadership struggles". The administrative services must encourage, guide, plan and facilitate, leaving the commercial, industrial and operational activities up to the professionals. The latter must unite to promote the port and only then compete among themselves;

- In all the large modern ports, the marketing function has been considerably developed. The port is much more attentive than in the past to the needs of the shipper. Creativity and innovation are encouraged. The technological life for new equipment is shorter and shorter, and operational systems must be reviewed periodically. All new port employees will in the course

of their career be relocated and/or retrained, hence the importance of defining and applying human resource development policies. "The real wealth is in the people";

- Each port, large or small, must defend itself vis-à-vis its competitors by using its own strengths or by creating comparatively new advantages. There are always "new opportunities" to occupy or conquer. One must be pragmatic and innovative. The "feeder" system, so undesired by certain ports, has allowed a certain number of them to have access to new markets and to reinforce their position in promoting regional development. Accordingly, a new strategic policy for port development must often be developed;

- By visiting the more advanced ports, one realizes that a system of foreign trade logistics has been implemented. The port infrastructure plus the road and railway connections have been improved and made more efficient through a system of data processing allowing the exchange of commercial and operational information. In addition to this basic structure, there is a range of public or private services that is becoming more and more developed. Their quality is essential to the smooth running of the new commercial and industrial operations, as well as the traditional transfer of goods. Such logistics have been created over time. They have to be conceived and implemented by motivated and visionary officials who will create the necessary organizations, associations and other support structures. A recent study done by UNCTAD in Africa showed that for the most part, senior port managers were well qualified. Often, in the more impoverished countries, the port authority was one of the few powerful and organized bodies. These port officials have a great responsibility in the introduction of changes in the role of the port. Twenty years ago, in view of the development of rapid port operations, certain specialists predicted a progressive reduction in the role of ports. In fact, we observe the opposite trend: ports, as vital organs of trade and development, have shown a remarkable vitality and capacity to react and adjust to the needs of trade. Some ports are the proof that one can combine the demands for rapid transfer of goods with the expansion of the role and functions of the port.

#### L. Technical co-operation and training

139. UNCTAD's technical co-operation and training activities in shipping, ports and multimodal transport continued to expand in 1990. A total of 43 projects were executed during the year, with a total value of \$US 4 million (as compared with a budget of \$US 3.6 million in 1989).



140. UNCTAD's TRAINMAR Programme, which is helping promote a greater maritime training capability in developing countries, entered a consolidation phase in 1990 following the evaluation of the programme the previous year. Towards the end of the year the United Nations Development Programme (UNDP) agreed to finance a new interregional project to implement an Action Plan aimed at:

- Reorganizing and strengthening the TRAINMAR network based on the reinforcement of a dozen or so main centres;
- Updating and upgrading the quality of certain TRAINMAR courses;
- Developing new courses to meet the demands of changing technology; and
- Reinforcing co-operation with other parts of the United Nations system involved in training activities.

141. The new approach to on-the-job training, JOBMAR, initiated by UNCTAD in 1989 was continued during 1990. By the end of 1990 23 candidates had been placed, mostly with port authorities, shipping companies, industrial companies with in-house transport divisions, and ship brokers, and five additional placements had been negotiated for the first half of 1991. Regrettably, due to financing difficulties, it appears that the JOBMAR programme may have to be discontinued. UNCTAD wishes to place on record its appreciation for the assistance offered by the many organizations which have contributed to the success of this project and in particular the Centre for Maritime Co-operation of the International Chamber of Commerce.

142. The development and implementation of an Advance Cargo Information System (ACIS) for African transport operators was continued through three subregional technical co-operation projects in Southern Africa, West/Central Africa and East/Central Africa.

143. Priority development focused on software modules for cargo tracking from the sea leg, through ports and on to railway modes. A module enabling shipping lines to electronically transmit manifest data was successfully tested in mid-1990; port harbour master/operations planning and gate pass modules were developed and are now being used in African ports. The module enabling railway companies to fully track rolling stock and cargo is now finalized; by the end of 1990 it was working on four African railways (Malawi, United Republic of Tanzania, Zaire, Cameroon), and during 1991 it will be installed on at least six other railway networks (Senegal, Mali, Côte d'Ivoire, Burkina Faso,

Benin and Zambia). The design of the Backbone Information System, which links these modules together to make an integrated information system for logistics management, is now under way.

144. A new subregional multimodal transport project was initiated in collaboration with the Commission of the Cartagena Agreement (JUNAC) for the Andean Pact countries in 1990. The overall objective of this project is to increase the contribution of the Andean countries' transport sectors to subregional development and integration. In particular, the project has been designed to create awareness of multimodal transport issues and to participate in the elaboration of a harmonized Andean countries shipping policy. The project's training activities include five workshops on multimodal transport, the production of a videotape, the preparation of short presentations on a variety of subjects and the elaboration of a postgraduate course in multimodal transport. In addition, the project is preparing an analysis of the impact of ongoing shipping issues in the subregion, for example liberalization of the economy, cargo reservation laws, privatization of services, etc.

145. A national multimodal transport project in Ethiopia, designed to introduce institutional, documentary and technical improvements to facilitate cargo movement through the port of Assab to and from Addis Ababa, produced recommendations for removing institutional and operational transportation bottlenecks identified in an earlier phase (Phase I). The Phase II recommendations include proposals for terms and conditions of carriage, terminal operators' liability, specific documents and procedures to be improved, issues affecting the scope and compatibility of current computer systems, a blue-print for improved logistics, and a short-term plan of action to relieve congestion in the port of Assab. The Phase II final report also contains implementation proposals to be carried out during the third and last phase of the project.

146. Two national projects were recently approved by UNDP for Haiti. The first will examine administrative and operational problems of the port of Port-au-Prince with a view to improving port efficiency, while the second will assist in the development of a port training centre.

147. UNCTAD participated actively during 1990 in the preparations for the Second United Nations Transport and Communications Decade for Africa, 1991-2000, (UNTACDA II). In this connection UNCTAD chaired a subsectoral working group which developed a strategy for the Decade in the fields of shipping, ports, multimodal transport and inland waterways. UNCTAD also participated in the carrying out of a series of studies to identify those factors which have assisted (or

constrained) human resource performance and institutional development in the transport sector of Africa. Various parts of the United Nations and specialized agencies conducted these studies which covered all modes of transport. The objective of this exercise was to see what lessons could be drawn from the first Transport and Communications Decade for Africa (UNTACDA I) to ensure that UNTACDA II would be as successful as possible. The ultimate goal was to pioneer a specific programme for development to be included in UNTACDA. Starting late 1989 the seven agencies concerned carried out in-depth investigations, including case studies, meetings and discussion sessions. Separate reports have been prepared on all modes of transport, (UNCTAD conducted the studies on ports and multimodal transport), and a combined report synthesizing the modal reports was finalized last December. This report, together with proposals for follow-up programmes and projects, will be presented and discussed at six subregional policy workshops to be organized by the United Nations Economic Commission for Africa in 1991.

148. The Draft Programme for UNTACDA II is due to be adopted by the General Assembly of the United Nations at its Autumn session in 1991.

149. About 85 per cent of the funding for UNCTAD's technical co-operation and training programme is provided by the United Nations Development Programme (UNDP). Contributions were also made by the European Economic Community and the Governments of Belgium, France, the Netherlands, Norway, Sweden, the United States and the USSR and by the recipient countries themselves.

Chapter IX

**ACTIVITIES OF INTERNATIONAL REGIONAL ORGANIZATIONS  
IN THE FIELD OF MARITIME TRANSPORT**

150. One of the principal mandates of UNCTAD in the field of shipping is to assist the development of world maritime transportation and international co-operation in shipping for the benefit of the maritime community. A large number of other organizations have similar objectives but their emphasis is more regional or subregional.

151. Given the global interests and interrelationships of the maritime sector, the UNCTAD secretariat believes that an exchange of information on the objectives and activities between organizations will be mutually beneficial. Accordingly, this issue of the Review of Maritime Transport includes a special chapter on the activities of certain organizations dealing with transport-related issues.

152. The secretariat wishes to thank all organizations for their assistance in the preparation of this chapter through provision of information on their activities.

A. Economic Commission for Latin America and the Caribbean (ECLAC)

153. The Economic Commission for Latin America and the Caribbean has 41 member States, eight of which are located outside the geographical region of Latin America and the Caribbean: Antigua and Barbuda, Argentina, Bahamas, Barbados, Belize, Bolivia, Brazil, Canada, Chile, Colombia, Costa Rica, Cuba, Dominica, Dominican Republic, Ecuador, El Salvador, France, Grenada, Guatemala, Guyana, Haiti, Honduras, Italy, Jamaica, Mexico, Netherlands, Nicaragua, Panama, Paraguay, Peru, Portugal, St. Kitts and Nevis, Saint Lucia, Saint Vincent and the Grenadines, Spain, Suriname, Trinidad and Tobago, United Kingdom of Great Britain and Northern Ireland, United States of America, Uruguay and Venezuela. There are also six associate members within this region: Aruba, British Virgin Islands, Montserrat, Netherlands Antilles, Puerto Rico and the United States Virgin Islands.

154. The transport-related activities of ECLAC are aimed at aiding the countries of the region in their efforts to provide infrastructure and services that are adequate in both quantity and quality to support internal and international trade and passenger movements, which are vital to the process of national economic and social development. A systems approach to transport sector management is emphasized, for which the application of information systems and informatics is of particular importance in reducing costs while increasing the

timeliness and reliability with which decisions can be made.

155. At the international level, the objective is to support initiatives for regional integration by seeking to minimize non-tariff barriers to trade. Since most of this region's trade is carried by ships, the activities in the maritime field are designed to identify and promote specific actions leading to greater co-operation among the region's merchant marines.

156. Three studies have recently been carried out by ECLAC that are especially relevant to the maritime sector, and all of which are available in both English and Spanish: "The international common-carrier transportation industry and the competitiveness of the foreign trade of Latin America and the Caribbean" (Cuadernos de la CEPAL No. 64); "Structural changes in ports and competitiveness of Latin American and Caribbean foreign trade" (Cuadernos de la CEPAL No. 65); "The distribution chain and the competitiveness of Latin American exports: port modernization in Chile" (LC/G.1597). The latter two studies were prepared as part of an ongoing project on International Marketing Channels and the Competitiveness of Latin American Exports, which is being financed by the Government of the Netherlands.

157. Activities to be carried out in the near future in the field of maritime transport include: a study regarding the degree to which exports of Latin America and the Caribbean have ready access to containers; a study of institutional factors that inhibit the use of containers in the countries of southern South America; and a study of the institutional and legal framework of port privatization.

Contact address: Chief, Transport and Communications Division, Economic Commission for Latin America and the Caribbean (ECLAC), P.O. Box 179-D, SANTIAGO, Chile. Telephone: +56 2 208-5051; Telex: 441054 UNSTGO CZ; Fax: +56 2 208-0252.

B. ASEAN Committee on Transportation and Communications (COTAC)

158. The ASEAN Committee on Transportation and Communications comprises the following ASEAN member States: Brunei Darussalam, Indonesia, Malaysia, Philippines, Singapore and Thailand. The Chairman of COTAC is the Secretary-General of the Ministry of Transport of Malaysia.



159. The objectives of COTAC are as follows:

To promote close co-operation, establish joint programmes and develop technical projects in the field of communications and transportation, including marine transportation and inland waterways;

To review, reconcile and collate projects under consideration by ASEAN dealing with all modes of transportation and communication and identify possible areas for international financial and technical co-operation;

To co-ordinate plans and activities pertaining to communications and transportation among ASEAN countries and to maintain close co-ordination with other subregional, regional and international organizations for transportation and communications where ASEAN countries are members thereof;

To recommend measures for ASEAN co-operation in land, air and marine transportation in the field of navigation, pollution protection and safety;

To recommend measures for standardization and development of training and facilitate the exchange of experts.

160. To assist COTAC in fulfilling these objectives, a number of sub-committees have been established which consider different types of transport and communication: Sub-Committee on Shipping and Ports; Sub-Committee on Land Transportation; Sub-Committee on Post and Telecommunications; and Sub-Committee on Civil Aviation and Related Services.

161. During the last few years, the activities of COTAC in the field of maritime transport has concentrated mainly on the improvement of member countries' fleet activities, the establishment and strengthening of national shippers' councils and national freight booking centres in each country, the effective regional co-ordination of their operations, and the improvement of the organization of port operations. This ongoing work also points towards activities aimed at the development of a joint approach to international maritime conventions, including those elaborated under the auspices of UNCTAD, IMO and ILO, implementation of these conventions, training of trainers for seafarers' academies, and the simplification of port documents and procedures.

Contact address: Chairman, ASEAN Committee on Transportation and Communications (COTAC), c/o Ministry of Transport, Wisma Perdana, 3,5,6,7,9 floors, Jalan Dungun, Damansara Heights, 50616 Kuala Lumpur, Malaysia. Telephone: (03) 254 8122; Telex: MA 30999; Fax: (3) 255 7041.

C. Ministerial Conference of West and Central African States on Maritime Transport

162. The Ministerial Conference of West and Central African States on Maritime Transport (MINCONMAR) comprises the following 25 member States: Angola, Benin, Burkina Faso, Cameroon, Cape Verde, Central African Republic, Chad, Congo, Côte d'Ivoire, Equatorial Guinea, Gabon, the Gambia, Ghana, Guinea, Guinea-Bissau, Liberia, Mali, Mauritania, Niger, Nigeria, Sao Tome and Principe, Senegal, Sierra Leone, Togo and Zaire.

163. The basic objective of MINCONMAR is to promote and encourage the development of maritime transport in the subregion by means of:

- Harmonization and co-ordination of policy and development of the maritime transport material base in member States;

- Promotion and development of appropriate mechanisms and bodies aimed at improvement of maritime transport activities: shippers' councils, regional negotiation committees, regional maritime training centres, development of national and multinational maritime fleets, rationalization of maritime services, modernization of infrastructures and improvement of port operations, harmonization of maritime legislation, co-operation with international organizations, etc.

164. A number of specialized bodies assist MINCONMAR in the fulfilment of its principal objectives, each considering specific problems connected with maritime transport. The main bodies are the Association of National Maritime Companies, the Union of African Shippers' Councils, the Port Management Association of West and Central Africa, maritime academies and the Permanent Commission on Land-locked countries. Alongside these permanent bodies are nine *ad hoc* commissions presently acting with the aim of studying maritime problems which are of interest to MINCONMAR. These include such issues as transportation of bulk cargoes, maritime insurance, multimodal transport and containerization, administrative problems, financing and others.

165. Taking into consideration the current developments in maritime transport, since 1988 MINCONMAR has been paying considerable attention to such problems as revision of the United Nations Code of Conduct for Liner Conferences, renovation of the EEC/ACP Convention (Lomé IV Convention), and the relations between MINCONMAR and the EEC in the field of maritime transport.

Contact address: MINCONMAR, BPV 257, ABIDJAN, Côte d'Ivoire. Telephone: 21 71 15; Telex: 22528.

D. Preferential Trade Area for Eastern and Southern African States

166. The Preferential Trade Area for Eastern and Southern African States (PTA) comprises 18 member States located in the subregion: Angola, Burundi, Comoros, Djibouti, Ethiopia, Kenya, Lesotho, Malawi, Mauritius, Mozambique, Rwanda, Somalia, Sudan, Swaziland, United Republic of Tanzania, Uganda, Zambia and Zimbabwe. Five other countries, Botswana, Madagascar, Namibia, the Seychelles and Zaire, are potential members and have the status of observers.

167. The main objective of PTA is to promote co-operation and development among member countries in all fields of economic activity. To realize this objective, the PTA programme embraces the following sectors: trade, customs and monetary affairs; industry, energy and natural resources development; co-operation in agriculture, livestock and forestry development; and co-operation in transport and communications. The fundamental principles of PTA are mutual assistance and partnership among member countries, aimed at collective efforts to facilitate autonomous and self-sustained growth and development in the subregion.

168. In the maritime sector, the main objective is to co-ordinate and rationalize shipping services in the subregion so as to promote maritime trade between member States on the one hand and between the subregion and the rest of the world on the other.

169. The development of coastal shipping constitutes a priority in the subregion. The objective of PTA in this area is to promote co-operation among all the national shipping companies, including those of island countries (Comoros, Mauritius, Madagascar and the Seychelles), and to establish an integrated subregional coastal shipping network in order to promote intra-PTA sea trade.

170. In the short term, activities in the maritime transport sector consist of: the establishment of a permanent institutional mechanism of co-ordination of different maritime activities in the subregion; the modernization and harmonization of national maritime legislation in the whole subregion; the development of the transshipment system so as to promote coastal shipping in the subregion; the promotion of the establishment of national shippers' councils in the member countries where such councils do not exist.

171. In the near future, the activities will focus on the following: the evaluation of training needs of port and seagoing personnel; the establishment of a subregional freight booking centre; the establishment of a data bank on coastal shipping in the countries of the subregion;

the formation of a subregional association of national shipping companies; the transformation of the Intergovernmental Standing Committee on Shipping (ISCOS) into a subregional association of national shippers' councils of the PTA subregion; and the transformation of the Port Management Association of Eastern and Southern Africa (PMAESA) into a subregional association of port administrations of the subregion.

172. In the long term it is envisaged to establish a PTA coastal shipping company.

173. The three associations, namely ISCOS, PMAESA and the Association of National Shipping Companies, will become specialized organs of the permanent institutional mechanism for co-ordination of different shipping activities in the subregion. The establishment of this co-ordination mechanism was decided by the PTA Council of Ministers in November 1990 and instituted as the Maritime Ministerial Committee for Eastern and Southern African States (MMCESAS). MMC will be launched during 1991.

Contact address: Secretariat of the Preferential Trade Area for Eastern and Southern African States, Ndeke House Annexe, Haile Selassie Avenue, P.O. Box 30051, 10101 LUSAKA, Zambia. Telephone: 229725/33; Telex: PTA ZA 40127; Cable: PTA LUSAKA.

E. Association of Latin American Shipowners (ALAMAR)

174. ALAMAR is an international non-governmental organization made up of a membership of private and nationalized shipping companies based in Spanish and Portuguese speaking countries in Latin America and the Caribbean, established with the aim of promoting the development of the national merchant marines. ALAMAR comprises 38 shipping companies from 12 countries: Argentina, Bolivia, Brazil, Chile, Colombia, Dominican Republic, Ecuador, Mexico, Paraguay, Peru, Uruguay and Venezuela.

175. The main objectives of ALAMAR are:

- To promote a policy to develop, encourage, co-ordinate and rationalize maritime, river and lake transport among States members, and to ensure that merchant marines have the required capacity to serve the maritime transport needs within countries in the zone and to carry a substantial share of international seaborne trade with third countries to ensure the normal flow of imports and exports;

- To co-ordinate a regional maritime policy to contribute, among other things, to the definition of a



joint position vis-à-vis bilateral or multilateral measures implemented in other regions or countries of the world;

- To collaborate and maintain contacts with all national and international bodies that directly or indirectly contribute to the improvement of conditions in maritime transport within and outside the region;
- To carry out studies and research on problems related to maritime, river and lake transport activities;
- To protect and represent the general interests of members, to promote the conference system, and to promote the establishment of other modalities of transport in accordance with technological developments;
- To obtain and facilitate the exchange of information dealing with the improvement of the productivity and quality of water transport;
- To support the requests that members make to their Governments in connection with the development of national merchant fleets, especially in those cases in which the requests coincide with the aim of the Association;
- To represent and protect members against measures that can affect their interests;
- To organize seminars, conferences and congresses to disseminate information of interest to the Association;
- To promote the establishment of a Latin American Institute of Maritime Studies.

176. The bodies of the Association are the General Assembly and the Board, the Legal Committee and the Arbitrage of ALAMAR.

#### Plan of Action

177. The Plan of Action adopted in 1988 foresees the further integration of member companies, dissemination of ALAMAR activities to non-member shipowners and other trade associations in order to increase co-operation with other companies, as well as authorities and international organizations which are active in shipping and which may take decisions that affect the membership. Attention will be paid to the improvement of training in order to improve the technical and academic level of the personnel of the member companies while supporting the integration and expansion of ALAMAR.

178. Attention is also paid to the dissemination of information. ALAMAR publishes the Boletín

Informático (Newsletter) fortnightly in Spanish and Portuguese. Statistics are also published periodically.

Contact address: Asociacion Latinoamericana de Armadores, Río Negro 1394 - Oficina 502, Casilla de Correos 767, MONTEVIDEO, Uruguay. Telephone: 98 74 49 and 92 07 32; Telex: 26431 ALAMAR UY; Fax: (05982) 92 07 32.

#### F. Caribbean Shipping Association

179. The Caribbean Shipping Association is a regional multinational organization of private and public port and shipping sector interests. Its membership is comprised of 15 national associations situated in the countries and territories of the region, i.e. Antigua, Barbados, Bermuda, Dominican Republic, Grenada, Guyana, Jamaica, Montserrat, Puerto Rico, St. Kitts, St. Lucia, St. Vincent, Suriname, Tortola, and Trinidad and Tobago, and 92 individual companies representing the region's port authorities, shipping agents, shipping lines, tug and salvage companies and container-leasing companies. Some of these companies are located outside the Caribbean.

180. The main objectives of the Association are as follows: to promote and protect the maritime interests of its members; to provide a forum for bringing together all agents, ship and terminal operators and other related shipping personnel within, or who have an interest in, the region; to collect, collate, analyse and disseminate facts, views and technical information and carry out research studies in various aspects of shipping, trade and port activities in the Caribbean; and to offer the expertise of its membership, through consultation, training programmes and direct assistance to all members, regional organizations and Governments.

181. The Caribbean Shipping Association holds two general meetings each year (in May and in October) which provide members with the opportunity to exchange views and to develop business contacts. The Association pays special attention to the development of ports in the region. In order to encourage ports to maintain high standards of service it has instituted a Port Award Competition, the objective of which is to give recognition on an annual basis to ports in the region which have achieved a high standard of efficient and productive performance. Another problem dealt with by the Association is security in ports. A Standing Committee on Security Matters was established in order to keep members informed on current systems and procedures.

182. Since 1982, the Association has organized annual training seminars for the benefit of its members and their employees. The Association co-operates with the

Regional Trainmar Centre, based in Guadeloupe, in organizing training courses throughout the region. A training trust fund established by the Association and open to contributions by all interested parties is intended to assist the expansion of training programmes. The Caribbean Shipping Association makes further efforts to foster and strengthen regional co-operation in the field of shipping and ports.

Contact address: The Secretary, Caribbean Shipping Association, P O Box 40, KINGSTON 15, Jamaica. Telephone: (809) 922 8220 to 3; Telex: 2431 CARISHIP JA; Telefax: (809) 922 6221.

#### G. Islamic Shipowners' Association

183. The Islamic Shipowners' Association (ISA) aims at co-ordinating and unifying the efforts of the members in realizing co-operation among shipping companies with the purpose of advancing the maritime transport of the member States and utilizing to the maximum the potential of their fleets, protecting the interests of the members by providing counsel, and supporting them in international maritime affairs, as well as linking the Islamic world and other countries in an integrated maritime network. The Islamic Shipowners' Association comprises 36 shipowning companies from Algeria, Bangladesh, Egypt, Iraq, Jordan, Kuwait, Libyan Arab Jamahiriya, Mauritania, Nigeria, Pakistan, Saudi Arabia, Sudan, Tunisia and Turkey, as well as from Palestine.

184. To meet these objectives, the ISA: encourages its members to establish shipping lines and organize liner conferences among member States, to create multinational Islamic maritime companies and to develop periodical, regular freight and passenger voyages between ports of member States and between Islamic and other ports. It assists in drawing up a unified maritime policy and in the improvement of national maritime administration; conducts studies and research in various fields of maritime transport; and extends assistance to members in the area of maritime safety, marine pollution, maritime law and marine insurance.

185. In recent years, the General Secretariat of the Islamic Shipowners' Association has been preoccupied with the establishment of a joint venture shipping company among the member States and companies. This project is expected to be fulfilled in the near future.

186. At present the General Secretariat is studying the possibility of establishing an Islamic classification society.

Contact address: The Islamic Shipowners' Association, P.O. Box No. 14900, JEDDAH-21434, Kingdom of

Saudi Arabia. Telephone: 665 3379; Telex: 607303 SEACOP SJ; Fax: 660 4920.

#### H. South Pacific Forum

187. The South Pacific Forum (previously known as the South Pacific Bureau for Economic Co-operation) comprises 13 countries and territories situated in the region: Australia, Cook Islands, Federated States of Micronesia, Fiji, Kiribati, Nauru, New Zealand, Niue, Papua New Guinea, Solomon Islands, Tonga, Tuvalu, Samoa.

188. Its basic objective is to encourage and promote regional co-operation in the development of the island countries of the South Pacific in a close partnership with the more industrially developed countries of the region: Australia and New Zealand. It foresees co-ordinated actions with regard to the development of maritime transport in the subregion. This work is organized by the Transport Division of the Forum Secretariat. In recent years the secretariat aimed at the establishment of a jointly owned shipping company, the Pacific Forum line, the development of feeder services, and the creation of uniform maritime standards through the modernization of national maritime legislation of South Pacific countries.

189. In 1989 the Regional Council of Ministers endorsed the South Pacific Maritime Development Plan (SPMDP), prepared by the Transport Division. The rationale behind the SPMDP was to develop a legal and legislative framework to which countries in the region could add an administrative and regulatory system appropriate to their particular needs. This comprehensive work programme document, with a five-year time frame, identifies projects that have been prioritized for implementation and implementation methods. This document also determines budget and human resource requirements and identifies country inputs, possible funding sources, a mechanism for project review and an implementation schedule.

190. The SPMDP has identified the following maritime projects to be executed: (1) Assistance to Maritime Training Colleges, (2) Regional Maritime Legal Services, (3) Regional Maritime Database, (4) Regional Shipping Surveyor Training Programme, (5) Regional Human Resource Development in Maritime Matters, (6) Port Safety Training, (7) Shipbuilding, Boatbuilding and Repair Facilities Regional Planning Study, (8) Regional Approach to the delivery of Maritime Training, (9) Subregional Shipping Service Study, and (10) Port Operations Assessment Review. In late 1990 resources were found for the financing of projects (2), (6), (7) and (8). Currently, funding sources are being sought for the others.

191. Another group of projects has been identified for which funding is being considered by: (a) UNDP: (1) Medium-Term Planning of Inter-Island Shipping, (2) Port Authorities for smaller countries, (3) Shipping costs and the balance of payments and (4) Review Seminar on inter-island domestic shipping; (b) the European Economic Community and the European Investment Bank Resources: Pacific Forum Line (PFL) Feeder Service vessel.

Contact address: Transport Division, Secretariat of South Pacific Forum, G.P.O. Box 856, SUVA, Fiji. Telephone: 312600; Cable: SPECSUVA; Telex: 2229 SPECSUVA FJ; Fax: 302204.

#### I. Recent developments towards the establishment of the EEC common shipping policy

192. Following the adoption by the EEC Council of Ministers of four Regulations in December 1986, which set the foundations for a European Community shipping policy,<sup>26</sup> the Commission of the European Communities turned itself to addressing the issues concerning the situation and prospects of the EEC shipping industry and measures to improve the operating conditions of Community shipping.

193. In a communication addressed to the EEC Council in 1989, the Commission proposed the establishment of a Community ship register (EUROS), parallel to existing national registers, as an effective means of assisting the Community fleet to make the necessary adjustments, while maintaining a workforce of qualified European seafarers to the maximum extent possible. In addition, the Commission proposed a number of further measures and areas for further work, e.g. to achieve greater technical efficiency, mutual recognition of technical equipment and mutual recognition of seafarers' qualifications. Some of these proposals also related to the completion of the internal market, the central one being the proposal to apply the freedom to provide services in shipping within member States (cabotage and off-shore supply).

194. During continuing discussions, progress has been made with a number of the proposals. Thus, a Council regulation to facilitate the transfer of ships between the registers of member States was adopted early in 1991. Discussions have been held on a general system for the mutual recognition of diplomas of the maritime professions, and a proposal for a Council directive on minimum training requirements for seafarers is also in preparation. Research projects on maritime themes relating to the efficient operation of ships and rationalization of on-board functions have been included in the EURET programme adopted in December 1990 by the Council of Ministers. As concerns the transport of

Community food aid, a new system has been implemented, which ensures transparency of procedures for awarding transport operations and maintains openness of the trade for the participation of third-country carriers. A proposal for a Council regulation, enabling the Commission to give consortia a block exemption from the competition rules of the Treaty of Rome, has also been prepared.

195. The Commission's proposal to establish a Community shipping register, as an instrument by which the operating conditions of the Community fleet may be improved, has been considered in light of both the Council's conclusion that its provisions needed adjustment to bring them more clearly into line with the general objective of making Community fleets more competitive, and the amendments proposed by the European Parliament. A number of amendments have been included in an amended Commission proposal issued in March 1991, and others, of a fiscal nature, remain under consideration by the Commission.

196. On the question of the liberalization of cabotage, for which the Commission presented a proposal to the Council in August 1989, the Council of Transport Ministers, at its meeting on 18-19 December 1990, agreed on an orientation based on the view that island services need special consideration and providing for a two-stage liberalization of services between mainland ports, beginning in 1993.

197. In related fields, the Commission has also been active, together with the member States, in pursuing measure to improve the safety of ships, passengers and crew and the protection of the marine environment, inter alia through increased effectiveness of port state control procedures as provided for by the Paris Memorandum of Understanding.

#### J. Port State Control at the regional level

198. Upon instructions from the Committee on Shipping, the UNCTAD secretariat has for a number of years monitored the effect of the implementation of the Memorandum of Understanding on Port State Control. This was achieved by inviting States members to inform the UNCTAD secretariat of the actual commercial consequences for their merchant ships of port state control at a regional level. The work has been discontinued, since the latest communications received from member States indicated that such port state control had had no adverse commercial or economic effects on their merchant ships. It may, however, be useful to note that, according to the report of the secretariat of the Memorandum of Understanding on Port State Control, in 1989, 12,459 inspections were carried out on 9,164 individual ships registered in 113 flag States using



the ports of 14 countries parties to the Memorandum. The inspection rate for 1989 was calculated at 20.6 per cent of the ships entering the ports of countries participating in the Memorandum, compared with 18.2 per cent in 1988. The number of ships detained or delayed due to serious deficiencies was 344, compared with 295 in 1988. The 344 cases of detention or delay represented 3.75 per cent of the number of individual ships involved in port state control inspection, as compared with 3.52 per cent in 1988.

#### Box 7

##### Inter-American trades go free

Over the past six months, the Brazilian Government has engineered a series of liberalization measures in international trade and maritime policy.

Not only have the cuts in import tariffs and the lifting of non-tariff barriers fuelled southbound cargo movements, but also the cargo reservation rules and other restrictive regulations have been radically liberalized. First of all, the new Brazilian Government halved the former 50 per cent tax on import freight (the so-called "additional on freight for the renovation of the merchant marine"). Then it lifted restrictions on the actual importation into Brazil of certain commodity groups. In August, it ended the reserved market for conference pool members of coffee and cocoa transport, two key Brazilian export commodities.

Today, Brazil is engaged in discussions with the United States Department of Transportation, which are expected to alleviate or abandon altogether the national flag preferences enacted by the long-standing US/Brazil bilateral maritime agreement. Elaine L. Chao, US Deputy Secretary of Transportation, declared that "the exchange of views on transportation policies and maritime issues in particular has been both productive and encouraging".

What is at stake is the reservation, for United States and Brazilian carriers only, of "government-prescribed cargoes" (i.e. imported, licensed, financed, insured for, or by any entity in which the Brazilian State has any interest). The extensive application of preferential government-prescribed cargo rules means that around 60 per cent of the southbound trade is allocated 50:50 between each country's relevant national carriers, leaving conference and non-conference cross-traders to compete for the remaining 40 per cent (in which the United States/Brazilian carriers also take a lion's share).

In this context, the wave of liberalization is expected to turn over a new leaf in the competition playing field of shipping, putting on a more equal footing the various categories of competitors: national carriers, cross-traders, conference lines and outsiders. The three-pronged effect of the opening of the Brazilian economy to imports, and of easier access of non-national lines to southbound cargo (if the bilateral agreement is indeed liberalized) as well as to northbound liftings (coffee and cocoa), has the potential of restructuring the trade.

Source: Containerisation International, November 1990.

## Chapter X

## MARITIME ENVIRONMENT ISSUES

A. Protection of the marine environment

199. During the last few years the problem of protection of the world oceans has attracted considerable attention. The latest serious tanker accidents near the coasts of the United States, France and other countries are vivid examples of environment destruction. To combat such incidents the international community and Governments have implemented new legislation to protect the maritime environment.

International Convention on Oil Pollution Preparedness, Response and Co-operation, 1990 (OPRC Convention, 1990)

200. This Convention had been elaborated under the auspices of the International Maritime Organization (IMO) and was signed in London on 30 November 1990. It is designed to help Governments to combat major oil pollution incidents. The Convention recognizes that in the event of a pollution incident, prompt and effective action is essential.

201. The Convention foresees the establishment of oil pollution emergency plans on ships and offshore installations, at ports and at oil handling facilities, together with national and regional contingency plans as appropriate, availability of effective response systems and wide international co-operation to mobilize maximum resources as quickly as possible in case of pollution emergencies.

202. In accordance with the provisions of the Convention, masters of ships, port authorities and others have to report pollution incidents without delay. Necessary actions to be taken are also defined. The Convention encourages the establishment of national and regional systems for responding to pollution incidents. These systems should include features such as a national contingency plan; the pre-positioning of oil spill combating equipment; and exercises in dealing with spills.

203. Parties to the Convention agree to co-operate and provide advisory services, technical support and equipment at the request of other Parties. Research and development is encouraged, as is the development of standards for compatible oil combating techniques and equipment. The Convention also makes provision for technical co-operation in such matters as training and the provision of advisory services and equipment.

204. The Convention will enter into force 12 months after being ratified by 15 States.

205. Alongside the OPRC Convention of 1990, the following could be considered as the most important and significant recently occurring developments with respect to IMO conventions concerning the prevention and control of maritime pollution from ships:

- The entry into force, on 18 February 1991, of amendments to Annex V of the International Convention for the Prevention of Pollution from Ships (MARPOL 73/78) designating the North Sea as a "Special Area". Annex V deals with the disposal of garbage from ships. In special areas only food wastes are permitted to be disposed of into the sea under prescribed circumstances;

- The entry into force, on 13 October 1990, of amendments to Appendices II and III of Annex III of MARPOL 73/78, and to the IBC and BCH Codes, introducing amendments to the lists of substances to which these instruments apply. Annex II deals with noxious liquid substances transported in bulk;

- The adoption, on 16 November 1990, of amendments to Annexes I and V of MARPOL 73/78 designating the Antarctic (viz. the sea area south of 60° south latitude) as a "Special Area". Annexes I and V relate to prohibition of discharges from ships of oil and garbage respectively. The amendments are expected to enter into force on 17 March 1992;

- The adoption, on 16 March 1990, of amendments to Annexes I and II of MARPOL 73/78 introducing the harmonized system of survey and certification. Entry into force of the amendments is expected on the date six months after the conditions for entry into force of both the 1988 SOLAS Protocol and the 1988 Load Line Protocol are met, provided that the date, when those conditions are met, is not before 1 August 1991;

- The approval (in November 1990) of amendments, (subject to formal adoption at the thirty-first session of the Marine Environment Protection Committee (July 1991)) to Annex V of MARPOL 73/78 designating the Wider Caribbean as a "Special Area". Annex V deals with garbage from ships;

- The adoption of resolution MEPC.44(30) with regard to the identification of the Great Barrier Reef region as a particularly sensitive area which will be approved by the Council at its sixty-sixth session (June 1991) for submission to the seventeenth Assembly for adoption. This is the first particularly sensitive area to be recognized by the Marine Environment Protection Committee. See table 47 for a summary of international conventions relating to maritime pollution.



## Box 8

Double hull no panacea

A long-awaited report, "Tanker Spills: Prevention by Design", has been published in the United States by the National Academy of Sciences. It was requested by the United States Coast Guard, after the Exxon Valdez spill, and its conclusions could have a direct impact on tanker design requirements.

A brief review of key conclusions follows:

- No single design was found to be best for every type of oil spill.
- Double hulls are amongst the most cost-effective designs, but they can have serious drawbacks, and the OPA, which mandated double hulls for tankers travelling in United States waters, should be viewed as only an interim step to reducing oil spills.
- Hydrostatic design options for new tankers were not favoured, though hydrostatic loading requirements for some existing vessels should be considered.
- Another design concept - a tanker with an intermediate oil-tight deck and double sides (referred to throughout the report as IOTDw/DS) - could perform better than a double-hulled vessel in some cases, notably in high impact groundings and in some collisions. High impact groundings have caused some of the largest United States oil spills, including that from the Exxon Valdez. In addition, IOTDw/DS tankers, by their design, are much less prone to corrosion.
- Existing tanker design standards must be improved, notably with respect to stress and corrosion tolerances in vessels built with high tensile steel. This is particularly important for double-hulled vessels, where these factors are more acute.
- Design based on the possibility of accidents - common practice in many industries - should be considered for tankers.
- All newbuildings are to have: (i) IMO-recommended two fittings, bow and stern; (ii) Onboard systems for transferring, bow and stern, to other tanks or other vessels; (iii) No cargo piping in ballast tanks. The study notes that passive vacuum systems for use on fully laden tankers deserves further appraisal.
- Serious consideration should be given to having all existing tankers meet current MARPOL standards for new ships.
- Regardless of cost, and bearing in mind that no one design excels in all types of accident, the most favoured tanker would be double-hulled, with hydrostatic controls. Such ships would increase the average cost of oil transported to the United States from \$US 3.6 per ton (using modern single-hulled tankers) to US 4.93 per ton.
- The most cost-effective designs were deemed to be double hulls, and double sides with hydrostatic controls. Cost differences between the two designs are negligible, and would raise average import costs to around \$US 4.30 per ton.

Source: Lloyd's Shipping Economist, April 1991.

Table 47

Status of international conventions relating to marine pollution  
(As at 18 April 1991)

Instrument	Date of entry into force	No. of acceptances	Percentage of world fleet
International Convention for the Prevention of Pollution of the Sea by Oil, 1954, as amended (OILPOL 54) <u>a/</u>	26 July 1958	68	65.25
International Convention for the Prevention of Pollution from Ships, 1973 <u>b/</u>	Not yet in force	19	-
Protocol of 1978 relating to the International Convention for the Prevention of Pollution from Ships, 1973 (MARPOL 73/78)	2 October 1983	64	88.19
Annex III	Not yet in force	43	47.82
Annex IV	Not yet in force	37	38.09
Annex V	31 December 1988	49	64.78
International Convention relating to Intervention on the High Seas in Cases of Oil Pollution Casualties, 1969 (INTERVENTION 69)	6 May 1975	57	68.67
Protocol relating to Intervention on the High seas in Cases of Pollution by Substances other than Oil, 1973 (INTERVENTION PROT 73)	30 March 1983	26	50.61
International Convention on Civil Liability for Oil Pollution Damage, 1969 (CLC 69)	19 June 1975	69	83.16
Protocol of 1976 to the International Convention on Civil Liability for Oil Pollution Damage, 1969 (CLC PROT 76)	8 April 1981	37	61.16
Protocol of 1984 to amend the International Convention on Civil Liability for Oil Pollution Damage (CLC PROT 84)	Not yet in force	7	3.54
International Convention on the Establishment of an International Fund for Compensation for Oil Pollution Damage, 1971 (FUND 71)	16 October 1978	45	62.77
Protocol of 1976 to the International Convention on the Establishment of an International Fund for Compensation for Oil Pollution Damage, 1971 (FUND PROT 76)	Not yet in force	18	48.12
Protocol of 1984 to amend the International Convention on the Establishment of an International Fund for Compensation for Oil Pollution Damage, 1971 (FUND PROT 84)	Not yet in force	2	2.26
Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter, 1972 (LDC 72)	30 August 1975	63	63.07
International Convention on Oil Pollution Preparedness, Response and Co-operation (OPRC 90)	Not yet in force	0	-

Source: IMO.

a/ Superseded by MARPOL 73/78.

b/ MARPOL 73/78 incorporates, with modification, the provisions of the 1973 Convention.

### United States Oil Pollution Act, 1990

206. The Oil Pollution Act, 1990, imposes liability upon any vessel (tanker of any type and dry cargo vessels) which spills oil carried as cargo or fuel in United States navigable waters. Liability limits, however, differ between tanker vessels (\$US 1,200 per grt) and non-tanker vessels (\$US 600 per grt).<sup>27</sup> In the Act, a tanker is defined as a vessel constructed or adapted to carry oil or hazardous material in bulk as cargo or residue. Hence, the higher limits would apply to oil spills from tankers carrying oil or hazardous substances, including LPG.

207. Financial responsibility requirements would apply to all types of vessel over 300 grt except for barges which do not carry oil as fuel or cargo, or vessels of any size which tranship lighter oil within the exclusive economic zone of the United States. Proof of financial responsibility must involve an amount equal to or greater than the applicable limitation amount under the Act.

208. The Act also establishes a double hull requirement for oil tankers, which is not applicable to chemical tankers, gas carriers or dry bulk vessels. However, the requirements on manning standards apply to all tanker vessels as specified above except those which are merely on innocent passage through United States waters.

### B. Developments related to IMO safety conventions during 1990

209. Maritime safety issues are closely related to environmental policy concerns. The following are considered to be the most important and significant developments related to IMO safety-related conventions during 1990:

- The entry into force, on 29 April 1990, of new SOLAS stability standards for passenger ships, including ro-ro ships;
- The adoption of amendments to the International Convention for the Safety of Life at Sea (SOLAS) on subdivision and damage stability of dry cargo ships;
- The approval for circulation of draft amendments to SOLAS 74 based on the revision of Chapter VI on the Carriage of Cargoes and the mandatory Code of Safe Practice for the Carriage of Grain in Bulk;
- The approval of three codes associated with new SOLAS Chapter VI for submission to the seventeenth Assembly for adoption;
- The progress made towards setting in place the necessary technical, educational and financial

infrastructure for the introduction of the Global Maritime Distress and Safety System (GMDSS);

- The approval for circulation of the first set of amendments to the 1978 International Convention on Standards of Training, Certification and Watchkeeping for Seafarers (STCW); and
- Decisions made with respect to strengthening the passenger ship fire protection provisions of the SOLAS Convention.

210. Table 48 summarizes the status of maritime safety conventions and protocols.

### C. Tonnage lost

211. Table 49 gives information on tonnage lost during the last five years. It indicates that the losses both in terms of number of ships and their deadweight constantly decreased during this period. Notwithstanding a certain increase in tonnage reported lost in 1990 as compared to 1989, its share in the total deadweight of the world merchant fleet stood at 0.2 per cent, viz. at the level of the previous year, and was considerably lower than in 1986-1987. Thus, the 1990 year figure of losses in terms of deadweight amounted to less than a quarter of the 1986 figure.

212. As shown in table 50 and graph 14, during the five-year period 1986-1990 a significant decrease in tonnage losses occurred for all main types of vessel, as well as considerable changes in the structure of tonnage reported as lost, although the situation varied from year to year. The share of oil tankers in total ship losses decreased from 62.8 per cent in 1986 to 10.5 per cent in 1990, while that of dry bulk carriers and general cargo ships increased during this period from 25.1 per cent to 65.4 per cent and from 10.8 per cent to 18.9 per cent respectively. There were no containerships lost in 1990 and the other vessels represented only 5.2 per cent of total losses.

213. In 1990, four geographic regions - East and South-East sections of the Pacific Ocean, West and North-West sections of the Atlantic Ocean - accounted for 52.6 per cent of the number of ship losses (92 ships). The major part of these losses comprised general cargo vessels and vessels attributed to other vessel categories. The East and South-East sections of the Pacific Ocean, the Mexican Gulf and the central section of the Indian Ocean were the regions with the most significant losses of large size bulk tonnage such as oil tankers and dry bulk carriers, as well as general cargo vessels (for the Pacific Ocean region); they accounted for 45 per cent of all tonnage lost in 1990 (in terms of deadweight).

Table 48

Status of maritime safety conventions and protocols  
(As at 8 April 1991)

Instrument	Date of entry into force	No. of acceptances	Percentage of world fleet
International Convention for the Safety of Life at Sea, 1974 (SOLAS 1974)	25 May 1980	111	97.14
Protocol of 1978 relating to the International Convention for the Safety of Life at Sea, 1974 (SOLAS PROTOCOL 74)	1 May 1981	72	91.15
Protocol of 1988 relating to the International Convention for the Safety of Life at Sea, 1974-HSSC (SOLAS PROTOCOL 88)	Not yet in force	4	0.97
Convention on the International Regulations for Preventing Collisions at Sea, 1972 (COLREG 72)	15 July 1977	107	96.0
International Convention on Load Lines, 1966 (LOAD LINES 66)	21 July 1968	117	98.13
Protocol of 1988 relating to the International Convention on Load Lines, 1966 - HSSC (LL PROTOCOL 88)	Not yet in force	6	2.39
International Convention on Tonnage Measurement of Ships, 1969 (TONNAGE 69)	18 July 1982	90	96.55
Special Trade Passenger Ships Agreement, 1971 (STP 71)	2 January 1974	15	24.4
Protocol on Space Requirements for Special Trade Passenger Ships, 1973 (SPACE STP 73)	2 June 1977	14	22.4
International Convention for Safe Containers, 1972 (CSC 72)	6 September 1977	52	69.4
Torremolinos International Convention for the Safety of Fishing Vessels, 1977 (SFV 77)	Not yet in force	18	15.4
International Convention on Standards of Training, Certification and Watchkeeping for Seafarers, 1978 (STCW 78)	28 April 1984	81	77.1
International Convention on Maritime Search and Rescue, 1979 (SAR 79)	22 June 1985	38	49.7
Convention for the Suppression of Unlawful Acts Against the Safety of Maritime Navigation (SUA 88)	Not yet in force	9	4.9
Protocol for the Suppression of Unlawful Acts Against the Safety of Fixed Platforms Located on the Continental Shelf (SUA PROTOCOL 88)	Not yet in force	9	4.9
Convention on the International Maritime Satellite Organization - INMARSAT (INMARSAT 75-76)	16 July 1979	64	86.1

Source: IMO.

Table 49

## Tonnage lost, 1986-1990

	1986	1987	1988	1989	1990
Number of ships lost	358	284	271	247	175
Thousand dwt	6 910	3 125	1 905	1 064	1 680
Percentage of world fleet	1.1	0.5	0.3	0.2	0.2

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

Table 50

Tonnage reported lost by vessel type, 1986-1990  
(Thousand dwt and percentage shares)

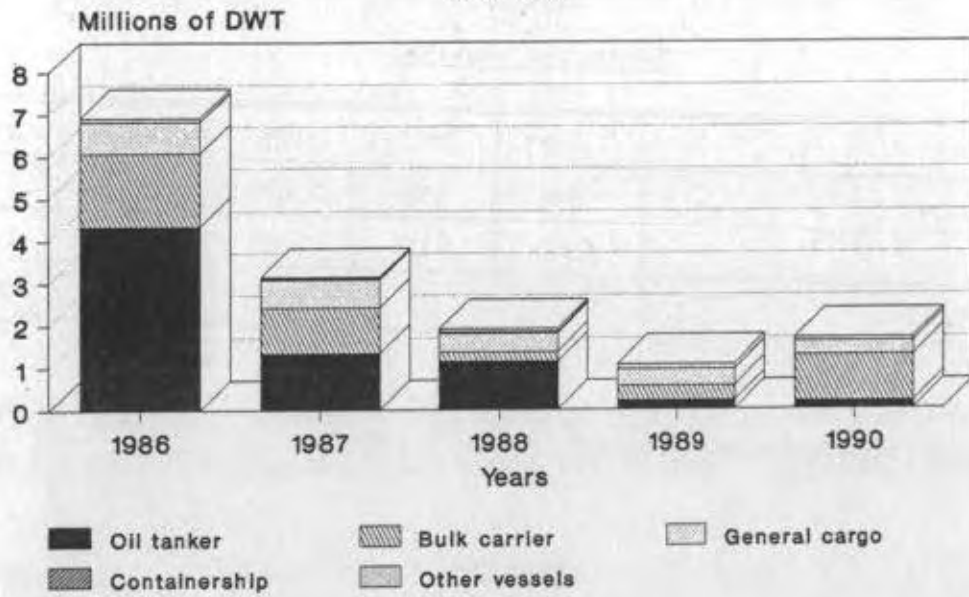
Type of vessel	Thousand dwt					Percentage shares				
	1986	1987	1988	1989	1990	1986	1987	1988	1989	1990
Oil tankers	4 342	1 334	1 138	199	178	62.8	42.7	59.7	18.7	10.5
Bulk carriers	1 732	1 076	236	356	1 098	25.1	34.4	12.4	33.4	65.4
General cargo ships	749	666	432	386	317	10.8	21.3	22.7	36.3	18.9
Containerships	11	25	32	6	-	0.2	0.8	1.7	0.6	-
Other vessels	76	24	67	117	87	1.1	0.8	3.5	11.0	5.2
Total	6 910	3 125	1 905	1 064	1 680	100.0	100.0	100.0	100.0	100.0

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



Graph 14

Tonnage reported lost by vessel type  
1986-1990



Source: Lloyd's Maritime Information Service Ltd.

- 1/ UNCTAD, Trade and Development Report, 1990, p. 1.
- 2/ Lloyd's Shipping Economist (London), February 1991, p. 22.
- 3/ Fearnleys (Oslo), Review 1990, p. 5.
- 4/ Lloyd's Maritime Information Services (LMIS) and DRI/McGraw-Hill (DRI) have combined resources to produce a global fleet forecasting service, the LMIS/DRI World Fleet Forecasting Service (WFFS), which in turn is based on fleet information from LMIS and global trade forecasts for the DRI/TBS World Sea Trade Service (WSTS). WFFS forecasts supply and demand in respect of each of 34 vessel types and sizes across 700 global trade routes based on the WSTS forecasts of total trade in 40 commodity groups and assigned to each appropriate type on relevant trade routes.
- 5/ World Fleet Forecast Service (London) based upon information supplied by Lloyd's Maritime Information Services and DRI/McGraw-Hill (DRI).
- 6/ Guide to International Ship Registers, International Shipping Federation, London (United Kingdom), 1990. The 22 international registers are as follows: Antigua and Barbuda; Bahamas; Bermuda; Cayman Islands; Cyprus; Gibraltar; Honduras; Hong Kong; Isle of Man; Kerguelen; Liberia; Luxembourg; Malta; Mauritius; Netherlands Antilles; Norwegian International Register; Panama; St. Vincent and the Grenadines; Singapore; Sri Lanka; Turks and Caicos Islands; Vanuatu.
- 7/ See Review of Maritime Transport, 1989 (TD/B/C.4/324), p. 16.
- 8/ In order of importance: Philippines, Singapore, Republic of Korea, Hong Kong, India, Brazil, Islamic Republic of Iran, Malta, Yugoslavia, Vanuatu.
- 9/ Saint Vincent and the Grenadines, Kuwait, Indonesia, Argentina, Saudi Arabia, Malaysia, Egypt, Mexico, Iraq, Libyan Arab Jamahiriya.
- 10/ Journal of Commerce and Commercial, New York, 10 December 1990.
- 11/ Lloyd's Shipping Economist (London), January 1991, pp. 15-16.
- 12/ "The Worldwide Demand for and Supply of Seafarers", final report, University of Warwick, Institute for Employment Research, United Kingdom, 1990.
- 13/ Fearnleys (Oslo), Review, 1990, pp. 17 and 42.
- 14/ Lloyd's List, London, 1991, 9 March 1991.
- 15/ Fearnleys (Oslo), Review 1990, p. 28.
- 16/ Lloyd's List (London), 11 January 1991.
- 17/ Fearnleys (Oslo), Review 1990, p. 28.
- 18/ The liner freight rate indices shown in table 32 were compiled by the Ministry of Transport of Germany and are based on the foreign trade of that country. Nevertheless, it is considered that these indices provide a general indication of trends for the liner sector of the world shipping industry.

- 19/ In the maritime container industry the term "owned containers" refers to containers exclusively controlled by the carriers (containers that may be fully owned, under some form of hire purchase or other payment arrangement, or even under long term financial lease from a finance house). The term "leased container" refers to the fairly standardized operating leases of one kind or another offered by a recognized container leasing company. (In fact, the container leasing company may itself not even own the units, but have them under financial lease or other forms of finance from a bank or finance house.)
- 20/ For additional information on UN/EDIFACT, see Review of Maritime Transport, 1988 (TD/B/C.4/320), paras 88-99.
- 21/ Ocean Voice, London, Volume 9, No. 4, p. 14.
- 22/ Ibid.
- 23/ 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)).
- 24/ For the text of the Convention, see United Nations Conference on the Carriage of Goods by Sea (United Nations publication, Sales No. E.80.VIII.1).
- 25/ For the text of the Convention, see document TD/RS/CONF/23.
- 26/ Council Regulation (EEC) No. 4055/86 applying the principle of freedom to provide services in maritime transport between member States and member States and third countries; Council Regulation (EEC) No. 4056/86 laying down detailed rules for the application of articles 85 and 86 of the Treaty to maritime transport; Council Regulation (EEC) No. 4057/86 on unfair practices in maritime transport; Council Regulation (EEC) No. 4058/86 concerning co-ordinated action to safeguard free access to cargoes in ocean trades, Official Journal L.378, 31 December 1986. These Regulations were briefly considered in the Review of Maritime Transport, 1986.
- 27/ BIMCO Bulletin (Sagsvoerd), 1990, No. 6, pp. 52-53.

Annex 1Classification of countries and territories

Code 1	Canada	United States of America
Code 2	Japan	
Code 3	Australia	New Zealand
Code 4	Austria (L) Belgium Denmark Faeroe Islands Finland France Germany, Federal Republic of g/ 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 5	South Africa	
Code 6	Albania Bulgaria Czechoslovakia German Democratic Republic g/	Hungary (L) Poland Romania Union of Soviet Socialist Republics
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)	Reunion
	Comoros	Seychelles
	Djibouti	Somalia
	Ethiopia	Sudan
	Kenya	Uganda (L)
	Madagascar	United Republic of Tanzania
	Mauritius	Zambia (L)
	Mozambique	
Code 9 - 9.1	<u>Caribbean and North America</u>	
	Anguilla	Guadeloupe
	Antigua and Barbuda	Haiti
	Aruba	Jamaica
	Bahamas	Martinique
	Barbados	Montserrat
	Bermuda	St. Pierre and Miquelon
	British Virgin Islands	Saint Kitts and Nevis
	Cayman Islands	Saint Lucia
	Cuba	Saint Vincent and the Grenadines
	Dominica	Trinidad and Tobago
	Dominican Republic	Turks and Caicos Islands
	Greenland	United States Virgin Islands
	Grenada	
Code 9.2	<u>Central America</u>	
	Belize	Honduras
	Costa Rica	Mexico
	El Salvador	Nicaragua
	Guatemala	Panama
Code 9.3	<u>South America - Northern Seaboard</u>	
	Guyana	Suriname
	French Guyana	Venezuela
	Netherlands Antilles	
Code 9.4	<u>South America - Western Seaboard</u>	
	Chile	Ecuador
	Colombia	Peru
Code 9.5	<u>South America - Eastern Seaboard</u>	
	Argentina	Falkland Islands (Malvinas) <u>b/</u>
	Bolivia (L)	Paraguay (L)
	Brazil	Uruguay
Code 10 - 10.1	<u>Western Asia</u>	
	Bahrain	Oman
	Cyprus	Qatar
	Iran (Islamic Republic of)	Saudi Arabia
	Iraq	Syrian Arab Republic
	Jordan	United Arab Emirates
	Kuwait	Yemen
	Lebanon	



Code 10.2	<u>Southern and Eastern Asia</u> Bangladesh Bhutan Brunei Darussalam Cambodia Hong Kong India Indonesia Macau Malaysia	Maldives Pakistan Philippines Republic of Korea Singapore Sri Lanka Thailand Union of Myanmar
Code 11	Malta	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

(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 Eastern Europe and socialist countries of Asia: Codes 6 and 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/ Through accession of the German Democratic Republic to the Federal Republic of Germany with effect from 3 October 1990, the two German States have united to form one sovereign State. As from the date of unification, the Federal Republic of Germany acts in the United Nations under the designation "Germany".

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<sup>a</sup> according to geographical areas,  
1970, 1988 and 1989  
(millions of tons)

Area <sup>b</sup>	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
	1988	1.5	24.7	482.6	508.8	226.6	89.6	211.5	527.7
	1989	1.5	25.5	503.5	530.5	260.1	98.6	223.8	582.5
Japan	1970	-	0.3	41.6	41.9	170.4	30.4	235.1	435.9
	1988	-	1.3	79.4	80.7	177.7	75.2	397.2	650.1
	1989	-	1.3	80.3	81.6	190.2	80.5	432.5	703.2
Australia and New Zealand	1970	-	1.3	92.3	93.6	18.8	2.9	15.4	37.1
	1988	6.8	1.6	247.4	255.8	7.6	6.9	17.1	31.7
	1989	5.9	1.6	260.5	268.0	8.0	7.2	17.8	33.0
Europe	1970	28.6	82.3	244.8	355.6	621.0	100.4	469.0	1 190.4
	1988	183.3	105.9	460.0	749.2	434.8	172.6	739.9	1 347.3
	1989	189.2	110.2	483.8	783.2	454.0	169.5	748.9	1 372.4
South Africa	1970	-	-	13.2	13.2	8.8	2.6	6.2	17.6
	1988	-	-	74.2	74.2	19.9	0.3	9.0	29.2
	1989	-	-	80.1	80.1	20.7	0.3	9.5	30.5
Subtotal: Developed market-economy countries	1970	29.3	89.2	699.9	818.3	892.4	239.9	895.7	2 028.0
	1988	191.6	133.5	1 343.7	1 668.8	866.7	344.5	1 374.9	2 586.1
	1989	196.6	138.6	1 408.2	1 743.4	933.0	356.1	1 432.5	2 722.0
<u>Countries of Eastern Europe</u>									
Countries of Eastern Europe (excluding USSR)	1970	0.2	3.4	34.8	38.5	10.8	3.0	29.2	43.0
	1988	-	17.5	45.4	62.9	29.2	0.8	59.1	89.1
	1989	-	16.5	43.5	160.0	28.6	0.7	58.7	88.0
USSR	1970	38.0	22.9	46.0	106.9	2.5	-	11.9	14.4
	1988	64.0	52.4	44.2	160.6	7.9	0.6	77.1	85.6
	1989	64.5	52.6	46.2	163.3	7.8	0.6	79.4	87.8
<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
	1988	42.0	8.1	27.0	77.1	3.5	1.4	75.9	80.8
	1989	42.2	8.2	27.2	77.6	3.6	1.4	78.2	83.2
<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
	1988	161.1	29.5	35.6	226.2	58.6	4.5	55.8	118.9
	1989	174.0	28.6	33.2	235.8	60.4	4.5	57.5	122.4
Western Africa	1970	60.5	1.0	61.5	123.0	3.6	4.0	14.8	22.4
	1988	109.5	3.1	57.9	170.5	3.6	3.2	26.5	33.3
	1989	124.1	3.3	57.6	185.0	3.7	3.3	27.6	34.6
Eastern Africa	1970	-	1.2	16.1	17.3	5.5	2.6	8.3	16.4
	1988	-	0.7	9.1	9.8	5.8	2.6	15.2	23.6
	1989	-	0.7	9.0	9.7	6.0	2.7	15.9	24.6

## Annex II (continued)

World seaborne trade<sup>a</sup> according to geographical areas,  
1970, 1988 and 1989  
(millions of tons)

Area <sup>b</sup>	Year	Goods loaded				Goods unloaded			
		Oil		Dry cargo	Total all goods	Oil		Dry cargo	Total all goods
		Crude	Products			Crude	Products		
Caribbean and North America	1970	-	1.4	28.4	29.8	23.5	4.5	11.2	39.2
	1988	13.1	11.4	26.1	50.6	26.9	9.0	18.1	54.1
	1989	13.5	12.1	27.1	52.7	28.4	9.3	18.4	56.1
Central America	1970	-	3.7	11.9	15.6	6.0	5.5	6.5	18.0
	1988	81.0	6.4	17.6	105.0	3.7	2.8	15.2	21.7
	1989	85.7	7.1	18.0	110.8	3.9	2.8	15.5	22.2
South America: Northern Seaboard	1970	131.1	11.8	36.0	278.9	63.1	3.0	6.7	72.9
	1988	51.5	21.6	16.1	89.2	-	1.4	18.4	19.8
	1989	55.6	24.3	16.3	96.2	-	1.5	19.0	20.5
South America: Western Seaboard	1970	4.6	1.6	29.8	35.9	4.1	1.5	5.9	11.5
	1988	15.5	8.3	32.2	56.0	3.3	1.3	14.6	19.8
	1989	15.0	8.0	33.6	56.6	3.4	1.4	14.6	19.4
South America: Eastern Seaboard	1970	0.1	1.1	54.3	55.5	18.8	1.0	19.8	39.6
	1988	0.1	4.1	184.8	189.0	31.0	2.8	27.3	61.1
	1989	0.1	4.3	190.7	195.1	41.6	2.9	27.6	72.1
Western Asia	1970	588.7	65.6	3.3	658.6	0.1	1.0	13.1	14.2
	1988	347.4	78.3	31.7	457.4	14.7	6.4	107.6	128.7
	1989	387.1	83.7	31.1	501.9	15.0	6.4	104.8	126.2
Southern and Eastern Asia (n.e.s.)	1970	35.0	23.7	89.3	148.0	148.0	23.3	61.9	139.9
	1988	82.4	79.6	233.3	395.3	133.2	35.9	341.4	510.4
	1989	86.3	83.6	247.8	417.7	141.1	39.5	358.2	538.8
Developing countries in Europe	1970	-	1.0	-	-	-	0.3	0.7	1.0
	1988	0.3	1.1	7.1	8.5	8.3	2.5	16.8	27.6
	1989	0.3	1.1	7.3	8.7	8.5	2.6	17.5	28.6
Oceania (n.e.s.)	1970	-	0.2	9.5	9.7	0.6	1.6	2.9	5.1
	1988	-	0.3	7.7	8.0	-	2.4	3.4	5.8
	1989	-	0.3	7.9	8.2	-	2.4	3.5	5.9
Subtotal: Developing countries	1970	1 041.4	216.9	368.4	1 627.7	189.9	5.5	169.7	414.0
	1988	861.9	244.3	659.3	1 765.6	289.2	74.7	660.3	1 024.2
	1989	941.7	257.0	679.6	1 878.3	312.0	79.3	680.1	1 071.4
World total <sup>c</sup>	1970	1 110.0	330.0	1 165.0	2 606.0	1 101.0	302.0	1 127.0	2 530.0
	1988	1 159.5	455.9	2 119.6	3 735.0	1 196.4	422.1	2 247.4	3 865.9
	1989	1 245.0	473.1	2 204.7	3 922.8	1 285.0	438.1	2 328.7	4 051.8

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.

<sup>a</sup> Including international cargoes loaded at ports of the Great Lakes and St. Lawrence River system for unloading at ports of the system. Great Lakes and St. Lawrence trade (in dry cargo) amounted to 42 million tons in 1970, and 27 million tons in 1989.

<sup>b</sup> See annex I for the composition of groups.

<sup>c</sup> Figures rounded to the nearest million.

Annex III(a)

Merchant fleets of the world by flag of registration, <sup>a</sup> groups of countries and types of ships <sup>b</sup>  
(in '000 grt)  
as at 1 July 1990

	Total fleet	Oil tankers	Bulk carriers <sup>c</sup>	General cargo <sup>d</sup>	Container ships	Other types
1990						
<u>World total <sup>e</sup></u>	417 598	128 081	130 661	79 639	23 799	55 418
<u>Developed market-economy countries</u>						
Australia	2 512	651	1 112	141	119	489
Austria	139	..	72	67	..	..
Belgium	1 954	110	979	69	200	596
Canada	1 129	184	34	104	8	799
Denmark	5 188	1 502	353	678	1 321	1 334
Finland	1 069	161	121	264	..	523
France	3 832	1 703	357	433	514	825
Germany, Fed. Rep.	4 302	95	397	1 104	1 855	851
Gibraltar	2 008	1 539	344	99	..	26
Greece	20 522	7 628	9 783	1 692	240	1 179
Iceland	177	..	4	46	..	127
Ireland	181	7	9	60	17	88
Israel	530	1	32	81	407	9
Italy	7 991	2 497	2 346	1 085	395	1 668
Japan	27 078	7 515	8 788	5 886	1 250	3 639
Luxembourg	3	2	..	..	..	1
Netherlands	3 785	360	328	1 224	589	1 284
New Zealand	261	80	26	78	11	66
Norway	23 429	9 954	7 283	1 758	140	4 294
Portugal	854	393	223	72	14	152
South Africa	352	1	..	..	226	125
Spain	3 807	1 458	850	451	76	972
Sweden	2 775	402	383	943	88	959
Switzerland	287	-	252	23	..	12
Turkey	3 719	771	1 932	808	..	208
United Kingdom	6 716	2 350	749	427	1 316	1 874
United States	16 916	7 712	1 037	2 311	2 766	3 090
<u>Subtotal</u>	141 516	47 076	37 794	19 905	11 552	25 189
<u>Open-registry countries</u>						
Bahamas	13 626	6 602	3 698	1 193	219	1 914
Bermuda	4 258	3 285	161	160	31	621
Cyprus	18 336	5 230	9 226	3 133	244	503
Liberia	54 700	27 495	16 099	4 785	1 893	4 428
Panama	39 298	9 104	13 293	11 249	2 570	3 082
<u>Subtotal</u>	130 218	51 716	42 477	20 520	4 957	10 548
<u>Eastern Europe</u>						
Albania	56	..	..	55	..	1
Bulgaria	1 360	288	611	365	19	77
Czechoslovakia	326	..	241	85	..	-
German Dem. Rep.	1 437	6	324	766	114	227
Hungary	98	..	17	81	..	..
Poland	3 369	126	1 603	1 212	61	367
Romania	4 005	645	1 891	1 245	15	209
USSR	26 737	4 041	4 182	9 534	626	8 354
<u>Subtotal</u>	37 388	5 106	8 869	13 343	835	9 235

Annex III(a) (continued)

Merchant fleets of the world by flag of registration, <sup>a</sup> groups of countries and types of ships <sup>b</sup>  
(in '000 grt)  
as at 1 July 1990

	Total Fleet	Oil Tankers	Bulk Carriers <sup>c</sup>	General Cargo <sup>d</sup>	Container Ships	Other Types
1990						
Socialist countries of Asia						
China	13 899	1 726	4906	5604	846	817
Democratic Peoples Republic of Korea	442	13	79	292	-	58
Viet Nam	470	18	14	310	-	128
<u>Subtotal</u>	14 811	1 757	4 999	6 206	846	1 003
Developing countries of Africa						
Algeria	906	28	153	204	-	521
Angola	93	2	-	68	-	23
Benin	5	-	-	3	-	2
Cameroon	33	-	-	24	-	9
Cape Verde	21	1	-	16	-	4
Comoros	2	-	-	1	-	1
Congo	9	-	-	-	-	9
Côte d'Ivoire	82	-	-	67	-	15
Djibouti	3	-	-	2	-	1
Egypt	1 257	263	343	473	-	178
Equatorial Guinea	6	-	-	6	-	-
Ethiopia	75	4	-	69	-	2
Gabon	24	-	-	19	-	5
Gambia	2	-	-	-	-	2
Ghana	126	1	-	56	-	69
Guinea	9	-	-	1	-	8
Guinea-Bissau	4	-	-	1	-	3
Kenya	7	-	-	-	-	7
Libyan Arab Jamahiriya	835	707	-	80	-	48
Madagascar	74	5	-	55	-	14
Malawi	-	-	-	-	-	-
Mauritania	41	-	-	1	-	40
Mauritius	99	-	47	22	21	9
Morocco	488	10	92	106	5	275
Mozambique	40	1	-	10	-	29
Nigeria	496	221	-	200	-	75
Sao Tome and Principe	1	-	-	-	-	1
St. Helena	3	-	-	-	-	3
Senegal	52	-	-	11	-	41
Seychelles	3	-	-	2	-	1
Sierra Leone	21	1	-	1	-	19
Somalia	17	-	-	8	-	9
Sudan	58	1	-	36	-	21
Togo	52	1	-	11	-	41
Tunisia	278	27	37	46	-	168
Untd. Rep. Tanzania	32	3	-	21	-	8
Uganda	5	-	-	5	-	-
Zaire	56	-	-	41	-	15
<u>Subtotal</u>	5 315	1 275	672	1 666	26	1 676



Annex III(a) (continued) :

Merchant fleets of the world by flag of registration, <sup>a</sup> groups of countries and types of ships <sup>b</sup>  
(in '000 grt)  
as at 1 July 1990

	Total fleet	Oil tankers	Bulk carriers <sup>c</sup>	General cargo <sup>d</sup>	Container ships	Other types
1990						
Developing countries of America						
Anguilla	3	..	..	2	..	1
Antigua and Barbuda	359	3	3	300	16	37
Argentina	1 890	568	502	502	51	267
Barbados	8	..	..	4	..	4
Belize	1	..	..	1	..	1
Bolivia	10	..	..	10	..	..
Brazil	6 016	1 836	2 971	683	87	439
Cayman Islands	415	72	89	138	..	116
Chile	616	4	296	149	..	167
Colombia	372	10	81	262	..	19
Costa Rica	14	..	..	3	..	11
Cuba	834	80	62	518	..	174
Dominica	2	..	..	2	..	..
Dominican Republic	36	1	11	22	..	2
Ecuador	385	117	27	218	..	45
El Salvador	1	..	..	..	..	1
Falkland Islands <sup>f</sup>	10	..	..	1	..	9
Grenada	1	..	..	1	..	..
Guatemala	5	..	..	4	..	1
Guyana	15	..	..	5	..	10
Haiti	1	..	..	..	..	1
Honduras	712	108	56	453	10	85
Jamaica	14	2	2	5	3	2
Mexico	1 320	501	178	64	8	569
Montserrat	1	..	..	1	..	..
Nicaragua	5	..	..	2	..	3
Paraguay	37	1	..	16	..	20
Peru	617	190	129	146	..	152
Saint Kitts and Nevis	1	..	..	..	..	1
Saint Lucia	2	..	..	1	..	1
St. Vincent and the Grenadines	1 937	295	651	763	82	146
Suriname	13	2	..	7	1	3
Trinidad and Tobago	22	..	..	7	..	15
Turks and Caicos Islands	3	..	..	1	..	2
Uruguay	104	47	..	4	22	31
Venezuela	934	451	147	193	1	142
Br. Virgin Islands	7	..	..	3	..	4
<b>Subtotal</b>	<b>16 723</b>	<b>4 288</b>	<b>5 205</b>	<b>4 472</b>	<b>281</b>	<b>2 477</b>
Developing countries of Asia						
Bahrain	47	2	..	17	..	28
Bangladesh	464	50	..	379	..	35
Brunei Darussalam	358	..	..	2	..	356
Cambodia	4	..	..	1	..	3
Hong Kong	6 365	963	4 395	374	559	274
India	6 476	1 664	3 182	1 113	..	517
Indonesia	2 179	578	138	931	77	455
Iran, (Isl. Rep. of)	4 738	3 101	1 059	420	..	158
Iraq	1 044	827	..	82	..	135
Jordan	42	..	25	10	..	7
Kuwait	1 855	1 101	..	350	139	265
Lebanon	307	14	44	239	..	10

## Annex III(a) (continued)

Merchant fleets of the world by flag of registration, <sup>a</sup> groups of countries and types of ships <sup>b</sup>  
(in '000 grt)  
as at 1 July 1990

	Total fleet	Oil tankers	Bulk carriers <sup>c</sup>	General cargo <sup>d</sup>	Container ships	Other types
<b>1990</b>						
Malaysia	1 717	175	347	460	198	537
Maldives	78	5	32	38	..	3
Myanmar	827	6	518	250	24	29
Oman	23	..	..	11	..	12
Pakistan	354	43	..	288	..	23
Philippines	8 515	362	6 344	1 430	61	318
Qatar	359	160	..	94	86	19
Republic of Korea	7 783	583	4 708	1 053	668	771
Saudi Arabia	1 683	920	26	450	67	220
Singapore	7 928	3 069	2 190	1 339	951	379
Sri Lanka	350	78	103	156	..	13
Syrian Arab Republic	80	..	..	71	..	9
Thailand	615	82	10	412	45	66
United Arab Emirates	750	332	34	137	170	77
Yemen	17	2	..	4	..	11
<u>Subtotal</u>	55 158	14 117	23 155	10 111	3 045	4 730
<b>Developing countries of Europe</b>						
Malta	4 519	1 614	1 774	963	7	161
Yugoslavia	3 816	306	2 018	1 263	131	98
<u>Subtotal</u>	8 335	1 920	3 792	2 226	138	259
<b>Developing countries of Oceania</b>						
American Samoa	..	..	..	..	..	..
Fiji	55	4	..	36	..	15
Kiribati	4	..	..	2	..	2
Nauru	32	..	17	14	..	1
Papua New Guinea	37	2	4	16	..	15
Samoa	27	..	..	25	..	2
Solomon Islands	8	..	..	3	..	5
Tonga	40	..	..	11	24	5
Tuvalu	1	..	..	1	..	..
Vanuatu	2 164	187	1 133	700	35	109
<u>Subtotal</u>	2 368	193	1 154	808	59	154
<b>Developing total</b>	87 899	21 793	33 978	19 283	3 549	9 296
<b>Other unallocated</b>	5 766	633	2 544	382	2 060	147

## Annex III(b)

Merchant fleets of the world by flag of registration, <sup>a</sup> groups of  
countries and types of ships <sup>b</sup>  
(in '000 dwt)  
as at 1 July 1990

	Total fleet	Oil tankers	Bulk carriers <sup>c</sup>	General cargo <sup>d</sup>	Container ships	Other types
1990						
<u>World total <sup>e</sup></u>	658 377	245 936	234 659	102 676	25 955	49 151
Developed market-economy countries						
Australia	3 730	1 102	1 912	178	126	412
Austria	234	..	122	112	..	..
Belgium	3 116	204	1 846	90	218	758
Canada	700	285	57	94	7	257
Denmark	7 173	2 885	655	807	1 407	3 033
Finland	983	244	186	285	..	268
France	5 574	3 359	615	540	533	527
Germany, Fed. Rep.	5 369	184	626	1 600	2 219	740
Gibraltar	3 849	3 064	613	142	..	30
Greece	37 205	15 252	18 197	2 517	313	926
Iceland	135	1	6	71	..	58
Ireland	188	11	14	93	25	45
Israel	609	1	52	113	440	3
Italy	11 840	4 471	4 212	1 292	408	1 457
Japan	40 828	13 809	16 484	5 954	1 194	3 387
Luxembourg	6	3	..	..	..	3
Netherlands	4 725	565	547	1 794	592	1 227
New Zealand	302	125	42	88	14	33
Norway	41 207	20 138	13 437	2 168	143	5 321
Portugal	1 322	716	370	111	22	103
South Africa	299	1	..	..	216	82
Spain	6 185	3 046	1 567	725	102	745
Sweden	2 942	721	640	973	72	536
Switzerland	483	..	427	34	..	22
Turkey	6 360	1 449	3 498	1 298	..	115
United Kingdom	8 594	4 209	1 293	669	1 247	1 176
United States	25 035	15 828	1 869	2 017	2 758	2 563
<u>Subtotal</u>	218 993	91 672	69 287	23 764	12 056	22 214
Open-registry countries						
Bahamas	22 365	12 646	6 398	2 090	261	970
Bermuda	7 800	6 632	288	191	29	660
Cyprus	32 985	10 483	16 733	4 834	322	613
Liberia	99 226	55 471	30 637	5 420	2 004	5 694
Panama	62 184	17 206	23 813	14 353	2 859	3 953
<u>Subtotal</u>	224 560	102 438	77 869	26 888	5 475	11 890
Eastern Europe						
Albania	75	..	..	75	..	0
Bulgaria	1 954	460	970	439	18	67
Czechoslovakia	510	..	395	115	..	1
German Dem. Rep.	1 731	10	520	946	124	131
Hungary	143	..	29	114	..	..
Poland	4 442	219	2 581	1 373	47	222
Romania	6 089	1 146	3 158	1 629	17	139
USSR	29 360	5 989	6 721	11 225	632	4 793
<u>Subtotal</u>	44 304	7 824	14 374	15 916	838	5 352

## Annex III(b) (continued)

Merchant fleets of the world by flag of registration, <sup>a</sup> groups of countries and types of ships <sup>b</sup>  
(in '000 dwt)  
as at 1 July 1990

	Total Fleet	Oil Tankers	Bulk Carriers <sup>c</sup>	General Cargo <sup>d</sup>	Container Ships	Other Types
1990						
Socialist countries of Asia						
China	20 750	2 692	8 359	7 739	1 097	868
Dem. People's Rep. of Korea	656	20	125	463	..	48
Viet Nam	712	34	24	485	..	169
<u>Subtotal</u>	22 118	2 746	8 508	8 687	1 097	1 080
Developing countries of Africa						
Algeria	1 062	46	254	296	..	466
Angola	122	2	..	107	..	13
Benin	5	..	..	4	..	1
Cameroon	39	..	..	34	..	5
Cape Verde	30	1	..	27	..	2
Comoros	3	..	..	3	..	..
Congo	11	..	..	..	..	11
Cote d'Ivoire	100	..	..	85	..	15
Djibouti	..	..	..	..	..	..
Egypt	1 825	496	565	668	..	96
Equatorial Guinea	7	..	..	7	..	..
Ethiopia	91	6	..	84	..	1
Gabon	29	..	..	26	..	3
Gambia	2	..	..	..	..	2
Ghana	110	1	..	73	..	36
Guinea	3	..	..	..	..	3
Guinea-Bissau	2	..	..	..	..	2
Kenya	4	..	..	..	..	4
Libyan Arab Jamahiriya	1 468	1 344	..	100	..	24
Madagascar	92	7	..	76	..	9
Malawi	..	..	..	..	..	..
Mauritania	22	..	..	2	..	20
Mauritius	141	..	79	28	29	5
Morocco	618	19	163	151	10	275
Mozambique	29	2	..	20	..	7
Nigeria	727	436	..	246	..	45
Sao Tome and Principe	1	..	..	..	..	1
St. Helena	2	..	..	..	..	2
Senegal	38	..	..	17	..	21
Seychelles	2	..	..	2	..	..
Sierra Leone	15	1	..	3	..	11
Somalia	19	..	..	13	..	6
Sudan	79	1	..	77	..	1
Togo	78	1	..	21	..	57
Tunisia	442	47	58	61	..	276
Untd. Rep. Tanzania	32	4	..	23	..	5
Uganda	..	..	..	..	..	1
Zaire	76	..	..	61	..	15
<u>Subtotal</u>	7 326	2 413	1 119	2 315	39	1 440

Annex III(b) (continued)

Merchant fleets of the world by flag of registration, <sup>a</sup> groups of countries and types of ships <sup>b</sup>  
(in '000 dwt)  
as at 1 July 1990

	Total fleet	Oil tankers	Bulk carriers <sup>c</sup>	General cargo <sup>d</sup>	Container ships	Other types
1990						
Developing countries of America						
Anguilla	4	..	..	3	..	1
Antigua and Barbuda	608	6	5	506	31	60
Argentina	2 872	951	880	717	67	257
Barbados	8	..	..	8	..	..
Belize	..	..	..	..	..	..
Bolivia	16	..	..	16	..	..
Brazil	10 005	3 314	5 176	885	112	518
Cayman Islands	570	116	155	198	..	101
Chile	883	6	554	202	..	121
Colombia	541	16	157	348	..	20
Costa Rica	6	..	..	2	..	4
Cuba	1 115	117	100	727	..	171
Dominica	4	..	..	4	..	..
Dominican Republic	52	2	19	31	..	..
Ecuador	523	209	46	241	..	27
El Salvador	..	..	..	..	..	..
Falkland Islands <sup>f</sup>	4	..	..	..	..	4
Grenada	1	..	..	..	..	1
Guatemala	7	..	..	6	..	1
Guyana	11	..	..	5	..	6
Haiti	1	..	..	..	..	1
Honduras	1 046	179	94	708	13	52
Jamaica	21	3	4	8	5	1
Mexico	1 803	841	266	80	12	604
Montserrat	1	..	..	1	..	..
Nicaragua	3	..	..	3	..	..
Paraguay	42	1	..	24	..	17
Peru	807	327	216	215	..	49
Saint Kitts and Nevis	1	..	..	..	..	1
Saint Lucia	2	..	..	2	..	..
St. Vincent and the Grenadines	2 995	557	1 106	1 106	87	139
Suriname	16	3	..	10	2	1
Trinidad & Tobago	13	..	..	6	..	7
Turks & Caicos Islands	3	..	..	1	..	2
Uruguay	157	94	..	4	34	25
Venezuela	1 383	759	247	277	1	99
Br. Virgin Islands	5	..	..	4	..	1
<b>Subtotal</b>	<b>25 529</b>	<b>7 501</b>	<b>9 025</b>	<b>6 348</b>	<b>364</b>	<b>2 291</b>
Developing Countries of Asia						
Bahrain	49	2	..	27	..	20
Bangladesh	620	84	..	523	..	13
Brunei Darussalam	349	..	..	3	..	346
Cambodia	4	..	..	1	..	3
Hong Kong	11 176	1 870	7 939	495	595	277
India	10 497	2 890	5 469	1 607	..	531
Indonesia	2 910	966	202	1 374	98	270
Iran (Isl. Rep. of)	8 692	6 194	1 776	571	..	151
Iraq	1 797	1 552	..	120	..	125
Jordan	64	..	44	16	..	4
Kuwait	2 944	2 016	..	514	147	267
Lebanon	473	23	74	369	..	7
Malaysia	2 460	307	635	676	233	609
Maldives	123	10	54	56	..	3
Myanmar	1 246	10	936	251	25	24
Oman	12	..	..	7	..	5
Pakistan	508	90	..	407	..	11



## Annex III(b) (continued)

Merchant fleets of the world by flag of registration, <sup>a</sup> groups of countries and types of ships <sup>b</sup>  
(in '000 dwt)  
as at 1 July 1990

	Total Fleet	Oil Tankers	Bulk Carriers <sup>c</sup>	General Cargo <sup>d</sup>	Container Ships	Other Types
<b>1990</b>						
Philippines	14 159	701	11 249	1 928	94	187
Qatar	556	298	..	150	91	17
Republic of Korea	12 462	1 111	8 534	1 362	766	689
Saudi Arabia	2 716	1 714	45	656	76	225
Singapore	12 965	5 621	3 962	1 745	1 108	529
Sri Lanka	528	139	188	196	..	3
Syrian Arab Republic	116	..	..	112	..	4
Thailand	912	152	17	633	64	46
United Arab Emirates	1 158	581	55	216	218	88
Yemen	14	3	..	5	..	6
<u>Subtotal</u>	89 510	26 334	41 179	14 020	3 515	4 462
<b>Developing Countries of Europe</b>						
Malta	7 756	2 976	3 119	1 509	10	142
Yugoslavia	6 027	521	3 495	1 820	142	49
<u>Subtotal</u>	13 783	3 497	6 614	3 329	152	191
<b>Developing Countries of Oceania</b>						
American Samoa	..	..	..	..	..	..
Fiji	53	6	..	37	..	10
Kiribati	3	..	..	3	..	..
Nauru	41	..	27	14	..	..
Papua New Guinea	35	3	5	17	..	10
Samoa	35	..	..	34	..	1
Solomon Islands	6	..	..	4	..	2
Tonga	50	..	..	17	30	3
Tuvalu	1	..	..	1	..	..
Vanuatu	3 316	382	2 021	714	45	154
<u>Subtotal</u>	3 540	391	2 053	841	75	180
Developing Total	139 688	40 136	59 990	26 853	4 145	8 564
Other Unallocated	8 714	1 120	4 634	568	2 344	48

Source: Lloyd's Register of Shipping - Statistical tables, 1990, (London), and supplementary data regarding the Great Lakes fleets of the United States and Canada and the United States Reserve Fleet.

<sup>a</sup> 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.

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

<sup>c</sup> Ore and bulk carriers of 6,000 grt and over, including ore/bulk/oil carriers.

<sup>d</sup> Including passenger/cargo.

<sup>e</sup> Excluding estimates of the United States Reserve fleet and United States and Canadian Great Lakes fleets, which amounted respectively to 3.2 million grt (3.9 million dwt), 1.2 million grt (2.2 million dwt) and 1.7 million grt (2.3 million dwt).

<sup>f</sup> 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).

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