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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

CFS	Container freight station
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
ULCC	Ultra large crude carrier
VLCC	Very large crude carrier
VO-MTO	Vessel-operating multimodal transport operator

EXPLANATORY NOTE

Reference to dollars ($) are to United States dollars.

The '#' sign signifies numbers.

Tons refer to metric tons, unless otherwise stated.

Details and percentages in tables do not necessary add up to the totals, owing to rounding.

Two dots (..) indicate that the 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, 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, references to "countries" are to countries, territories or areas.

INTRODUCTION

1. This year the annual publication of the Review of Maritime Transport by the UNCTAD secretariat has several new substantive features. These include an analysis of the participation in world shipping by 35 leading maritime countries, and short-term forecasts of world seaborne trade and the world fleet. In order to facilitate the interpretation of certain statistical material, expanded graphs and charts are shown in appropriate sections. The additions are complementary to the general purpose of highlighting and examining the main developments in world maritime transport during 1989 with particular emphasis on the maritime sector in developing countries.

2. In view of recent developments, the classification and grouping of countries shown under codes 6 and 7 (see Annex I and note 3 thereto) is at present under review. The grouping of countries has been maintained in the present publication in order to provide continuity and permit comparison of statistical data series as presented in earlier issues of this Review.

Summary of main developments in 1989

- International seaborne trade increased for the fourth consecutive year, reaching over 3.9 billion tons.
- Both coal and iron ore reached record ton-mile highs with shipments exceeding 1.9 and 1.7 billion ton-miles, respectively.
- Total ton-miles for all cargoes also increased to 16.2 billion – a 6.1 per cent gain over 1988.
- With the significant increase in newbuilding deliveries (up 37.1 per cent over the previous year) and a decrease in broken up tonnage (down 42.1 per cent from 1988) the mid-year 1989 fleet reached 638.0 million dwt.
- Effective control of 50 per cent of the world merchant fleet through national flag and "off-shore" registers is concentrated in five major maritime countries (Greece, Japan, United States, Norway and USSR).
- The developing countries' share of the world merchant fleet dwt is 21.1 per cent of which 70 per cent is concentrated in ten countries or territories.
- Moreover, the disparity between developing country cargo generation and fleet ownership remains. For example, developing countries were the origin of 47.6 per cent of world trade but owned only 21.1 per cent of the world dwt. Conversely, developed market-economy countries loaded 44.6 per cent of the world seaborne trade and, either directly or indirectly through open or offshore registry fleets, controlled 67.5 per cent of the world dwt.
- The overall balance between supply and demand in the world fleet continues to improve as only 11.5 per cent of the active world fleet was estimated to be surplus in 1989.
- Global freight payments for maritime transport reached a ten-year record high in 1988. However, the ratio of freight to c.i.f. value of imports for developing countries in Africa and Oceania was almost three times greater than that for developed countries.
- The level of freight rates, particularly in the tanker sector, increased in 1989. The largest gains occurred in the liquid and dry bulk sectors while liner indices experienced minimal changes over 1988.
- The growth of NVO-MTO operators in developing regions, more double-stacked trains, expanded sea-air services and greater use of inland waterways for container traffic characterized developments in the multimodal sector.

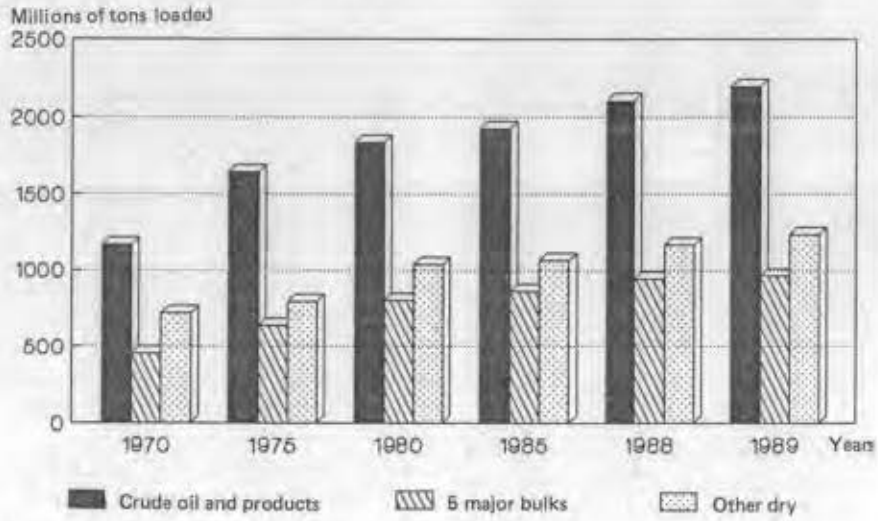
I DEVELOPMENTS IN INTERNATIONAL SEABORNE TRADE 1989

1. For the fourth consecutive year total international seaborne trade expanded. Table 1 indicates that over 3.9 billion tons were loaded in 1989 which represents a 5.5 per cent increase over the previous year. The annual rate of change for tanker cargo loaded increased 6.9 per cent but in the dry cargo sector the annual rate of change was less than in the previous year (4.4 per cent versus 6.6 per cent). The decrease in the annual rate of change can be traced to a relatively small gain in the loading of mainbulk commodities which only increased 2.0 per cent over 1988. Trends in seaborne trade tonnage for crude oil and products, five major bulks and other dry cargo for selected years are illustrated in graph 1 and table 2.

2. The underlying factors driving the increase in world seaborne trade have been the size and growth of the economics of developed market-economy countries. For example, these industrial countries have about 69.1[1] per cent of the world GDP (1987) and experienced an average annual growth rate of over 2.9 per cent over the 1980-1988 period[2] By comparison, developing countries' share of the world GDP in 1987 was 18.9[3] per cent and average annual growth was 2.1 per cent[4]

3. Moreover, developed market-economy countries' share of the 1988 value of world merchandise trade reached 70.8 per cent as compared to 19.9 per cent for developing countries.[5] Also, the annual average rate of exports during the 1980-1988 period was 6.0 per cent for developed market-economy countries while developing countries experienced a negative change of -1.0 per cent.[6] In summary, it is the economic growth and trade, particularly of developed market-economy countries, that has been the primary catalyst for international shipping.

Graph 1
INTERNATIONAL SEABORNE TRADE FOR SELECTED YEARS



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

1 UNCTAD, Statistical Pocket Book, 1989, p.12.

2 UNCTAD, Handbook of International Trade and Development Statistics, 1989, p. 428

3 Statistical Pocket Book, op. cit.

4 Handbook of International Trade and Development Statistics, op. cit.

5 Gatt, International Trade 88-89, Vol. II, p.2.

6 Handbook of International Trade and Development Statistics, op. cit., p. 14, tables 1.5 and 1.6. Imports during the same period increased 5.3 per cent for developed market-economy countries and decreased 0.3 per cent for developing countries.

4. Total ton-miles also increased to 16.2 billion in 1989 or a 6.1 per cent upward movement over 1988. ton-mile demand by cargo types for the 1970-1989 period is noted in table 2. All cargo groups, except grain, experienced growth. For example, in 1989, iron ore ton-miles increased to 1.2 billion, and coal reached a record high of 1.8 billion ton-miles.

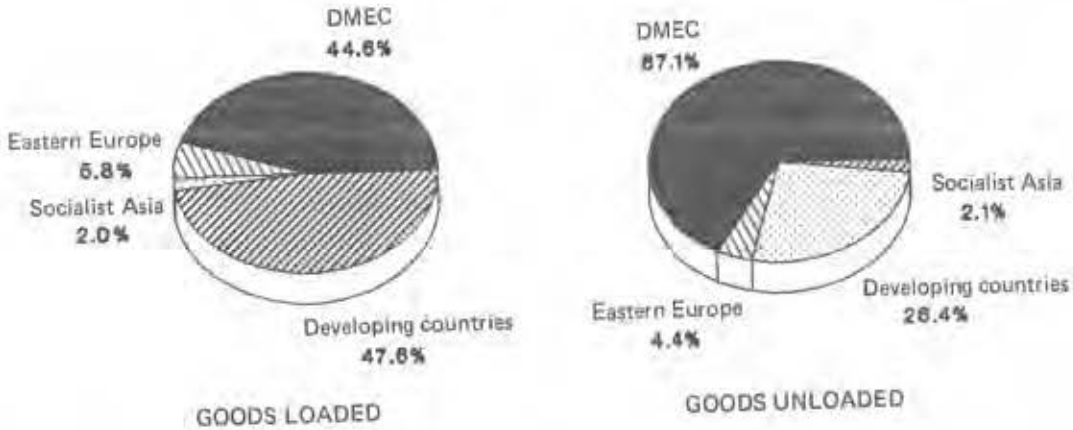
5. Total ton-miles for oil cargoes amounted to 7.1 billion but this figure is well below the decade's peak years 1980/81 when oil shipments exceeded 9.4 billion ton-miles. The reduction in ton-miles from the highs of the early 1980s reflects reduced oil production/consumption, and the decrease in the average distance of loaded voyage-miles.[7]

6. The distribution of 1989 world seaborne trade by goods loaded/unloaded into country groups and broad cargo categories is given in table 3 and graph 2. Developed market-economy countries generated 44.6 per cent of all goods loaded and were the destination of 67.1 per cent of all goods unloaded in 1989. The developed market-economy countries' share of goods loaded decreased 0.1 per cent but increased 0.2 per cent in the goods unloaded category. Countries of Eastern Europe and socialist countries of Asia experienced minimal changes in the share of world seaborne goods loaded/unloaded in 1989 as compared with 1988. Developing countries expanded in the 1989 goods loaded category by 0.3 per cent and experienced a slight, 0.1 per cent, decrease in goods unloaded, with oil cargoes accounting for most of the 1989 changes in both goods loaded/unloaded categories.[8]

7. A forecast of world seaborne trade by cargo sector from 1990 to 2000 is presented in graph 3. Total trade in 1990 is estimated to be 3.3 billion tons and is forecast to expand to 4.4 billion tons by the year 2000.[9] Liner and neobulk tons are forecast to reach 1.2 billion tons by the end of the decade, of which containerized cargo is expected to reach over 400 million tons. Estimated for both the dry bulk and the tanker sectors are 1.6 billion tons each by the end of the 20th century.

Graph 2

WORLD SEABORNE TRADE BY COUNTRY GROUPS, PERCENTAGE DISTRIBUTION OF TONNAGE 1989



Source: UNCTAD data bank.

7 Fearnleys, World Bulk Trades 1988, p.8.

8 The increase in oil cargo loadings would have been even more had the Middle East crude oil shipments through Turkey had not been statistically grouped in the developed market-economy countries.

9 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 Forecast Service (WFFS), which in turn is based on fleet information from LMIS and global trade forecasts from 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.

Box 1: Another view of international trade

The table below shows the origins/destinations by regions of the world international merchandise trade. Exact transport mode data are not available but it is estimated that 95.0 per cent of all goods shipped in international trade move by water transport. [a] *For the shipping industry the major interregional trade routes are the transatlantic (North America/Europe), transpacific (North America/Asia), and Europe/Asia and the interregional Asian trade. These four accounted for over one third of the 1988 world merchandise trade.*

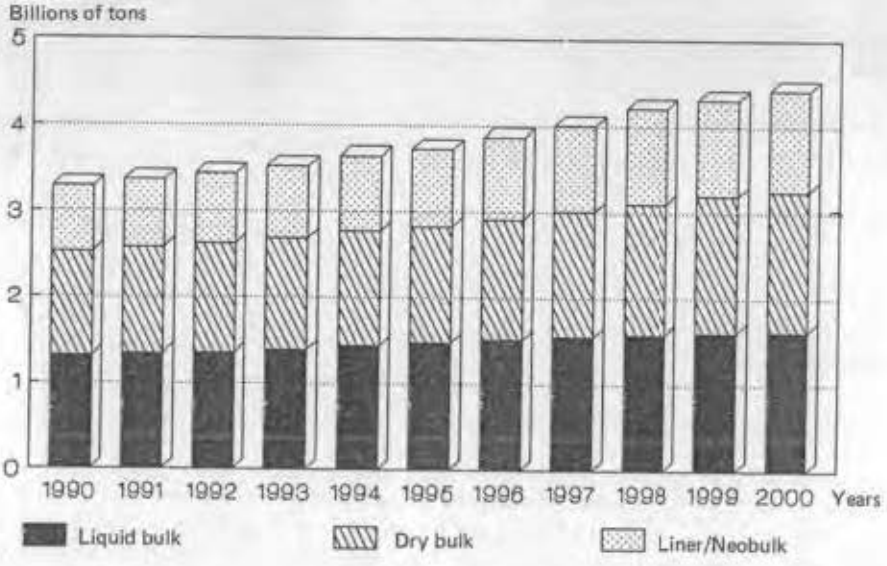
Network of world merchandise trade by region, 1988
(billions dollars)

Destination / *Origin*	*North America*	*Latin America*	*Western Europe*	*Eastern Europe and the USSR*	*Africa*	*Middle East*	*Asia*	*n.e.s*	*World*
North America	*150.5*	*46.6*	*99.3*	*4.9*	*8.2*	*11.9*	*112.5*	*3.6*	*437.5*
Latin America	*54.5*	*16.4*	*26.7*	*8.1*	*1.8*	*1.9*	*12.2*	*0.5*	*122.0*
Western Europe	*113.4*	*24.1*	*903.7*	*38.9*	*46.5*	*38.3*	*91.7*	*11.3*	*1 267.8*
Eastern Europe and the USSR	*3.0*	*8.6*	*50.4*	*128.2*	*4.1*	*4.9*	*18.3*	*8.9*	*226.4*
Africa	*9.8*	*1.5*	*39.0*	*2.8*	*4.6*	*0.9*	*6.0*	*9.4*	*73.9*
Middle East	*11.5*	*6.4*	*23.8*	*3.5*	*1.2*	*5.5*	*31.0*	*1.2*	*85.0*
Asia	*197.4*	*12.6*	*124.5*	*11.9*	*13.2*	*20.6*	*283.1*	*6.5*	*669.8*
World	*540.1*	*116.1*	*1 267.3*	*198.3*	*80.5*	*83.9*	*554.8*	*41.4*	*2 882.3*

Source: GATT, International Trade 88-89, vol. II, p.11, (graph only).

[a] *White, Lawrence J., International Trade in Ocean Shipping Services, Ballinger Publishing Company, Cambridge, Massachusetts, 1988, p.1. See also Box 6 for volume of trade in manufactures by mode of transport, 1980-1987.*

Graph 3
FORECAST OF WORLD SEABORNE TRADE
1990 TO 2000



Source: World Sea Trade Service.

Table 1

Development of international seaborne trade, [a] 1970 and 1980-1989
(Estimates of goods loaded)

Year	Tanker cargo		Dry cargo				Total (all goods)	
			Total		Of which: main bulk commodities [b]			
	Millions of tons	Percentage annual change	Millions of tons	Percentage annual change	Millions of tons	Percentage annual change	Millions of tons	Percentage annual change
1970	1 440	13.1	1 165	13.0	448	16.0	2 605	13.0
1980	1 871	-6.6	1 833	3.3	796	4.5	3 704	-2.0
1981	1 693	-9.5	1 866	1.8	806	1.3	3 559	-3.9
1982	1 480	-12.6	1 793	-3.9	759	-5.8	3 273	-8.0
1983	1 461	-1.4	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 [c]	1 728	6.9	2 212	4.4	960	2.0	3 940	5.5

Source: Based on data from the United Nations Statistical Office; Fearnleys, World Bulk Trades 1988 (Oslo), UNCTAD data bank and other specialized sources.

[a] Including international cargoes loaded at ports of the Great Lakes and St.Lawrence system for unloading at ports of the same system, but excluding such traffic in main bulk commodities.
[b] Iron ore, grain, coal, bauxite/alumina and phosphate.
[c] UNCTAD preliminary estimates.

Table 2

World seaborne trade by types of cargo, 1970 and 1980-1989
(Billions of ton-miles)

Year	Oil		Iron ore	Coal	Grain [a]	Other cargo	Total trade
	Crude	Products					
1970	5 597	890	1 093	481	475	2 118	10 654
1980	8 385	1 020	1 613	952	1 087	3 720	16 777
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	5 620	1 490	1 965	1 780	1 110	4 270	16 235

Source: Fearnleys, Review 1989 (Oslo).

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

Table 3

World seaborne trade [a] in 1970, 1987, 1988 and 1989 (est.)
by types of cargo and country groups [b c]

Country group	Year	Goods loaded				Goods unloaded			
		Oil		Dry cargo	Total all goods	Oil		Dry cargo	Total all goods
		Crude	Products			Crude	Products		
		(Trade in millions of tons)							
World total	1970	1 110	330	1 165	2 605	1 101	302	1 127	2 530
	1987	1 107	441	1 987	3 505	1 100	408	2 120	3 628
	1988	1 160	456	2 119	3 735	1 196	422	2 248	3 866
	1989	1 260	468	2 212	3 940	1 300	433	2 337	4 070
		(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
	1987	30.7	12.6	56.7	100.0	30.3	11.3	58.1	100.0
	1988	31.1	12.2	56.7	100.0	30.9	10.9	58.2	100.0
	1989	32.0	11.9	56.1	100.0	31.9	10.7	57.4	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
	1987	16.1	30.1	63.8	44.9	72.0	81.9	61.2	66.8
	1988	16.5	29.3	63.4	44.7	72.5	81.6	61.2	66.9
	1989	16.3	29.1	63.8	44.6	72.7	81.3	61.4	67.1
Countries of Eastern Europe (including USSR)	1970	3.4	8.0	6.9	5.6	1.2	1.0	3.8	2.3
	1987	6.0	15.5	4.4	6.3	3.4	0.4	6.4	4.8
	1988	5.5	15.3	4.2	6.0	3.1	0.4	6.1	4.5
	1989	5.4	15.0	4.1	5.8	2.9	0.4	5.9	4.4
Socialist countries of Asia	1970	-	-	1.2	0.5	0.5	0.1	2.0	1.2
	1987	3.7	1.8	1.4	2.1	0.3	0.3	3.5	2.2
	1988	3.6	1.8	1.3	2.1	0.3	0.3	3.4	2.1
	1989	3.5	1.7	1.3	2.0	0.3	0.3	3.4	2.1
		(Percentage share of trade by groups of countries)							
Developing countries	1970	94.6	64.9	31.9	62.8	17.9	19.4	15.1	16.6
	1987	74.1	52.6	30.4	46.7	24.3	17.4	29.0	26.2
	1988	74.4	53.6	31.1	47.3	24.2	17.7	29.3	26.5
	1989	74.8	54.2	30.8	47.6	24.1	18.0	29.3	26.4
of which in:									
Africa	1970	25.5	2.4	9.1	15.2	1.7	4.7	3.6	2.9
	1987	23.1	7.3	5.0	10.9	6.0	2.5	4.3	4.6
	1988	23.4	7.3	4.9	10.9	5.7	2.4	4.3	4.6
America	1970	12.2	35.4	13.8	16.0	10.5	5.6	4.4	7.2
	1987	13.8	11.3	13.2	13.2	5.0	4.2	4.4	4.5
	1988	13.9	11.3	13.0	13.1	5.5	4.1	4.3	4.5
Asia	1970	56.9	27.0	8.1	31.3	5.5	8.5	6.7	6.4
	1987	37.2	33.7	11.5	22.2	12.6	9.5	19.2	16.1
	1988	37.1	34.6	12.5	22.8	12.4	10.0	20.0	16.5
Europe	1970	-	-	-	-	-	0.1	0.1	-
	1987	-	0.2	0.4	0.2	0.8	0.6	0.8	0.8
	1988	-	0.2	0.3	0.2	0.7	0.6	0.7	0.7
Oceania	1970	-	0.1	0.8	0.4	-	0.5	0.3	0.2
	1987	-	0.1	0.4	0.2	-	0.6	0.1	0.2
	1988	-	0.1	0.4	0.2	-	0.6	0.1	0.2

Source: 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.

II DEVELOPMENT OF THE WORLD FLEET

A. Size and flag distribution of the world fleet

8. The distribution of the world fleet by country groupings for the years 1970, 1988 and 1989 is found in table 4. The 1989 mid-year data show that the world total has reached 638.0 million deadweight tons. The 10.1 million dwt increase over the 1988 mid-year figure is well below the average annual growth of 16.4 per cent for the 1970-1989 period but indicates a reversal of the annual decline in world deadweight tonnage that occurred during 1987 and 1988. Graph 4 illustrates changes in world fleet deadweight capacity by country groupings for the 1970-1989 period.

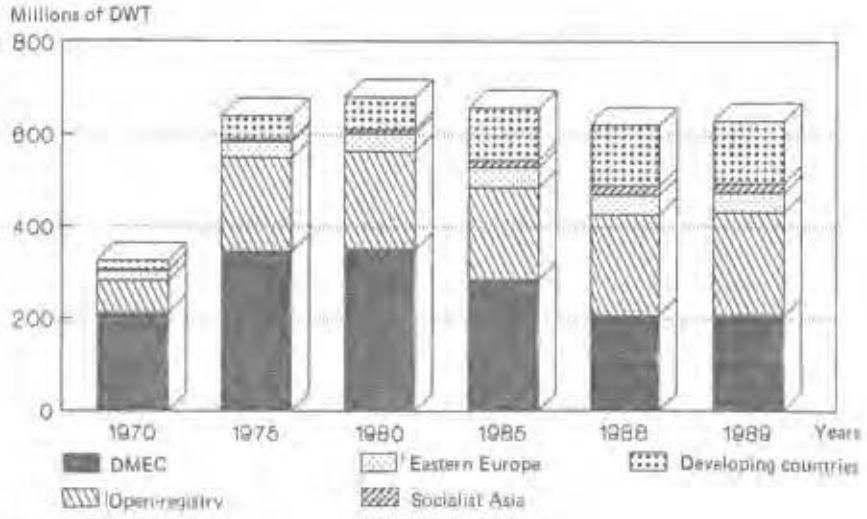
9. The 1989 upturn in total deadweight can be traced to the significant increase of newbuilding deliveries and the decrease in demolition of ships. For example, new deliveries increased from 9.7 million deadweight tons in 1988 to 13.3 million in 1989. During the same period, broken-up tonnage decreased from 5.7 million deadweight tons to 3.3 million deadweight tons.

10. The combined total of developed market-economy and open-registry countries continue to be the dominant groupings for flag registration in 1989. These two groupings together accounted for 67.5 per cent of the world deadweight and represent a 4.4 per cent increase over the previous year. In 1989 the countries of Eastern Europe and socialist Asia's share of the world deadweight remained unchanged from the previous year, e.g. 10.4 per cent. Developing countries, however, increased total deadweight from 131.2 million in 1988 to 135.0 million in 1989. This is a 3.8 million dwt gain or an increase of 2.9 per cent which largely reflects increases in tonnage registered in developing countries in Asia (NICs), Europe and Latin America, while there was a decrease in tonnage registered in Africa. Over-all, the share of developing countries represented 21.1 per cent of the 1989 world fleet. It should be noted, however, that 69.9 per cent of the developing country deadweight is registered in only ten countries or territories.

11. Graph 4 illustrates changes in world fleet deadweight capacity by country groupings for the 1970-1989 period while graph 5 shows world tonnage by country groups and most important developing countries as at mid-1989.

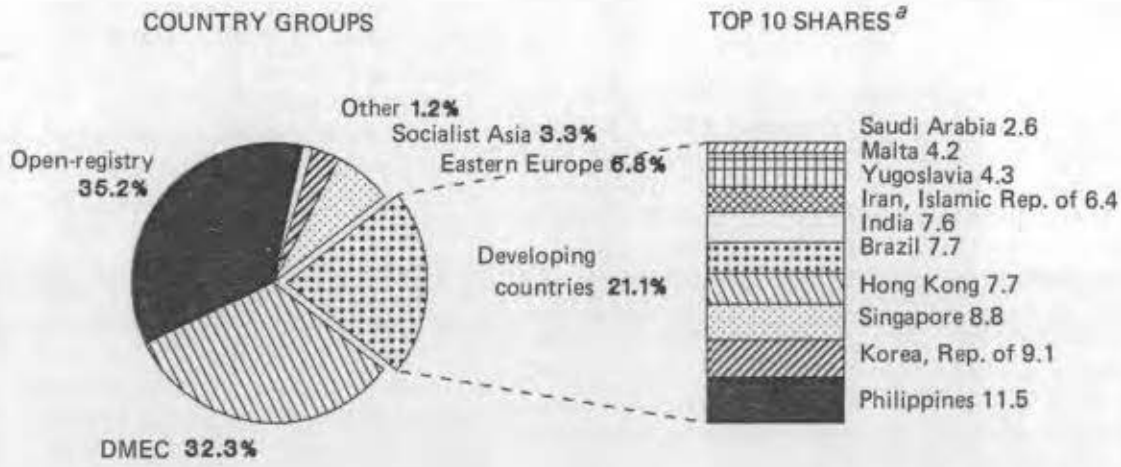
Graph 4

WORLD FLEET CAPACITY BY COUNTRY GROUPS: SELECTED YEARS, 1970 TO 1989



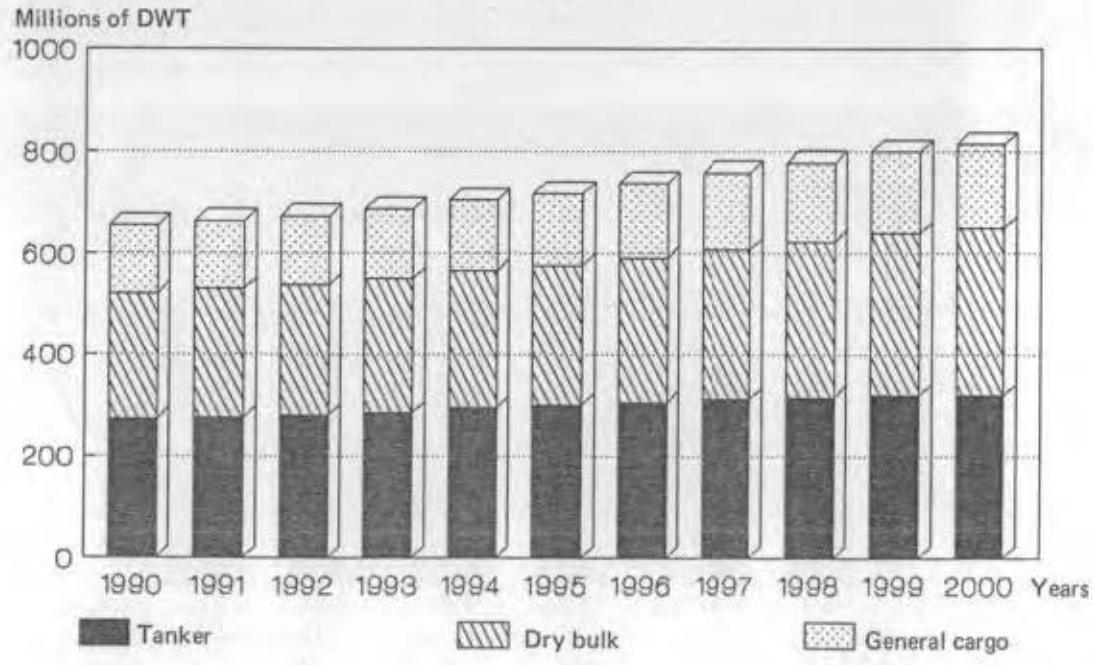
Source: LMIS, at mid-year.

Graph 5
WORLD TONNAGE BY COUNTRY GROUPS: MID-YEAR DWT 1989



Source: LMIS
[a] Millions of DWT

Graph 6
FORECAST OF WORLD FLEET BY PRINCIPAL TYPE OF CARRIER, 1990 TO 2000



Source: World Fleet Service.

12. Forecasts for world fleet development by vessel type are shown in graph 6. The WFFS[10] projections indicate that total world fleet deadweight will increase from 655.1 million in 1990 to 816.3 million tons by the year 2000. The dry bulk sector is expected to increase the most with a 32.9 per cent expansion over the decade. Tanker and liner/neobulk vessel types are forecast to increase 17.3 per cent and 24.1 per cent, respectively.

B. The 35 most important maritime countries

13. Although the merchant fleets registered in many traditional maritime countries have declined drastically during the last decade, shipowners from those countries have, to a large extent, maintained a controlling interest and continued to manage and operate the ships "flagged out" to open and international or offshore registers. Table 5 shows the 35 most important maritime countries in terms of the "controlling interest" of the world merchant fleet. The table lists merchant fleets (ships of 1,000 grt and above) by "country of domicile" or "national flag" which indicates the country where the controlling interest -- in terms of parent companies -- of the ships is located, showing ships registered under national flags as well as under foreign flags.

14. A decision as to where the "controlling interest" is located requires, of course, in several instances certain judgements to be made with respect to the ownership, control, management, and operations of the companies involved.[11] The figures shown in the table are therefore to be considered as general indications of magnitude rather than precise statistical tabulations.

15. The table indicates that -- as at 1 July 1989 -- a controlling interest of 94 per cent (in terms of dwt tonnage) of world tonnage was located in not more than 35 countries. Shipowners in only five most important countries of domicile (Greece, Japan, United States, Norway, USSR) controlled over 50 per cent of the world merchant fleet while for the 20 most important countries (including the territory of Hong Kong), controlling interest increased to more than 80 per cent of world tonnage.

16. The table also shows that 43 per cent of the deadweight tonnage for which the controlling interest is located in the 35 listed countries of domicile is "flagged out", i.e. registered in other countries or territories (41.5 per cent on a world-wide basis).

17. For certain countries or territories (see table 5), tonnage registered under foreign flag considerably exceeds that under the national flag, with the highest percentages shown for: Hong Kong (89.90); Switzerland (87.62); Pakistan (80.79); Finland (77.06); Canada (72.32); Federal Republic of Germany (69.34); USA (62.78); United Kingdom (61.84); and Sweden (61.56).

18. Table 6 shows the number of vessels and amount of tonnage (by major types of vessel) under the most important registries for the top nine countries of domicile with tonnage under foreign flag listed in table 5. The table shows that for most countries there is a large concentration -- ranging from somewhat over one half to more than 80 per cent -- under not more than two foreign flags although the remainder of the tonnage under foreign flags may be widespread. Graph 7 also shows the ten most important maritime countries and their share under foreign flags.

C. Tonnage distribution of major open and international (offshore) registers

19. During recent years, there has been an increase in the number of countries or territories offering open-registry facilities or establishing international or offshore registers with special ship registration conditions available to national and/or foreign shipowners. A recently published listing, for instance, shows 22

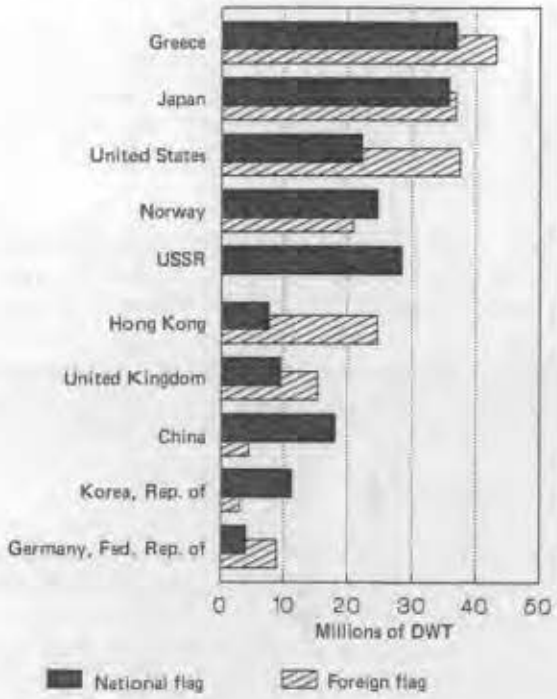
10 World Fleet Forecast Service (London) based upon information supplied by Lloyd's Maritime Information Services and DRI McGraw Hill (DRI).

11 See also footnote [b] to table 5.

12 See the guide to International Ship Registers, published by the International Shipping Federation, London (UK). The 22 international registers are indicated 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.

Graph 7

TEN MOST IMPORTANT MARITIME COUNTRIES AND THEIR SHARES UNDER NATIONAL AND FOREIGN FLAGS: DWT UNDER CONTROL, JULY 1989



Source: LMIS

"international ship registers."[12]

20. Table 7 shows the number of ships and deadweight tonnage of the merchant fleets registered in the five major open registry countries (i.e. with more than 5 million dwt) according to broad categories of vessels. It indicates that Liberia and Panama continue to be the most important although tonnage registered has declined during recent years in both absolute and relative terms. Tonnage registered in Liberia has decreased from 94 million dwt in 1988 to 77 million dwt and in Panama from 71.5 to 61.3 million dwt. For Cyprus, Bahamas and Bermuda, the 1988 and 1989 dwt figures were as follows (in millions): Cyprus (32.8/30.3); Bahamas (15.0/18.1); Bermuda (6.9/7.6). Tankers (including gas and chemical tankers) constitute the largest category in terms of dwt (1,327 vessels; 99.5 million dwt). Ore and bulk carriers (including combination carriers) are the second most important category (1,511 ships; 66 million dwt), followed by 2,294 general cargo vessels totalling 22.3 million dwt and 238 containerships totalling 5.3 million dwt.

21. In revealing the true nationality (country of domicile) of major open registry fleets, table 8 shows that Greek ownership of the combined open-registry fleets shown predominates (39.0 million dwt -- 20.06 per cent) followed by United States (31.9 dwt -- 16.4); Japan (29.0 dwt -- 14.93); Hong Kong (22.0 dwt -- 11.33); Norway (15.6 dwt -- 8.04); United Kingdom (9.2 dwt -- 4.75), and Federal Republic of Germany (6.9 dwt -- 3.59). The aggregate tonnage for the nine countries/territories combined amounted to 153.6 million dwt or 79.10 per cent of the total fleet registered in the five open-registry countries shown.

22. The distribution of tonnage among the major open-registry fleet varies considerably among countries of domicile with Greek-owned tonnage dominating in Cyprus (18.4 million dwt -- 60.84 per cent of Cyprus-registered tonnage) while USA-owned tonnage is predominant in Liberia (18.3 million dwt -- 23.78 per cent) as well as in the Bahamas (4.1 million dwt -- 22.87 per cent) and Bermuda (4.9 million dwt -- 64.39 per cent), and Japanese-owned tonnage is predominant in Panama (22.8 million dwt -- 37.24 per cent). Out of the total foreign-flag fleet of 237.2 million dwt for which the controlling interest is located in the 18 major countries or territories of domicile shown in table 8, 194.3 million dwt or 81.92 per cent has been "flagged out" to the five major open registry countries shown.

23. The Norwegian International Register (NIS) included, as at 1 July 1989, 449 ships aggregating 23 million dwt (98.5 per cent under Norwegian ownership) and the Danish International Register recorded 204 ships for a total of 5.9 million dwt (practically all Danish-owned).

D. Types of vessels

24. The nine principal types ov vessel in the world merchant fleet are listed in table 9. The total deadweight tonnage for the principal types increased 1.5 per cent from mid-year 1988 to mid-year 1989. The largest annual change occurred within the miscellaneous tanker group which expanded to 558,000 dwt or 48.4 per cent over the previous year. Vessel type shares of the total fleet have remained relatively static over the 1988-1989 period. Over 90 per cent of 1989 total deadweight (646,810 tons) consists of four vessel types, eg. oil tankers (38.4 per cent), ore and bulk carriers (29.9 per cent), and general cargo (16.1 per cent). (See graph 8 for world fleet by vessel types for the 1987-1989

period.)

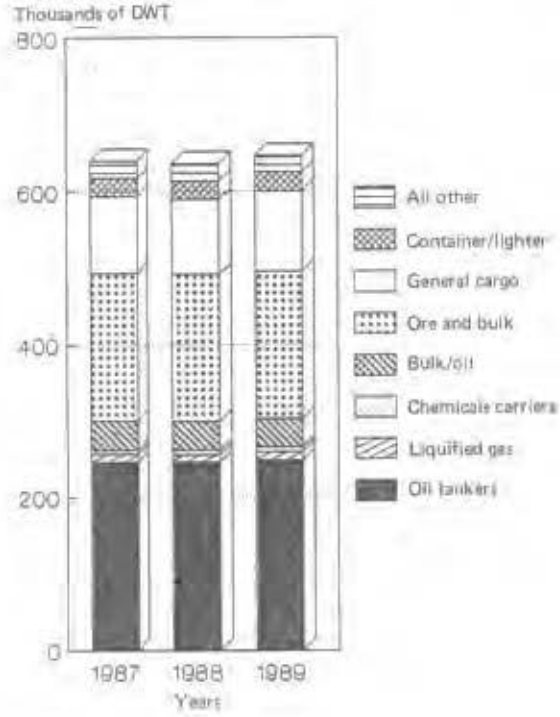
25. Further information about the world merchant fleet by type of vessel and country groups is presented in table 10. In the tanker sector the developed market-economy countries continued to decline while all other country-groups expanded their deadweight shares. Developing countries, in particular, more than doubled their share of the world tanker fleet between 1980 and 1989. Similar shifts in the deadweight distribution of the dry bulk fleets occurred with developed market-economy countries dropping from 52.7 per cent in 1980 to 28.4 per cent by 1989. This decline, however, was offset by gains in the other country groupings with developing countries obtaining 25.2 per cent of dry bulk fleet in 1989 as compared with only 9.2 per cent in 1980.

26. Structural changes also occurred in the general cargo and container/lighter carrier sectors. For example, developed market-economy deadweight shares of the general cargo ships fell from 43.4 per cent in 1980 to 23.6 per cent nine years later. The share of container ships and lighter carrier declined from 74.3 per cent to 46.9 per cent over the 1980-1989 period. The re-distribution of the developed market-economy deadweight tonnage has resulted in developing countries now (1989) accumulating 25.9 per cent of the general cargo ships and 15.3 per cent of container/lighter carrier vessels. Countries of Eastern Europe and socialist Asia also participated in the shift as their combined totals of the general cargo and container/lighter carrier by mid-year 1989 are 23.6 per cent and 6.9 per cent, respectively.

27. Table 11 summarizes recent trends in the world container fleet. At mid-year 1989 the total number of fully cellular containerships was 1 122 as compared to 1 075 for the same period in 1988. Total TEU capacity also expanded to 1.4 million which represents a 9.0 per cent improvement over the previous mid-year. Developed market-economy countries and open-registry fleets had 64.2 per cent of the 1989 world TEU capacity while developing countries increased their share to 14.6 per cent or 205,358 TEU slots. The countries of Eastern Europe and socialist Asia experienced similar gains as the combined total reached 86 622 TEU capacity or 6.1 per cent of the world slots at mid-year 1989.

Graph 8

WORLD FLEET BY PRINCIPAL TYPES OF CARRIER, 1987-1989 MID-YEAR



Source: LMIS

E. Age distribution of the world fleet

28. The average age of all ships increased to 12.98 years by July 1989. This is a 6.0 per cent increase over the previous mid-year age. Table 12 provides a statistical summary of age distribution by country groupings, type of vessel and age interval. Within the bulk carrier and general cargo ship fleets 43.9 per cent of the total deadweight is in the oldest age group (15 years and over), as compared to 33.4 per cent of the tanker fleet. Conversely, the percentage distributions by vessel type found in the youngest age group (0-4 years) are tankers (11.5 per cent), bulk carriers (18.5 per cent), and general cargo vessels (9.3 per cent). By country grouping the oldest ships are found in the merchant fleets of the combined fleets of Eastern European countries and socialist Asia (average 14.05 years) while the youngest fleets are in developed countries (average 12.37 years) and developing countries (12.67 years).

F. Comparison of cargo turnover and registration of ships by groups of countries

29. The dichotomy between cargo volumes generated by country groups and fleet ownership is represented in table 13. The data demonstrate that developed market-economy countries and open-registry countries continue to own a considerably larger share of the world merchant fleet than in total world cargo turnover. For example, in 1988 these two country groups combined generated 56.7 per cent of the world's international seaborne trade but owned 67.8 per cent of the world's deadweight. By comparison, the share of developing countries in goods loaded and unloaded in world seaborne trade in 1988 was 36.0 per cent, while their merchant fleet represented 20.9 per cent of the total world deadweight fleet. The share of the countries of Eastern Europe and socialist Asia in world international trade was slightly less than their share of the world's deadweight tonnage.

G. Productivity of the world fleet

30. During the decade of the 1980s the efficiency of the world tanker and dry bulk fleet followed a cyclical pattern. From 1980 to 1983 both the annual tons of cargo carried per dwt and ton-miles performed per dwt decreased to a ten-year low of 4.70 and 18.34 respectively. In 1984, however, a turnaround occurred and both productivity indicators continued to increase. By 1989 tons of cargo carried per dwt reached 6.18 and ton-miles performed per dwt was 25,450. Thus, over the 1980-1989 period, productivity of the world fleet, as measured by tons of cargo carried per dwt, increased 14.0 per cent but ton-miles performed per dwt remained almost the same. Tables 14 through 16 provide additional details about this period.

31. For example, table 15 indicates that the ton-miles performed per dwt by dry bulk carriers increased 27.1 per cent as compared to only a 5.4 per cent increase for the tanker fleet. Percentage changes in ton-miles performed per dwt by combined carriers and the residual fleet increased 21.3 per cent and 4.3 per cent respectively. Table 16 lists tons carried per dwt and shows that the tanker sector achieved the highest gains in productivity, with an increase of 25.1 per cent over the 1980-1989 period. Dry bulk carriers and combined carriers (over 18,000 dwt) increased 12.9 per cent and 16.9 per cent respectively, while the residual fleet (all other vessels) increased the annual tons carried per dwt from 8.33 in 1980 to 9.20 by 1989.

H. Present situation between supply and demand

32. The overall balance between supply and demand in the world merchant fleet continued to improve in 1989. Table 17 depicts the trends for the 1980s and shows that estimated surplus tonnage decreased from 83.4 million deadweight tons in 1988 to 62.6 million deadweight in 1989, i.e. 9.8 per cent of the world merchant fleet. The 24.9 per cent decrease reflects improved trading conditions and is well below the 1983 surplus peak of 195.8 million deadweight.

33. Nevertheless, all sectors of the world fleet experienced some surplus capacity. For example table 19 provides an analysis by the four main shipping sectors. The tanker market continued to have the largest excess fleet with 41.8 million deadweight tons or 16.5 per cent surplus to requirements in 1989. Furthermore, tanker tonnage engaged in oil storage fell (see table 18) as only 51 vessels or 9.9 million deadweight tons were employed for this purpose at the end of 1989.

34. By contrast, the 1989 world unitized fleet was only 2.5 per cent in surplus, while the general cargo fleet was in excess by only 4.2 per cent. The 1989 dry bulk fleet surplus was 17.2 million deadweight or 7.6 per cent of this sector's capacity.

Table 4

Distribution of world tonnage (grt and dwt) by groups of countries of registration, 1970, 1988 and 1989 [a]
(Mid-year figures)

Flags of registration by groups of countries	Tonnage and percentage shares [b]						Increase in tonnage (mill.of dwt)	
	In grt (millions)			In dwt (millions)				
	1970	1988	1989	1970	1988	1989	1970-1989 (average)	1988-1989
1. World total	217.9 (100.0)	397.1 (100.0)	404.2 (100.0)	326.1 (100.0)	627.9 (100.0)	638.0 (100.0)	16.4	10.1
2. Developed market-economy countries	141.8 (65.1)	134.9 (34.0)	134.5 (33.3)	209.7 (65.0)	205.9 (32.8)	206.1 (32.3)	-0.2	0.2
3. Open-registry countries	40.9 (18.8)	125.5 (31.6)	129.0 (31.9)	70.3 (21.6)	220.2 (35.0)	224.4 (35.2)	8.1	4.2
Total 2 & 3	182.0 (83.9)	260.4 (65.6)	263.5 (65.2)	282.2 (86.6)	426.1 (67.8)	430.5 (67.5)	7.8	4.4
4. Countries of Eastern Europe and socialist countries of Asia	19.5 (8.9)	49.6 (12.5)	50.5 (12.5)	21.7 (6.6)	63.8 (10.2)	64.9 (10.2)	2.3	1.1
of which: in Eastern Europe	18.6 (8.5)	36.0 (9.1)	36.2 (9.0)	22.7 (6.2)	43.4 (6.9)	43.6 (6.9)	1.1	0.2
in Asia	0.9 (0.4)	13.6 (3.4)	14.3 (3.5)	1.2 (0.4)	20.4 (3.3)	21.3 (3.3)	1.1	0.9
5. Developing countries [c]	14.5 (6.7)	82.5 (20.8)	85.0 (21.0)	20.5 (6.3)	131.2 (20.9)	135.0 (21.1)	6.0	3.8
of which in: Africa	0.8	5.5	5.3	1.1	7.7	7.3	0.3	-0.4
America	6.4	16.1	16.6	8.7	24.6	25.4	0.9	0.8
Asia	7.3	53.7	55.0	10.7	87.2	89.0	4.1	1.8
Europe [c]	-	6.2	7.0	2.2	10.0	11.5	0.5	1.5
Oceania	-	1.0	1.1	-	1.7	1.8	-	0.1
6. Other, unallocated	1.2 (0.5)	4.6 (1.1)	5.2 (1.3)	1.7 (0.5)	6.8 (1.1)	7.6 (1.2)	0.3	0.8

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

[a] Excluding the United States Reserve Fleet and the United States and Canadian Great Lakes fleets, which in 1988 amounted respectively to 3.3, 1.3 and 1.7 million grt.

[b] Percentage shares are shown in brackets.

[c] Including Yugoslavia, classified as from 1986 as a developing country in Europe.

Table 5

The 35 most important maritime countries
(as at 1 July 1989) [a]

Country of domicile [b]	Number of vessels: National flag [c]	Foreign flag	Total	Deadweight tonnage: National flag [d]	Foreign flag	Total	Foreign flag %	Total as percentage	
Greece	984	1 312	2 296	37 001 507	43 169 013	80 170 520	53.85	14.03	
Japan	1 212	1 527	2 739	35 873 770	36 931 649	72 805 419	50.73	12.74	
United States	810	605	1 415	22 257 178	37 538 626	59 795 804	62.78	10.46	
Norway	679	498	1 177	24 603 083	20 881 143	45 484 226	45.91	7.96	
USSR [d]	4 039	-	4 039	28 439 699	-	28 439 699	0	4.98	50.17 [e]
Hong Kong	56	544	600	2 765 461	24 621 031	27 386 492	89.90	4.79	
United Kingdom	474	415	889	9 420 115	15 264 801	24 684 916	61.84	4.32	
China	1 315	134	1 449	18 143 116	4 438 831	23 581 947	18.82	4.13	
Republic of Korea	428	98	526	11 165 574	3 090 260	14 255 834	21.68	2.49	
Germany, Fed. Rep. of	415	432	847	3 930 242	8 889 962	12 820 204	69.34	2.24	68.14
Italy	539	38	577	10 473 426	519 311	10 992 737	4.72	1.92	
Brazil	304	5	309	9 527 146	776 374	10 303 520	7.54	1.80	
India	383	17	400	9 927 840	327 859	10 255 699	3.20	1.79	
Denmark	323	191	514	6 643 280	3 539 577	10 182 857	34.76	1.78	
Taiwan Province of China	193	142	335	5 902 967	3 479 225	9 382 192	37.08	1.64	77.07
Iran, Isl. Rep. of	142	3	145	8 612 820	18 863	8 631 683	0.22	1.51	
Singapore	188	155	343	4 457 625	2 833 294	7 290 919	38.86	1.28	
Cyprus	75	22	97	5 444 312	1 820 991	7 265 303	25.06	1.27	
France	202	69	271	3 988 205	2 296 429	6 284 634	36.54	1.10	
Yugoslavia	271	22	293	5 593 527	338 939	5 932 466	5.71	1.04	83.27
Spain	347	61	408	5 300 271	284 258	5 584 529	5.09	0.98	
Turkey	319	16	335	4 930 546	542 367	5 472 913	9.91	0.96	
Romania	335	3	338	5 421 335	20 418	5 441 753	0.38	0.95	
Belgium	80	70	150	2 485 835	2 853 754	5 339 589	53.45	0.93	
Netherlands	409	161	570	3 154 259	2 093 577	5 247 836	39.89	0.92	
Sweden	183	93	276	1 791 336	2 868 996	4 660 302	61.56	0.82	
Poland	329	-	329	4 204 842	-	4 204 842	0	0.74	
Kuwait	43	19	62	2 631 275	1 328 438	3 959 713	33.55	0.69	
Philippines	226	14	240	3 276 169	212 559	3 488 728	6.09	0.61	
Finland	95	64	159	769 179	2 583 112	3 352 291	77.06	0.59	
Australia	73	22	95	2 763 416	192 269	2 955 685	6.51	0.52	
Canada	221	55	276	798 721	2 086 828	2 885 549	72.32	0.50	
Switzerland	15	80	95	338 472	2 396 536	2 735 008	87.62	0.48	
Pakistan	33	49	82	519 495	2 185 294	2 704 789	80.79	0.47	
Argentina	154	9	163	2 422 696	152 125	2 574 821	5.91	0.45	
Total (35)	15 894	6 945	22 839	305 978 740	230 576 679	536 555 419	43.0	93.88	
percentage	69.6	30.4	100	57	43	100			
World total	18 418	7 350	25 768	334 277 642	237 204 447	571 482 089	41.5	100.0	
percentage	71.5	28.5	100	58.5	41.5	100			

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

[a] Vessels of 1,000 grt and above, excluding USA reserve fleet and Canadian Great Lakes fleet.

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

[c] Including vessels flying the national flag but registered in territorial dependencies or associated self-governing territories. For the United Kingdom, British flag vessels are included under the national flag, except for Bermuda (listed in table 8 as an open-registry country) and Hong Kong (shown separately in the present table).

[d] It is reported that some vessels owned by USSR companies have recently been registered in Cyprus.

[e] Figures in this column show cumulative totals.

Table 6

Distribution of flagged-out tonnage for important countries of domicile [a]
By category of vessel

Flag country	Tankers		Bulk carriers		General cargo		Container ships		Other		Total		Percentage total
	ships	*000' dwt*	*ships*	*000' dwt*	*ships*	*000'dwt*	*ships*	*000' dwt*	*ships*	*000' dwt*	*ships*	*000' dwt*	
6.1 GREECE													
Cyprus	41	3 806	325	11 708	234	2 753	8	181	-	-	608	18 447	42.7
Liberia	52	6 795	81	4 841	14	235	-	-	-	-	147	11 872	27.5
Panama	56	1 866	90	3 148	121	1 171	1	29	13	97	281	6 310	14.6
Malta	52	991	48	1 445	59	471	-	-	-	-	133	2 907	6.7
Bahamas	8	1 029	17	931	29	386	-	-	-	-	54	2 34 6	3.1
Others	12	391	14	461	58	391	4	42	1	1	89	1 287	3.1
Total	195	14 878	575	22 534	515	5 407	13	252	14	98	1 312	43 169	100.0
6.2 JAPAN													
Panama	262	7 441	243	8 243	561	5 668	58	1 448	-	-	1 124	22 840	61.8
Philippines	-	-	112	5 087	44	483	2	30	-	-	158	5 600	15.2
Liberia	37	2 963	112	1 466	50	483	5	161	-	-	117	5 380	14.5
Singapore	9	802	5	470	8	77	3	78	-	-	25	1 427	3.9
Others	13	518	25	759	54	385	-	-	11	24	103	1 684	4.6
Total	321	11 724	410	16 025	717	7 402	68	1 758	11	24	1 527	3 693	100.0
6.3 USA													
Liberia	136	15 983	44	1 920	18	282	3	57	4	48	205	18 289	48.7
Bermuda	15	4 871	-	-	4	29	-	-	-	-	19	4 900	13.1
Panama	29	3 092	17	757	57	377	9	133	33	165	145	4 523	12.0
Bahamas	36	3 815	5	302	6	15	-	-	5	11	52	4 143	11.0
France	7	1 402	-	-	-	-	-	-	-	-	7	1 402	3.7
Others	84	2 519	17	499	47	331	6	86	23	845	177	4 282	11.4
Total	307	31 682	83	3 478	132	1 034	18	276	65	1 069	605	37 539	100.0
6.4 NORWAY													
Liberia	177	6 593	39	2 674	19	286	3	122	6	209	176	9 885	47.3
Panama	21	1 098	22	2 674	26	287	1	40	12	28	82	2 615	12.5
Bahamas	4	135	27	1 589	19	132	-	-	-	-	53	1 856	8.9
Gibraltar	4	1 323	1	159	-	-	-	-	-	-	5	1 481	7.1
Philippines	-	-	31	1 130	11	135	-	-	-	-	42	1 265	6.1
Cyprus	4	322	7	686	4	33	-	-	-	-	15	1 042	5.0
Others	32	900	32	1 349	34	394	-	-	27	96	125	2 737	13.1
Total	177	10 371	159	8 749	113	1 267	4	162	45	333	498	20 881	100.0
6.5 HONG KONG													
Liberia	69	9 560	60	3 608	36	442	13	412	-	-	171	14 022	57.0
Panama	31	2 790	74	2 581	149	1 597	15	257	-	-	269	7 226	29.3
Taiwan	-	-	11	1 046	2	48	6	173	-	-	19	1 267	5.1
Philippines	-	-	10	519	2	22	-	-	-	-	12	542	2.2
Other	10	757	6	312	50	392	4	103	3	3	73	1 564	6.4
Total	103	13 107	161	8 066	239	2 501	38	945	3	3	544	24 621	100.0

Table 6 (continued)

Distribution of flagged-out tonnage for important countries of domicile

Flag country	Tankers		Bulk carriers		General cargo		Container ships		Other		Total		Percentage total
	ships	*000' dwt*	*ships*	*000' dwt*	*ships*	*000'dwt*	*ships*	*000' dwt*	*ships*	*000' dwt*	*ships*	*000' dwt*	
6.6 UNITED KINGDOM													
Liberia	36	3 372	17	1 080	13	174	5	103	11	14	82	4 743	23.2
Isle of Man [b]	17	1 695	13	941	16	49	7	135	-	-	53	2 820	13.8
Gibraltar [b]	13	2 327	-	-	5	16	-	-	-	-	18	2 342	11.4
Bermuda [b]	16	1 917	4	162	14	141	-	-	7	28	41	2 248	11.0
Hong Kong [b]	14	742	16	1 124	6	136	8	141	-	-	44	2 143	10.5
Others	65	3 429	30	1 503	111	1 025	12	136	30	37	248	6 131	30.0
Total	161	13 482	80	4 810	165	1 541	32	515	48	79	486	20 427	100.0
6.7 CHINA (PEOPLE'S REPUBLIC)													
Panama	2	130	66	2 796	17	189	5	38	-	-	90	3 154	71.0
Liberia	-	-	17	609	-	-	-	-	-	-	17	609	13.7
Hong Kong	-	-	7	319	-	-	-	-	1	1	71	319	7.2
Others	1	57	1	7	17	227	-	-	1	1	20	357	8.1
Total	3	187	91	3 797	34	416	5	38	1	1	134	4 439	100.0
6.8 KOREA, REPUBLIC OF													
Panama	14	935	14	508	28	214	16	571	8	11	80	2 238	72.4
Liberia	2	373	3	83	2	27	-	-	-	-	7	482	15.6
Singapore	4	286	-	-	-	-	-	-	-	-	4	286	9.3
Others	-	-	1	69	2	10	-	-	4	5	7	84	2.7
Total	20	1 594	18	659	32	251	16	571	12	16	98	3 090	100.0
6.9 GERMANY (FRG)													
Liberia	13	1 910	8	906	27	363	4	99	-	-	52	3 277	36.9
Panama	9	102	17	1 111	33	446	6	142	-	-	65	1 801	20.3
Others	22	141	8	275	77	497	13	211	6	13	126	1 139	12.8
Total	61	2 275	63	3 382	261	2 245	41	673	6	13	432	8 890	100. 0
Total tonnage flagged out tor nine countries listed above:													
	1 348	99 601	1 637	71 331	2 209	22 043	235	5 190	209	1 658	5 638	199 821	—

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

[a] Vessels of 1,000 grt and above.
[b] Ships registered under the British flag.

Table 8

True nationality of major open registry fleets
as at 1 July 1989 (dwt tonnage)

Flag country / Country of domicile	Liberia			Panama			Cyprus			Bahamas			Bermuda			Sub-total			Total foreign-flag fleet	
	000 dwt	# of vessels	% [a]	000 dwt	# of vessels	%	000 dwt	# of vessels	%	000 dwt	# of vessels	%	000 dwt	# of vessels	%	000 dwt	# of vessels	%	000 dwt	# of vessels
Greece	11 872	147	15.43	6 310	281	10.29	18 447	608	60.84	2 346	54	12.95	-	-	-	38 975	1 090	20.06	43 169	1 312
USA	18 289	205	23.78	4 523	145	7.37	28	1	0.09	4 143	52	22.87	4 890	19	64.39	31 873	422	16.40	37 539	605
Japan	5 380	117	6.99	22 840	1 124	37.24	99	13	0.33	699	30	3.86	-	-	-	29 018	1 284	14.93	36 932	1 527
Hong Kong	14 022	171	18.23	7 226	269	11.78	389	6	1.28	396	4	2.18	-	-	-	22 033	450	11.33	24 621	544
Norway	9 885	176	12.85	2 615	82	4.26	1 042	15	3.44	1 856	53	10.24	4 890	19	64.39	15 631	335	8.04	20 881	498
U.K.	4 743	82	6.17	765	43	1.25	428	20	1.41	1 047	67	5.78	2 248	41	29.54	9 231	253	4.75	14 265	415
Federal Republic of Germany	3 277	52	4.26	1 801	65	2.94	1 890	145	6.23	-	-	-	-	-	-	6 968	161	3.59	8 890	432
China	609	17	0.79	3 154	90	5.14	-	-	-	-	-	-	-	-	-	3 763	107	1.94	4 439	134
Denmark	247	5	0.32	393	24	0.64	47	10	0.15	552	44	3.05	-	-	-	1 239	83	0.64	3 540	191
Taiwan, Province of China	460	18	0.60	1 979	107	3.23	795	6	2.61	69	1	0.38	-	-	-	3 303	132	1.70	3 479	142
Republic of Korea	482	7	0.63	2 238	80	3.65	-	-	-	-	-	-	-	-	-	2 720	87	1.40	3 090	98
Sweden	188	9	0.24	295	11	0.48	-	-	-	1 152	25	6.36	-	-	-	1 635	45	0.84	2 869	93
Belgium	330	6	0.43	28	3	0.05	223	19	0.73	509	2	2.81	-	-	-	1 090	30	0.56	2 854	70
Singapore	721	28	0.94	879	66	1.43	27	1	0.09	317	5	1.75	-	-	-	1 944	100	1.00	2 833	155
Finland	-	-	-	-	-	-	254	1	0.84	2 139	40	11.80	-	-	-	2 393	41	1.23	2 583	64
Switzerland	459	8	0.60	271	20	0.44	293	13	0.97	142	8	0.78	-	-	-	1 165	49	0.60	2 396	80
France	144	3	0.19	572	15	0.93	-	-	-	662	23	3.65	-	-	-	1 378	41	0.71	2 296	69
Pakistan	1 448	27	1.88	168	3	0.27	-	-	-	302	5	1.67	-	-	-	1 918	35	0.99	2 185	49
Sub-total	72 556	1 078	94.33	56 057	2 428	91.39	23 962	858	79.02	16 331	413	90.13	7 371	69	96.87	176 277	4 846	90.72	218 861	6 478
Others	4 364	130	5.67	5 278	324	8.61	6 361 [b]	155	20.97	1 789	99	9.87	238	14	3.00	18 030	722	9.28	18 343	872
Total	76 920	1 208	100.00	61 335	2 752	100.00	30 323	1 013	100.00	18 120	512	100.00	7 609	83	100.00	194 307	5 568	100.00	237 204	7 350

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

[a] Ships of 1,000 grt and above. Deadweight figures rounded to nearest thousand. Percentages relate to total dwt of the flag country (based on actual dwt before rounding.)

[b] Of which 5 434 thousand dwt (17.92 per cent) with true nationality in Cyprus.

Table 7

Tonnage distribution of major open-registry fleets
As at 1 July 1989

Country	Tankers [b]		Ore/bulk carriers [c]		General cargo [d]		Container ships		Others		Total	
	ships	000′ dwt [a]	ships	000′ dwt	ships	000′ dwt	ships	000′ dwt	ships	000′ dwt	ships	000′ dwt
Liberia	510	50 122	389	21 981	243	3 451	43	1 083	23	283	1 208	76 920
Panama	525	19 890	632	24 428	1 312	12 621	161	3 715	122	682	2 752	61 335
Cyprus	109	10 852	384	14 748	490	4 374	26	347	4	2	1 013	30 323
Bahamas	143	11 674	99	4 590	224	1 668	7	92	39	97	512	18 120
Bermuda	40	7 021	7	276	25	238	1	29	10	45	83	7 609
TOTAL	1 327	99 559	1 511	66 023	2 294	22 352	238	5 266	198	1 109	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.
[b] Including gas and chemical tankers.
[c] Including combination carriers.
[d] Including passenger, ro-ro vessels and ferries.

Table 9

World fleet by principal types of vessel, 1987-1989 [a]
(Thousands of dwt) [b]

Principal types	1987	1988	1989	Percentage change 1988/1989
1. Oil tankers	245 492 (38.3)	245 036 (38.5)	248 355 (38.4)	+ 1.4
2. Liquified gas carriers	10 039 (1.6)	10 000 (1.6)	10 358 (1.6)	+ 3.6
3. Chemical carriers	5 927 (0.9)	5 946 (0.9)	5 850 (0.9)	- 1.6
4. Miscellaneous tankers	398 (0.1)	376 (0.1)	558 (0.1)	+ 48.4
5. Bulk/oil carriers (inc. ore/oil carriers)	38 611 (6.0)	38 009 (6.0)	37 835 (5.8)	- 0.5
6. Ore and bulk carriers	193 191 (30.1)	192 090 (30.1)	193 540 (29.9)	+ 0.8
7. General cargo (inc. passenger cargo)	100 565 (15.7)	98 075 (15.4)	104 141 (16.1)	+ 6.2
8. Containerships (fully cellular) and lighter carriers	23 078 (3.6)	24 207 (3.8)	24 647 (3.8)	+ 1.8
9. Ferries and passenger vessels	2 758 (0.4)	2 871 (0.4)	2 927 (0.5)	+ 2.0
10. All other vessels	20 705 (3.3)	20 469 (3.2)	18 599 (2.9)	- 9.1
World Total	640 764 (100.0)	637 079 (100.0)	646 810 (100.0)	+ 1.5

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.
[c] Includes all fishing vessels that were previously shown separately. Consolidation required because data from previous years are not comparable with the new LMIS reporting format.

Table 10

Percentage shares of world tonnage by type of vessel and country groups (as at 1 July), 1980, 1985, 1988 and 1989 [a]
(In terms of dwt)

Country group	Year	Total dwt		Oil tankers	Ore and bulk carriers [b] including combined carriers	General cargo ships [c]	Container ships	Other ships
		Millions of dwt	Percentage of world total	Percentage share by vessel type				
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
	1988	628.0	100	37.4	36.0	15.0	3.9	7.7
	1989	638.0	100	37.2	35.6	15.8	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
	1988	205.9	32.8	37.0	28.3	24.2	51.6	40.8
	1989	206.1	32.3	36.1	28.4	23.6	46.9	42.9
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
	1988	220.2	35.0	42.0	36.0	23.6	20.4	23.7
	1989	224.4	35.2	42.8	35.1	26.3	21.6	23.8
Countries of Eastern Europe and socialist countries of Asia	1980	48.7	5.5	2.8	4.2	12.3	2.9	19.2
	1985	58.5	8.8	4.4	7.3	20.8	5.5	15.2
	1988	63.9	10.2	4.8	9.2	24.0	7.1	15.2
	1989	64.9	10.2	4.5	9.7	23.6	6.9	14.0
of which: in 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
	1988	43.4	6.9	3.6	5.8	15.1	3.7	13.7
	1989	43.6	6.8	3.4	6.1	15.1	3.3	12.1
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
	1988	20.5	3.3	1.2	3.4	8.9	3.4	1.5
	1989	21.3	3.3	1.1	3.6	8.5	3.6	1.9
Developing countries [d]	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
	1988	131.2	20.9	15.8	25.0	27.6	13.0	17.2
	1989	134.9	21.1	16.2	25.2	25.9	15.3	19.2
of which in: 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
	1988	7.7	1.2	1.2	0.5	2.8	0.1	2.3
	1989	7.3	1.1	0.9	0.5	2.3	0.2	3.4
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
	1988	24.6	3.9	3.1	3.7	7.2	1.4	4.0
	1989	25.4	4.0	3.0	3.9	6.4	1.6	5.1
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
	1988	87.2	13.9	10.3	18.5	14.2	11.0	10.5
	1989	89.0	13.9	10.9	18.1	13.9	12.8	10.0

Table 10 (continued)

Percentage shares of world tonnage by type of vessel and country groups (as at 1 July), 1980, 1985, 1988 and 1989 [a]
(In terms of dwt)

Country group	Year	Total dwt		Oil tankers	Ore and bulk carriers [b] including combined carriers	General cargo ships [c]	Container ships	Other ships
		Millions of dwt	Percentage of world total	Percentage share by group of countries				
Europe [d]	1980	1.2	..	..	..	0.1	-	-
	1985	3.0	0.5	0.2	0.6	0.9	-	..
	1988	10.0	1.6	1.0	2.0	3.0	0.4	0.2
	1989	11.5	1.8	1.3	2.3	2.8	0.5	0.4
Oceania	1980	0.2	..	..	..	0.1	-	-
	1985	0.4	0.1	..	0.1	0.2	-	0.1
	1988	1.7	0.3	0.2	0.3	0.4	0.1	0.2
	1989	1.8	0.3	0.1	0.4	0.5	0.2	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
	1988	6.8	1.1	0.4	1.5	0.6	7.9	0.1
	1989	7.6	1.2	0.4	1.6	0.6	9.3	0.1

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

[a] Excluding the United States Reserve Fleet and the United States and Canadian Great Lakes Fleet.
[b] Ore and bulk carriers of 6,000 grt and above, including combined ore/oil and ore/ bulk/oil carriers.
[c] Including passenger cargo vessels.
[d] Including Yugoslavia as of 1986.

Table 11

Distribution of the world fleet and TEU [a] capacity of fully cellular containerships by groups of countries, at mid-year 1987, 1988 and 1989

Flags of registration by groups of countries	Number of ships			TEU capacity and percentage shares [b]		
	1987	1988	1989	1987	1988	1989
1. World total	1 052	1 075	1 122	1 215 215 (100.0)	1 292 333 (100.0)	1 408 480 (100.0)
2. Developed market-economy countries	481	455	406	664 760 (54.7)	651 094 (50.4)	599 301 (42.5)
3. Open-registry countries	227	237	257	239 031 (19.7)	274 240 (21.2)	305 490 (21.7)
Total, 2 and 3	708	692	663	903 791 (74.4)	925 334 (71.6)	904 791 (64.2)
4. Countries of Eastern Europe and socialist countries of Asia	106	110	131	65 791 (5.3)	74 261 (5.7)	86 622 (6.1)
of which in:						
Eastern Europe	65	63	78	32 124 (2.6)	34 488 (2.7)	40 955 (2.9)
Asia	41	47	53	32 967 (2.7)	39 773 (3.0)	45 677 (3.2)
5. Developing countries	174	199	213	151 069 (12.5)	172 942 (13.4)	205 358 (14.6)
of which in:						
Africa	3	4	4	585 -	1 810 (0.1)	1 810 (0.1)
America	24	36	34	10,701 (0.9)	18 990 (1.5)	19 413 (1.4)
Asia	140	146	158	134 820 (11.2)	146 932 (11.4)	174 928 (12.4)
Europe	7	9	10	3 953 (0.3)	4 197 (0.3)	7 032 (0.5)
Oceania	-	4	7	-	1 013 (0.1)	2 175 (0.2)
6. Other, unallocated	64	74	115	95 274 (7.8)	119 796 (9.3)	211 709 (15.1)

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

[a] Twenty-foot equivalent unit.
[b] Percentage shares are shown in brackets.

Table 12

Age distribution of the world merchant fleet by type of vessel as at 1 July 1989
(Percentage of total in terms of dwt)

Country grouping	Type of vessel	Total	0-4 years	5-9 years	10-14 years	15 years and over	Average age (years) [a]	
							July 1989	July 1988
World total	All ships	100	14.4	19.7	31.8	34.1	12.98	12.25
	Tankers	100	11.5	12.6	42.5	33.4	13.56	12.55
	Bulk carriers [b]	100	18.5	26.1	23.8	31.6	12.00	11.31
	General cargo	100	9.3	18.3	28.5	43.9	14.54	14.05
Developed market-economy countries	All ships	100	16.1	21.5	31.8	30.6	12.37	11.71
	Tankers	100	11.8	12.6	45.7	29.9	13.18	12.18
	Bulk carriers [b]	100	20.7	29.4	22.0	27.9	11.25	10.82
	General cargo	100	14.3	23.3	25.5	36.9	13.09	12.63
Open-registry countries	All ships	100	13.3	16.4	33.1	37.2	13.57	12.53
	Tankers	100	12.0	10.1	40.5	37.4	14.03	12.80
	Bulk carriers [b]	100	14.9	23.0	23.4	38.7	13.23	12.33
	General cargo	100	9.6	19.0	35.6	35.8	3.67	12.98
Subtotal	All ships	100	14.6	18.7	32.5	34.2	13.02	12.13
	Tankers	100	12.0	11.1	42.6	34.3	13.67	12.51
	Bulk carriers [b]	100	17.4	25.7	22.8	34.1	12.38	11.63
	General cargo	100	11.9	21.2	30.6	36.3	13.38	12.79
Countries of Eastern Europe and socialist countries of Asia	All ships	100	13.0	19.0	25.0	43.0	14.05	13.75
	Tankers	100	14.2	22.1	31.3	32.4	12.71	12.80
	Bulk carriers [b]	100	16.0	22.9	30.6	30.5	12.30	11.79
	General cargo	100	8.8	13.0	18.9	59.3	16.40	15.99
Developing countries (excluding open-registry countries)	All ships	100	15.0	22.1	30.1	32.8	12.67	11.99
	Tankers	100	8.6	14.6	40.4	36.4	14.05	12.85
	Bulk carriers [b]	100	23.9	28.5	22.2	25.4	10.72	10.14
	General cargo	100	4.9	17.7	31.7	45.7	15.19	14.87

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

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

[b] Including combined carriers.

Table 13

Comparison between total cargo turnover and fleet ownership by groups of countries, 1970 and 1987-1989
(In terms of dwt)

Country grouping	Year	Goods loaded and unloaded (millions of tons)		Total of goods loaded & 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
	1987	1 606.2	2 437.2	4 043.4	430.7	56.7	68.1
	1988	1 704.9	2 604.4	4 309.3	426.1	56.7	67.8
	1989	1 792.0	2 752.0	4 544.0	430.5	56.7	67.4
Countries of Eastern Europe and socialist countries of Asia	1970	158.8	87.6	264.4	21.7	4.8	6.7
	1987	295.8	253.1	548.9	62.4	7.7	9.9
	1988	300.6	255.6	556.2	63.8	7.3	10.2
	1989	306.0	262.0	568.0	64.9	7.1	10.2
Developing countries	1970	1 643.3	431.6	2 074.9	20.5	40.4	6.3
	1987	1 602.9	938.1	2 541.0	132.4	35.6	20.9
	1988	1 729.5	1 005.9	2 735.4	131.2	36.0	20.9
	1989	1 842.0	1 056.0	2 898.0	135.0	36.2	21.2
World total [a]	1970	2 604.8	2 529.6	5 134.4	326.1	100.0	100.0
	1987	3 504.8	3 628.4	7 133.2	632.3	100.0	100.0
	1988	3 735.0	3 865.9	7 600.9	627.9	100.0	100.0
	1989	3 940.0	4 070.0	8 010.0	638.0	100.0	100.0

Source: As per tables 3 and 4.

[a] Including unallocated tonnage indicated in annex III.

Table 14

Cargo tonnage carried and ton-miles performed per dwt of the total world fleet, 1980-1989

Year	World fleet (millions of dwt)	Total cargo carried (millions of tons)	Total ton-miles performed (thousands of millions of ton-miles)	Tons of cargo carried per dwt	Ton-miles performed per dwt (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	3 940	16 235	6.18	25.45

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 15

Estimated productivity of tankers, bulk carriers, combined carriers [a] and the residual fleet [b], 1980-1989
(Ton-miles performed per dwt)

Year	Ton-miles of oil and grain by tankers (thousands of millions) [c]	Ton-miles per dwt of tankers (thousands)	Ton-miles of dry bulk cargo by 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 [b] (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
1988	6 740	29.04	3 596	18.39	1 310	39.34	4 589	25.91

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 the previous issue 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 16

Estimated productivity of tankers, bulk carriers, combined carriers, and the residual fleet [a], 1980-1989
(Tons carried per dwt)

Year	Tons of oil and grain by tankers (millions)	Tons carried per dwt of tanker	Tons of dry bulk cargo by bulk carriers of over 18,000 dwt (millions)	Tons carried per dwt of bulk carriers	Tons of oil and dry bulk cargo 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	1 390	5.99	630	3.22	227	6.82	1 630	9.20

Source: As for table 15.

[a] See footnote [a] to table 15.

Table 17

Tonnage oversupply in the world merchant fleet, 1980-1989
(million dwt and percentages)

	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989 (est)
					(Million dwt)					
World merchant fleet (as at mid-year)	682.2	688.8	693.5	686.0	674.5	664.8	639.1	632.3	627.9	638.0
Surplus tonnage [a]	97.1	149.1	184.1	195.8	171.2	161.5	108.0	101.1	83.4	62.6
Active fleet [b]	585.1	539.7	509.4	490.2	503.3	503.3	531.0	531.2	544.5	575.4
					(Percentages)					
Surplus tonnage as a percentage of the world merchant fleet	14.2	21.6	26.5	28.5	25.4	23.4	16.9	16.0	13.3	9.8
Surplus tonnage as a percentage of the active world merchant fleet	16.6	27.6	36.1	39.9	34.0	32.2	20.3	19.0	15.3	11.5

Source: Shipping Information Services of Lloyds'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 1980-1985 in this table are estimated in accordance with the method used before March 1989. Estimates for 1986-1989 are based on a new method which show considerably lower figures.

[b] World fleet minus surplus tonnage.

Table 18

Tanker tonnage engaged in oil storage, 1981-1989
(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
December 1989	37	6 235	14	3 750	51	9 983

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

Table 19

Analysis of tonnage oversupply by vessel type, 1980-1989
(Average year figures in million dwt) [a]

	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989 (est)
Supply of world tanker fleet	341.8	341.3	335.0	319.4	296.7	273.0	261.7	255.1	250.6	252.7
Total tanker surplus fleet, of which:	74.0	107.7	130.7	134.0	111.7	100.9	68.8	65.8	54.7	41.8
Share of surplus fleet in the world tanker fleet (per cent)	21.6	31.5	39.0	41.9	37.6	36.9	26.3	25.8	21.8	16.5
Supply of world dry bulk fleet	172.8	184.0	197.0	202.9	215.0	222.7	215.4	213.8	220.6	225.0
Dry bulk fleet surplus, of which:	19.7	36.4	46.4	52.0	50.3	50.1	30.8	28.0	23.4	17.2
Share of surplus in the world dry bulk fleet (per cent)	11.4	19.8	23.5	25.6	23.4	22.5	14.3	13.1	10.6	7.6
Supply of world general cargo fleet	103.4 [b]	108.4 [b]	85.4	82.1	79.8	74.9	69.7	65.6	64.7	63.5
General cargo fleet surplus	3.0	4.4	6.1	8.3	7.6	5.8	4.3	3.6	2.9	2.7
Share of surplus in the world general cargo fleet (per cent)	2.9	4.0	7.1	10.1	9.5	7.7	6.2	5.5	4.5	4.2
Supply of world unitized fleet [c]	19.0	21.1	22.9	25.2	27.3	29.9	31.2	32.9	34.4	35.4
Surplus of unitized fleet	0.4	0.6	0.9	1.5	1.6	1.7	1.5	1.7	0.8	0.9
Share of surplus in the world unitized fleet (per cent)	2.1	2.8	3.9	5.9	5.9	5.7	4.8	5.2	2.3	2.5

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

[a] Aggregates for all sectors as shown in the present table are averages for the years shown and therefore differ from the world total figures in table 15, which indicate estimates at mid-year.
[b] Average figures for the second half of the year.
[c] Unitized fleet includes here fully cellular containerships, partly cellular containerships, ro-ro ships and barge carriers.

III SHIPBUILDING

A. Ship prices

35. The 1989 shipbuilding market was characterized by robust pricing for all types and sizes of newbuildings. For example, the 1989 newbuilding price for a representative 15,000 dwt general cargo vessel reached $US 22.0 million, or a 29.41 per cent increase from 1988. Similar large increases were found for containerships (up 28.0 per cent), ro/ro vessels (up 14.0 per cent) and LNG carriers (up 27.0 per cent). Newbuilding prices for selected years and the percentage changes between 1988 and 1989 are found in table 20.

36. The overall escalation in shipbuilding prices can be traced to the 25 per cent decrease[13] in global shipping capacity since the 1970s coupled with new orders from shipowners who wish to modernize their vessels and the general improvement in the freight market. Moreover, the prices for newbuilding are expected to remain firm owing to the long lead time required to add shipbuilding capacity, the continuing expansion of world trade and pressure from shipowners to upgrade fleets.

37. Second-hand 1989 prices followed the upward trend of newbuildings. Table 21 indicates ship prices for both five- and ten-year old vessels over a range of vessel types and sizes for the 1987-1989 period. The ten-year old vessel group experienced the largest annual change from 1988 to 1989. For example, a ten-year old 125,000 dwt tanker was reported sold for $US 25.5 million in 1989 as compared to a 1988 selling price of $US 15.5 million or a 64.5 per cent increase; while a similar five-year old tanker experienced a 34.6 per cent price gain from 1988 to 1989.

Box 2: An end to cheap ships

With worldwide orders for all types of new tonnage at the highest they have been for several years and shipyard capacity at a premium, the era of relatively cheap vessels has ended--for the time being at least. This logic applies just as much to containerships as other vessel types. There are now more TEU slots on order than there were a year ago and several major yards report capacity fully booked through to 1992.

Growth in estimated construction cost [a]

Indices

	1987				1988				1989	
	Second	*Third*	*Fourth*	*First*	*Second*	*Third*	*Fourth*	*First*	*Second*	*Third*
Europe [b]	100	104	180	118	133	119	156	162	170	170
Japan	75	78	93	93	116	111	139	140	144	144
South Korea	75	78	93	93	160	106	126	127	134	138
PRC	86	78	100	100	120	110	136	138	-	-

Source: Containerisation International, January 1990, p. 20.

[a] *The indices are based on estimated cost without subsidies of a 2,700 TEU, 21-knot containership (not fitted with a Conair system nor cranes) over the last two years (expressed on a quarterly basis).*

[b] *100 based on an exchange rate of $US = DM 1.8, base year 1987.*

[13] See the annual Report of the Association of Danish Shipbuilders for 1988, March 1989, (p. 2), materials of the seminar "Shipbuilding 2000," Gdansk, 5-7 September, 1988, and materials of the Conferences "Shipping and Ship Building in the 1990s," Genoa, 10-11 November 1989.

B. Tonnage on order

38. Newbuilding trends by quarters for the March 1987 to September 1989 period are reflected in table 21. During this 30-month span, world tonnage on order continued to rise and by September 1989 42.8 million deadweight tons had been accumulated on the world's order books. Tankers on order increased 56.1 per cent and dry bulk carriers on order expanded by 48.0 per cent. The "other ships" category shows the largest change from the first quarter of 1987 to the third quarter of 1989 with a 65.5 per cent increase.

39. A more detailed summary of the world tonnage on order at 30 September 1989 is found in table 22. This information highlights the principal vessel types and countries of registry. For the former, tankers represent 44.8 per cent of the total, of which 7.7 million dwt are for VLCC/ULCC type tankers and 11.5 million dwt are for tankers under 150,000 dwt. Dry bulk and combination bulkers are the next largest category with 34.0 per cent of newbuilding orders, while vessels catering to the unitized/general cargo trades (full containerships, part containerships and ro/ro vessels) represent 9.8 per cent. The balance--other ships--amounts to 11.4 per cent.

40. Newbuilding orders were concentrated in the two country groupings of developed market-economy and open-registry countries. For example, the combined total for these two groups exceeded 30 million dwt or 72.1 per cent of all ships on order. The remaining percentage distribution of all ships on order was: countries of Eastern Europe 5.5 per cent; socialist countries of Asia 1.4 per cent; and developing countries 15.2 per cent. Within the developing countries group, Asian countries had the largest share with 4.8 million dwt on order as of 30 September 1989.

41. An analysis in table 22 of the newbuildings on order as of 30 September 1989 by country-groups/vessel type indicate that developed market-economy countries and open-registry countries had 79.6 per cent of the liquid and drybulk sectors, 9.4 per cent in the unit load/general cargo vessels and 11.1 per cent in the categories of other ships. In comparison, developing countries have 80.4 per cent of their newbuilding orders in bulk carriers (tanker and dry bulk), 10.2 per cent in unit load/general cargo orders and the remaining 9.4 per cent in other ships. The percentage distribution by ship types for Eastern Europe and socialist countries of Asia shows less emphasis on the bulk fleet sector (54.3 per cent in tankers and dry bulk carriers) and more even distribution between unit load/general cargo carriers (21.1 per cent) and other ships (24.5 per cent).

C. Deliveries of newbuildings

42. The total number of newbuildings delivered to the world fleet for the first three quarters of 1989 decreased to 1 102 ships from 1 150 for the same period in 1988. Total deadweight, however, increased by 36.8 per cent which reflects a growth in the size of newbuildings. Table 23 contains additional details as to type, number, dwt and grt for 1987-1989. In deadweight terms, tanker deliveries increased by 63.0 per cent but dry bulk carriers declined 92.6 per cent over the latest three years. From 1987 to 1989, general cargo vessels and other ships deliveries increased 11.6 per cent and 9.8 per cent respectively.

43. Newbuilding deliveries to country groupings are summarized in table 24. Developed market-economy countries continued to be the dominant recipients with 61.1 per cent of the 1989 deliveries followed by developing countries with 27.0 per cent, and the countries of Eastern Europe and socialist Asia combined 9.2 per cent. Although total 1989 deliveries increased a significant 23.1 per cent over 1988, shares by country groupings were equally important. For example, in 1987 developing countries received 21.6 per cent of grt deliveries but in 1989 this group's share was 27.0 per cent. By contrast, developed market-economy countries' share of the 1989 newbuilding decreased 6.1 per cent from 1987, while the 1989 combined share of newbuilding deliveries to the countries of Eastern Europe and socialist Asia expanded by 1.4 per cent from 1987.

D. Demolition of ships

44. The total amount of tonnage sold for demolition reached 3.3 million dwt or 0.5 per cent of the 1989 world fleet. Table 25 summarizes the 1980 decade and shows the significant drop in total broken-up tonnage since the peak of 1985. The sharp reduction in 1989 as compared to previous years can be attributed to the improvement of the tonnage balance situation,

an increase in freight rates and a substantial rise in prices for second-hand ships.

45. Details of the type of tonnage reported as sold for the 1982-1989 period are listed in table 26. For the two most recent years (1988 versus 1989), the amount of tanker tonnage sold for breaking decreased by 39 per cent, while dry bulk carrier and combined carrier demolition sales declined by 39.7 per cent and 63.1 per cent respectively. The demolition sales of other dry cargo vessels also declined 47.5 per cent. It should be noted that the tonnage sold for demolition consisted basically of damaged or very old tonnage removed from lay-up. Thus, the average age of undamaged tankers sold for demolition in 1989 was close to 28 years and the average age of dry bulk carriers was over 31 years.[14]

46. Continuing the previous years' trend, tankers represented the major type of tonnage sold for breaking in 1989 (48.1 per cent as compared with 44.6 per cent in 1988). The share of dry bulk carriers sold for breaking in 1989 was 15.6 per cent, as against 14.7 per cent in 1988. The share of combined carriers sold for breaking was 3.3 per cent, and the other dry cargo category share was 33.0 per cent.

47. The average annual prices paid by shipbreakers in the three main regional markets were higher in 1989 than in 1988. Table 27 provides monthly data for the 1987-1989 period and shows that the average in the Far East market was 2.8 per cent higher than a year before, 11.3 per cent higher and in in the Pakistan/India region, and 6.7 per cent higher in southern Europe. Year-end 1989 prices for all markets, however, was lower than January. The overall annual increases in prices can be traced to a decrease in the availability of vessels, due to improving trading opportunities for shipowners, and the continuing strong demand for scrap by major steel producing countries.[15]

Box 3: LR class for five revolutionary Nedlloyd boxships

Nedlloyd lines, a division of the Royal Nedlloyd Group, has ordered five 3,1000 TEU container ships of a novel design to Lloyd's Register class from Mitsubishi Heavy Industries and Ishikawajima Harima Heavy Industries in Japan. The vessels, designed by Nedlloyd Fleet Services, are the largest ever to be built without hatch covers. They will be fitted with continuous container cell guides from the tank top right up to a level which corresponds with an "on deck" height of four containers above the weather deck. Plan approval is being carried out at LR's Yokohama office in close co-operation with London headquarters. The design has been called the Ultimate Container Carrier (UCC) since the container handling and port turnaround times will be drastically reduced, as time-consuming deck container securing will be avoided. Special classification features have been incorporated in this advanced design and statutory requirements have been subjected to intensive examination in full co-operation with the flag administrations. Principal particulars of the ships are: Capacity: 3,100 TEU; Service speed: 23.5 knots; Length oa: 267.00m; Breadth: 32.24m; Depth: 23.25m; Maximum draught: 13.00.

Source: Lloyd's Anversois, 14 December 1989.

14 Fearnley's Review 1989 (Oslo), p.28.

15 See Institute of Shipping Economics and Logistics (Bremen), Shipping Statistics, March 1990, p. 27.

Table 20

Representative newbuilding prices, 1980, 1985 and 1987-1989
(Millions of dollars)

Type and size of vessel	1980	1985	1987	1988	1989	Percentage change 1988/1989
30 000 dwt bulk	17	11	13	19	22	16
32 000 dwt tanker	19	18	18	23	27	17
70 000 dwt bulk	24	14	18	24	27	12
80 000 dwt tanker	28	22	24	33	38	15
120 000 dwt bulk	32	27	25	33	42	27
250 000 dwt tanker	75	47	46	63	75	19
125 000 m3 LNG	200	200	150	150	190	27
75 000 m3 LPG	77	44	55	57	68	19
1 200 TEU ro/ro	44	28	27	28	32	14
15 000 dwt general cargo ship	14	12	15	17	22	29
2 500 TEU full containership	..	26	32	32	41	28

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

Table 21

World tonnage on order at the end of each quarter, 1987, 1988 and 1989
(Millions of dwt and percentage change [a])

Tonnage on order as at	All ships in millions of dwt	Percentage change	Tankers in millions of dwt	Percentage change	Dry bulk carriers (inc. combined carriers) in millions of dwt	Percentage change	Other ships in millions of dwt	Percentage change
31 March 1987	27.6		12.3		9.8		5.5	
		+ 5.0		+ 19.1		-11.7		+ 3.1
30 June 1987	29.0		14.7		8.7		5.7	
		+ 0.3		+ 4.6		-11.7		+ 7.6
30 September 1987	29.1		15.4		7.6		6.1	
		+ 5.3		+ 10.6		- 1.7		+ 0.7
31 December 1987	30.7		17.0		7.5		6.1	
		+ 4.8		+ 1.7		+ 11.1		+ 5.5
31 March 1988	32.1		17.3		8.3		6.5	
		+ 4.6		- 2.2		+ 21.3		+ 1.4
30 June 1988	33.6		16.9		10.1		6.6	
		+ 4.7		+ 2.5		+ 10.5		+ 1.5
30 September 1988	35.2		17.3		11.2		6.7	
		- 1.1		- 8.3		+ 9.9		- 0.9
31 December 1988	34.8		15.9		12.3		6.6	
		+ 2.4		+ 2.3		- 2.2		+ 11.3
31 March 1989	35.7		16.3		12.0		7.4	
		+ 10.9		+ 9.7		+ 15.4		+ 6.2
30 June 1989	39.5		17.8		13.9		7.8	
		+ 8.2		+ 7.4		+ 4.7		+ 16.2
30 September 1989	42.8		19.2		14.5		9.1	

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 22

World tonnage on order as at 30 September 1989
(Thousands of dwt [a])

Countries of registry	All ships	Tankers 150 000 dwt and over	Tankers under 150 000 dwt	Ore/oil and OBO carriers	Other bulk carriers	Full container ships	Part container ships	Ro/ro cargo ships	Other ships
World total	42 783	7 653	11 510	651	13 881	3 566	11	598	4 914
Developed market-economy countries	8 660	496	1 608	-	2 462	1 934	11	271	1 877
Open-registry countries	22 186	4 811	7 432	651	7 085	622	-	46	1 540
Subtotal	30 846	5 307	9 040	651	9 547	2 556	11	317	3 417
Countries of Eastern Europe	2 362	307	482	-	545	263	-	175	590
Socialist countries of Asia	588	-	63	-	206	182	-	3	134
Subtotal	2 950	307	545	-	751	445	-	178	724
Developing countries, Total	6 509	1 886	1 202	-	2 142	565	-	102	611
of which in:									
Africa	42	-	4	-	-	-	-	27	11
America	1 470	-	801	-	545	-	-	75	48
Asia	4 858	1 886	397	-	1 575	487	-	-	514
Europe	96	-	-	-	-	78	-	-	18
Oceania	42	-	-	-	22	-	-	-	20
Unallocated	2 478	153	723	-	1 441	-	-	-	161

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

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

Table 23

Deliveries of newbuildings, 1987-1988 [a]
(number of ships and thousands of grt/dwt)

Type of ship		1987	1988	1989
Tankers	Number	82	117	106
	Grt	1 976	2 404	3 169
	Dwt	3 376	4 148	5 503
Bulk/oil carriers	Number	5	1	2
	Grt	439	172	37
	Dwt	854	306	63
Ore and bulk carriers	Number	81	31	62
	Grt	2 872	1 346	2 440
	Dwt	5 077	2 418	4 491
General cargo ships [b]	Number	69	69	89
	Grt	458	462	511
	Dwt	578	572	645
Other ships	Number	854	932	843
	Grt	3 320	2 987	2 902
	Dwt	2 358	2 272	2 588
Total	Number	1 091	1 150	1 102
	Grt	9 065	7 371	9 059
	Dwt	12 243	9 716	13 290

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

[a] The figures in this table refer to the period January-September for each year.
[b] Vessels of 2,000 grt and over.

Table 24

Distribution of deliveries of newbuildings by groups of countries of build, 1987-1989 [a] (Thousands of grt) [b]

Country grouping	1987	1988	1989
Developed market-economy countries	5 994 (67.2)	4 183 (56.9)	5 533 (61.1)
Developing countries	1 927 (21.6)	2 176 (29.6)	2 443 (27.0)
Countries of Eastern Europe and socialist countries of Asia	691 (7.8)	655 (8.9)	828 (9.2)
Other, unallocated	301 (3.4)	340 (4.6)	248 (2.7)
World total	8 914 (100.0)	7 354 (100.0)	9 052 (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] As for table 23, this table is based on the period January to September (a slight statistical discrepancy remains in the total tonnages as compared to those shown in table 23).
[b] Percentage shares of the world total are indicated in brackets.

Table 25

Broken-up tonnage trends, 1980-1989

	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989
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
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

Source: Fearnleys, Review, Oslo, various issues.

Table 26

Tonnage reported sold for breaking by type of vessel, 1982-1989
(Thousand dwt and percentage shares)

Type of vessel	Thousands of dwt								Percentage shares							
	1982	1983	1984	1985	1986	1987	1988	1989	1982	1983	1984	1985	1986	1987	1988	1989
Tankers	23 253	24 348	19 822	26 794	12 306	6 549	2 570	1 567	82.2	74.5	67.9	64.3	39.4	40.1	44.6	48.1
Combined carriers	1 683	2 022	1 516	3 794	2 889	950	293	108	5.9	6.2	5.2	9.1	9.3	5.8	5.1	3.3
Dry bulk carriers	1 097	2 651	4 024	6 673	11 365	5 539	846	510	3.9	8.1	13.8	16.0	36.4	33.9	14.7	15.6
Other dry cargo ships	2 271	3 677	3 836	4 414	4 654	3 310	2 050	1 076	8.0	11.2	13.1	10.6	14.9	20.2	35.6	33.0
Total	28 304	32 698	29 198	41 675	31 214	16 348	5 759	3 261	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Source: Fearnleys, Review, Oslo, various issues.

Table 27

Demolition prices in 1987-1989
(Dollars per LDT)

Month	Market								
	Far East			Pakistan/India			Southern Europe		
	1987	1988	1989	1987	1988	1989	1987	1988	1989
January	145.0	200.0	250.0	117.5	195.0	245.0	70.0	95.0	130.0
February	132.5	230.0	250.0	115.0	195.0	250.0	70.0	105.0	130.0
March	137.5	250.0	250.0	115.0	210.0	250.0	77.5	115.0	130.0
April	148.5	230.0	250.0	117.5	220.0	250.0	77.5	115.0	130.0
May	148.5	240.0	250.0	117.5	240.0	260.0	77.5	115.0	130.0
June	159.0	240.0	250.0	115.0	251.0	262.5	77.5	130.0	130.0
July	160.0	240.0	250.0	130.0	245.0	262.5	80.0	130.0	130.0
August	175.0	250.0	250.0	145.0	250.0	262.5	85.0	130.0	130.0
September	185.0	240.0	250.0	155.0	230.0	250.0	85.0	130.0	130.0
October	230.0	250.0	230.0	175.0	240.0	230.0	95.0	130.0	120.0
November	200.0	250.0	230.0	175.0	245.0	250.0	95.0	130.0	120.0
December	200.0	250.0	215.0	190.0	245.0	260.0	95.0	130.0	120.0
Annual average	168.4	237.0	243.7	139.0	227.0	252.7	82.1	119.5	127.5

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

IV PORT DEVELOPMENT

A. Port throughput

48. In 1988 world seaborne trade amounted to 3.7 billion tons which means that ports handled at least 7.4 billion tons of cargo, while the fact that some cargo is transhipped in reality increases the figure even further. Approximately 44 per cent is liquid cargo and the rest represents dry bulk and general cargo. It is estimated that a maximum 20 per cent of this dry cargo is shipped on liner vessels. For some liner trades, the proportion of containerized cargo reached approximately 75 per cent. With the assumption that on average 65 per cent of this cargo is containerized, this gives some 270 million tons of containerized cargo resulting in more than 540 million tons being handled by ports.

49. Table 28 gives the latest available figures on world container port traffic in developing countries and territories for 1988. The figures shown for the world total are more comprehensive because of an improved response to the survey. The world rate of growth for 1987-1988 was 8.4 per cent, which was more than the 7.6 per cent achieved in 1986-1987. The rate of growth for developing countries and territories was almost double that of the world average and reached 14.4 per cent for the period 1987-1988. This was a modest decrease in comparison with the 14.8 per cent for the period 1986-1987, but a rate of growth which, if maintained, will see a doubling of container traffic in developing countries in a period of five years. The growth is unevenly spread and frequently erratic from year to year due in some cases to violent fluctuations in the trade and in other cases to improved statistical coverage.

B. Containerization

50. Containerization has grown on all trade routes over the last two decades and it is anticipated that it will increase further particularly on routes linking developed and developing countries. Container operations in many developing countries still require improvement. Although inefficiency associated with handling containers often does not affect the profitability of the port as all costs are passed on to the exporter or importer anyway, there is a tendency to overlook the fact that these inefficiencies may harm the national economy. Many developing countries are directly competing with each other for the same export market and thus higher productivities and lower tariffs in ports will reduce distributors' costs, making their products more competitive. Low transport and handling costs and reduced transit times are decisive factors for the competitiveness of the products concerned.

51. Technological developments have changed the construction, layout, cargo handling equipment, manpower requirements and even the location of ports. New and reconstructed ports are moving from urban areas because of the requirements for more space resulting not only from greater cargo quantities but also because of new transport techniques. Ships sizes have become larger to benefit from economies of scale and therefore need greater berth lengths and draughts. Unitization of cargo requires ports to provide container terminals with large land areas, specialized layouts, container handling equipment with specific maintenance facilities and small highly trained labour forces. At the same time containerization has allowed the growth of transhipment services at selected ports.

C. Distribution centres

52. Another change is the development of ports as distribution centres. The underlying concept is to upgrade port activities from pure cargo handling at terminal points of a transport mode to an integrated link in a transport chain offering services for the optimization of the whole transport chain, including storage and distribution. The new services provide logistics support to the exporting and importing industries and more specifically involve information/documentation and distribution/storage services. The information technology support offered by the port is available to all port customers and can include such services as advising shippers and shipping companies of the arrival of goods, quantity and quality control reports, stock monitoring, possible

Box 4: World trade in port services [a] by area, region and leading exporter, 1970 and 1987

(Billion dollars)

Region/Country	1970		1987	
	Exports	Imports	Exports	Imports
Developed	6.5	9.4	46.3	47.0
Developing	1.3	1.0	9.9	8.2
Eastern trading area	...	...	0.5	1.2
North America	2.2	1.4	12.6	7.3
Latin America	0.4	0.5	2.5	3.8
Western Europe	3.5	6.3	28.1	31.0
Africa	0.2	0.1	2.1	0.5
Middle East	0.2	0.2	0.7	1.2
Asia	1.3	1.8	10.6	11.8
Selected East European [b]	...	...	0.2	0.8
Leading exporters				
United States	2.0	1.2	12.3	7.0
France	...	...	8.2	7.3
Netherlands	0.8	0.3	5.0	1.5
Japan	0.5	1.2	4.2	7.8
Germany, Fed. Rep.	0.4	0.7	3.3	3.3
United Kingdom	0.9	2.9	3.2	3.9
Singapore	0.2	0.0	1.9	...
Spain	0.2	0.1	1.6	1.2
Egypt	0.0	0.0	1.6	0.2
Belgium-Luxembourg	0.1	0.1	1.2	1.3
Hong Kong	...	...	1.2	...
Australia	0.3	0.4	1.1	0.8
Sweden	0.2	0.5	0.9	1.3
Denmark	0.2	0.2	0.9	1.6
Italy	0.3	0.4	0.7	1.6

Source: GATT, International Trade 88-89, vol. I, p. 57.

[a] *Port services defined by IMF Balance of Payments Manual (1977) include all goods and services procured by carriers at port, and fees for charters of carriers.*

[b] *Poland, Hungary, Romania.*

batching to form consignments, stock dispatch reports, dispatch statistics, delivery notes, customs papers, provision of trade statistics, etc..

53. As far as the physical movement and storage of cargo is concerned, modern service-oriented ports are increasingly acting as distribution centers both for export and import cargoes. Branching into distributive services has considerable implications for the port and its users - both traders and the various modes of transport - as well as the national economy. The main purpose of distribution centres is to optimize collection, delivery, transfer and storage of general cargo in a co-ordinated manner. The basic idea is to organize the transport chain in such a way that each individual link of the chain is performed by the mode best suited for it to arrive at an optimum use of all modes and, at the same time, to relieve cargo owners of activities such as storage/warehousing that are not directly linked to their particular production processes.

54. Finally, the establishment of distribution centers has considerable impact on the port and its activities and on regional economic development. These types of services create new employment for qualified personnel. The new port activities consist of distribution services in the widest sense, including such activities as stuffing and stripping of containers, cargo consolidation, cargo storage, etc.. The inclusion of distribution and related services has a considerable impact on the value added by the port and consequently on the income generated. The increasing importance of trade in port services is shown in box 4 which is an estimate of goods and services procured by carriers at port and fees for charters of carriers.

Table 28

Container port traffic of developing countries and territories, 1988 and 1987

Country or territory	Container traffic		Percentage change	
	1988 (TEUs)	1987 (TEUs)	1987/1988	1986/1987
Hong Kong	4 033 427	3 457 182	16.7	24.6
Singapore	3 375 100	2 634 500	28.1	19.6
Republic of Korea	2 205 532	1 949 143	13.1	27.1
Philippines	1 098 473	913 909	20.2	18.9
United Arab Emirates	1 042 637	957 558	8.8	3.0
Saudi Arabia	822 663	829 752	0	0.7
Brazil	815 188	666 007	22.4	9.1
Thailand	795 301	649 530	22.4	27.0
Sri Lanka	620 940	429 298	44.6	25.7
Malaysia	600 480	489 077	22.8	14.9
India	516 092	516 152	0	6.4
Indonesia	398 371	393 131	1.3	4.1
Pakistan	339 000	281 437	20.4	-3.8
Cyprus	295 629	245 623	20.3	18.7
Kuwait	219 921	200 034	9.9	0
Argentina	199 238	186 625	6.7	35.3
Egypt	186 364	179 108	4.0	3.5
Jamaica	182 669	254 757	-28.5	-7.0
Côte d'Ivoire	178 973	162 829	9.9	2.2
Mexico	177 779	148 863	19.4	9.3
Nigeria	171 371	159 591	7.4	0
Honduras	167 972	177 732	-5.4	4.7
Chile	159 976	149 343	7.1	23.8
Costa Rica	157 572	117 435	34.2	14.7
Oman	148 191	140 496	5.5	24.6
Venezuela	143 559	151 723	-5.4	43.3
Panama	127 248	174 565	-27.1	4.4
Jordan	116 672	98 655	18.3	-18.9
Kenya	112 445	115 367	-2.5	0.3
Colombia	98 829	111 114	-11.0	19.1
Guadeloupe	93 721	92 406	1.4	8.6
Cameroon	84 239	91 337	-7.8	-10.8
Papua New Guinea	84 061	91 758	-8.4	12.8
Guatemala	82 790	76 000	8.9	1.0
Peru	69 599	72 306	-3.7	-1.0
Bahrain	66 794	79 499	-16.0	-1.1
Trinidad and Tobago	62 537	67 858	-7.8	-13.4
United Republic of Tanzania	61 943	46 703	32.6	13.1
Bangladesh	60 651	55 392	9.5	10.7
Mauritius	57 400	53 379	7.5	23.3
Netherlands Antilles	48 443	39 278	23.3	37.8
Haiti	47 161	46 268	1.9	8.1
Syrian Arab Republic	46 143	54 197	-14.9	-16.0
Uruguay	45 411	40 002	13.5	14.5
Ghana	42 879	30 352	41.3	n.a.
Algeria	42 500	37 271	14.0	-20.8
Barbados	38 628	36 460	5.9	0
Togo	38 509	38 317	0	n.a.
American Samoa	35 730	31 987	11.7	12.8
Zaire	35 613	34 822	2.3	-14.5
Sudan	34 491	20 320	69.3	n.a.
Other reported [a]	458 816	409 015	12.2	12.9
Total reported [b]	20 686 255	18 076 448	14.4	14.8
World total reported	72 928 023	67 256 581	8.4	7.6

Source: Derived from information presented in Containerisation International Yearbook of 1990 and 1989; for last column, see Review of Maritime Transport, 1988 table 9.

[a] Comprising developing countries and territories where less than 300 00 TEU per year were reported or where a substantial lack of data was found.

[b] Certain ports did not respond to the background survey, although they were not among the largest ports; the total omission may be estimated at 5-10 per cent.

V FREIGHT MARKETS

A. *Freight rates of main cargo sectors*

55. The increase in the demand for international seaborne transport and the reduction of surplus capacity combined to increase freight rates in all sectors of the shipping market. Table 30 provides freight rate indices for the 1987-1989 period by sectors. In the liner market the 1989 annual average index returned to the same level as 1987 or showed a minimal gain of 0.8 per cent over 1988. Moreover, by 1989 year end the index was 8 percentage points below the January level, e.g. 115 versus 123.[16]

56. In the dry bulk sector both time and trip charter 1989 indices increased 12.9 per cent and 4.6 per cent respectively over the previous year. Over the whole of 1989, however, time charter rates declined 43.2 per cent but the trip charter index followed the usual mid-year decline and by year end was almost the same as January (204 versus 205).

57. Examples of drybulk freight rates that are of particular interest to developing countries are noted in table 29.

58. For most of the above cargoes the ranges for 1988 and 1989 are about the same. The annual variations, however, are significant the differences between the year's high and low amounting to over 59.9 per cent for ore cargoes from West Africa/Continental Europe or grain from the US Gulf to China (36.0 per cent).

59. Tanker freight indices showed the largest annual increases. The 1989 annual average for

Box 5: Freight at the country level

A more detailed analysis of freight rates at the country level is found in a recent study of shipping in Chile.

Ocean freight as a percentage of merchandise value f.o.b. in Chile's foreign trade, 1986 [a]

(Values in $US'000, and percentages)

	Total freight		*Value f.o.b.*	*Freight/Value f.o.b.*
	$US'000	*%*	*$US'000*	*%*
EXPORTS				
General cargo	*184,126*	*39.0*	*2,436,506*	*7.6*
Solid bulk	*111,767*	*24.0*	*726,551*	*15.4*
Liquid	*3,863*	*1.0*	*25,364*	*15.2*
Refrigerated	*171,973*	*36.0*	*448,855*	*38.3*
Total	*471,729*	*100.0*	*3,637,276*	*13.0*
IMPORTS				
General cargo	*154,200*	*72.0*	*1,566,608*	*9.8*
Solid bulk	*14,262*	*7.0*	*118,331*	*12.1*
Liquid	*43,034*	*20.0*	*351,765*	*12.2*
Refrigerated	*1,943*	*1.0*	*6,296*	*31.0*
Total	*213,439*	*100.0*	*2,043,000*	*10.4*

Source: World Bank Discussion Paper 67, Deregulation of Shipping: What is to be learned from Chile.

[a] *Based on customs data.*

16 Note the freight indices are based on the foreign trade of the Federal Republic of Germany (Ministry of Transport). Nevertheless, the indices are considered to provide representative data for the liner sector.

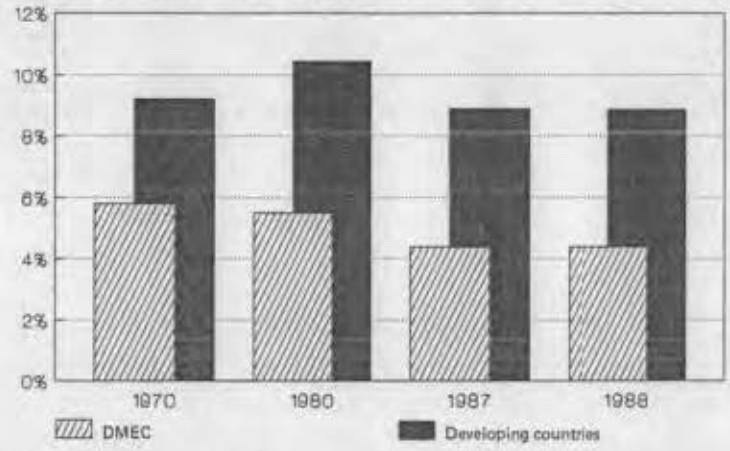
handy size clean tankers advanced 31.2 per cent over the 1988 annual average while the VLCC/ULCC annual index increased 15.9 per cent. Furthermore, during 1989 the monthly indices for handy size dirty tankers increased 19.6 per cent from January to December, while the monthly indices for handy size clean tankers increased 20.8 per cent for the same period. The fundamental economic factors driving the tanker freight market were the continued strong consumption of oil by developed market-economy countries, increasing oil production and better supply/demand balance in the tanker sector.

B. Estimates of global freight costs

60. Global payments for maritime transport reached a ten-year record high with the estimated freight cost of imports exceeding $US 139.4 billion in 1988. Table 31 provides estimates of total freight costs in world trade and the ratio of ocean freight to the total c.i.f. value of imports by groups of countries. Although world total freight payments increased 14.7 per cent over 1987, the percentage of freight to total import value remained the same. However, the ratio of freight to c.i.f. value differs significantly between developed and developing countries, particularly for Africa and Oceania, where the ratio is almost three times as great. See graph 9 for comparative values in selected years.

Graph 9

FREIGHT AS A PERCENTAGE OF C.I.F.: COMPARISON BETWEEN DMEC AND DEVELOPING COUNTRIES



Source: IMF, International Financial Yearbook.

Table 29

Comparative freight rates of selected commodities, 1988 versus 1989

Commodity	Route	Freight rate range			
		1988		1989	
		($US/ton)			
		High	Low	High	Low
Grain	United States (Gulf of Mexico)/China	34.00	25.00	34.00	25.00
Grain	United States (Gulf of Mexico)/Venezuela	19.00	17.50	19.00	17.50
Sugar	Queensland/Japan	20.00	-	20.00	-
Fertilizers	Aqaba/West Coast India	22.25	17.00	22.25	17.00
Fertilizers	United States (Gulf of Mexico)/West Coast India	45.00	38.00	45.00	38.00
Ore	Brazil/Japan	11.60	9.50	11.60	9.50
Ore	Brazil/Continental Europe	7.10	4.90	7.10	4.90
Ore	West Africa/Continental Europe	7.10	4.97	7.95	4.97

Source: Lloyd's List, London, 3 January 1989, 12 March and 1990.

Table 30

Freight rate indices, 1987-1989
(Monthly or quarterly figures)

	Liner freight rates [a] (1980 = 100)			Dry cargo tramp time charter [b] (1976 = 100)			Dry cargo tramp trip charter [c] (July 1965 to June 1966 = 100)			Tanker freight indices [c]												
										VLCC/ULCC			Medium-size crude carriers			Small crude and product carriers			Handy size dirty			Handy size clean		
Period	1987	1988	1989	1987	1988	1989	1987	1988	1989	1987	1988	1989	1987	1988	1989	1987	1988	1989	1987	1988	1989	1987	1988	1989
January	121	116	123				164	193	205	33	34	48	87	76	98	127	123	143	197	199	225	204	167	221
February	121	118	122	107	234	273	166	203	202	30	33	36	66	78	93	106	124	132	161	..	229	175	155	207
March	123	117	123				167	207	212	27	34	35	61	68	89	89	109	139	128	147	213	167	148	224
April	123	120	124				175	203	203	32	37	39	71	72	82	110	111	146	126	149	197	150	148	181
May	123	121	127	131	224	240	172	189	222	37	38	45	74	68	110	104	101	137	148	130	179	148	151	195
June	124	124	125				166	194	202	39	34	52	74	69	101	112	98	134	128	143	181	172	143	191
July	124	124	120				169	184	189	54	41	47	79	77	97	102	101	129	142	162	170	152	148	188
August	124	125	123	141	201	244	177	178	204	69	41	45	80	66	91	109	99	124	144	143	162	147	142	177
September	123	123	125				178	185	193	41	47	52	69	73	103	93	101	114	127	141	186	169	144	194
October	121	121	121				182	196	198	47	53	68	77	78	107	105	105	143	140	146	221	179	155	225
November	116	118	119	176	238	155	189	199	208	48	62	77	83	106	119	101	134	159	150	177	228	176	176	248
December	115	120	115				184	198	204	42	71	65	78	128	133	109	181	194	184	234	269	170	236	267
Annual average	122	121	122	139	224	253	174	195	204	42	44	51	75	80	102	105	116	141	148	158	205	167	160	210

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

[a] Liner index compiled by the Ministry of Transport of the Federal Republic 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 16 for certain comments regarding this index.)

[b] Compiled and published on a quarterly basis by the General Council of British Shipping.

[c] Compiled and published by Lloyd's Ship Manager. Worldscale = 100, 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 31
Estimates of total freight costs in world trade [a] by groups [b]
(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
	of which:			
	in Africa	10 432	77 757	13.42
	America	10 929	123 495	8.85
	Asia	21 979	211 089	10.41
	Europe	1 320	16 037	8.23
	Oceania	318	2 477	12.84
1987	1. World total	121 588	2 321 223	5.24
	2. Developed market-economy countries	82 616	1 883 480	4.39
	3. Developing countries-total	38 972	437 743	8.90
	of which:			
	in Africa	7 327	64 830	11.30
	America	8 118	92 917	8.74
	Asia	21 894	261 752	8.36
	Europe	1 284	15 406	8.34
	Oceania	349	2 838	12.30
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
	of which:			
	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

Source: Derived from IMF f.o.b./c.i.f. 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.

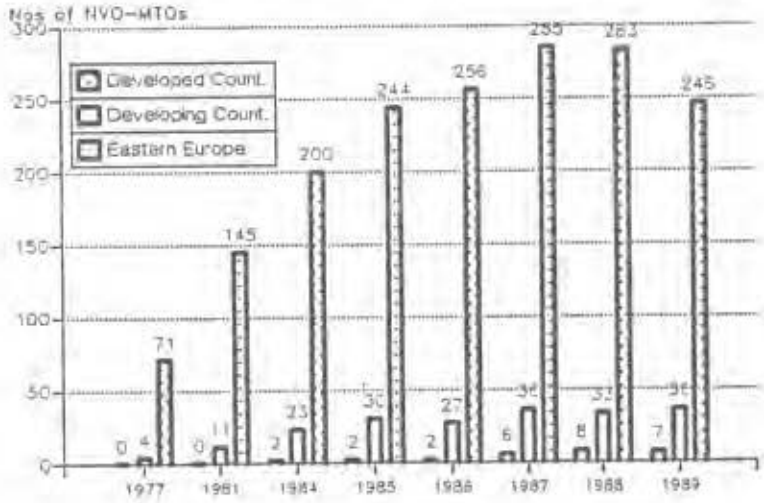
VI MULTIMODAL TRANSPORT AND TECHNOLOGICAL DEVELOPMENTS

A. Development of multimodal transport operators

61. Statistics on the development of multimodal transport operators (MTOs) remain scarce. According to *Containerization International Yearbook*, 1990 edition, the global number of MTOs has declined to 289. (Graph No. 10 shows the development.) However, according to information from Japan,[17] the number of NVO-MTOs operating in that country increased from 123 in 1987 to 153 in 1989, a 29 per cent increase. While a similar situation may not exist in all other developed countries, it is highly doubtful that there are only 10 NVO-MTOs in the Nordic countries or 21 in France, the Federal German Republic and Switzerland combined when there are 74 in the United Kingdom. Available data, however, will not allow accurate quantification of the correct number of NVO-MTOs.

Graph 10

Development of NVO-MTOs



Source: Containerization International Yearbook, various issues.

[17] Shipping and Trade News, Tokyo, Part II, Directory Edition, 12 December 1989, pp. 34-58.

62. Graph 10 indicates a near static situation for NVO-MTOs in developing countries, but again this may be more the result of inaccurate data than of actual developments. The continuing growth, albeit modest, among NVO-MTOs from East Asia may indicate an underlying trend (see graph 11).

63. Cargo systems in February 1990 carried an article that highlighted the difficulty in assessing the size of the intermodal or multimodal transport market.[18] The article also pointed to the consequences of inadequate information on the growth of the industry on investments in equipment and, by implication, in infrastructure.

64. With the steady increase in the number of MTOs and multimodal transport it has become necessary to revise a number of industry recommendations. The three most important of these are the ICC Uniform Rules on Combined Transport, the ICC Uniform and Customs Document Procedures, and the ICC INCOTERMS. All of these three sets of recommendations are currently being updated.

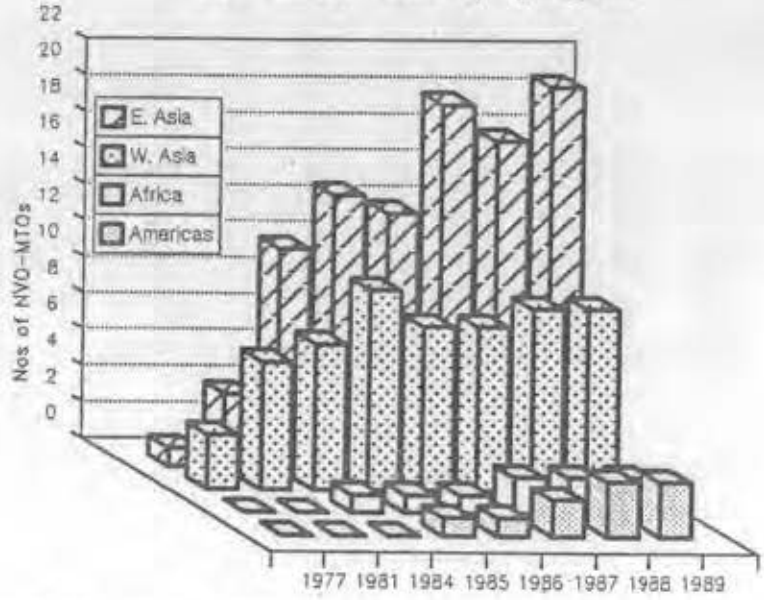
B. Developments in freight forwarding

65. The development of multimodal transport has also influenced the freight forwarding industry. In response to shippers' increasingly sophisticated requirements for logistics management and to participate in containerization and international multimodal transport, operators and freight forwarders must have the financial means of undertaking door-to-door responsibility. To compete with freight forwarders from developed countries, freight forwarders from developing countries are obliged to invest substantial capital in computers and communications equipment.

66. Developing countries' freight forwarders must also compete against VO-MTOs from developed countries who are continuing their efforts to build up transportation systems to create physical distribution and logistic chains. In brief, an "investment war" is being waged on the assumption that the competition will be affected by the amount of investments made to create an integrated transport service.

Graph 11

NVO-MTOs in developing regions



Source: Containerization International Yearbook, various issues.

18 "*Modal share game*", Cargo Systems, London, vol. 17, No. 2, February 1990, p. 35.

67. Developments in freight forwarding and integrated transport services also continue in Eastern European countries and in the Soviet Union. In these countries new national operators and existing companies have established several joint ventures with major European and Japanese freight forwarding companies. For example, a large new forwarding company was set up in the USSR through the initiative of organizations in the merchant marine sector together with shipper's interests. Its founding shareholders include ports on the different USSR coasts, the chartering and agency company "Sovfracht", several foreign trade associations and a number of joint international companies based outside the USSR.

68. In China freight forwarding has grown dramatically. The country's largest and official freight forwarding company, Sinotrans, established in 1955, has in the last three years set up more than 20 branches in major Chinese cities and ports. The company has also created a joint venture with a Japanese operator to establish multimodal integrated services using sea, air, and land modes of transportation. However, competition in the Chinese freight forwarding sector has become a reality because about 60 forwarding companies have been established to serve the needs of more than 5,000 Chinese national foreign trade corporations. The Integrated Transport Association was established to co-ordinate the activities of these companies.

C. Physical distribution

69. Two recent documents[19] highlight developments in the field of physical distribution. For example, the development of just-in-time (JIT) techniques for the delivery of materials into a manufacturing process without the holding of inventories requires a much closer carrier-customer relationship than was hitherto considered necessary or even desirable. While this limits the freedom of shippers, it also creates a healthier relationship between the shipper and the carrier. If the carrier wishes to increase his carriage, he must meet these logistics requirements. If developing countries wish to compete for this level of trade, they may find it necessary to create new NVO-MTOs that may have as their shareholders various unimodal carriers and freight forwarders who have the necessary know-how, and the latest computers and communications equipment.

D. Sea-air services

70. Sea-air intermodal service has grown considerably over the last three years. The main routes served by this transportation service are:

(a) Japan/Republic of Korea - US/Canada west coast (by sea), to Europe (by air).
(b) West coast of India-Arabian Gulf - Fujairah, Sharjah, Khor Fakkan, Dubai - (by sea), to Europe (by air).
(c) Australia-Hong Kong/Singapore (by sea), to Europe (by air).
(d) Indonesia-Hong Kong/Singapore (by sea), to Europe (by air).

The developments are illustrated in table 32:

Table 32

Sea-air cargo traffic from the Far East to Europe
(tons)

Country of origin	1986	1987	1988 [a]
Japan	20,000	45,000	61,800
Republic of Korea	3,700	5,000	10,000
Taiwan, Province of China	6,700	13,000	20,000
Hong Kong	20,000	20,000	20,000
China	2,000	5,000	5,000
India	3,000	5,000	8,000
Sri Lanka	1,000	2,000	3,000
TOTAL	56,400	95,000	130,000

Source: *Cargo Systems*, July 1989, p. 33.
[a] Figures for 1988 are UNCTAD estimates, except for Japan, for which the figure was taken from *Shipping and Trade News*, Tokyo, 25 April 1990, p. 28.

71. The volume of sea-air cargo traffic from Japan to different destinations totaled 61,000 tons in 1988, up 40 per cent from the previous year. Of this about 75 per cent was bound for Europe and 14 per cent for Latin America, both via the west coast of North America (see table 33). Textile manufacturers, makers of audio items and parts, integrated circuits and other

19 "Developments in multimodal transport", (TD B C.4 328) and "Information material for shippers to make the most efficient use of multimodal transport", (TD B C.4 330.)

"high-value-added" products are the main users of sea-air services.

Table 33

Sea-air cargo traffic from Japan, 1988

Destination	Tons	Percentage Share
Europe	46,607	75.4
North America	3,900	6.3
Latin America	8,773	14.2
Middle East	441	0.7
Africa	227	0.4
Others	1,894	3.0
TOTAL	61,000	100.0

Source: Shipping and Trade News, Tokyo, 25 April 1990.

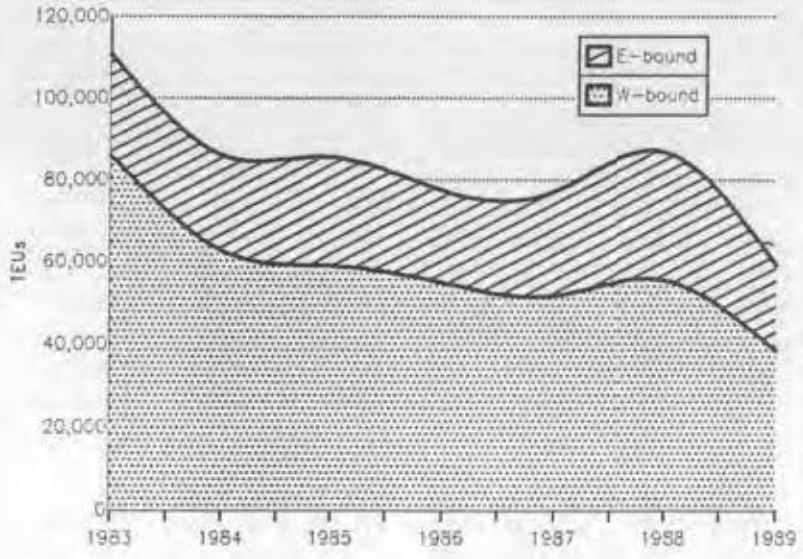
72. The ports of Singapore and Dubai are important transhipment points for cargos originating from South-East Asia. In both places new logistics distribution centres are under construction and intended particularly for sea-air transhipment services. For the first 10 months of 1989, sea-air cargo transiting Singapore reached 6,106 tons, a 10.5 per cent increase compared with the same period in 1988. Dubai has become the world's fastest growing sea-air transit gateway as Far East shippers seek a quick and cost-effective alternative to unimodal air-freight. The simple customs formalities, well-developed transport infrastructure and established forwarding sector are contributing to making Dubai the Middle East's sea-air transport hub.

73. The major problem to overcome in sea-air multimodal transport is the need to unload cargo from marine containers and reload it into unit load devices (ULD) currently used by airlines. The airlines have not yet generally adopted the 20' ISO 8323 standard air/surface general purpose container. It is estimated that there are currently only around 200 such containers in service, primarily on Europe-United States routes.

74. With expanding demand for door-to-door sea-air multimodal transport services, the airfreight industry will have to consider the wider use of containers that can be transported by air, sea, road or rail transport without intermediate stuffing and stripping, and considerable research and development efforts have consequently been deployed to reach this goal.

Graph 12

TSCS traffic



Source: Shipping and Trade News, Tokyo, 12 December 1989.

E. Trans-Siberian Container Service (TSCS)

75. At present, the TSCS is confronted with fierce competition from conference and non-conference shipping lines on the Far-East/Europe route. It has been reported[20] that shipping lines on this route in 1989 the result that some freight rates than those of the TSCS with resulted in some clients switched to the all-water route. At the same time cargo flows to the Islamic Republic of Iran and Afganistan further declined. Consequently, cargo volumes carried by the TSCS in 1989 were at their lowest level for the last few years.

76. To improve the attractiveness of the TSCS, the Soviet foreign trade organization Sojuztranzit (SOTRA), which operates this service, sought to guarantee a transit time between Japan and the Federal Republic of Germany/Switzerland of 24-28 days. A minimum of two block-trains per week with a capacity of 110 TEUs each are run between Vostochny in the east and and Brest in the west of the USSR. The transit time between these two points has been set at 14 days. An increase in the frequency of sailings between Japan and Vostochny is also planned. From Yokohama and Nagoya a fixed day service is operated to connect with the departure of the block-trains from Vostochny. The trains now also accept a total of about fifty 40' refrigerated containers a month for Europe. The traffic on the TSCS from and to Japan is shown in graph 12.

77. To improve the monitoring of container movements through the USSR a specialized Soviet-Japanese firm was established in Khabarovsk with the aim of developing a computerized system of tracking the containers in transit.

F. New landbridge projects

78. The Government of Thailand has approved a project for the creation of a 180-km landbridge linking Krabi province in the west of the Kra peninsula to the district of Khanom in Surat Thani province in the east. The landbridge will shorten the distance for cargo flows from the Middle East and Europe to the Far East by between 835 to 2,780 km. Four new deep-sea terminals (two on each side of the landbridge) will be constructed to handle crude oil and containerized cargo. The landbridge itself will comprise a combination of a high-speed road system, a high-standard double-track railway and modern handling facilities for the transhipment of containers.

79. Plans to create a new "Euro-Asia landbridge" linking the Chinese port of Lianyungang on the Pacific coast via the Trans-siberian railway to Rotterdam by 1992 have been developed by the Government of China. About 2,000 kilometres of this landbridge will go through China. When operational it will be the shortest land route between this part of Asia and Western Europe.

G. Double-stack train services

80. In the United States transport of containers by double-stack trains in domestic and international traffic has continued to develop. The fleet of double-stack flat cars has grown significantly since the inauguration of double-stack train services in 1984. Clearance restrictions in infrastructure for moving the double-stack trains have been largely eliminated through the combined funding efforts of railroads, states and ports. Where clearance problems remain, special lightweight car-platforms are used to gain a tare weight advantage over conventional equipment. By the end of 1989 this fleet numbered 15,000 "container wells" combined in 3,000 five-platform wagon units. The benefit of having multi-platform units is that less running gear is required, thus cutting costs and weights, and thereby permitting increased load capacity and optimizing operating costs. Each platform is designed to accommodate two containers up to 48' in length in the bottom tier. A 53' container can be loaded on the top tier. Specially designed for the domestic market, high-cube and wide-body containers have been rapidly introduced. By the end of 1989 more than 15,000 domestic containers (45', 48' and 53' long and 8'6" wide) were in service. According to forecasts for 1990, domestic containers additions range from 6,000 to 9,000 units.

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20 Shipping and Trade News, Tokyo, 12 December 1988.

Table 34

Operation of double-stack trains in the United States, Canada and Mexico

Stack train operator	Route	Frequency per week
API	Eastbound Services	29
	Westbound Services	42
	Northbound/Southbound Services	36
Subtotal	(no. of trains)	104
Rail-Bridge Corporation (K-Line)	Pacific South-West Services	2 Westbound 1 Eastbound
	Pacific North-West Services	2 Westbound 1 Eastbound
	Gulf Services	1 Westbound 1 Eastbound
	Azteca (Mexican) Services	1 Westbound 1 Eastbound
Subtotal	(no. of trains)	10
SCL Intermodal	Eastbound Services	29
	Westbound Services	35
	Canadian Eastbound Services	1
	Canadian Westbound Services	1
Subtotal	(no. of trains)	66
CN	Canadian Eastbound Services	2
	Canadian Westbound Services	2
Subtotal	(no. of trains)	4
Mitsui (MOL Intermodal)	Eastbound Services	13
CENTEX (NYK Line)	Eastbound services	23
Maersk	Eastbound Services	3
	Westbound Services	1
	Canadian Eastbound Services	2
Subtotal	(no. of trains)	6
Evergreen	Eastbound Services	7
	Westbound Services	6
Subtotal	(no. of trains)	13
ATSF	Eastbound Services	24
BN	Eastbound Services	14
Hanjin	Eastbound Services	5
OOCL	Eastbound Services	3
Hyundai	Eastbound Services	2
SP	Mexican Service	1 Southbound
Total for 14 stack-train operators		284

Source: Advice from carriers and Temple, Barker & Sloane.

API = American President Intermodal
ATSF = Atchison Topeka and Santa Fe Railroad Company
BN = Burlington Northern Railroad Company
CN = Canadian National Railroad
KLine = Kawasaki Kisen Kaisha
MOL = Mitsui OSK Line
NYK = Nippon Yusen Kaisha
OOCL = Orient Overseas Container Line
SP = Southern Pacific

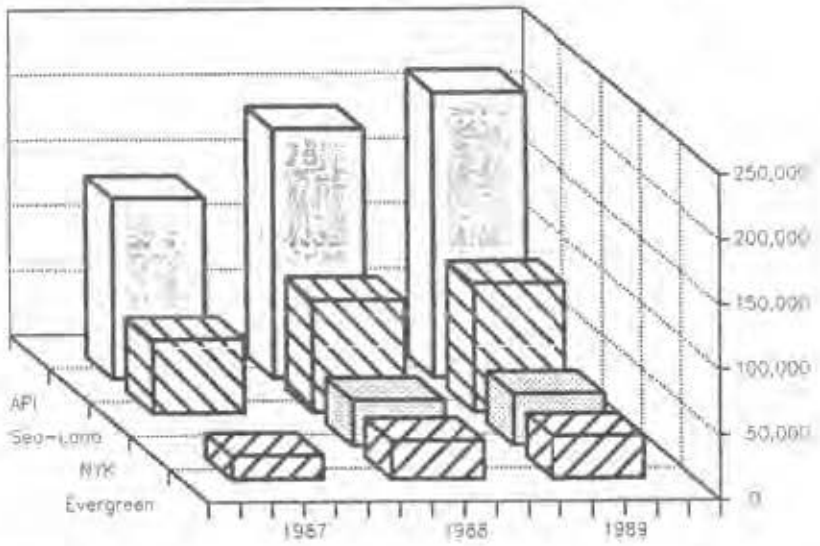
81. In table 34 details are given of the double stack-trains routing and frequency. The capacity of the trains is adjusted according to the actual cargo volume available and the time of departure of the train. Usually maximum capacity is around 270 - 280 FEU per train, sometimes up to 350 FEU. Graphs 13 and 14 show the development of some stack-train operators over the last three years.

82. While the norm in the past has been for the double-stack trains to be loaded away from the piers, there are moves to eliminate the intermediate transfer by trucks from the piers to the railway terminal. For example, Neptune Orient Line has commenced on-dock loading of its stack-trains. This reportedly cuts 8 to 12 hours off the transcontinental transit time.[21]

83. Double-stack train services first began in the United States in 1984. They have since spread first to Canada, in 1988, and to Mexico in 1989. In the latter country several modifications were made to tunnels and bridges on the Nuevo Laredo-Mexico City line as well as to the intermodal facilities in Mexico City to allow the inauguration of double-stack train services. Furthermore, in order to streamline the transportation process, customs clearance operations have been moved from the border crossing to the destination in Mexico. The latest country to contemplate the introduction of double-stack trains is Australia where the Australian National Railways are reported already to have built their first articulated 5-pack wagon.[22] Double-stack train services have expanded because of two factors, price and service. The effective doubling of the number of containers carried on a train has lowered the cost per container while the use of highly automated ports and inland container-handling hubs combined with strict scheduling of the trains has encouraged greater concentration of containers per train.[23] While double-stack

Graph 13

Approximate nos. of East-bound FEUs by selected double-stack train operators



Source: Advice from carriers.

21 *"First On-dock train leaves Seattle today"*, Journal of Commerce, New York. January 1990, and Japan Maritime Gazette, 6 February 1990, p. 6.

22 *"Container transport in Australia: railways planning to catch up,"* Journal de Transport, Basel, No. 48, 1 December 1989, p. 4511.

23 *"Moving agricultural products by double stack trains: an update,"* Transportation Report, Office of Transportation, United States Department of Agriculture, Washington, D.C., no date, p. 1.

trains initially were used exclusively for international traffic, there has been a move to use them also for domestic (United States) traffic, for example in agricultural products.

84. Developing countries that plan new railway lines or upgrade existing ones may wish to give serious consideration to the possibility of allowing double-stack train services to operate on dedicated routes.

H. Other container train services

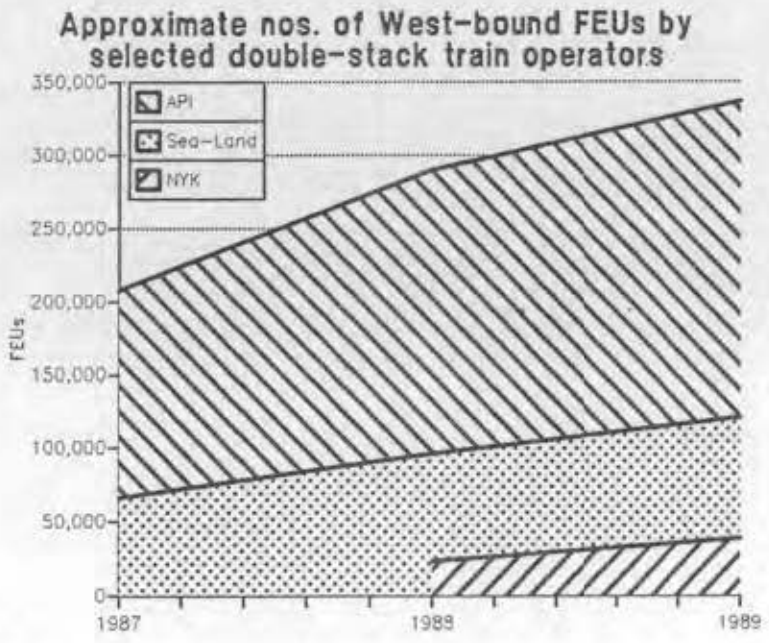
Pakistan

85. In addition to the data published in table 35 of the 1988 edition of the Review of Maritime Transport the secretariat was informed that a unit train service between Lahore Dry Port and Karachi was introduced in July 1989 in Pakistan. The capacity of each unit train is 70 TEUs and frequency of the service is about 1.7 train per week in each direction. For the period from July to December 1989 about 2,600 TEUs were transported in each direction. Separate unit trains for foreign companies are also run by the Pakistan Railways. At present one such train on this itinerary is run weekly for APL.

Saudi Arabia

86. The Damman-Riyadh container unit train service now in operates in principle five days per week (no trains on Fridays or Saturdays). Each train has a 140 TEU capacity. A certain flexibility is maintained in that, although at least one train leaves the port daily, not all its capacity may be used, while on other days up to three trains a day may depart. The Riyadh inland clearance depot has handled approximately 33,000 TEUs annually over the last three years.[24]

Graph 14



Source: Advice from carriers.

[24] Containerisation International, December 1989, p. 51.

I. Container traffic in inland navigation

87. The transport of containers on the Rhine has become a substantial activity. Beside economic and competitive considerations the present environment policy of the governments of the European countries makes this mode of transportation more and more attractive. In 1987 a total of 409,000 TEUs moved in and out of Rotterdam by inland navigation, of which 214,000 TEUs moved on the Rhine, 188,000 TEUs moved between Rotterdam and Antwerp and 7,000 TEUs moved between Rotterdam and Amsterdam. Of the total volume of containers moved by all means of transport between Rotterdam and The Federal Republic of Germany in 1987 (770,000 TEUs), inland navigation had a share of approximately 25 per cent, road transport about 65 per cent and rail approximately 10 per cent. It was estimated that transportation of containers by inland navigation on the Rhine increases annually in volume by 10-20 per cent and in 1989 the volume of container traffic between Rotterdam and the ports on the lower, mid and upper Rhine was estimated at approximately 250,000 - 350,000 TEUs. The container services on the Rhine run by different European operaters are listed in table 36. Containers are transported on the specialized pushed or towed barges or self-propelled vessels with the capacity varying from 32 to 352 TEUs (see table 36).

88. Another interesting development is the Bulgarian ro-ro service on the Danube. Currently four catamarans, each with a capacity of 50 trailers, provide a weekly service between the port of Passau (Federal Republic of Germany) and the Bulgarian ports of Vidin and Ruse. From there the trailers are transported by road to Varna and then by ferry to the Turkish port of Trabzon.

J. Container leasing

89. According to a survey conducted by the Institute of International Container Lessors (IICL) the world's container leasing fleet at the beginning of 1989 was around 2.35 million TEUs, of which the IICL members owned or controlled 2,07 million TEUs (see table 35).

Table 35

IICL members' container fleet at 1 January 1989

Size	Nos.	per cent
20 ft.	959,124	46.34
40 ft.	552,036	53.34
45 ft.	1,549	0.17
48 ft.	870	0.10
Other sizes	1,971	0.05
Total boxes	1,515,550	100.00
Total TEUs	2,069,755	

Source: *Lloyd's List*, London, 27 October 1989.

Note: IICL members include: Itel, Genstar, Transamerica, Sea Containers, Triton, Tiphook, CLOU, Textainer, Trans Ocean and IEA.

90. It is estimated that by the end of 1989 the container fleet owned or controlled by lessors would have increased by 200,000 TEUs (with 300,000 new constructions and 100,000 disposals) to total about 2.5 million TEUs or approximately 50 per cent of the world container population.

91. Owing to continued shortages of containers in many trades the lessors' container utilization rates in 1989 were very high (over 90 per cent), ensuring good profitability for the industry in which the process of concentration and rationalization has continued. A number of traditional major leasing companies became involved in a chain reaction of consolidation. With the limited capacities of the container production industry and high prices for new containers for a company seeking a greater scale of business it became more profitable to merge with or acquire competitors than to rely exclusively on the purchase of newly built containers. As a result in 1989 the top seven lessors controlled around 80 per cent of the leased container fleet or nearly 40 per cent of the whole world container population.

92. Rationalization and the benefits of economies of scale stemming from concentration in the industry have made it possible for the major leasing companies to increase the number of containers handled per employee ten-fold over the last 15 years from 250 TEUs in 1973 to 2,500 TEUs in 1988. One company was reported to operate at the rate of 3,850 TEUs per person.[25]

[25] *Cargo Systems*, London, February 1990, p. 27

Table 36

Container services operating on the Rhine between Netherlands/Belgium and the lower Rhine/mid-upper Rhine ports

Operator	Port calls in Netherlands /Belgium	Sailing frequency per week	Number of units deployed	TEU capacity	Rhine port calls
Combined Container Service	Rotterdam	4 (Lower Rhine Service)	1 7 1 1 1 1	224 108 99 90 72 120	Duisburg, Dusseldorf, Bayer Leverkusen, Sturzelberg
	Rotterdam, Amsterdam, Antwerp	6	as above		Koblenz, Ginsheim/ Gustavsburg, Frankfurt/Main (Hoechst) Ludwigshafen, Worth
CTG Rotterdam (Network Holding)	Rotterdam	3	1 1 1	208 90 192	Gemersheim
Dubbelman Container Transporten	Rotterdam, Antwerp	1	1 1	90 208	Mannheim, Ludwigshafen, Strasbourg, Karlsruhe, Worth, Ottmarsheim, Basle, Duisburg
	Rotterdam, Antwerp	1	1	72	
Fahrgemeinschaft Oberrhein (members: Alpina Container Service (SRN), Conteba Natural Van Dam, CFNR, Danser Container Line	Rotterdam, Antwerp, Amsterdam	3	1 1 1 1 1	352 178 320 140 174	Kekl, Mulhouse/ Ottmarsheim, Basle, Strasbourg, Mannheim, Weil
Frankenbach Container Service	Rotterdam, Antwerp	4	1	200	Mainz, Worth
Haniel Handelen Transport Wij	Rotterdam, Amsterdam	1	1 1	105 100	Ottmarsheim, Strasbourg and Worth on inducement; Basle by truck from Ottmarsheim or by direct call when justified by volumes
	Rotterdam	1	1	111	Duisburg
Rhine Ro-Ro Service	Rotterdam	2	2 2	40 32	Mainz, Mannheim, Karlsruhe
Rhinecontainer	Rotterdam	5	10	72-224	Emmerich, Mannheim, Worth, Karlsruhe
	Antwerp	5	as above		Emmerich, Mannheim, Worth, Karlsruhe
Transbox	Rotterdam, Antwerp	2	1 1	111 208	Duisburg, Sturzelberg, Bonn, Dusseldorf, Cologne (on inducement), Frankfurt am Main

Source: *Containerisation International*, December 1989, p. 39.

Note: The numbers and capacities of barges deployed are subject to change; additional Rhine port calls may be made; sailing frequencies are return trips.

93. One of the consequences of concentration was that it became difficult for potential newcomers to enter the market. The concentration also led to increasing pressure on medium-sized or smaller leasing companies in safeguarding their niche in the market. According to some evaluations, to be competitive on the market in the present situation a lessor needs to have a fleet of the order of 300,000 TEU. At an average TEU value of, say, US$ 1,650 this comes to approximately USD 500 million.

94. Medium-sized companies, i.e. companies with a container fleet of less than this "minimum requirement," must either expand through acquisition or merger, or accept being taken over by one of the major lessors if it wishes to continue to play a "global" role. If it wishes to remain independent, it must concentrate on a certain niche, e.g. through emphasis on specialized containers. However, this involves higher risks as the competition in this market is already very intense.

95. To avoid domination by the major leasing companies some ocean carriers have formed joint container pools such as Global Equipment Management (GEM) controlling a fleet of 120,000 TEUs for its member lines. Other carriers are themselves moving into both container leasing and container manufacturing, thus creating global multimodal logistics systems where the interests of lessors and carriers converge.

K. Production of containers

96. In 1989 the worldwide container shortage continued and container manufacturing companies were often working close to full capacity. Many had backlogs which virtually guaranteed that 1990 would also see the same situation.

97. Demand for containers from both shipping and leasing companies continued to be greater than existing supply capacities and despite the start up of new factories in the Far East, the situation in the market in the near future is likely to be the same, particularly as the average age of the world container fleet increases and replacements become a priority for operators. The world production of dry freight containers in 1989 will probably be in excess of 700,000 TEUs.

98. However, a number of new container factories were under construction or planned throughout the world and by early 1991 the annual construction of dry freight container capacity will have been increased by at least 200,000 TEUs. (the figures for South East Asia and China are reproduced in table 37). The possibility of balancing supply and demand will thus increase. Indeed, at the beginning of 1990 there were already some indications of a container n Japan where there had previously been a tendency towards shortage for some time.

Table 37

Container production, 1987

Region or country	Number produced (TEU)	(%)
Republic of Korea	220,000	50.6
Taiwan, province of China	82,000	18.8
Japan, China, India	42,500	9.8
Western Europe	48,700	11.2
Eastern Europe	26,000	6.0
Other	15,800	3.6
TOTAL	435,000	100.0

Source: Cargo Systems, January 1988

VII OTHER DEVELOPMENTS

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

99. The Convention continues to attract new Contracting Parties. At the time the Convention came into force in October 1983, there were 60 Contracting Parties. By the end of 1989 the number of Contracting Parties had increased to 74. These include: Algeria; Bangladesh; Barbados; Belgium; Benin; Bulgaria; Burkina Faso; Cameroon; Cape Verde; Central African Republic; Chile; China; Congo; Costa Rica; Côte d'Ivoire; Cuba; Czecholslovakia; Denmark (except Greenland and the Faroe Islands); Egypt; Ethiopia; Finland; France; Gabon; Gambia; German Democratic Republic; Germany, Federal Republic of; Ghana; Guatemala; Guinea; Guyana; Honduras; India; Indonesia; Iraq; Italy; Jamaica; Jordan; Kenya; Kuwait; Lebanon; Madagascar; Malaysia; Mali; Mauritania; Maritius; Mexico; Morocco; Netherlands (for the Kingdom in Europe and Aruba); Niger; Nigeria; Norway; Pakistan; Peru; Philippines; 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 (in behalf of United Kingdom, Gibraltar and Hong Kong); United Republic of Tanzania; Uruguay; Venezuela; Yugoslavia; Zaire; Zambia. The last three accessions, namely those of Somalia (14 November 1988), Burkina Faso (30 March 1989) and Italy (30 May 1989), took place after the Review Conference, which was held in October/November 1988.

100. The Review Conference was convened in Geneva from 31 October to 18 November in accordance with the provisions of article 52 of the Convention in order "to review the working of the Convention, with particular reference to its implementation and to consider and adopt appropriate amendments".

101. Prior to the Review Conference, five sets of specific substantive issues relating to the implementation and working of the Convention were identified by the UNCTAD secretariat as appropriate for consideration by the Review Conference. These covered: the implications for the Convention of the technological and structural changes in world liner shipping; the scope of application of the Convention; reservations to the Convention; modalities of implementation; and the activities of non-conference lines in liner trades to which the Convention applies.

102. Before debate could begin on subtantive issues the important question on the rules of procedure needed to be established. However, agreement could not be reached on the rules of procedure that should be applicable to the Review Conference in particular as regards the extent to and manner in which States that are non-Contracting Parties should participate in decision-making at the Review Conference. At the conclusion of the session, a resolution was adopted unanimously which recognized the continuing validity of the Convention and invited all States entitled to become contracting parties, which had not yet done so, to consider ratifying or acceding to the Convention. The resolution requested the Secretary-General of the United Nations to convene a resumed session of the Review Conference in 1989 after agreement had been reached between States on the outstanding issues relating to the rules of procedure through consultations with governments to be undertaken by the President of the Conference and the Secretary-General of UNCTAD.

103. The process of consultations mentioned in the resolution referred to above was set in motion immediately. As a result of the above consultations, a compromise package, which includes a recommendation for a general understanding on the work and objectives of the Review Conference to be incorporated in a statement to be made by the President of the Conference and recommendations for the rules on which there had been earlier disagreement, has been circulated for consideration by Governments. If the on-going consultations show that a compromise can be reached on the rules of procedure, the Secretary-General of the United Nations will take action to convene the resumed session in the second half of 1990.

104. 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 of developing countries, advice and guidance with regard to the implementation of the Convention. Certain recommended guidelines for the application of the Convention were set out in UNCTAD document UNCTAD/ST/SHIP/1 in 1986.

B. United Nations Convention on International Multimodal Transport of Goods

105. This Convention, 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 1990, the situation had not changed from 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)

106. This Convention, 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. Contrary to the situation for the MT Convention, considerable progress has been made with the Hamburg Rules. By 1 January 1990, seventeen countries - Barbados, Botswana, Burkina Faso, Chile, Egypt, Hungary, Kenya, Lebanon, Lesotho, Morocco, Nigeria, Romania, Senegal, Sierra Leone,

Box 6: Fundamental changes in international shipping policy

The formulation and implementation of shipping policies have undergone considerable changes over the last decades, in line with the technological and structural developments that have characterized the industry. In essence, these changes involve reduced importance of non-economic policy objectives and increasing importance of a process of harmonization of regulatory policies at a subregional/regional level to cope with the internationalization of shipping markets. Additionally, the contents of a shipping policy itself has been subject to important changes. Traditionally, an active shipping policy comprised mainly, if not exclusively, the promotion of national shipping and was the prerogative of important maritime powers. It is again only within the last decades that shipping policy has more and more been understood to contain two equally important elements--the above-mentioned promotion of national shipping and, secondly, the protection of shippers' interests in the widest sense.

One of the most important promotional policy measures presently adopted that also contains elements of a protectionist policy is the granting of direct or indirect subsidies to national shipowners, a course of action primarily pursued by developed countries. While considerations of maintaining a minimum national fleet may justify such policy options, widespread subsidization has considerable negative effects on the international shipping markets. Not only does such a policy lack any attempt to remedy distortions of shipping markets but, to the contrary, considerably adds to maintaining or even aggravating existing structural disequilibria. It keeps the supply of shipping services at an artificially high level and prohibits capital movements to other countries that have a comparative advantage in shipping. Furthermore, this type of policy has proven to trigger off a subsidy race leaving behind those countries, particularly developing ones, that are neither able not willing to participate in it.

Source: UNCTAD, "Trade in services: Sectoral issues" pp. 128-151.

Tunisia, Uganda, and the United Republic of Tanzania - had ratified or acceded to the Convention, while 22 countries - Austria; Brazil; Czecholslovakia; Denmark; Ecuador; Finland; France; Germany, Federal Republic of; Ghana; the Holy See; Madagascar; Mexico; Norway; Pakistan; Panama; Philippines; Portugal; Singapore; Sweden; the United States of America; Venezuela and Zaire - had signed the Convention subject to ratification.

107. According to UNCITRAL, several other countries are now close to becoming contracting parties to the Convention, which may very well enter into force in 1991.

D. United Nations Convention on Conditions for Registration of Ships

108. This Convention 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.

109. The Convention will enter into force 12 months after the date on which no fewer 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.

110. By the end of March 1989, the Convention had been ratified by the Côte d'Ivoire, Hungary, Iraq, Libyan Arab Jamahiriya and Mexico, while the following 10 States had signed the Convention subject to ratification, acceptance or approval: Algeria, Bolivia, Cameroon, Czecholslovakia, Egypt, Indonesia, Morocco, Poland, Senegal, USSR.

E. Joint UNCTAD/ICC uniform rules for MT documents

111. UNCTAD is actively participating in this work, and it is hoped that a new set of rules, to be known as the UNCTAD/ICC Rules on Multimodal Transport, will be ready within 1990.

F. Economic co-operation among developing countries

112. Pursuant to decision 63(XIII) of the Committee on Shipping, a Group of Experts on Economic Co-operation among Developing Countries in Shipping, Ports and Multimodal Transport, was convened on 26 June 1989 for one week at the Palais des Nations, Geneva.

113. Following its deliberations the Group of Experts adopted recommendations in 19 areas of co-operation aiming at intensifying the role of economic co-operation among developing countries as a major vehicle for the attainment of shipping policy objectives of developing countries. Specific areas of closer co-operation identified by the Group included operational activities- such as freight booking, pooling of shipping space, manning, financing, etc.--training, policy formulation and implementation as well as the creation and maintenance of institutional structures necessary to implement co-operation programmes at the subregional, regional and interregional levels.

114. In the course of the year 1989 a number of developments took place that have given further impetus to the concept of economic co-operation among developing countries. These are analysed in more detail in document TD/B/C.4/324 issued by the UNCTAD secretariat.[26] At the political level major developments relate to the negotiation and subsequent signing, in December 1989, of the Fourth ACP-EEC Convention (Lome IV) that maintains a separate section on "Transport and Communications" dealing, inter alia, with maritime relations among Contracting Parties. Also in 1989 following the proclamation of the Second United Nations Transport and Communications Decade for Africa (UNTACDA II) in 1988 by the United Nations General Assembly, African Ministers of Transport adopted objectives, strategies and guidelines for the Decade.

115. At the regional level an important initiative was taken in the field of maritime transport by the Special Conference of African Ministers of Transport, convened by the Organization of African Unity at Addis Ababa,

[26] See UNCTAD, "Economic co-operation among developing countries in the field of shipping, ports and multimodal transport - overview of recent developments," (TD/B/C.4/324) Geneva, 1990.

10-12 July 1989. The Conference adopted a resolution on "Intra-African Co-operation in Maritime Transport" calling, inter alia for the elaboration and subsequent adoption of an African Maritime Charter, which would serve as a substantive and institutional guideline for regional maritime co-operation.

116. As far as co-operation at the operational shipping level is concerned, developing countries' carriers have continued to seek ways to increase efficiency through North-South as well as South-South co-operation. Examples of such co-operation are referred to in document TD/B/C.4/324.

G. Consultations between shippers' and liner conferences

117. In recent years liner shipping services have continued to undergo important changes with a considerable impact on relations and consultations between shippers and conferences or shipping lines. A persistent tonnage oversupply, accompanied by large-scale participation by non-conference lines, has intensified competition in most liner trades resulting in reductions in freight rates to levels far below those stipulated in the official tariffs. Many conference tariffs have therefore been eroded and pressure is being exerted on conferences to restructure their tariffs in order to reflect prevailing market freight rates. The continuing competition has also reduced considerably the importance of the traditional loyalty arrangements and in some trades there has been a move towards greater use of service contracts. Some shippers and shippers' organizations have expanded their consultations to cover non-conference lines in order to obtain the best possible services. On the other hand conferences have continued to impose various forms of surcharges, and the expansion of containerization has increased the importance of handling and other related charges which add new elements to freight rates as well as to the consultation machinery. A number of conferences have continued to apply so-called "rate restorations" which are normally not subject to consultations with shippers and which shippers generally view as a hidden form of general rate increases.

118. The initiative taken by the European Shippers' Councils (ESC) to abolish currency adjustment factors (CAFs) is still a subject of disagreement with the Council of European and Japanese National Shipowners' Associations (CENSA) who have pointed out that the CAF mechanism makes it possible to share currency risks between shippers and shipowners. CENSA have also argued that currency hedging as suggested by the ESC would only be feasible if shippers could commit cargo volumes by area and freight-paying currency well in advance (15 to 24 months) in order to enable carriers to arrange the right amount of forward coverage.

119. The development of consortia among container ship operators has expanded and in some cases shippers' organizations may need to establish consultations with such consortia in addition to consultations they may have already established with the traditional liner conferences within the same trade. The continued growth of transhipment services tends to restrict the ability of conferences to provide all the required cost and revenue data to justify rate increases, that is, including the provision of data relating to freight rates paid for transhipment services. Similarly, the establishment of multimodal through rates has meant that conferences are generally not in a position to control and negotiate with shippers rate changes that are made by parties offering services in other modes of transport outside the conferences. Furthermore, the growth of non-vessel-operating common carriers (NVOCCs) has meant that such carriers can charter container slots under their own name at box or freight all kinds (FAK) rates and in turn sell the slots to shippers at less than container load (LCL) rates which may be different from those published by the conferences.

120. There has been an increase in the importance of various types of agreements between conferences and/or shipping lines. This includes agreements between conferences which merge into the so-called "superconferences". These have been established mainly in the United States - Far East trades and United States - Europe trades. Their aim is to reduce competition, to maintain rate stability and to restore rates to levels considered by the lines to be renumerative. Examples include the North Europe - USA Rate Agreement, USA - North Europe Rate Agreement, the Transpacific Westbound Rate Agreement (TWRA) covering all westbound trade from ports/points in North America to ports/points throughout Asia, and the Asia - North America Eastbound Rate Agreement (ANERA) covering Far East (excluding Japan) to United States liner trades.

121. In addidition to "superconferences" other agreements have been established between conferences and independent lines in order to limit competition over substantial parts of entire liner trades and to reduce overall capacity. These include the Eurocorde Agreements which are discussion agreements between the North Europe - USA Atlantic Conference and independent lines in the USA North Atlantic - Europe trade. Another notable example is the Transpacific Stabilization Agreement (TSA), grouping together 13 major container operators who in 1989 represented about 85 per cent of the total container capacity deployed in the Far East to USA trade. More recently large operators in the North Atlantic trade have decided to establish the Cross Atlantic Stabilization Agreement (CASA) intended at reducing capacity and probably also at establishing revenue pool sharing. As all these agreements are intended to enhance the ability of shipowners to influence both supply and price, they have caused concern among shippers. For example ESC have made representations to the EC Commission whereby the Eurocorde Agreements as well as CASA would be able to fix rates at any levels and eliminate competition in violation of EC competition regulations. Shippers in other regions are similarly concerned by these agreements.

122. A number of countries have established new laws or regulations which, among other things, appear to have had the effect of providing a framework for more effective consultations between shippers and shipowners. These include the European Economic Community Council Regulations concerning maritime transport, in particular Regulation 4056/86, the Australian Trade Practices (International Liner Cargo Shipping) Amendment Bill 1989, Part X of which was passed to repeal and replace Part X of the Trade Practices Act 1974, the Canadian Shipping Conferences Exemption Act 1987, and the New Zealand Shipping Act 1987. The United States Shipping Act 1984, while not giving antitrust immunity to agreements between conferences and shippers' organizations, has nevertheless been interpreted and used by some shippers' organizations outside the United States as being a basis for them to consult with conferences operating in the United States trades.

H. UNCTAD Model Clauses on Marine Hull and Cargo Insurance

123. These Model Clauses, which were drafted by the Working Group on International Shipping Legislation and endorsed by the Trade and Development Board of UNCTAD in March 1987, are intended to provide guidelines for insurance markets, particularly those of developing countries wishing to develop their own insurance 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.

I. Maritime liens, mortgages and arrest

124. 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 on maritime liens and mortgages. The draft articles cover such issues as: recognition and enforcement of mortgages, hypotheques and charges; claims to be granted maritime lien status and their priority; rights of retention; extinction of maritime liens; effects of forced sale and provisions dealing with temporary change of flag.

125. The sixth session of the Joint Group was held in September 1989, when 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 its adoption.

126. 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.

J. Maritime fraud

127. The work of UNCTAD in the field of maritime fraud has resulted in the establishment of the Maritime Advisory Exchange (MAE), known during its preparatory stage as the Maritime Fraud Prevention Exchange. The MAE is to provide a focal point for all information necessary for combating maritime fraud. It is established, under the auspices of UNCTAD, by the 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, International Maritime Bureau and Lloyd's Maritime Information Services, for direct reply. The MAE, which is located in London, started operation on 1 December 1988.

K. UNCTAD Minimum Standards for Shipping Agents

128. These Standards have been prepared by the UNCTAD secretariat in close collaboration with the 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 to be applicable to shipping agents. The UNCTAD Minimum Standards are contained in document UNCTAD/ST/SHIP/13.

L. Technical co-operation and training

129. The volume of UNCTAD's technical co-operation and training activities in maritime transport continued to increase during 1989. A total of 46 projects were executed by the Shipping Division during the year with a total value of $US 3.6 million.

130. Training continued to be a major feature of this technical co-operation and training programme. A new course under the Improving Port Performance (IPP) project--IPP-3: a 4-day seminar for senior officials on the "Management of Port Equipment" - was completed during the year and a first delivery took place in Kingston, Jamaica, in December 1989. A fourth course, IPP-4, covering various aspects of equipment procurement, is currently under preparation.

131. The TRAINMAR programme, which has as its objective the strengthening of the maritime training capabilities of the developing countries, through the provision of pedagogic skills, enforcement of professional standards and co-operation among training centres, continues to expand. In all, 42 centres were co-operating with TRAINMAR in 1989. An in-depth evaluation of TRAINMAR was carried out in 1989 and the findings were discussed at a round-table meeting in Geneva in September 1989. It was recognized that TRAINMAR was making an important contribution to the training of maritime managers and should be continued. However, various areas for improvement were identified and an action plan has been developed to ensure these improvements will be put into effect. UNCTAD will continue to give priority support to the TRAINMAR programme but external financing will be essential for the further development of the TRAINMAR networks and regional and inter-regional co-operation among members.

132. The on-the-job training initiative, JOBMAR, concluded its first year of operation at the end of 1989 by which date 32 candidates from more than a dozen countries had applied for a JOBMAR placement. Assignments have been with port authorities, shipping lines, industrial companies with in-house transport divisions and ship brokers. Locations were equally varied with positions offered in Eastern and Western Europe, USSR, North America and the Far East. The UNCTAD secretariat wishes to place on record its appreciation for the assistance offered by a number of organizations, particularly the Centre for Maritime

Co-operation (CMC) of the International Chamber of Commerce (ICC).

133. Another major activity during the past two years has been the implementation of the first phase of an important sub-regional transport project entitled "Transit traffic and support to the transport sector in southern Africa". This project consists of two components:

(1) transit traffic: covering institutional and technical measures to facilitate the movement of transit cargo across international borders and thus stimulate transit trade;

(2) support to the transport sector: dealing with measures to increase the physical capacity of transport networks through the introduction of modern data management techniques which permit much closer monitoring of cargo movements.

134. The most important feature of component (2) - which is being handled by the Shipping Division - is the development of an Advanced Cargo Information System (ACIS). This is a system for making available to all transport operators information on cargo before that cargo reaches any interface.

135. Good progress was made during 1989: the railway tracker is now fully operational on the Malawi railway network, it is in a testing phase on the Tanzania/Zambia railway and about to be introduced on Zambia railways (SNCZ) and Mozambique railways' Northern Corridor. Work is proceeding on the electronic transfer of manifests from shipping lines to ACIS entry port installations. Computer-assisted training will be provided to ensure that all users can gain maximum advantage from the new system. Two similar projects, one for West and Central Africa, and one for East/Central Africa have recently been approved. These latter projects will benefit from the development work already undertaken in southern Africa.

136. Finally there were some 16 other regional and national projects varying in size from a few thousand dollars to several hundred thousand dollars executed by the Shipping Division during the two-year period. Among the more important regional projects were a study on the harmonization of port tariff structures and cost accounting in West Africa, assistance to the Ministerial Conference of West and Central African States on Maritime Transport (MINCONMAR) to produce guidelines for the harmonization and modernization of the maritime legislation of member countries, assistance to East African countries through the Intergovernmental Standing Committee on Shipping (ISCOS), on protecting shippers' interests, and assistance to African land-locked countries in formulating shipping policy. The Shipping Division is also co-operating with the University of Trieste (ISTIEE - Transport Study Institute) of Italy in promoting the development of shippers' organizations in member countries of the Southern Africa Development Co-ordination Conference (SADCC).

137. National projects included advice on port planning and operations to the Governments of Djibouti, Panama, Sri Lanka and Sao Tome and Principe; assistance in port administration to the Government of Malawi; multimodal transport projects in Benin and Ethiopia; advice on updating the maritime code in Ethiopia, and projects to assist in the reorganization of the transport sector in Cameroon and Côte d'Ivoire.

138. The United Nations Development Programme provided 80 per cent of the funding for the above operational activities. Contributions were also received from the European Economic Community, the Governments of Belgium, France, the Netherlands, Norway, Sweden, USA and USSR, and from the recipient countries themselves. Fuller details are contained in document TD/B/WP/68 "Review of the technical assistance activities of UNCTAD".

M. Classification by ship's type

139. An informal study group composed of representatives from international organizations, national ministries of transport, national transport institutes and Lloyd's Registry of Shipping have been working towards a uniform classification of ships by type. This classification would be used mainly for statistical purposes and ensure that national statistics on fleet development by type of vessel would be consistent among countries.

140. Currently ship types are classified in many ways in publications and comparison of figures from different sources is often not possible. An hierarchical breakdown has been proposed with a breakdown of merchant ship structures into four main classes: liquid, dry bulk, other dry cargo, and miscellaneous. The

next level of classification has 15 classes: oil tanker, chemical, liquified gas carrier, tanker, barge and other tanker belonging to the liquid class; then bulk/oil carriers and bulk carrier in the dry bulk class; container, specialized carrier general cargo, dry cargo barge, and passenger in the other dry cargo class and finally fish processing and catching, off-shore production and support and other types in the last class.

Annex I

Classification 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 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 Hungary (L)	Poland Romania Union of Soviet Socialist Republics
Code 7 -	China Democratic People's Republic of Korea	Viet Nam
Code 8 - 8.1 -	Northern Africa Algeria Egypt Libyan Arab Jamahiriya	Morocco Tunisia
Code 8.2 -	Western Africa Angola Benin Burkina Faso (L) Cameroon Cape Verde Congo Cote 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

Annex I (continued)

Code 8.3 - Eastern Africa

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

Code 9 - 9.1 - Caribbean and North America

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

Code 9.2 - Central America

Belize
Costa Rica
El Salvador
Guatemala
Honduras
Mexico
Nicaragua
Panama

Code 9.3 - South America - Northern Seaboard

Guyana
French Guyana
Netherlands Antilles
Suriname
Venezuela

Code 9.4 - South America - Western Seaboard

Chile
Colombia
Ecuador
Peru

Code 9.5 - South America - Eastern Seaboard

Argentina
Bolivia (L)
Brazil
Falkland Islands (Malvinas) [a]
Paraguay (L)
Uruguay

Code 10 - 10.1 - Western Asia

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

Annex I (continued)

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

Notes

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

Annex II

World seaborne trade [a] according to geographical areas, 1970, 1987 and 1988
(millions of tons)

Area [b]	Year	Goods Loaded				Goods Unloaded			
		Oil		Dry cargo	Total all goods	Oil		Dry cargo	Total all goods
		Crude	Products			Crude	Products		
Developed market-economy countries									
North America	1970	0.7	5.3	308.0	314.0	73.4	103.6	170.0	347.0
	1987	1.4	23.8	449.9	475.1	208.7	82.8	204.9	496.4
	1988	1.5	24.7	482.6	508.8	226.6	89.6	211.5	527.7
Japan	1970	-	0.3	41.6	41.9	170.4	30.4	235.1	435.9
	1987	-	1.3	82.4	83.7	158.7	69.6	392.8	621.1
	1988	-	1.3	79.4	80.7	177.7	75.2	397.2	650.1
Australia and New Zealand	1970	-	1.3	92.3	93.6	18.8	2.9	15.4	37.1
	1987	7.3	1.3	234.8	243.4	5.5	7.5	17.8	30.8
	1988	6.8	1.6	247.4	255.8	7.6	6.9	17.1	31.7
Europe	1970	28.6	82.3	244.8	355.6	621.0	100.4	469.0	1 190.4
	1987	164.8	106.3	429.0	700.1	401.5	174.2	672.1	1 247.8
	1988	183.3	105.9	460.0	749.2	434.8	172.6	739.9	1 347.3
South Africa	1970	-	-	13.2	13.2	8.8	2.6	6.2	17.6
	1987	-	-	71.4	71.4	17.8	0.3	8.4	26.5
	1988	-	-	74.2	74.2	19.9	0.3	9.0	29.2
Subtotal: developed market-economy countries	1970	29.3	89.2	699.9	818.3	892.4	239.9	895.7	2 028.0
	1987	173.5	132.7	1 267.5	1 573.7	792.2	334.4	1 296.0	2 422.6
	1988	191.6	133.5	1 343.7	1 668.8	866.7	344.5	1 374.9	2 586.1
Countries of Eastern Europe and socialist countries of Asia									
Countries of Eastern Europe (excluding USSR)	1970	0.2	3.4	34.8	38.5	10.8	3.0	29.2	43.0
	1987	-	16.4	47.3	63.7	29.2	0.9	61.0	91.1
	1988	-	17.5	45.4	62.9	29.2	0.8	59.1	89.1
USSR	1970	38.0	22.9	46.0	106.9	2.5	-	11.9	14.4
	1987	65.1	52.0	40.4	157.5	7.8	0.6	75.3	83.7
	1988	64.0	52.4	44.2	160.6	7.9	0.6	77.1	85.6
Socialist countries of Asia	1970	-	0.1	13.3	13.4	5.4	0.4	24.4	30.2
	1987	40.0	7.9	27.0	74.9	3.4	1.4	73.5	78.3
	1988	42.0	8.1	27.0	77.1	3.5	1.4	75.9	80.8
Developing countries and territories									
Northern Africa	1970	221.4	5.6	28.3	255.4	9.9	5.9	17.9	33.8
	1987	150.0	28.7	39.8	213.1	56.5	4.4	55.2	116.1
	1988	161.1	29.5	35.6	226.2	58.6	4.5	55.8	118.9
Western Africa	1970	60.5	1.0	61.5	123.0	3.6	4.0	14.8	22.4
	1987	98.4	3.0	52.3	153.4	3.8	3.1	24.1	31.0
	1988	109.5	3.1	57.9	170.5	3.6	3.2	26.5	33.3
Eastern Africa	1970	-	1.2	16.1	17.3	5.5	2.6	8.3	16.4
	1987	-	0.7	6.9	7.6	5.4	2.8	11.6	19.8
	1988	-	0.7	9.1	9.8	5.8	2.6	15.2	23.6

Annex II (continued)

World seaborne trade [a] according to geographical areas,
1970, 1987 and 1988
(millions of tons)

Area [b]	Year	Goods Loaded				Goods Unloaded			
		Oil		Dry cargo	Total all goods	Oil		Dry cargo	Total all goods
		Crude	Products			Crude	Products		
Caribbean and North America	1970	-	1.4	28.4	29.8	23.5	4.5	11.2	39.2
	1987	12.3	11.0	23.1	46.4	25.7	9.3	18.1	53.1
	1988	13.1	11.4	26.1	50.6	26.9	9.0	18.1	54.1
Central America	1970	-	3.7	11.9	15.6	6.0	5.5	6.5	18.0
	1987	75.0	6.1	16.8	97.9	3.6	2.8	15.0	21.4
	1988	81.0	6.4	17.6	105.0	3.7	2.8	15.2	21.7
South America: Northern Seaboard	1970	131.1	11.8	36.0	278.9	63.1	3.0	6.7	72.9
	1987	45.2	20.0	16.5	81.7	-	1.5	18.1	19.6
	1988	51.5	21.6	16.1	89.2	-	1.4	18.4	19.8
South America: Western Seaboard	1970	4.6	1.6	29.8	35.9	4.1	1.5	5.9	11.5
	1987	16.2	8.8	29.7	54.7	3.3	1.0	14.8	19.1
	1988	15.5	8.3	32.2	56.0	3.3	1.3	14.6	19.8
South America: Eastern Seaboard	1970	0.1	1.1	54.3	55.5	18.8	1.0	19.8	39.6
	1987	0.1	3.9	177.2	181.2	22.4	2.8	27.3	52.5
	1988	0.1	4.1	184.8	189.0	31.0	2.8	27.3	61.1
Western Asia	1970	588.7	65.6	3.3	658.6	0.1	1.0	13.1	14.2
	1987	324.3	74.9	28.3	427.5	13.9	6.4	111.3	131.6
	1988	347.4	78.3	31.7	457.4	14.7	6.4	107.6	128.7
Southern and Eastern Asia (n.e.s.)	1970	35.0	23.7	89.3	148.0	148.0	23.3	61.9	139.9
	1987	76.0	73.5	199.7	349.2	125.1	32.5	297.1	454.7
	1988	82.4	79.6	233.3	395.3	133.2	35.9	341.4	510.4
Developing countries in Europe	1970	-	1.0	-	..	-	0.3	0.7	1.0
	1987	-	1.0	7.8	8.8	8.0	2.3	17.9	28.2
	1988	0.3	1.1	7.1	8.5	8.3	2.5	16.8	27.6
Oceania (n.e.s.)	1970	-	0.2	9.5	9.7	0.6	1.6	2.9	5.1
	1987	-	0.3	7.4	7.7	-	2.4	3.2	5.6
	1988	-	0.3	7.7	8.0	-	2.4	3.4	5.8
Subtotal: Developing countries	1970	1 041.4	216.9	368.4	1 627.7	189.9	5.5	169.7	414.0
	1987	798.2	232.0	605.2	1 635.4	267.7	71.1	613.9	952.7
	1988	861.9	244.3	659.3	1 765.6	289.2	74.7	660.3	1 024.2
World total [c]	1970	1 110.0	330.0	1 165.0	2 606.0	1 101.0	302.0	1 127.0	2 530.0
	1987	1 076.8	440.7	1 987.4	3 504.9	1 100.4	408.4	2 119.6	3 628.4
	1988	1 159.5	455.9	2 119.6	3 735.0	1 196.4	422.1	2 247.4	3 865.9

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

[a] Including international cargoes loaded at ports of the Great Lakes and St. Lawrence River system for unloading at ports of the system. Great Lakes and St. Lawrence trade (in dry cargo) amounted to 42 million tons in 1970, and 27 million tons in 1987.

[b] See annex I for the composition of groups.

[c] Figures rounded to the nearest million

Annex III(a)

Merchant fleets of the world by flag of registration, [a] groups of countries and types of ships [b]
(in '000 grt)
as at 1 July 1989

1989	Total fleet	Oil tankers	Bulk carriers [c]	General cargo [d]	Container ships	Other types
World total	40 4201	122 790	126 937	77 522	22 735	54 217
Developed market-economy countries						
Australia	2 494	652	1 106	155	107	474
Austria	204	..	136	68	..	..
Belgium	2 044	112	1 091	81	200	560
Canada	1 132	167	202	62	8	693
Denmark	4 963	1 522	326	698	1 164	1 253
Finland	944	116	77	263	..	488
France	4 413	1 930	641	480	556	806
Germany, Fed. Rep.	3 967	130	318	1 013	1 629	877
Gibraltar	2 611	2 028	398	132	..	53
Greece	21 324	7 926	9 987	1 958	179	1 274
Iceland	183	1	12	49	..	121
Ireland	167	7	..	65	17	78
Israel	505	1	32	109	357	6
Italy	7 602	2 399	2 351	1 017	320	1 515
Japan	28 030	7 787	9 234	5 174	1 401	4 434
Luxembourg	4	2	..	..	..	2
Netherlands	3 655	365	328	1 207	520	1 235
New Zealand	257	80	26	77	11	63
Norway	15 597	6 576	4 170	1 260	75	3 516
Portugal	726	323	178	73	7	145
South Africa	397	20	..	..	254	123
Spain	3 962	1 470	955	488	82	966
Sweden	2 167	173	176	914	88	816
Switzerland	220	1	183	23	..	14
Turkey	3 240	783	1 413	838	..	206
United Kingdom	7 646	2 584	1 249	530	1 368	1 915
United States	16 002	6 830	686	2 053	2 878	3 555
Subtotal	134 456	43 985	35 275	18 787	11 221	25 188
Open-registry countries						
Bahamas	11 579	5 920	2 822	1 389	68	1 380
Bermuda	4 077	3 273	157	160	31	456
Cyprus	18 134	5 462	8 820	3 179	334	339
Liberia	47 893	25 602	14 374	3 187	854	3 876
Panama	47 365	10 320	17 513	12 598	3 475	3 459
Subtotal	129 048	50 577	43 686	20 513	4 762	9 510
Eastern Europe						
Albania	56	..	..	55	..	0
Bulgaria	1 375	285	612	346	19	113
Czechoslovakia	191	..	96	94	..	1
German Dem. Rep.	1 500	36	324	801	114	225
Hungary	76	..	..	76	..	..
Poland	3 416	126	1 610	1 271	51	358
Romania	3 783	595	1 758	1 213	15	202
USSR	25 854	3 991	4 115	8 813	618	8 317
Subtotal	36 251	5 033	8 515	12 669	817	9 216

Annex III(a) continued

Merchant fleets of the world by flag of registration, [a] groups of countries and types of ships [b]
(in '000 grt)
as at 1 July 1989

1989	Total Fleet	Oil Tankers	Bulk Carriers [c]	General Cargo [d]	Container Ships	Other Types
Socialist countries of Asia						
China	13 514	1 706	4726	5597	684	801
Korea, Dem. People's Rep. of	396	13	68	280	..	35
Viet Nam	358	18	14	290	..	36
Subtotal	14 268	1 737	4 808	6 167	684	872
Developing countries of Africa						
Algeria	848	28	95	204	..	521
Angola	93	2	..	68	..	23
Benin	5	..	..	3	..	2
Cameroon	33	..	..	24	..	9
Cape Verde	18	..	..	13	..	5
Comoros	2	..	..	2	..	..
Congo	8	..	..	..	..	8
Côte d'Ivoire	83	..	..	67	..	16
Djibouti	3	..	..	..	..	3
Egypt	1 230	243	343	493	..	151
Equatorial Guinea	6	..	..	6	..	..
Ethiopia	77	1	..	73	..	3
Gabon	25	..	..	19	..	6
Gambia	2	..	..	..	..	2
Ghana	126	1	..	60	..	65
Guinea	8	..	..	1	..	7
Guinea-Bissau	4	..	..	1	..	3
Kenya	8	..	..	..	..	8
Libyan Arab Jam.	831	581	..	79	..	170
Madagascar	70	5	..	53	..	12
Malawi	..	..	..	..	..	..
Mauritania	40	..	..	3	..	37
Mauritius	130	44	39	17	21	9
Morocco	454	10	92	96	5	251
Mozambique	38	1	..	10	..	27
Nigeria	500	221	..	211	..	68
Sao Tome and Principe	2	..	..	..	..	2
St. Helena	3	..	..	..	..	3
Senegal	51	..	..	11	..	40
Seychelles	3	..	..	2	..	1
Sierra Leone	18	..	..	2	..	16
Somalia	11	..	..	5	..	6
Sudan	97	1	..	93	..	3
Togo	43	1	..	11	..	32
Tunisia	282	27	37	51	..	167
Untd. Rep. Tanzania	32	3	..	22	..	7
Uganda	5	..	..	..	..	5
Zaire	56	..	..	42	..	14
Subtotal	5 245	1 169	606	1 742	26	1 702

Annex III(a) continued

Merchant fleets of the world by flag of registration, [a] groups of countries and types of ships [b]
(in '000 grt)
as at 1 July 1989

1989	Total fleet	Oil tankers	Bulk carriers [c]	General cargo [d]	Container ships	Other types
Developing countries of America						
Anguilla	3	–	..	2	..	..
Antigua and Barbuda	392	39	3	276	49	25
Argentina	1 833	543	459	533	53	245
Barbados	8	..	..	4	..	4
Belize	1	..	..	1	..	1
Bolivia	10	..	..	10	..	..
Brazil	6 078	1 777	2 943	829	87	442
Cayman Islands	411	37	111	170	..	93
Chile	590	4	295	144	..	147
Colombia	379	10	81	271	..	17
Costa Rica	13	..	..	4	..	9
Cuba	900	80	62	587	..	171
Dominica	3	..	..	3	..	..
Dominican Republic	44	1	11	30	..	2
Ecuador	402	117	22	218	..	45
El Salvador	4	..	..	..	..	4
Falkland Islands [f]	8	..	..	1	..	7
Grenada	1	..	..	1	..	..
Guatemala	5	..	..	4	..	1
Guyana	15	..	..	5	..	10
Haiti	1	..	..	..	..	1
Honduras	691	86	103	411	8	83
Jamaica	14	2	2	5	3	2
Mexico	1 388	482	226	53	8	619
Montserrat	1	..	..	1	..	..
Nicaragua	5	..	..	2	..	3
Paraguay	39	1	..	19	..	19
Peru	638	197	129	161	..	151
Saint Kitts and Nevis	..	..	..	..	..	..
Saint Lucia	2	..	..	2	..	..
St. Vincent and the Grenadines	1 486	200	540	601	50	95
Suriname	11	1	..	7	1	2
Trinidad and Tobago	22	..	..	7	..	15
Turks and Caicos Islands	3	..	..	1	..	2
Uruguay	101	47	..	3	22	29
Venezuela	1 092	451	157	258	2	224
Br. Virgin Islands	7	..	..	4	..	3
Subtotal	16 601	4 075	5 144	4 628	283	2 471
Developing countries of Asia						
Bahrain	55	2	11	17	..	25
Bangladesh	439	49	..	354	..	36
Brunei Darussalam	355	..	..	1	..	354
Cambodia	4	..	..	1	..	3
Democratic Yemen	11	2	..	3	..	6
Hong Kong	6 151	729	4 363	338	432	289
India	6 315	1 672	3 024	1 127	..	492
Indonesia	2 035	576	145	849	60	405
Iran, Isl. Rep. of	4 733	3 102	1 059	417	..	155
Iraq	1 056	829	..	93	..	134
Jordan	32	..	25	..	..	7
Kuwait	1 865	1 075	..	172	139	279
Lebanon	384	14	91	270	3	6

Annex III(a) continued

Merchant fleets of the world by flag of registration, [a] groups of countries and types of ships [b]
(in '000 grt)
as at 1 July 1989

1989	Total fleet	Oil tankers	Bulk carriers [c]	General cargo [d]	Container ships	Other types
Malaysia	1 668	162	347	476	195	488
Maldives	94	5	43	43	..	3
Oman	24	..	..	12	..	12
Pakistan	366	43	..	300	..	23
Philippines	9 385	393	6 987	1 695	40	270
Qatar	306	108	..	96	86	16
Korea, Republic of	7 832	798	4 493	1 165	638	738
Saudi Arabia	2 119	1 194	170	454	67	234
Singapore	7 273	2 407	2 083	1 271	906	606
Sri Lanka	287	8	37	231	..	11
Syrian Arab Republic	74	..	..	64	..	10
Thailand	539	70	10	361	36	62
Union of Myanmar	582	2	355	187	..	38
United Arab Emirates	839	441	24	124	170	80
Yemen	196	193	..	1	..	2
Subtotal	55 019	13 874	23 267	10 322	2 772	4 784
Developing countries of Europe						
Malta	3 329	1 347	1 172	692	5	113
Yugoslavia	3 681	312	1 915	1 253	104	97
Subtotal	7 010	1 659	3 087	1 945	109	210
Developing countries of Oceania						
American Samoa	..	..	..	..	..	..
Fiji	62	5	..	41	..	16
Kiribati	4	..	..	3	..	1
Nauru	41	..	17	22	..	2
Papua New Guinea	37	2	4	17	..	14
Solomon Islands	8	..	..	5	..	3
Tonga	35	..	..	9	24	2
Tuvalu	2	..	..	2	..	..
Vanuatu	920	131	482	200	12	95
Samoa	27	..	..	25	..	2
Subtotal	1 136	138	503	324	36	135
Developing total	85 011	20 915	32 607	18 961	3 226	9 302
Other unallocated	5 169	541	2 043	427	2 029	129

Annex III(b)

Merchant fleets of the world by flag of registration, [a] groups of countries and types of ships [b]
(in '000 dwt)
as at 1 July 1989

1989	Total fleet	Oil tankers	Bulk carriers [c]	General cargo [d]	Container ships	Other types
World total	637 991	237 168	227 290	101 082	24 647	47 804
Developed market-economy countries						
Australia	3 707	1 104	1 896	196	111	400
Austria	355	..	246	109	..	..
Belgium	3 282	207	2 051	111	218	695
Canada	756	261	402	48	7	38
Denmark	6 926	2 908	600	833	1 226	1 359
Finland	838	179	124	295	..	240
France	6 653	3 811	1 086	623	586	547
Germany, Fed. Rep.	4 954	246	487	1 513	1 902	806
Gibraltar	5 026	4 054	705	196	..	71
Greece	38 465	15 987	18 347	2 888	234	1 009
Iceland	155	1	19	77	..	58
Ireland	178	11	..	98	25	44
Israel	586	1	52	145	386	2
Italy	11 524	4 340	4 209	1 233	335	1 407
Japan	42 357	14 267	17 251	6 285	1 335	3 219
Luxembourg	6	3	..	..	..	3
Netherlands	4 557	572	547	1 762	511	1 165
New Zealand	299	126	42	83	14	34
Norway	26 568	12 989	7 866	1 682	64	3 967
Portugal	1 102	604	290	105	10	93
South Africa	352	32	..	..	240	80
Spain	6 461	3 060	1 767	775	109	750
Sweden	1 995	291	273	934	72	425
Switzerland	363	..	304	34	..	25
Turkey	5 477	1 479	2 534	1 345	..	119
United Kingdom	10 252	4 727	2 234	710	1 308	1 273
United States	22 954	14 317	1 306	1 784	2 870	2 677
Subtotal	206 148	85 577	64 638	23 864	11 563	20 506
Open-registry countries						
Bahamas	19 228	11 389	4 864	1 846	92	1 037
Bermuda	7 625	6 614	276	215	29	491
Cyprus	32 699	11 084	15 864	4 887	434	430
Liberia	89 501	52 139	27 410	3 803	928	5 221
Panama	75 360	20 155	31 365	15 788	3 830	4 222
Subtotal	224 413	101 381	79 779	26 539	5 313	11 401
Eastern Europe						
Albania	63	..	..	63	..	0
Bulgaria	1 956	461	968	436	18	73
Czechoslovakia	279	..	153	125	..	1
German Dem. Rep.	1 824	63	520	991	124	126
Hungary	108	..	..	108	..	..
Poland	4 490	219	2 588	1 419	46	218
Romania	5 711	1 059	2 920	1 585	17	130
USSR	29 212	6 192	6 626	10 568	601	5 225
Subtotal	43 643	7 994	13 775	15 295	806	5 773

Annex III(b) continued

Merchant fleets of the world by flag of registration, [a] groups of countries and types of ships [b]
(in '000 dwt)
as at 1 July 1989

1989	Total fleet	Oil tankers	Bulk carriers [c]	General cargo [d]	Container ships	Other types
Socialist countries of Asia						
China	20 200	2 662	8 067	7 715	899	857
Korea, Dem. People's Rep. of	529	20	109	379	..	21
Viet Nam	526	34	24	452	..	16
Subtotal	21 255	2 716	8 200	8 546	899	894
Developing countries of Africa						
Algeria	964	46	156	296	..	466
Angola	122	2	..	106	..	14
Benin	5	..	..	4	..	1
Cameroon	39	..	..	36	..	3
Cape Verde	26	..	..	24	..	2
Comoros	3	..	..	3	..	..
Congo	11	..	..	..	..	11
Côte d'Ivoire	100	..	..	85	..	15
Djibouti	..	..	..	..	..	..
Egypt	1 796	465	565	671	..	95
Equatorial Guinea	7	..	..	7	..	..
Ethiopia	94	2	..	91	..	..
Gabon	29	..	..	26	..	3
Gambia	2	..	..	..	..	2
Ghana	114	1	..	79	..	34
Guinea	3	..	..	..	..	3
Guinea-Bissau	2	..	..	..	..	2
Kenya	5	..	..	..	..	5
Libyan Arab Jam.	1 463	1 093	..	100	..	270
Madagascar	88	7	..	71	..	10
Malawi	..	..	..	..	..	..
Mauritania	22	..	..	4	..	18
Mauritius	216	92	66	24	29	5
Morocco	594	19	163	129	10	273
Mozambique	27	2	..	18	..	7
Nigeria	737	435	..	263	..	39
Sao Tome and Principe	1	..	..	..	..	1
St. Helena	2	..	..	..	..	2
Senegal	36	..	..	17	..	19
Seychelles	2	..	..	2	..	..
Sierra Leone	14	1	..	3	..	10
Somalia	14	..	..	10	..	4
Sudan	127	1	..	125	..	1
Togo	65	1	..	21	..	44
Tunisia	447	47	59	66	..	275
Untd. Rep. Tanzania	32	4	..	24	..	4
Uganda	..	..	..	..	..	1
Zaire	76	..	..	61	..	15
Subtotal	7 285	2 218	1 009	2 366	39	1 654

Annex III(b) continued

Merchant fleets of the world by flag of registration, [a] groups of countries and types of ships [b]
(in '000 dwt)
as at 1 July 1989

1989	Total fleet	Oil tankers	Bulk carriers [c]	General cargo [d]	Container ships	Other types
Developing countries of America						
Anguilla	4	..	..	3	..	..
Antigua and Barbuda	696	85	5	489	78	39
Argentina	2 764	900	804	763	71	226
Barbados	8	..	..	8	–	..
Belize	..	..	..	..	..	–
Bolivia	16	..	..	16	..	..
Brazil	10 063	3 242	5 091	1 092	112	526
Cayman Islands	566	62	188	220	..	96
Chile	876	..	552	198	..	120
Colombia	546	15	157	355	..	19
Costa Rica	7	..	..	3	..	4
Cuba	1 198	117	100	816	..	165
Dominica	5	..	..	5	..	..
Dominican Republic	68	2	19	47	..	..
Ecuador	531	209	38	250	..	34
El Salvador	3	..	..	..	..	3
Falkland Islands [f]	4	..	..	..	..	4
Grenada	1	..	..	..	..	1
Guatemala	7	–	–	6	..	1
Guyana	11	–	..	5	..	6
Haiti	..	..	..	..	..	..
Honduras	982	138	173	617	9	45
Jamaica	21	3	4	8	5	1
Mexico	1 883	807	346	62	12	656
Montserrat	1	..	..	1	–	..
Nicaragua	3	..	..	3	..	..
Paraguay	44	1	..	26	..	17
Peru	841	337	216	237	..	51
Saint Kitts and Nevis	1	..	–	1	..	..
Saint Lucia	2	..	..	2	..	..
Saint Vincent and the Grenadines	2 282	355	905	887	61	74
Suriname	15	2	..	10	2	1
Trinidad and Tobago	16	..	..	6	..	10
Turks and Caicos Islands	2	..	..	1	..	1
Uruguay	155	94	..	3	34	24
Venezuela	1 727	759	264	364	3	337
Br. Virgin Islands	5	..	..	5	..	–
Subtotal	25 354	7 128	8 862	6 509	387	2 461
Developing countries of Asia						
Bahrain	65	2	20	27	..	16
Bangladesh	587	83	..	490	..	14
Brunei Darussalam	346	..	..	1	..	345
Cambodia	4	..	..	1	–	3
Democratic Yemen	12	3	..	4	..	5
Hong Kong	10 337	1 357	7 778	439	469	294
India	10 207	2 905	5 192	1 626	..	484
Indonesia	2 742	966	210	1 245	75	246
Iran, Isl. Rep. of	8 685	6 191	1 776	564	..	154
Iraq	1 813	1 552	..	136	..	125
Jordan	48	..	44	..	..	4
Kuwait	2 887	1 903	..	542	147	295
Lebanon	593	23	156	404	3	7

Annex III(b) continued

Merchant fleets of the world by flag of registration, [a] groups of countries and types of ships [b]
(in '000 dwt)
as at 1 July 1989

1989	Total fleet	Oil tankers	Bulk carriers [c]	General cargo [d]	Container ships	Other types
Malaysia	2 364	284	635	699	231	515
Maldives	148	10	72	64	..	2
Oman	13	..	..	7	..	6
Pakistan	526	90	..	425	..	11
Philippines	15 468	769	12 359	2 112	61	167
Qatar	459	201	..	151	92	15
Korea, Republic of	12 335	1 504	8 120	1 358	716	637
Saudi Arabia	3 535	2 242	310	658	76	249
Singapore	11 888	4 468	3 708	1 688	1 028	996
Sri Lanka	371	15	55	297	..	4
Syrian Arab Republic	102	..	..	99	..	3
Thailand	805	129	17	565	50	44
Union of Myanmar	907	4	658	213	..	32
United Arab Emirates	1 316	782	38	192	218	86
Yemen	407	407	..	1	..	..
Subtotal	88 970	25 890	41 148	14 008	3 166	4 759
Developing countries of Europe						
Malta	5 691	2 476	2 004	1 081	7	123
Yugoslavia	5 815	530	3 324	1 799	116	46
Subtotal	11 506	3 006	5 328	2 880	123	169
Developing countries of Oceania						
American Samoa	..	..	..	..	..	..
Fiji	64	7	..	46	..	11
Kiribati	3	..	..	3	..	..
Nauru	45	..	27	19	..	1
Papua New Guinea	42	2	5	24	..	11
Solomon Islands	7	..	..	5	..	2
Tonga	43	..	..	12	30	1
Tuvalu	1	..	..	1	..	..
Vanuatu	1 574	273	848	307	20	126
Samoa	35	..	..	34	..	1
Subtotal	1 814	282	880	451	50	153
Developing total	134 929	38 524	57 227	26 214	3 765	9 196
Other unallocated	7 604	966	3 669	623	2 301	45

Source: Lloyd's Register of Shipping - Statistical tables, 1989, (London), and supplementary data regarding the Great Lakes fleets of the United States and Canada and the United States Reserve Fleet.

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

[b] 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.

[c] Ore and bulk carriers of 6,000 grt and over, including ore bulk oil carriers.

[d] Including passenger/cargo.

[e] Excluding estimates of the United States Reserve fleet and United States and Canadian Great Lakes fleets, which amounted respectively to 3.3 million grt (4.1 million dwt), 1.3 million grt (2.3 million dwt) and 1.7 million grt (2.4 million dwt).

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

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