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East Europe Report

ECONOMIC AND INDUSTRIAL AFFAIRS

(FOUO 2/81)

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EAST EUROPE REPORT

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CONTENTS

INTERNATIONAL AFFAIRS

GROWTH OF CEMA'S MERCHANT FLEETS REVIEWED

East Berlin JAHRBUCH DER SCHIFFAHRT in German 1980 signed to press Jun 1979 pp 6-15

[Article by Prof Dr Czeslaw Wojewodka: "Facts and Trends: Maritime Traffic of CEMA Countries"]

[Text] By January 1979, 30 years had passed since the establishment of the CEMA. During that time, economic cooperation between the socialist states was constantly developed and improved and was extended to ever more branches of the economy and activity sectors.

In 1971, economic cooperation among the socialist countries received renewed impetus through the "Complex Program for the Further In-Depth Development and Perfection of Collaboration and the Development of Socialist Integration." This program spells out the main directions of collaboration among the CEMA member states in the field of economic integration which currently constitutes the primary mission of collaboration among the socialist states.

Foreign Trade Volume of CEMA Member Countries in Maritime Traffic

Maritime traffic plays an important role in international trade among the CEMA member states. This applies not only to transportation between those states and to foreign-trade transportation involving other countries. Most European CEMA countries have common land boundaries, so that a considerable portion of commodities is transported between those countries via land. But, for example, practically all shipments from and to Cuba as well as from and to Vietnam, so far the only overseas countries with which the CEMA has been dealing, are handled by sea. Foreign-trade shipments between the CEMA member countries and the developing countries as well as the developed capitalist countries likewise are handled primarily by sea. This is why the CEMA member countries reveal a relatively large maritime traffic volume in foreign trade. In the case of some of them, especially the USSR and Cuba, goods are also shipped by sea in domestic traffic.

The role and significance of maritime transportation varies in the foreign trade of the individual CEMA member countries as a function of their geographic location. In Bulgaria, its share out of the foreign trade shipments accounts for more than 60 percent and in Poland and the USSR the figure is 50 percent.

Landlocked CEMA countries, such as Czechoslovakia or Hungary, also reveal a high maritime traffic volume in their foreign trade. These shipments are handled in transit via the maritime ports of other countries, including to a great extent via

maritime ports of other CEMA member countries (see also the article on page 29 [of original]).

The maritime traffic volume of the CEMA member countries went up particularly during the seventies. In 1960, about 85 million tons of goods were transported; in 1975, the figure was 290 million tons, in other words, roughly 3.5 times more.

The USSR (excluding coastal shipping) records the largest maritime shipping volume among the CEMA member countries. Between 1960 and 1977, that volume rose more than four-fold and reached a figure of 187 million tons, that is to say, 47 percent of the USSR's total foreign trade shipping volume. During some of those years, the share was even more than 50 percent; maritime traffic in USSR foreign trade has been the most important transportation industry branch for quite some time now.

The biggest maritime traffic volume of the USSR is recorded for exports because large quantities of fuel and raw materials are being transported here.

While the USSR in 1960 transported 39 million tons of goods by sea, this export volume in 1977 rose to 154 million tons. For imports, these figures are, respectively, 6 million tons and 33 million tons, and they are essentially determined by grain imports that are handled by sea.

In 1976, the USSR, among other things, exported 148 million tons of petroleum and petroleum products, including 11.9 million tons to Bulgaria, 12.0 million tons to Italy, 9.6 million tons to Finland, 8.8 million tons to Cuba, 7.1 million tons to the FRG, and 5.7 million tons to France, in other words, runs during which the commodity sales volume was handled entirely or overwhelmingly by sea. At the same time, exports of hard coal from the USSR in 1976 came to 26.9 million tons, including 6.1 million tons going to Bulgaria, 3.2 million tons going to Japan, 1.9 million tons going to Yugoslavia, 1.5 million ton going to France, and 1.3 ton going to Italy, etc. USSR exports also show iron ore (40.9 million tons in 1977, although this was shipped primarily by land), potash salts (6.0 million tons in 1977), lumber and miscellaneous other bulk goods.

Poland holds second place in terms of the total maritime traffic volume involving foreign-trade goods from the CEMA member states. Between 1960 and 1978, the maritime transportation volume within Polish foreign trade went up more than 3.5 times and reached 59.8 million tons, that is to say 45.3 percent of the total foreign trade volume. The share of maritime transportation out of Poland's foreign trade kept growing more and more in recent years; during the middle of the fifties, it was not even 35 percent. This is connected with the general development of the Polish national economy as well as the handling of new types of commodities in maritime traffic, such as sulfur or petroleum.

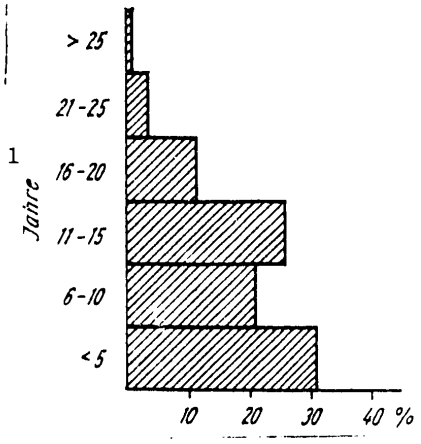

Figure 3. Age structure of CEMA merchant fleet, end 1977.
Key: 1--Years.

Exports in Polish maritime traffic likewise are considerably higher than imports; this is due to the fact that large quantities of coal are carried by sea. This type of commodity is the most important export item in Polish exports and also in maritime traffic; it increased from 8 million tons in 1960 to 26 million tons in 1978. Very much sulfur (2.6 million tons in 1978) has been exported by sea from Poland for the past several years.

The most important Polish import commodities, which are carried by sea, according to 1978 statistics, are cereals with 7.8 million tons, iron ore with 6 million tons, phosphorites and apatites with 3.3 million tons.

Bulgaria reveals the biggest dynamics in foreign trade maritime transportation volume; here, the volume rose between 1960 and 1976 almost twenty-fold and reached a figure of 24 million tons. This was due not only to a great increase in trade with foreign countries but also a considerable rise in the share of maritime transportation out of that trade volume; it went up from 28 percent in 1960 to 61 percent in 1976.

At the same time, Bulgaria recorded a great increase in maritime transportation connected with imports; here the figure increased from 0.7 million tons in 1960 to 21 million tons in 1976. Imports to Bulgaria by sea overwhelmingly involved petroleum and petroleum products, coal, phosphorites, and apatites, as well as iron ore. A large portion of these commodities comes from the USSR, whereby the route via the Black Sea keeps the transportation distance short.

Table 1. Merchant Fleets of CEMA Member Countries in 1967 and 1977 (as of 31 December)

Staaten 1	1967		1977		
	Anzahl der Schiffe 2	Tragfähigkeit 1000 t 3	Anzahl der Schiffe 2	Tragfähigkeit 1000 t 3	Tragfähigkeit 1967 = 100
Insgesamt 4	1 780	13 757	2 547	27 514	200,0
UdSSR 5	1 216	9 769	1 687	17 143	175,5
Polen 6	226	1 612	309	4 216	261,5
Rumänien 7	48	431	128	1 863	432,2
DDR	162	1 021	200	1 853	186,2
Bulgarien 8	99	794	95	1 279	161,1
Kuba 9	–	–	91	825	–
Tschechoslowakei 10	8	119	15	227	190,7
Ungarn 11	21	37	22	108	291,9

Key: 1--Countries; 2--Number of ships; 3--Capacity; 4--Total; 5--USSR; 6--Poland; 7--Romania; 8--Bulgaria; 9--Cuba; 10--Czechoslovakia; 11--Hungary, DDR--GDR. Source: "Morskoy transportnyy flot stran-chlenov SEV," Moscow, 1968, 1978.

Table 2. CEMA Merchant Fleet, 1977, by Principal Ship Types

Schiffsgattungen 1	Anzahl der Schiffe 2	Vermessung 1000 BRT 3	Tragfähigkeit 4	
			1000 t	%
Insgesamt 5	2 547	18 811,8	27 513,6	100,0
Kombinierte Schiffe 6	7	271,3	456,3	1,6
Tanker 7	390	5 516,0	8 851,2	32,2
davon: 8				
Flüssiggastanker 9	7	52,3	52,5	0,2
Chemikalientanker 10	5	29,1	40,8	0,1
Trockengutfrachter 11	2 150	13 024,4	18 206,1	66,2
davon: 8				
Massengutfrachter 12	247	3 354,9	5 254,9	19,1
Kühlschiffe 13	48	235,9	233,8	0,8
Container- und Semicontainerschiffe 14	72	391,4	468,3	1,7
Roll-on/roll-off-Schiffe 15	30	157,4	188,8	0,7
Fähren 16	28	105,6	35,8	0,1

Key: 1--Ship types; 2--Number of ships; 3--Size, 1,000 GRT; 4--Capacity; 5--Total; 6--Combination vessels; 7--Tankers; 8--Including; 9--Liquid gas tankers; 10--Chemical tankers; 11--Drygoods freighters; 12--Bulk goods freighters; 13--Refrigerator vessels; 14--Container and semicontainer vessels; 15--Roll-on/roll-off vessels; 16--Ferries. Source: see Table 1.

Bulgaria's maritime exports between 1960 and 1976 went up six-fold from 0.5 million ton to 3 million tons. Cuba's total foreign trade consists of maritime shipments. Between 1965 and 1975 they rose by 37 percent and reached a figure of 19 million tons.

Imports predominate more and more in Cuba's maritime trade because large quantities of fuels and raw materials as well as other commodities must be imported. Cuba's imports climbed from 8 million tons in 1965 to 13 million tons in 1975, with petroleum and petroleum products from the USSR hitting first place (8.8 million tons in 1976).

Cuba's exports fluctuate around 6 million tons per year; the consist above all of sugar, that country's main product.

The other European CEMA member countries with an outlet to the sea, the GDR and Romania, also display a high level of dynamics in international maritime transportation. The GDR's international maritime traffic volume in 1978 rose to about 20 million tons. Since 1960, the GDR's foreign trade maritime transportation volume has gone up more than three-fold.

The GDR's seaward imports are considerably higher than the exports. The reason for this can be found in the large volume of imports involving petroleum and petroleum products, iron ore, phosphorites and apatites, cereal crops, fodder, lumber, coal, with raw materials being imported on a larger scale above all from the USSR by sea.

Romania's maritime traffic volume in 1970 climbed to 14 million tons. In recent years we can record a further rise but we have no statistics on that. While exports by sea in the past were 50 percent higher than imports, both areas reached the same level in 1970.

The foreign trade maritime traffic volume of Czechoslovakia and Hungary is handled in transit via important maritime ports. Statistics show that Czechoslovakia's seaward foreign trade volume currently is about 9 million tons per year. It is handled overwhelmingly in the ports of the CEMA member countries, specifically, mostly in Poland (2.4 million tons in 1978) and the GDR (1.6 million tons in 1977) but also in Yugoslavia (Rijeka), in the FRG (Hamburg, 2.4 million tons in 1978), and Italy (Trieste).

Hungary's maritime trade volume comes to about 3 million tons per year; most of this volume is handled in the ports of Yugoslavia, Poland (480,000 tons in 1978), the USSR (Reni, Ismail), and the FRG (Hamburg, 770,000 tons in 1978).

Maritime Shipping of CEMA Countries

The development of seaward trade of the CEMA members necessitated the efficient expansion of the merchant fleet. In keeping with principles customary in international trade, countries involved in commerce are also entitled to participate in shipments of those commodities. The principle of transportation competence applies among the CEMA member countries; this means that the buyer country is given the right independently and on its own to organize maritime shipment.

In 1949, when the CEMA was established, the capacity of the merchant fleet of its member countries was barely 2.5 million tons. This is why a considerable portion of the goods of the socialist countries was carried by the fleets of capitalist countries. This meant that the CEMA countries were in a difficult situation; they were dependent on the conditions dictated to them by capitalist shipping. That applied not only to transportation possibilities for some types of goods in general

(at the time of the "Cold War," trade with socialist countries was being boycotted) but also to the transportation terms (transportation deadlines, level of freight rates, choice of ports, etc.). Of course there was not talk of any planned transport organization and of meeting the needs of the national economy of the socialist countries in this so very important field.

This is why the CEMA member countries chose the right way, that is, the creation and expansion of their own merchant fleet. In 1949, the Soviet Union alone had a fleet which was very significant (about 2 million tons). The Polish fleet had a capacity of 200,000 tons while the other socialist countries had practically no fleet.

Only toward the end of the fifties did the fleets of the socialist countries begin to develop more rapidly. By the 30th anniversary of the CEMA, the fleet was increased ten times over. Early in 1978 it had achieved a capacity of 27.5 million tons.

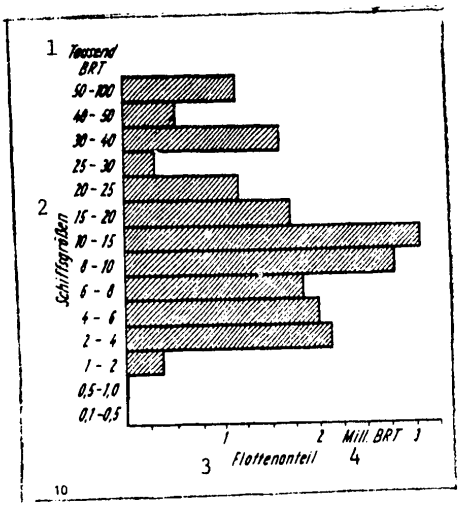

Figure 10. Size structure of CEMA merchant fleet, end 1977.
Key: 1--000 GFT; 2--Ship sizes; 3--Fleet share; 4--Millions of GRT.

At the end of 1967, the merchant fleets of the CEMA countries consisted of 1,780 vessels with a total capacity of 13.7 million tons; at the end of 1977, the figure was 2,547 ships with a capacity of 27.5 million tons (Table 1). During that decade, the number of ships was increased by 43 percent and their capacity was doubled.

The development rate of the merchant fleets varied in the individual CEMA member countries during the decade between 1967 and 1977; it depended on the need for maritime traffic volumes and on the possibility of guaranteeing a corresponding share of the particular country's fleet.

With the exception of Mongolia, all CEMA members countries have a merchant fleet. In addition to the countries listed in Table 1, the Vietnamese Socialist Republic--which did not become a member of the CEMA until 1978--has such a fleet.

Some of the CEMA member countries--such as the USSR, Poland, Romania, the GDR, and Bulgaria--have merchant fleets with a capacity of more than 1 million tons. The Romanian fleet developed in the most dynamic fashion between 1967 and 1977 with a more than four-fold increase in its tonnage while Poland expanded its fleet almost by 2.5 times.

The USSR fleet during that time was increased by 75 percent, the fleet of the GDR grew by 86 percent, and Bulgaria's merchant fleet grew by 61 percent. Cuba's merchant fleet also developed very rapidly; it is being carried in CEMA statistics only since 1974, at which time it had 41 vessels with a capacity of 382,000 tons. By 1977, it had doubled. We can also record strong fleet growth in those CEMA countries which do not have any outlet to the sea. Hungary increased the capacity of its fleet almost three-fold between 1967 and 1977 while Czechoslovakia roughly doubled it.

Fleet development in the CEMA is aimed at fundamental modernization, specialization, and adaptation to the commodity structure and volume involved in foreign trade. In this connection, the type structure of the CEMA merchant fleet reveals characteristic differences as compared to the structure of the international merchant fleet.

Most of the CEMA merchant fleets (Table 2) consist of various drygoods freighters whose share in 1977 came to 66.2 percent. This is due to the large percentage of these goods (both bulk goods and piece goods) in the seaward foreign trade of the CEMA member countries.

Universal piece goods and tramp steamers still predominate in the CEMA drygoods freighter fleet which in 1977 still consisted of about 12 million tons capacity or 65 percent of the total drygoods freighter fleet.

Among special vessels for the transportation of drygoods, the merchant fleets of the socialist countries have bulk goods freighters available, in other words, big ships that carry identical bulk goods, such as coal, ore, grain, and phosphorites, first of all. In 1977, the capacity of those ships topped the 5-million ton limit and thus accounted for 19.1 percent of the total merchant fleet of the CEMA or 28.9 percent of the total drygoods freighter fleet. Very large bulk goods freighters are already being used, such as the Polish vessels "Turoszow" and "Belchatow" with a capacity of 71,000 tons each; these are the biggest bulk goods freighters in the CEMA fleet. Poland also has the biggest bulk goods fleet among the CEMA countries (2 million in 1977) and thus comes ahead of the USSR (1.8 million tons) and Romania (0.9 million tons).

Among the vessels intended for transporting various cargo units (containers, pallets, semitrailers, etc.), the container and roll-on/roll-off vessels developed fastest in the CEMA fleet. The fleet of container and semicontainer vessels belonging to the CEMA member countries in 1977 consisted of 72 ships with a capacity of 468,300 tons. In quantitative terms, that it is not very much but one must keep in mind that the transportation capacity of those ships is considerably greater than the transportation capacity of conventional piece goods freighters and that every container vessel replaces several universal piece goods freighters, in other words, it can make considerably more runs during the same period of time. The USSR has the biggest container fleet (including semicontainer vessels) with 44 vessels and a capacity of 330,000 tons in 1977; it is followed by Poland with 13 vessels and 80,000 tons, Cuba with three ships and 37,000 tons, and the GDR with 12 ships and

21,000 tons. These fleet inventories above all include semicontainer vessels, in other words, ships partly equipped for container transport, as well as small and medium container vessels (first and second generation) which are best suited for the maritime traffic of the CEMA countries.

The second type of special vessel for carrying certain cargo units, etc., consists of the roll-on/roll-off vessels, in other words, ships with are serviced horizontally, without the use of harbor cranes. Among the socialist countries, the USSR has the most vessels of this category (25 ships with a capacity of 169,000 tons).

In 1978, the first lash vessel, the "Julius Fucik," was placed in service with a capacity of 36,000 tons as part of a joint undertaking in the CEMA countries. This ship marks the introduction of a new transportation technology in the socialist countries where light, floating containers are taken onboard and are then further transported to and from the maritime ports via inland waterways. This simplies the entire transportation process.

In our description here we must not overlook ferries although they--as in the case of passenger and automobile ferries and partly also railroad ferries--they carry mostly passengers. The CEMA member countries use not only passenger and motor vehicle ferries but also railroad or combined railroad and motor vehicle ferries. In 1977, the biggest ferry fleet belonged to the USSR (16 vessels with a volume of 72,000 GRT) and Poland (seven ships with 26,000 GRT). The GDR had five ferries which, of course, are being operated by the railroad administration; Bulgaria received its first ferries in 1978.

Refrigerator vessels represent a special category of ships for the transportation of piece goods; they are used to transport tropical fruits, meat, and other commodities. Among the CEMA countries, the USSR has the largest number of refrigerator vessels (31 units with a capacity of 149,000 tons).

The biggest identical group of freighters in the CEMA is made up of tankers; in 1977, 32.2 percent of the total freighter volume of the CEMA were to be found in this group. In addition to conventional tankers for petroleum and petroleum products, special vessels are also being increasingly employed for the transport of chemicals and natural gas.

But the inventory of this special fleet is not yet large (five chemical tankers with a capacity of 41,000 tons and seven natural gas tankers with a capacity of 52,000 tons in all CEMA countries in 1977); but we can expect an increase in the number of those ships over the next several years due to an increase in the share of this type of cargo in the maritime traffic of the CEMA countries. In 1979, the USSR received the first major LPG tanker (for petroleum gas) with a tank volume of 75,000 cubic meters. Poland has the biggest fleet of chemical ships among the CEMA countries (four vessels with a capacity of 39,000 tons).

The USSR has the largest petroleum tanker fleet in the CEMA (6.6 million tons in 1977); then follows Poland (1 million tons), the GDR (577,000 tons), and Bulgaria (545,000 tons). The capacity of petroleum tankers is as much as 150,000 tons. Petroleum products are carried by smaller tankers with a capacity of up to 30,000 tons.

Table 3. CEMA Merchant Fleet, 1977, by Shipping Companies

Staaten und Reedereien 1	Anzahl der Schiffe 2	Vermessung 1000 BRT 3	Tragfähigkeit 1000 t 4	
			Insgesamt 5	davon Tanker 6
UdSSR 7				
Asowsche Reederei				
Shdanow 8	126	555,4	734,5	1,7
Baltische Reederei				
Leningrad 9	164	1 104,9	1 539,3	–
Schwarzmeerreederei				
Odessa 10	227	2 372,9	3 383,8	–
Fernöstliche Reederei				
Wladiwostock 11	243	1 460,0	1 907,7	–
Donau-Reederei				
Ismail 12	58	155,4	188,7	–
Estnische Reederei				
Tallinn 13	85	235,2	291,9	–
Grusinische Reederei				
Batumi 14	46	439,1	661,5	402,8
Kamtschatkaer Reederei				
Petropawlowsk 15	49	146,7	168,7	6,3
Kaspische Reederei				
Baku 16	83	327,9	361,0	227,5
Litauische Reederei				
Klaipeda 17	36	117,7	160,1	–
Lettische Reederei				
Riga 18	100	707,1	957,2	772,3
Murmansker Reederei				
Murmansk 19	58	335,3	469,9	–
Noworossijsker Reederei				
Noworossijsk 20	134	2 863,8	4 650,3	4 343,7
Nordreederei				
Archangelsk 21	148	571,4	801,1	3,3
Primorsker Reederei				
Nachodka 22	57	370,3	530,9	530,9
Sachaliner Reederei				
Cholmsk 23	72	275,9	336,4	–

Key: 1--Countries and shipping companies; 2--Number of ships; 3--Size, 1,000 GRT; 4--Capacity; 5--Total; 6--Including tankers; 7--USSR, Azov Shipping Company, Zhdanov; 9--Baltic Shipping Company, Leningrad; 10--Black Sea Shipping Company, Odessa; 11--Far East Shipping Company, Vladivostok; 12--Danube Shipping Company, Ismail; 13--Estonian Shipping Company, Tallinn; 14--Georgian Shipping Company, Batumi; 15--Kamchatka Shipping Company, Petropavlovsk; 16--Caspian Shipping Company; Baku; 17--Lithuanian Shipping Company, Klaipeda; 18--Latvian Shipping Company, Riga; 19--Murmansk Shipping Company, Murmansk; 20--Novorossiysk Shipping Company, Novorossiysk; 21--Northern Shipping Company, Arkhangelsk; 22--Primorskiy Shipping Company, Nakhodka; 23--Sakhalin Shipping Company, Kholmsk.

Table 3 [Continued]

Staaten und Reedereien 1	Anzahl der Schiffe 2	Vermessung 1000 BRT 3	Tragfähigkeit 1000 t 4	
			Insgesamt 5	davon Tanker 6
Polen 6				
Polskie Linie Oceaniczne, Gdynia	168	705,4	1 040,4	–
Polska Żegluga Bałtycka, Kolobrzeg	24	32,4	20,4	–
Polska Żegluga Morska, Szczecin	117	1 926,5	3 155,6	1 001,3
Rumänien 7				
Navrom, Constanta	128	1 193,7	1 862,7	442,2
DDR				
Deutfracht-Seereederei, Rostock	200	1 259,0	1 853,5	577,0
Bulgarien 8				
Bolgarski Morski Flot, Warna 9	95	846,7	1 278,9	545,0
Kuba 10				
Empressa de Navegacion Mambisa, Havanna	91	582,4	822,4	82,6
Empressa de Navegacion Cariba, Havanna				
Tschechoslowakei 11				
Ceskoslovenska Namorni Plavba, Praha	12	146,2	221,6	–
Ceskoslovenska Plavba Dunajska, Bratislava	3	4,8	5,0	–
Ungarn 12				
Mahart, Budapest	22	75,7	107,8	–

Key: 1--Countries and shipping companies; 2--Number of ships; 3--Size, 1,000 GRT; 4--Capacity; 5--Total; 6--Including tankers; 6a--Poland; 7--Romania; 8--Bulgaria; 9--Varna; 10--Cuba; 11--Czechoslovakia; 12--Hungary; DDR--GDR. Source: see Table 1.

The merchant fleet also includes combination vessels, specifically, depending upon the design, ore-oil freighters, ore-bulk-oil freighters (OBO vessels), or ore-bulk-container freighters (OBC vessels).

The share of these special vessels is still not great but it keeps growing. The USSR here again among the CEMA countries accounts for the largest share with four ships and a capacity of 371,000 tons. These are mostly big ships whose cargo capacity presently is as much as 120,000 tons (the Marshal Konev type).

The age structure of the CEMA's merchant fleet is relatively favorable. Looking at the age of the ships, this is a modern fleet; in 1977, 33.9 percent of the total ship volume were less than 5 years old, 22.0 percent were between 6 and 10 years old, and 28.4 percent were between 11 and 16 years. In some countries, the structure was even more favorable due to big investments in recent years. For example, the share of ships up to 5 years old in 1977 was 68.0 percent in Romania, 52.9 percent in Hungary, and 47.5 percent in Poland.

Looking at the size of the vessels, there are big differences in the CEMA merchant fleet resulting from the multiplicity of vessels and goods as well as the shipping runs to be operated. Small and medium vessels predominate; the biggest vessels include tankers with a capacity of 150,000 tons. In the development of the fleet of the CEMA countries, the mania for gigantic units was deliberately avoided; that mania is practiced by the capitalist petroleum companies through the construction of ever bigger supertankers which, in connection with the notorious tanker disasters of recent years, caused correspondingly disastrous damage to the natural environment.

The merchant fleet of the CEMA member countries is operated by 27 shipping companies (Table 3). The USSR has 16 companies, Poland has three, Czechoslovakia and Cuba have two, each, and Bulgaria, the GDR, Romania, and Hungary have one shipping company, each; nine shipping companies of the CEMA own a fleet of more than one million tons capacity; in other words, on an international scale, they are included among the big shipping companies. The three biggest are the Novorossiysk Shipping Company with 4.7 million tons, the Black Sea Shipping Company with 3.4 million tons and the Polish Maritime Shipping Company (Polska Zegluga Morska) with 3.2 million tons.

Most of the shipping companies of the CEMA countries are universal shipping companies. The biggest special shipping companies are the Soviet Novorossiysk Shipping Company, which uses only tankers and OBO carriers, the Soviet Primorskiy Shipping Company in Nakhodka (tankers exclusively), and the Polish Ocean Lines, Polskie Linie Oceaniczne Gdynia (piece goods freighters exclusively).

The Polska Zegluga Morska Shipping Company at Szczecin has the biggest bulk goods freighter fleet. In 1977, this shipping volume came to 2.1 million tons, that is to say, 39.1 percent of all drygoods freighters in the CEMA; the Romanian Shipping Company holds second place. Among the CEMA member countries, Polska Zegluga Morska is at the same time the biggest shipping company operating chemical carriers; it has four vessels with a capacity of 39,000 tons. At the same time, among CEMA tanker shipping companies, Polska Zegluga Morska is in second place because it has 1 million tons, in other words, 11.3 percent of the total CEMA tanker volume. It comes right after the Soveit Novorossiysk Shipping Company whose share is 49.0 percent.

The biggest shipping companies operating container vessels in the CEMA countries are the Soviet Far East Shipping Company based in Vladivostok with 31 vessels and a capacity of 263,000 tons, and Polskie Linie Oceaniczne with 13 ships and 80,000 tons. The most important shipping company operating roll-on/roll-off vessels is the Soviet Baltic Shipping Company with ten vessels and 93,000 tons; among ferry operations, we have the Soviet Caspian Shipping Company based at Baku with five ferries and 44,000 GRT, the Sakhalin Shipping Company based at Kholmsk with five

ferries and 25,000 GRT, Polska Zegluga Baltycka with headquarters in Kolobrzeg and five ferries, totalling 20,600 GRT, and finally, the refrigerator vessels of the Latvian Shipping Company with 19 vessels and 93,000 tons.

Cooperation between CEMA Member Countries in Maritime and Shipping

Cooperation among the CEMA member countries in maritime trade and shipping began more than 30 years ago with the coordination of ship chartering. The individual socialist countries did not have enough ships and tried to find ships on the world market to carry their goods through united action. The position of the CEMA member countries was consolidated and beyond that it was thus possible to achieve more favorable charter terms. Since 1952, there have been annual conferences by the Organization for hartering essels of the CEMA member countries which in 1963 also was joined by the shipping companies that led to the Conference of Charter and Shipping Company Organizations of the CEMA Member Countries. The Coordination Bureau for the Chartering of Ships of the CEMA was founded in 1962 with headquarters in Moscow; it also acts as a permanent secretariat for the above-mentioned Conference of Chartering and Shipping Company Organizations.

Prior to that, in 1958, the Permanent Commission for Transportation of the CEMA was founded. It is the principal organ for the planned multilateral collaboration among the countries of the socialist community in the field of transportation.

Since that time, the collaboration among the member countries in maritime trade and maritime shipping was considerably expanded and improved. The Conference of Chartering and Shipping Company Organizations of the CEMA as well as the Coordinating Bureau for the Chartering of Ships greatly expanded their radius of action and thus practically cover the entire improvement in collaboration in maritime traffic.

The coordinator system has been applied in chartering for several years; it proved itself valuable in practice. In 1972, the Permanent Commission for Transportation of the CEMA approved the "Conditions for Mutual Supply of Maritime Shipping Space and Foreign Trade Goods of the CEMA Countries" as well as the "Principles of Signing Annual Agreements on Mutual Supply of Maritime Shipping Space and Foreign Trade Goods of the CEMA Member Countries" which had been drafted by the Conference of the Chartering and Shipping Company Organizations of the CEMA to implement the complex program of socialist economic integration. These documents contributed not only to the development and perfection of the corresponding collaboration efforts but also at the same time led to an increase in the share of vessels of the socialist countries in the transportation of their goods.

A new qualitative step of collaboration among CEMA member countries began after the signing of the agreement on collaboration in maritime merchant shipping between the European CEMA countries, which took place in Budapest on 3 December 1971. The parties to the agreement pledged to support bilateral and multilateral collaboration for the full and effective utilization of the maritime merchant fleet and the maritime ports in order to meet the requirement for international maritime shipments, to develop collaboration in the field of chartering, to expand the economic and technical relationships, to exchange experiences, etc.

The INSA (International Shipping Company Association) was formed in 1970 upon the initiative of the CEMA member countries; the association's members include most of

the shipping companies of the socialist countries and, beyond that, the Association of Indian Shipping Companies. This association works in support of international collaboration in shipping and is open to all shipping companies which accept the bylaws and the activity objectives.

The joint shipping lines are an expression of collaboration between the CEMA member countries in shipping. In 1977, the shipping companies of the CEMA countries maintained nine such lines, employing 183 vessels with a total capacity of 1,165,000 tons; that accounts for 22 percent of the total shipping space used in line shipping.

The biggest joint lines of the CEMA in 1977 were as follows:

Unilevant going to the Mediterranean ports with the participation of the fleets of Bulgaria, the GDR, Poland, and the USSR (70 ships with a capacity of 49,000 tons);

Uniafrica going to the ports of West Africa with the participation of the GDR, Poland, and the USSR (35 vessels, 194,000 tons);

Baltafrica going to the ports of East Africa with the participation of the GDR and Poland (22 vessels, 174,000 tons);

Baltamerica going to the ports on the east coast of South America with the participation of the fleets of the GDR, Poland, and the USSR (17 ships, 155,000 tons).

One factor in collaboration among the member countries of the CEMA in maritime commerce and in maritime shipping is also the mutual supply of the transloading and transportation potential, that is to say, the granting of transit services. These transit services are very necessary for landlocked countries which do not have an outlet to the sea (Czechoslovakia, Hungary) as well as for the maritime states of the CEMA which do not have adequate cargo handling capacities in their own ports (for example, for the GDR).

Poland offers the other CEMA countries the biggest transit cargo handling service capacity in its maritime ports; there, for example, in 1978, 2.4 million tons of goods were handled for Czechoslovakia, 1.6 million tons for the GDR, 484,000 tons for Hungary, 61,000 tons for Romania, 20,000 tons for Bulgaria, and 1,000 tons for the USSR. The Polish port of Szczecin, with a transit volume of 2 million tons per year, was the biggest transit port of the CEMA countries in 1978. The ports of the GDR also offer considerable transit handling capacities to other CEMA countries, mostly Rostock, as well as the ports of the USSR at the mouth of the Danube (Reni, Ismail); there, transit goods from Czechoslovakia and Hungary, which are carried by sea, are being transloaded mostly. It must be stressed that the ports of the GDR and Poland work closely together within the framework of the "Interport" economic organization.

Container shipments from European CEMA countries to Japan via the USSR represent a special type of transit service where sealanes to be sure play a minor role; they are handled via the so-called trans-Siberian container bridge with transloading in the maritime ports of the Soviet Far East, especially Nakhodka and Vostochnyy.

One factor, which favors the development of maritime shipping by the CEMA member countries, is also represented by their collaboration in the shipbuilding industry.

More than half of the ships, with which the fleets of the socialist countries are being constantly replenished, are being built in the shipyards of those countries. Some of them, in addition to production for their own needs, have also developed a considerable export production effort which to a great extent is intended for other socialist countries. Most ships for other CEMA countries are being built in the shipyards of Poland, the GDR, Bulgaria, and Romania.

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GERMAN DEMOCRATIC REPUBLIC

DEVELOPMENT OF MERCHANT FLEET REVIEWED, LISTINGS, STATISTICS GIVEN

East Berlin JAHRBUCH DER SCHIFFAHRT in German 1980 signed to press June 1979 pp 47-60

[Article by Capt Lothar Foss: "GDR Merchant Fleet--Universal Fleet in Focus"]

[Text] In 1982, the ocean-going merchant fleet of the GDR will start the third decade of its existence and the 8,800 seamen of this universal fleet (Table 2), as well as 3,800 employees ashore (as of 1979) employed by the big shipping company of DSR (VEB Deutfracht/Seereederei Rostock) will be able to look back upon a significant contribution to the worldwide enhancement of the republic's prestige and its economic strengthening. Starting with 21 seamen and 15 clerical employees, the foundation for the buildup of the GDR merchant fleet was created in 1950 with the commissioning of the steamer "Vorwaerts" and the sea-going lighter "Fortschritt" with a capacity of 2,000 tons. In line with the planned and proportionally rising foreign trade volume of the GDR, a merchant fleet was built up through long-term promotion measures instituted by the Socialist Unity Party of Germany and the government of the GDR as well as through manifold initiatives of the entire population, but especially the staff members of the then DSR which was founded on 1 July 1952; this merchant fleet takes up a respectable place among the merchant fleets of the seafaring nations.

The initiatives of the Pioneer Organization were of inestimable help for example in building up the merchant fleet in connection with the construction of the steamer "Thaelmann-Pionier," as well as the appeal by the workers of the Steckenpferd Radebeul VEB [State Enterprise] for the purchase of second-hand tonnage with the funds derived from overfulfilled export plans; 2,000 enterprises earned a "Steckenpferd [Hobby] Fleet" consisting of eight freighters with a capacity of 58,608 tons and a cruise ship, called "Voelkerfreundschaft."

Here we must also mention the following: the construction of the Rostock overseas port as the home port for the merchant fleet (commissioning of the first berth by MS "Schwerin" on 1 May 1960), the deepening of the 8.5-kilometer navigation channel leading to the port of Rostock, and some berths of the overseas port to a draft of 13 meters between February 1972 and November 1977 and the oil transfer installation, rebuilt and automated in 1978, so that loaded drygoods freighters and oil tankers with a capacity of up to about 45,000 tons can now be handled by the Rostock maritime port, or the delivery of the ballast water treatment plant in the middle of 1979 which gathers the oil-contaminated waste water from the ships and thus helps in environmental protection.

Table 1. Development of Merchant Fleet during Five-Year Plan Periods

1 Funfjahr-planzeitraum	2 Zugang 6 Schiffe	BRT	t dw	3 Abgang Schiffe	6 BRT	t dw	4 Bestand am 31. 12. des Fünfjahrplanabschlußjahres Schiffe	6 BRT	t dw	5 Trans-port-menge kt
1951/55	11	11 736	15 345	2	1 420	2 000	9	10 316	13 345	253
1956/60	44	189 852	267 929	6	3 270	3 850	47	196 898	277 424	3 491
1961/65	86	399 242	553 590	6	26 538	36 299	127	569 602	794 715	20 889
1966/70	65	472 436	694 565	17	101 978	149 327	175	940 060	1 339 953	36 843
1971/73	43	300 317	502 787	20	40 272	50 151	198	1 200 105	1 792 589	54 081
1976/80**)	55	425 952	573 251	63	341 290	517 001	190	1 284 767	1 848 839	61 410
1976	7	46 503	55 803	7	34 712	52 827	198	1 211 898	1 795 565	12 253
1977	13	95 854	123 439	11	48 784	65 464	200	1 258 968	1 853 540	12 676
1978	12	95 624	130 817	16	76 536	127 058	196	1 278 056	1 857 299	12 029
1979	16	113 922	156 707	18	83 633	115 657	194	1 308 345	1 898 349	12 152
1980**)	7	74 047	106 485	11	97 625	155 995	190	1 284 767	1 848 839	12 300
**) (vorraussichtlich)	55	425 952	573 251	63	341 290	517 001	190	1 284 767	1 848 839	61 410

Key: 1--Five-year plan period; 2--Additions; 3--Losses; 4--Status as of 31 December of the closing year of the five-year plan; 5--Transportation volume; 6--Ships; BRT--GRT; (**)--Estimated

The buildup and development of the GDR merchant fleet are inseparably connected with socialist aid and support from the Soviet Union and the other socialist seafaring nations. Collaboration by the maritime transportation enterprises of the GDR with the partner enterprises in the CEMA countries presently takes place on the basis of the complex program signed in 1971 in Bucharest for the further in-depth development and perfection of collaboration and development of socialist economic integration of the CEMA member countries.

The perfection of collaboration among the shipping enterprises in international line, tramp, and special shipping, in the coordination of chartering activities on the world market, in strengthening their joint line services, in mutually supplying each other with transportation assembly lines, tonnages, and repair capacities, in securing the economic interests through the combination of socialist international shipping organizations of the CEMA and coordinated collaboration in international shipping organizations under the UN system adds up to a constant task. In 1977, the CEMA countries maintained 144 line services. The DSR is a member of six conference line services, as follows: Rostock/Riga, Uniafrika, Baltafrika, Unilevant, Baltamerika, and Cubalco.

In accordance with the maritime transportation agreement concluded in 1973 between the GDR and the USSR, the USSR each year makes fleet capacities available to the GDR for transporting more than 1 million tons. In recent years, about 45 percent of the annual import volumes from the USSR were carried by sea (excluding pipeline transportation).

Using Polish capacities for cargo transloading, 1.6 million tons were transloaded in 1978 as part of the INTERPORT economic organization.

In 1978, the VEB DSR and Bulfracht (Bulgarian People's Republic) agreed upon the mutual utilization of tonnage and prepared for the utilization of Bulgarian ship repair capacities until 1980. Presently, the DSR each year carries about 1.8 million tons of transit goods for Czechoslovakia and the Hungarian People's Republic, including about 1.6 million tons that are handled in GDR ports. DSR developed certain

special programs to support and build up the maritime traffic industries of the Republic of Cuba and the Vietnamese Socialist Republic.

The seamen expreienced socialist collaboration also in the form of manifold cordial relationships between the various work gangs of the fleet and in the ports, by developing brotherly friendship through sponsorship contracts, as well as through selfless aid and exchange of experiences.

Through this development process, the reality of action readiness, activity, and sense of responsibility among our seamen grew and keeps growing daily and that includes workers and employees, all of whom are working to accomplish the national economic tasks of maritime transportation and port cargo handling on the basis of the competition resolutions that were adopted.

Table 2. Ship Category Structure, Merchant Fleet, 31 December 1979

Schiffstyp 1	Anzahl 2	Vermessung BRT 3	Tragfähigkeit t 4
Stückgutfrachter 5	140	743 653	973 392
Massengutfrachter 6	18	210 579	327 933
Containerschiffe 7	9	3 666	8 675
Ro/ro-Schiffe 8	5	14 043	22 687
Kühlschiffe 9	10	56 860	70 420
Erz/Ölfrachter 10	3	54 810	85 377
Öltanker 11	7	222 040	406 248
Chemiekalientanker 12	2	2 694	3 612
Handelsflotte 13	194	1 308 345	1 898 349
Fahrgastschiffe 14	1	12 068	4 775
Versorgungsschiffe 15	11	2 750	1 110
Schiffe gesamt 16	206	1 323 163	1 904 234

Key: 1--Ship category; 2--Number; 3--Size; 4--Capacity; 5--Piece goods freighter; 6--Bulk goods freighter; 7--Container vessels; 8--Roll-on/Roll-off vessels; 9--Refrigerator vessels; 10--Ore-oil freighters; 11--Oil tankers; 12--Chemical tankers; 13--Merchant fleet; 14--Passenger vessels; 15--Supply vessels; 16--Ships, total.

Politically motivated mass initiatives, such as "Solidarity Freight GDR-Chile" in 1972, "My--Your--Our Responsibility," "Sailing a Sure Course," "Friendship Line Bridge of Friendship GDR-USSR," "Setting Course for Havana," "Solidarity Line Rostock--Haiphong," or the central "Youth Project GDR-Angola" are aimed at thinking together of the big picture and making the unity of proletarian internationalism and socialist patriotism visible in word and deed. As ambassador of socialism, the GDR merchant fleet touches more than 360 ports throughout the world.

The latest developments are in compliance with the directive of the Ninth Congress of the SED to increase the merchant fleet, during the 1976-1980 five-year plan, primarily by adding modern ocean-going vessels from GDR production to a figure of about 2,000 kiloton capacity and to increase foreign trade shipments by sea to 135-140 percent (Table 1).

To achieve this merchant fleet expansion, the government is making about M2.1 billion available in investments.

By commissioning new ship units with high utility values and through the simultaneous removal of obsolete and technically worn-out tonnage from the inventory (Table 3), it is possible to create a more effective fleet structure. On the basis of this process, the fleet's capacity--with roughly the same number of ships--over the past 7 years grew by about 26 percent and the average size of the ships went up from 7,710 tons in 1973 to 9,730 tons capacity in 1980 (Table 4). By 1985, the GDR merchant fleet must be so developed that it will be able to transport about 16 million tons of goods, including 11 million tons of goods for GDR foreign trade. This corresponds to a coverage of about 80 percent as compared to 55 percent in 1978.

Here we start with the ideal that the total tonnage will remain roughly the same. The reproduction and conversion of the merchant marines was under no other five-year plan as comprehensive as during the period between 1976 and 1980. By commissioning newly-built vessels, especially from GDR shipyards, and through the planned wrecking of ships between 1976 and 1980, we were able to improve the working and living conditions of our merchant seamen through comfortable and air conditioned crew quarters, efficient work rooms, automation of engine operations, and increase in the degree of mechanization of deck machinery.

In 1967--the year automated ship operation was started--the merchant marine had two refrigerator vessels whose engine operation at sea and in port was automatic; by the end of 1979, it already had 150 vessels of this kind with a capacity of 1,252,334 tons. This means that 77 percent of the ship inventory or 66 percent of the operating tonnage are already automated (Table 7). This effort is going to be pursued. It means a saving of manpower and an improvement in working and living conditions. These measures are supplemented by social and cultural care for our merchant seamen. Athletic activities on board and ashore provide a change of pace and constitute one of the most popular recreational activities. Sports and singing were practiced already on the steamer "Vorwaerts." The cultural group under the direction of the then Third Officer Gerhard Just played for the population in the State of Mecklenburg during port layover time. The earnings were donated to the 1951 World Festival of Youth and Students and almost the entire crew was able to participate in Berlin by way of appreciation.

In 1959, the first 21 motion picture cameras were used when the fleet consisted of 33 vessels. In 1965, the 16-millimeter film depot of the DSR was able to supply already 259 film titles but only three copies were available for each film. In 1960, the first crate of books was hoisted on board. We started with a total inventory of 13,000 volumes. By 1961, the Erfurt service combine purchased used tape recordings; starting in 1962, the enterprise radio studios improved their operations. In 1975, the first video recorder was used. At the end of 1978, the film inventory had grown to 542 film titles with 10 copies each. Today, the ships have libraries with belletristic and popular-science liturature, technical books and magazines, the daily press and printed radio reports, television sets, radios, film projectors and tape recorders, record players, slide projectors, complete photo equipment including laboratory, musical instruments, recreation rooms, athletic equipment and recently also training rooms, a sauna and a bar or clubroom.

In 1976 alone, M1.2 million were allocated for that purpose.

Presently, 71,300 books, about 6,700 records, and annually more than 4,000 tapes are available. In contrast to other enterprises, the DSR has a very large facility for sparetime activities with the needs of the merchant seamen at the very focus. In developing intelectual and cultural life in the merchant marine, the "Ship of Exemplary Cultural Work" movement has been holding a strong position in the 1974-1975 BKV [Enterprise Collective Labor Contract] since the first invitation. The various crews use all available possibilities in order to develop a rich cultural and athletic life. Political indoctrination work, apprenticeship training, work by the social organizations, solidarity and sponsorship activities, participation in athletic competitions at long distance, and to win the athletic badge, dignified development of social highlights, brigade celebration, hobby show, and MMM [Fair of the Masters of Tomorrow], parties, as well as the effort to develop interpersonal relationships in a socialist manner and to foster a shipboard atmosphere where everybody will feel comfortable--these are part of everyday routine just like the tasks of plan accomplishment and economizing. By 1978, a total of 26 vessels won that title. On the basis of our social-policy measures, the wages of our seamen were raised (the new pay scale effective 1 September 1978 features an average of M171 per man and per month more) as well as the introduction of the 40-hour work week effective 1 May 1977, retaining the shipboard working hours (a daily work schedule of 8 hours, basically the 7-day work week, and thus a weekly shipboard work schedule of 56 hours), while the spare time entitlement was increased, the vacation starting in 1979 was extended by 3 days, along with the referred allocation of vacation spaces, as well as special support facilities in the harbors of the GDR and abroad. All crew members have the same status as shift works. Accordingly, a shift bonus is paid for daily work done on Sundays and for 8 hours of work on Saturdays and on Sundays, one day off, each, is granted.

Table 7. Development of Automated Ship Operation in Merchant Marine in 1976-1979

Jahr 1	Flotte gesamt 2		Automatisierte Schiffe (aut 24/16) 3			
per 31. 12. 4	Anzahl 5	Tragfähigkeit t 6	Anzahl gesamt 7	Flotte % 8 zur	Tragfähigkeit absolut 9	zur 10 Flotte %
Zugang 1976			16		105 946	
Stand 1976	198	1 795 565	106	53,53	834 704	46,48
Zugang 1977			20		169 653	
Stand 1977	200	1 853 540	126	63,0	1 004 357	54,18
Zugang 1978			8		63 526	
Stand 1978	196	1 857 299	134	68,37	1 067 883	57,44
Zugang 1979			16		184 451	
Stand 1979	194	1 898 349	150	77,32	1 252 334	65,97

Key: 1--Year; 2--Total fleet; 3--Automated vessels (automation rate 24/16); 4--As of 31 December; 5--Number; 6--Cargo capacity; 7--Total number; 8--Fleet % to; 9--Cargo capacity, absolute; 10--To fleet %; Zugang--addition; Stand--status as of.

In addition to the improvements and incentives on a material basis, organizational conditions were also created in an effort to coordinate the operational and personal-family requirements facing the seamen to the greatest possible extent. That includes the training of permanent crews and relief crews. At the end of 1972 six coastal container motor vessels with six permanent crews and three relief crews for the first time introduced the complete and well-organized relief crew system. Major

advantages and obligations are connected for all participants with the viability of the relief system. Up to 3 years in advance, planned and regular off-duty time development and thus also plannable personal and family undertakings, stabilization of the entire team and high efficiency in addition to the socially necessary fluctuation also require the permanent crew to remain on duty for the duration of the crew release plan, the approval of the duty-time and off-duty-time plan as well as disciplined operational regulations management. The cooperating parties implement the new quality of ship crews by means of administrative and organizational measures to the benefit of seafaring personnel (the relief crew brings its own duty roster, the navigation musters the complete crew regardless of the place and time). At the end of 1978, the relief system had been tested and guaranteed in coastal shipping for 30 ships broken down by relief groups for two ships and three crews (8 months sailing time, 4 months off-duty per year) and for 21 ships broken down by relief groups for three vessels and four crews (9 months sailing time, 3 months off-duty per year). In 1979, the relief system was uniformly converted to two ships and three crews. Relief systems also proved valuable for differing ship sizes and other situations. The process of their formation is being continued in the entire merchant fleet.

The development and consolidation of a politically and technically qualified cadre force consisting of seamen and officers is directly connected with the tremendous development of the merchant marine. The training of the first 18 apprentices on the "Vorwaerts" began with the establishment of the merchant fleet (see JAHRBUCH DER SCHIFFAHRT, 1962 and 1978, pp 100 ff.), along with the training of nautical and engineering officers at the Wustrow Navigation School which has been in existence since 1846 or at the Rostock-Warnemuende Ship Engineering School founded in 1950 (ss JAHRBUCH DER SCHIFFAHRT, 1972, pp 6 ff.). By the 25th anniversary of the merchant marine, it was thus possible to make more than 7,000 skilled workers and more than 2,000 officers available for ship command, ship engine operation, and maritime communications. Each year, on 1 September, the training year commences for more than 1,300 apprentices at the Fleet Operations School. At the same time, about 2,500 workers of the DSR go through the most varied forms of advanced adult education. Besides, about 1,280 students from 40 classes in high schools in Rostock complete polytechnical education at the facility owned by the shipping company. After 10 years of duty, the freighter and training vessel "Georg Buechner" found its final berthing place right next to the fleet's first ship in Rostock-Schmarl. The Fleet Operations School thus has the opportunity of qualitatively improving the basic seamanship training of the apprentices. After the freighter and training vessel "J. G. Fichte" was taken out of the inventory, apprenticeship training for the first training year was switched to shore facilities starting with the 1979-1980 academic year. Practical shipboard training starts with the second year in large groups of apprentices on about 80 freighters. Between 1981 and 1985, plans call for a shore training complex that will cost M25 million.

During the 1977-1980 academic years, the merchant fleet annually had 272 study spaces available at the Warnemuende/Wustrow Ship Engineering College in the ship operations specialty (HS 100, FS - A3 - 25), ship engineering (HS 100, FS - C3/C4 - 25) and information electronics (HS 25) to assure a steady flow of young ship officers.

The GDR merchant marine offers recognized and efficient service both to the country's own foreign trade and transit partners as well as foreign shippers with 24

regular line services and comprehensive capacities for the transport of bulk goods. In 1978, it handled a transportation volume of 2.4 million tons. That figure included 5.8 million tons of GDR foreign trade. DSR-Lines organizes maritime shipments for the Asian and American fleet sectors (about 45 piece goods vessels), the Mediterranean and Africa (about 48 ships), and special shipping and coastal shipping (about 105 units for line, tramp, and special shipments). Here we can estimate that the current economic organization of maritime traffic and port management proved itself in the form of a combine (KSH [Maritime Transportation and Port Management Combine]) with the merchant fleet as a permanent operation since 1974. It helped handle the constantly rising requirements of the national economy in terms of seaward transportation and transloading. But it also turned out that the growing production forces and the division-of-labor processes, to guarantee fast-response transportation management, in connection with the changes in foreign-trade conditions and on the international markets, must yet be mastered more effectively with the help of the existing management organization. The necessary changes in the economic organization were thoroughly investigated and prepared during the 1979 planning year. By means of better utilization of the combine effect and the fast elimination of ineffective operating procedures, it is possible thoroughly to improve management and planning in the KSH in order more intensively to utilize the voluminous assets available to the merchant marine and in the maritime ports.

During the current five-year plan, the renewal of the medium-sized tonnage was continued with the commissioning of the Poseidon Series. This ship series produced by the Rostock Neptun Shipyard comprises 19 semicontainer vessels-freedeckers [flushdeckers] with a capacity of 4,940 tons used especially for line service in the Mediterranean and African areas. The ships have two continuous decks, three hatches, one refrigerator hold, bowjet rudder, adjustable propeller plant, and new electrical single and double cranes with a capacity of 12.5 tons. It can carry 110 20-foot containers in the cargo hold and 38 on deck. The MS "Rudolf Diesel," the MS "Blankensee," and the following vessels were equipped with a main power plant of 5,296 kw (7,200 hp), newly developed in the GDR, which is at the same time connected to a shaft generator. The cruising speed with shaft generator drive is 16.3 kn and without that it is 16.5 kn. The eight multipurpose freighters of type 471, starting with MS "Freital," built by the Rostock Neptun Shipyard, are suitable for the transport of piece goods, 230 20-foot containers, lumber, bulk goods, and heavy cargo since they are equipped with two cargo holds and a high deck opening degree. The cargo beams can lift up to 30 tons. The crew is housed mostly in single cabins. This type is used primarily for container traffic from the North Sea to the Mediterranean.

The series of the Mercator type, built by the Warnow Shipyards in Warnemuende includes four semicontainer vessels for the Far East run from "Nordhausen" to "Sonderhausen." The vessels of this type are equipped with three continuous decks and five cargo holds, two refrigerator holds, and two edible oil tanks. The container capacity is 368 20-foot containers.

In order to be able to transport more tropical fruits in GDR ships, another two refrigerator vessels were purchased in 1977. The two sister ships "Ernst Moritz Arndt" and "Gerhart Hauptmann" were built by the British shipyard of Smith's Dock Company Ltd. Middlesbourgh according to the same or similar blueprints used for the sister ships "Heinrich Heine" and "Theordor Koerner." The DSR rationalized its

line services with the purchase of the roll-on/roll-off sister ships "Aschberg" and "Beerberg." The "Aschberg" alone, and fully loaded, with weekly departures, handles the entire cargo volume on the Rostock--Hull run. The ships have a stern ramp and two movable auto suspension decks. Container vessels and roll-on/roll-off ships can be used more effectively in terms of operating time than other freighters. The laydays in ports amount to only a few hours or a maximum of just one day. During that time everything must be done to get the ship ready for the next run. That means high requirements for the action readiness of the seamen and the quality of ship equipment.

The universal freight motor vessels "Weimar," "Jena," and "Meissen" were built by the Mathias-Thesen Shipyard in Wismar; they are the OBC type; they are designed to ore, bulk, lumber, piece goods, and containers. This single-deck vessel has five hatches which are designed as double longitudinal hatches and which obtain an opening degree of 76.5 percent in the deck surface. The commissioning of additional vessels of this type is planned in order to be able to handle the growing raw material shipments primarily with GDR-owned ships.

The first multipurpose vessel from the Meridian Series, the MS "Potsdam," built by the Warnemuende Shipyard, was accepted in 1978. Universal freighters of this type were purchased by several foreign shipping companies and have proved themselves in tropical areas and in ice waters, sailing behind icebreakers. Strengthening the inside bottom facilitated the transport of particularly heavy cargo items. At this time, the DSR is using nine such vessels on line service in the Far East.

In 1979, the GDR received additional vessels of the Pioner Moskvy type which proved themselves in action; they are the MS "Rabenau" and MS "Heidenau." This ship type was built by the Soviet Vyborg Shipyard and is a lumber and multipurpose freighter with four hatches for the transport of lumber, piece goods, bulk goods, grain, and containers.

In 1978, the MS "Barth" was converted especially for carrying chemical liquids, thus giving us the third glue tanker; in 1979, two new caustic soda tankers were placed in service.

Glue tankers carry urea and formaldehyde. This glue must be stored within a temperature range of + 15° C and + 22° C. The existing line traffic from Wismar to Scandinavia and Belgium guarantees this even when the outside temperature is - 25° C.

The caustic soda tankers"Buna" and "Schkopau" according to the IMCO Code for Construction and Equipment of Ships, which Carry Dangerous Chemicals in Bulk (London, 1977), are chemical tankers of type 3. They carry caustic soda from Wismar to Vlissingen.

Through the course of its development, the merchant marine must also report the loss of ships and their crew members due to serious damage. This shows that the seaman often is in direct contact with the natural environment and that the smooth transition between ship operations management and rescue action management is an important prerequisite for the survival of all crew members.

Here is the meaning of the abbreviations used in the tables:

Ship type--designation of construction series at shipyard and abbreviated version of customary ship types (Dam--steamer; Fra--freight motor vessel [motor freighter], FrL--freighter and training vessel; Fru--fruit carrier, Küm--coastal MV, Lei--lighter, Mas--bulk goods freighter; Pas--passenger vessel, Tan--tanker).

Ship name--spelling of ship name attached to ship's side. U.-sign.--identification signal or call sign of ship as seaborne radio station. Builder country--abbreviations of countries in which the ship was built (Bel--Belgium, Dmi--Denmark, Fin--Finland, Gbr--Great Britain, Jap--Japan, Ndl--Holland, Nor--Norway, Pol--Poland; Sow--Soviet Union, Swd--Sweden). Building year--year of completion. Lüa--length overall in meters. Beam--molded beam in meters. Draft--Summer draft or summer load line in meters. Size--ship's size according to inside space dimensions based on Agreement on Uniform System of Ship's Dimensions of 10 June 1947, the so-called Oslo convention (GBl., SDr. 611). BRT--GRT. NRT--Net registry tons. t dw--total capacity, summer draft, in tons, according to the 1966 Freeboard convention. Capacity--capacity of main engine in kilowatts (kw) and horsepower (hp), involving entirely power plants using diesel engines (1 hp is approximately 0.7355 kw). Speed --cruising speed with summer draft in knots (kn). Be/Pa/Le--average crew strength according to ship job manning plan DSR/space capacity for passengers/training capacity for apprentices, including training officers, in numbers of persons. Commissioning--date of commission in VEB DSR, with the date being given continually, without any periods or commas in between. Decommissioning--date taken out of merchant marine inventory. Remarks--Aut--degree of automation of ship engine operation for operations mode "temporarily unattended engine rooms" (zuM operation). The symbol "aut 16 bcw aut 24" signifies the time interval both for maritime and port as well as administrative operations during which the engine and equipment rooms need not be constantly attended by personnel on supervisory duty to check on technical equipment in operation. The term "aut port" shows that automated ship operation is permitted only for port or administrative processing by the GDR navigation bureau, while maritime operations at sea must be handled by the permanent crew for the engine room based on the Maritime vessel manning regulations (GBl., SDr., 787), using prescribed technical personnel. In this connection it is certainly interesting to point out that the term "unattended engine operation," which is used in many publications in connection with automated ship operations--does require further correction because:

(1) Comprehensive maintenance, repair, and upkeep work is done on automated vessels during the shipboard working hours of crew members assigned to the engineering division (as a rule 0800-1630);

(2) An 8-hour watch (0800-1630) is also put in on automated vessels but with subsequent 16-hour standby duty (1630-0800 of the following day) to make inspections and for troubleshooting in technical systems and installations.

Table 3. Ships Taken Out of Merchant Fleet Inventory, 1952-1979

Typ 1	Schiffsname 2	U.-sign. 3	Bau-jahr 4	BRT	tdw 5	Bes. Pas. 6	In-dienst 7	Außer-dienst 8
Dam	VORWARTS	DHWA	1903	917	1250	28/-	121050	261054
	ex JOHANNA AHRENS ex GRETE CORDS							
Lei	FORTSCHRITT	DHVN	1938	503	750	6/-		261054
Dam	ROSTOCK	DHWF	1954	3311	4500	37/-	111054	240865
und	WISMAR	DHWI	1954				181154	240865
Fra	STRALSUND	DCZM	1954	1106	1345	27/-	231254	080257*
Küm	WOLGAST	DHWO	1955	430	557	11/-	310755	070559
und	ANKLAM	DHWE	1955				260955	170659
	WARNEMÜNDE	DHWU	1955				021155	300559
	OSTSEEBAD WUSTROW	DHWV	1955				241155	300659
	SASSNITZ	DHWW	1955				081255	260559
Küm	TIMMENDORF	DHZA	1956	435	520	11/-	100456	130762
Küm	GREIFSWALD	DHWS	1955	439	562	11/-	290855	220573
und	KÜHLUNGS-BORN	DHZD	1956				070956	131071
	GRAAL-MÜRITZ	DHZE	1956				280956	131071
	AHRENSHOOP	DHZF	1956				121056	150573
	PREROW	DHZG	1956				021156	080573
	ZINGST	DHZH	1956				061256	180573
	PEENEMÜNDE	DHZJ	1956				281256	250573
	BARHÖFT	DHZI	1956				311256	290573
	KOSEROW	DHZK	1957				050157	131071
	HERINGSDORF	DHZL	1957				190157	131071
Dam	THÄLMANN PIONIER	DHZN	1957	2455	4087	38 -	150357	121170
Fra	FRIEDEN	DHWT	1957	9427	13000	44/4	230657	090878
und	DRESDEN	DAVO	1958				270758	151269
	FREUNDSCHAFT	DHZT	1958				241058	101177
	MAGDEBURG	DAVM	1958				311058	311264
	ERFURT	DAYC	1959				080559	311079
	HALLE	DCZI	1959				251159	230776
	SCHWERIN	DAYG	1959				231259	300579
Fra	THOMAS MÜNTZER ex HAULERWYK	DHZU	1937	5345	9260	34 -	180358	300468
und	STECKENPFERD ex CARLA	DAYM	1936				050159	200268
Fra	KAP ARKONA ex B.O.BÖRJESSON	DAYD	1948	1838	3530	27/2	121158	190614*
und	STUBBENKAMMER ex TILIA GORTHON	DAYK	1948				171258	251167*
	STOLTERA ex NILS GORTHON	DAYL	1946				260259	011270
Küm	NORDSTERN	DAVA	1959	617	840	12/3	171159	170278
und	ARCTURUS	DAVB	1960				140160	100577
	GEMMA	DAVD	1960				030360	030479
	WEGA	DAVE	1960				190360	230577
	DENEBOLA	DAVC	1960				250760	101079
	ATAIR	DAVF	1960				230860	111279
	DENEB	DAVG	1960				090960	190679
	MARKAB	DAVH	1960				291060	110277
	SIRRAH	DAVJ	1960				151160	200379
	ALDEBARAN	DAVO	1961				190461	240177
	CAPELLA	DAVP	1961	617	840		250561	030176*
	POEL	DAVS	1961				091261	190279
	PUTBUS	DAVT	1961				091261	141178
	STAVENHAGEN	DAVW	1961				291261	281178
	VITTE	DAVY	1963				310363	280479
Dam	ERNST MORITZ ARNDT ex ARCHON GABRIEL	DHZY	1943	6996	10880	35/-	260360	180668
Fra	SPERBER ex ABELONE VENDILA	DCZF	1954	2801	4052	28/2	220662	191175
Fra	USEDOM ex OTHEM	DCZG	1952	3453	6502	32/-	100762	151171
Fra	ELBE ex MARMARA	DCZJ	1953	2315	5140	31/2	050862	131077
Fra	WARNOW ex LEO DENS ex SIARO	DCZI	1952	2822	4812	31/2	090862	170676
Fra	STRALSUND ex LES COMERES	DCZM	1952	5999	7965	36/4	280962	040973
Fra	DARSS ex ALGENIB	DCZP	1953	2806	5185	29/-	181162	120178
Fra	SPREE ex ELSE	DCZQ	1952	2736	5255	29/-	191162	290178
Fra	HIDDENSEE ex LEALOTT	DCZN	1956	4828	7315	33/2	291262	220878
Fra	RÜGEN ex MARIVIA	DCZR	1958	3993	5920	30/2	260163	270979
Küm	DORNBUSCH ex MARGARIETE REBBERT	DCZU	1958	1137	1470	18/-	300463	100876
Fra	KORMORAN	DHWE	1963	1744	2775	22/-	221163	220776
und	SEEADLER	DHWH	1965				170665	310378*
Fra	KÄTHE NIEDER-KIRCHNER	DEVE	1964	7723	10300	35/6	310764	230865*
und	FIETE SCHULZE	DEVO	1966				121166	210967*
Fra	HAVEL ex CEARA	DCZY	1958	3771	5477	29 -	040864	240779
Fra	WERRA ex FRAVIZO	DCZZ	1957	2284	3627	31/2	140864	120279
Fra	ELSTER ex ERIK BANK	DDVB	1952	2445	3962	29/2	021064	200378
Fra	DAHME ex GERD TORM	DDVC	1948	3957	4926	31/-	201064	251168
Fra	BODE ex ARCTIC GULL	DDVG	1959	3826	5964	32.4	061164	180679
und	MULDE ex SUNIMA	DDVF	1958				301164	170779
	UNSTRUT ex ARCTIC TERM	DDVE	1958				071264	260978
Fra	UCKERMARK ex LOTTE SKOU	DDVD	1955	4060	6731	31/2	061164	281177

Key: 1--Type; 2--Ship name; 3--Identification symbol; 4--Building year; 5--Tons deadweight; 6--Crew/passengers; 7--Commissioning; 8--Decommissioning; Dam--Steamer; Lei--Lighter; und--and; Fra--Freighter; Küm--Coastal MV; BRT--GRT.

Table 3 [Continued]

Typ 1	Schiffsname 2	U.-sign. 3	Bau-jahr 4	BRT	5 t dw	Bes./Pas. 6	In-dienst 7	Außer-dienst 8
Fra	FERDINAND FREILIGRATH ex PRINS WILLEM VAN ORANJE	DHZX	1953	7312	7308	59/38	250165	061173
Fra	TOLLENSE ex ITAJAI	DDVI	1951	2306	3851	31/2	020365	190178
und	ZSCHOPAU ex ANTONIA	DDVJ	1952				210665	290578
Fra	WEISSERITZ ex FERNRIVER	DDVM	1954	2923	4379	31/6	260565	021178
Fra	RECKNITZ ex LAGUO	DDVL	1953	2025	3690	29/1	260565	100278
Fra	SPREEWALD ex BRIGITTE TORM	DDVN	1952	5715	7498	33/7	050765	200874
Fra	KRAKOW ex FORTUNA BAY	DDWM	1957	1145	1611	21/–	050865	230175
und	MALCHOW ex PERSEVERANCE BAY	DDWN	1957				261065	200274
Fra	VOGTLAND ex FREYA TORM	DDVQ	1953	5894	7625	34/8	081165	020479
Fra	LAUSITZ ex ESTRID TORM	DDVP	1952	5620	7493	33/7	230566	010977
Fra	KAP ARKONA ex INGRID GORTHOM	DAYD	1951	1900	3505	27/2	100666	141075
FrL	HEINRICH HEINE ex MAR DEL PLATA	DHZV	1938	7897	9050	39/100 (Ausbildungsplätze) 9	260358	020568
und	THEODOR KÖRNER ex COPACOBANA	DHZW	1938				020458	280268
FrL	J. G. FICHTE ex CLAUDE BERNARD	DCZK	1950	11045	9331	83/162 (Ausbildungsplätze) 9	070862	090779
FrL	GEORG BÜCHNER ex CHARLESVILLE	DDVR	1951	10060	9274	78/168 (Ausbildungsplätze) 9	050767	310877
Fra	KARLSHORST	DEVU	1967	2547	3640	22/2	310767	271077
Tan	LEUNA II	DHZP	1958	7644	11670	40/–	301158	260668
und	ZEITZ	DCZA	1961				310761	231168
	BÖHLEN	DCZB	1961				261061	141076*
	SCHWEDT	DCZE	1962				200562	241068
Tan	ROSITZ ex PAMELA	DAYS	1944	791	1024	19/–	280360	010167
Tan	SCHWARZHEIDE ex GAUTHIOD	DAYT	1947	8510	13625	40/–	300460	060169
und	LÖTZKENDORF ex SECURUS	DAYU	1946				170660	280169
Tan	BUNA ex TITANIA	DCZH	1953	11321	18260	38 –	240762	190276
Tan	BITTERFELD ex SOUTHERN CLIPPER	DCZS	1958	13069	20015	32/–	290163	200279
Tan	MERSEBURG ex HELTRID BILLNER	DCZV	1956	12468	20150	38/–	070563	060978
Tan	SCHWEDT ex SEA SERPENT	DCZE	1961	24827	45212	39/–	300169	140778
Fru	FRITZ REUTER ex DUBREKA	DCZC	1942/1947	3778	3040	40/8	160162	210273
und	JOHN BRINKMANN ex DJOLIBA	DCZD	1942/1947				080262	151272
Mas	RIESA ex CASSIOPEIA	DDVH	1956	13408	19981	32 –	080165	191279
Mas	BRANDENBURG ex MARGIT GORTHON	DDVO	1951	10787	16826	34/–	100366	160377
Pas	FRITZ HECKERT	DAYO	1961	8115	1923	178/379	090361	300672

Key: 1--Type; 2--Ship name; 3--Identification symbol; 4--Building year; 5--Tons deadweight; 6--Crew/passengers; 7--Commissioning; 8--Decommissioning; 9--Training spaces; BRT--GRT; Fra--Freighter; und--And; FrL--Freighter and training vessel; Tan--tanker; Mas--Bulk goods carrier; Pas--Passenger vessel; Fru--Fruit carrier; * -- sunk.

Table 4. Merchant Fleet Size Structure as 31 December 1979

Alter der Schiffe Jahre 1	Anzahl 2 der Schiffe	Anzahl 3 der BRT	Anzahl 4 der t dw	t dw in %
100 ··· 500	32	10 943	24 907	1,3
501 ··· 1 000	8	4 936	6 720	0,4
1 001 ··· 2 000	11	17 599	27 514	1,4
2 001 ··· 4 000	16	43 002	71 031	3,7
4 001 ··· 6 000	41	224 512	290 552	15,3
6 001 ··· 8 000	24	174 658	235 662	12,4
8 001 ··· 10 000	32	277 867	360 563	19,0
10 001 ··· 15 000	15	164 597	216 342	11,4
15 001 ··· 20 000	5	80 143	117 059	6,2
20 001 ··· 25 000	5	115 422	198 501	10,5
25 001 ··· 30 000	2	54 204	95 547	5,0
30 001 ··· 40 000	–	–	–	–
40 001 ··· 50 000	3	135 462	253 951	13,4
50 001 ···100 000	–	–	–	–
> 100 000	–	–	–	–
Gesamt 5	194	1 308 345	1 898 349	100,0

Tabelle 5: Altersstruktur der Handelsflotte am 31. 12. 1979

Alter der Schiffe Jahre 1	Anzahl 2 der Schiffe	Anzahl 3 der BRT	Anzahl 4 der t dw	t dw in %
unter 5 6	47	349 505	465 280	24,5
5 bis unter 10 7	39	146 773	212 705	11,2
10 bis unter 15 7	58	426 614	623 280	32,8
15 bis unter 20 7	38	284 117	444 693	23,4
20 bis unter 25 7	12	101 336	152 391	8,1
25 und darüber 8	–			
Gesamt 5	194	1 308 345	1 308 349	100,0

Key: 1--Age of ships in years; 2--Number of ships; 3--Number of GRT; 4--Number of t dw; 5--Total; 6--Less than; 7--To less than; 8--And over.

Table 6. Ship Inventory, GDR Merchant Marine, 31 December 1979, by Ship Name and Selected Indicators

Schiffstyp 1	Schiffsname 2	Unterscheidungssignal 3	Bau-land 4	Bau-jahr 5	Lüa m	Breite m 6	Tfg. m 7	Vermessung BRT 8	NRT	t dw 9	Lstg. kW	Gschw. kn 10	Be/Pa.Le Pers. 11	In-dienst 12	Bemerkungen 13
Stückgutfrachtschiffe unter 1 600 t Tragfähigkeit (Küstenmotorschiffe) 14															
KÜMO 600 Freidecker	SELLIN	DDWC	Ndl	1965	48,08	9,18	3,38	299	171	615	397	10,0	8/–/–	281165	aut 24
außerdem: 15	STUBNITZ	DDWD		1966							(540 PS)			210166	
16	GRANITZ	DDWE		1966										210166	
	BAABE	DDWI		1966										290166	
	SAGARD	DDWH		1966										250266	
	THIESSOW	DDWF		1966										020366	
	ALTEFÄHR	DDWJ		1966										020366	
	RALSWIEK	DDWL		1966										050366	
	LIETZOW	DDWK		1966										130466	
	GLOWE	DDWG		1966										300466	
KÜMO 700 Freidecker	HAGENOW	DEWE	DDR	1971	57,70	10,32	3,68	299	142	718	853	12,0	8/2/–	190571	aut 24
außerdem:	NEUBUCKOW	DEWF		1971							(1160 PS)			240671	
16	MARLOW	DEWG		1971										190771	Staukapazität 17
	MILTZOW	DEWH		1971										130871	für 25 20-Fuß-
	SATOW	DEWI		1971										251171	Container
	SEMLOW	DEWJ		1971										291271	
	RAKOW	DEWK		1972										110172	
	ZUROW	DEWL		1972										240172	
	ZÜSSOW	DEWM		1972										040272	
	TORGELOW	DEWN		1972										150372	
	MIROW	DEWO		1972										290372	
KÜMO 840 Freidecker 15	INSEL RIEMS	DAVU	DDR	1961	59,15	9,82	3,66	536	205	840	368	10,0	12/1/–	271261	
außerdem:	RERIK	DAVV		1961							(500 PS)			291261	
	UECKERMÜNDE	DAVX		1962									10/1/–	310362	aut 16
16	ZINNOWITZ	DAYB		1963									10/1/–	130463	aut 16
	VILM	DAVZ		1963									12/1/–	290463	
	WAREN	DAYA		1963										040663	
KÜMO 1000 Freidecker 15	WOLGAST	DDWB	Ndl	1965	63,33	10,59	3,90	499	239	1092	905	12,0	9/–/–	171265	aut 24
											(1230 PS)				
Stückgutfrachtschiffe 1601 bis 5000 t Tragfähigkeit 18															
Framo Wechseldecker	ALBATROS	DAYW	DDR	1961	82,42	12,62	4,26	1742	930	2733	1004	11,5	22/–/–	060661	aut Hafen 20
außerdem: 19	BUSSARD	DAYX		1962							(1365 PS)			140762	–
16	CONDOR	DAYZ		1962										301162	aut Hafen
	FALKE	DHWA		1962										291262	20
	FLAMINGO	DHWC		1963										310763	
21 22	PINGUIN	DHWG		1965										070465	
Holzframo Volldecker	HELLERAU	DEVQ	DDR	1966	92,86	14,25	5,95	2546	1424	3640	1692	13,5	22/2/2	150366	
außerdem:	ZEULENRODA	DEVR		1966							(2300 PS)			260766	
16	THEMAR	DEVS		1966										231166	
	OELSA	DEVT		1967										300467	aut Hafen 20
	EISENBERG	DEVV		1967										161067	
21 22															20
Hebframo Volldecker	NEUHAUSEN	DDWX	DDR	1972	104,93	14,64	6,99	3091	1904	4631	2354	14,6	23/–/4	310172	aut Hafen
außerdem	RADEBERG	DDWY		1972							(3200 PS)			161072	Staukapazität
16	KLOSTERFELDE	DDWZ		1972										051272	für 122 20-Fuß-
															Container 23
Wechseldecker 19	ODER	DCZL	Swd	1958	102,17	14,42	6,57	3090	1615	4597	2207	13,5	30/2/–	160862	ex CECILIA
											(3000 PS)				FALKLAND
Wechseldecker 19	SCHWARZA	DDVS	Swd	1962	110,20	14,50	7,30	3498	2133	4960	2427	15,0	31/4/5	190468	ex OLAN EGE
außerdem: 16	WEIDA	DDVT		1960							(3300 PS)			030968	ex OLAN DROT
Stückgutfrachtschiffe 5001 bis 10 000 t Tragfähigkeit 24															
Wechseldecker 19	SAALE	DCZO	Ndl.	1958	99,66	14,18	7,15	3428	1815	5377	1545	12,0	30/–/3	230163	ex OLIVIA
											(2100 PS)				WINTHER

Schiffstyp 1	Schiffsname 2	U.-sign. 3	Bau-land 4	Bau-jahr 5	Lua m	Breite m 6	Tfg. m 7	Vermessung BRT 8	NRT	tdw 9	Lstg. kW	Gschw. km 10	Be/Pa/Le Pers 11	In-dienst 12	Bemerkungen 13
Wechseldecker 19	ROSENORT	DCZT	Nor	1961	108,19	14,83	7,44	3847	2899	5954	2986 (4060 PS)	14,0	33/4/3	250263	ex NYCO
Wechseldecker 19	RHÖN	DCZX	Swd	1960	114,33	15,45	7,18	4322	2510	6070	2810 (3820 PS)	14,0	32/1/10	010764	aut Hafen, ex BINDAHL 20
außerdem: 16	ORLA	DDVU		1959										190668	ex ARTENSIS
Pionier Moskwy Volldecker 22	RABENAU	DZCI	Sow	1979	130,30	17,30	7,32	4841	2423	6788	4487 (6100 PS)	15,8	31/–/7	170979	aut 24
außerdem: 16	HEIDENAU	DZCJ		1979										151279	
Afrika Wechseldecker 19	WISMAR	DDWQ	DDR	1968	129,38	17,34	7,60	5715	3243	6950	5150 (7000 PS)	16,0	30/8/9	070269	aut 24
außerdem: 16	SONNEBERG	DDWR		1969										020669	
	WITTENBERG	DDWS		1969										311069	Schiffsvorstellung 26 „Jahrbuch der
	FREDERIC JOLIOT-CURIE	DDWT		1969										190170	Schiffahrt 1971",
	STOLLBERG	DDWU		1970										310570	Seite 94
	FÜRSTENBERG	DDWV		1970										240371	
Wechseldecker 19	ALTMARK	DCZW	Nor	1959	121,58	16,31	7,67	4632	2607	7732	3383 (4600 PS)	14,0	33/–/6	010564	ex INGE TOFT
271 Poseidon Wechseldecker 19	RUDOLF DIESEL	DDZA	DDR	1975	120,50	17,64	7,85	5735	2992	7434	5296 (7200 PS)	16,5	26/–/–	300875	aut 24
außerdem: 16	FÜRSTEN-WALDE	DDZC		1976							3972 (5400 PS)			290276	
	LUCKENWALDE	DDZD		1976										290476	Vorstellung 27
	CUNEWALDE	DDZE		1976										300776	dieses Typs
	EICHWALDE	DDZF		1976										251076	im „Jahrbuch der
	LIEBENWALDE	DDZG		1977										310177	Schiffahrt 1977",
	SCHÖNWALDE	DDZH		1977										300377	Seite 59 ff
	MITTENWALDE	DDZI		1977										290677	
	GERINGS-WALDE	DDZJ		1977										300977	
	ARENDSEE	DDZB		1978										230578	
	BLANKENSEE	DDZK		1978							5296 (7200 PS)		26/–/4	300678	
	FLEESENSEE	DDZL		1978										300978	
	KÖLPINSEE	DDZM		1978										301278	
	MÜGGELSEE	DDZN		1979										280279	
	WERBELLINSEE	DDZO		1979									26/–/9	150579	
	INSELSEE	DDZP		1979										300779	
	SCHWIELOW-SEE	DDZQ		1979										301079	
Wechseldecker 19	EICHSFELD	DDXX	Ndl	1967	135,70	17,74	7,60	6110	3528	7500	6472 (8800 PS)	17,0	34/4/–	110567	aut Hafen 20
außerdem: 16	PRIGNITZ	DDXY		1967										310567	
	FLÄMING	DDXZ		1967										240667	
471 Wechseldecker 19	FREITAL	DEWX	DDR	1977	121,84	17,63	7,72	5993	3276	7923	3972 (5400 PS)	15,0	27/–/–	280277	aut Hafen 20
außerdem 16	HETTSTEDT	DEWW		1975										280977	ex JOBEBE
	BURG	DEWY		1974										081277	ex JOBOY
	AKEN	DEWU		1978										310178	
	KÖTHEN	DEWV		1978										210778	
	BERGEN	DEWZ		1978										301178	
Wechseldecker 19	FRANZ STENZER	DCZM	Jap	1966	130,99	17,64	7,88	5956	3130	8129	5296 (7200 PS)	15,5	34/–/11	310375	ex TRANS-ATLANTIC
Stückgutfrachtschiffe 10 001 bis 13 000 t Tragfähigkeit 25															
XD Wechseldecker 19	ROSTOCK	DDXE	DDR	1967	150,23	20,24	8,20	8501	5048	10080	8238 (11200 PS)	18,5	32/4/6	300667	aut 24
außerdem: 16	QUEDLINBURG	DDXF		1967										180867	
	BOIZENBURG	DDXG		1967										080967	

Schiffstyp	Schiffsname	Unterscheidungssignal	Baubland	Baujahr	Lüa m	Breite m	Tfg. m	Vermessung BRT	Vermessung NRT	tdw	Lstg kW	Gschw. kn	Be/Pa/Le Pers.	Indienst	Bemerkungen
	ALTENBURG	DDXH		1967										290967	
	NAUMBURG	DDXI		1967										201067	
	BLANKENBURG	DDXJ		1967										131167	
	EILENBURG	DDXK		1967										041267	
	BERNBURG	DDXL		1967										271267	
	SCHWARZ-BURG	DDXM		1968										310168	
	ORANIENBURG	DDXN		1968										120368	
	RONNEBURG	DDXO		1968										300668	
	MEYENBURG	DDXP		1968										310768	
	NIENBURG	DDXQ		1969										290369	
	FREYBURG	DDXR		1969	150,30	20,28	8,20	8600	4943	10150	8238	18,5	32/4/6	250469	ab hier mit Wulstbug
	MAGDEBURG	DDXS		1970										280570	
	NEUBRANDEN-BURG	DDXT		1970										220670	
X WechselDecker außerdem:	EDGAR ANDRÉ	DEVA	DDR	1962	142,19	18,66	8,55	7707	4151	10400	4303 (5850 PS)	14,5	35/–/6	311062	aut Hafen
	ERNST SCHNELLER	DEVB		1963										211263	
	WERNER SEELENBINDER	DEVC		1964										290264	
	WILHELM FLORIN	DEVD		1964										020464	
	RUDOLF BREITSCHEID	DEVG		1964										310864	
	ANTON SAEFKOW	DEVF		1965										200365	
	BERNHARD BÄSTLEIN	DEVH		1965										300665	
	LISELOTTE HERRMANN	DEVI		1965										110965	
	HEINZ KAPELLE	DEVJ		1965										151165	
	ALBIN KÖBIS	DEVK		1966										090266	aut 24
	MAX REICHPIETSCH	DEVL		1966										310366	aut Hafen
	JOHN SCHEHR	DEVM		1966										150766	
	GEORG SCHUMANN	DEVN		1966										120866	
	MATTHIAS THESEN	DEVP		1966										291266	
Mercator Wechseldecker außerdem:	NORDHAUSEN	DEVW	DDR	1976	150,37	21,80	8,98	11127	6015	12350	8238 (11200 PS)	19,0	32/–/2	310776	aut 24
	MÜHLHAUSEN	DEVX		1976										270876	
	[illegible]														
	SANGER-HAUSEN	DEVY		1977										270177	
	SONDERS-HAUSEN	DEVZ		1977										180377	
421 Neptun Wechseldecker außerdem:	PRITZWALK	DDZW	DDR	1978	149,98	21,00	9,05	9231	5235	12685	6620 (9000 PS)	16,5	30/–/8	301278	aut 24
	FLIEGERKOSMONAUT DER DDR SIGMUND JÄHN	DDZX		1979										300379	
	PASEWALK	DDZV		1979										310879	
	CRIMMITSCHAU	Y5FO		1979										311279	
IV Wechseldecker außerdem:	BERLIN	DAVL	DDR	1958	157,44	20,04	9,67	9642	5789	13000	1324 (7200 PS)	14,5	44/4/11	030958	2 Schrauben
	LEIPZIG	DAYE		1959										280659	
	KARL-MARX-STADT	DAYH		1960										280560	

Schiffstyp 1	Schiffsname 2	U.-sign. 3	Bau-land 4	Bau-jahr 5	Lüa m	Breite m 6	Tfg. m 7	Vermessung BRT 8	NRT	tdw	Lstg. kW 9	Geschw. kn 10	Be/PA/Le. Pers. 11	In-dienst 12	Bemerkungen 13
	GERA	DAYI	4	1960										301260	
	HALBERSTADT	DAYJ		1961										310561	
Schnellfrachter 30															
Wechseldecker 19	KARL MARX	DDXA	DDR	1971	166,51	23,00	9,55	11023	6454	13100	14930 (20300 PS)	21,5	32/4/5	281071	aut 24
außerdem: 16	FRIEDRICH ENGELS	DDXB		1972										300972	
Wechseldecker 19	GEORG HANDKE	DDVC	BRD	1965	156,16	20,54	9,15	9576	5320	13550	7060 (9600 PS)	17,3	35/–/11	190975	ex TALANA
Meridian II	POTSDAM	DAVB	DDR	1978	156,84	21,88	9,00	10225	5634	13655	8238 (11200 PS)	18,0	31/–/11	230678	aut 24
Wechseldecker 19	COTTBUS	DAVE		1979										180579	
außerdem: 16	FRANKFURT/ ODER	DAVH		1979										210979	
	HALLE	DAVP		1976						15094				060779	ex PHENIX – I
	SUHL	DDWM		1977						15094				060779	ex MERLIN – I
	DRESDEN	DAVO		1979						13655				090879	
Vollcontainerschiffe 31															
KÜMO 800	BOLTEN-HAGEN	DEWA	DDR	1970	57,80	10,25	3,68	299	137	780	853 (1160 PS)	12,0	8/–/–	201070	aut 24 Staukapazität
Freidecker 15	TRINWILLERS-HAGEN	DEWB		1970										301170	für 39 20-Fuß- 32
außerdem 16	DIERHAGEN	DEWC		1970										301270	Container
	NIENHAGEN	DEWD		1971										290371	aut 24
KÜMO 1100	WARIN	DEWP	DDR	1972	71,03	10,37	3,68	494	267	1111	853 (1160 PS)	11,5	8/–/–	280472	
Freidecker 15	BANSIN	DEWQ		1972										250772	Staukapazität
außerdem: 16	TESSIN	DEWR		1972										250872	für 56 20-Fuß-
	KROPELIN	DEWS		1972										270972	Container 33
	RECHLIN	DEWT		1972										281072	
Ro/ro-Schiffe 34															
Schwergut-Ro/ro 35	BROCKEN	DDVZ	Ndl	1976	81,00	16,40	3,96	1273	582	1349	2x 883 (2400 PS)	12,0	17/–/–	170376	aut 24
Freidecker 15															
Freidecker 16	INSELSBERG	DDVY	Swd	1967	99,13	15,00	6,10	2350	1296	4470	2229 (3030 PS)	13,0	18/12/–	071273	aut 24; ex BERWALD
Freidecker 15	ASCHBERG	DDXC	Fin	1972	113,46	19,23	6,25	3162	1700	5050	2x 2208 (6000 PS)	16,0	23/6/–	040477	aut 24; ex BORE IX
außerdem: 16	BEERBERG	DHWX		1972										260578	ex BORE X
Freidecker 15	FICHTELBERG	DDVN	Nor	1975	137,55	20,60	7,18	3974	1700	7597	2x 4413 (12000 PS)	18,5	25/–/–	110775	aut 24; ex TOR CALE-DONIA
Massengutfrachtschiffe 36															
Volldecker 22	ARTERN	DDVW	Pol	1971	84,28	13,61	5,29	1586	1141	2959	1471 (2000 PS)	12,5	16/–/–	250673	ex GRONG
außerdem 16	COSWIG	DDVX		1971										310773	ex GARLI aut 24;
Volldecker 22	DESSAU	DHZP	Sow	1958	145,50	19,24	8,52	7614	3817	10179	2x 1471 (4000 PS)	12,0	33/–/–	260668	ex LEUNA II
IX Volldecker 22	LÜBBENAU	DHWL	DDR	1961	151,57	19,24	8,58	8229	4457	11830	4303 (5850 PS)	15,0	30/2/4	301261	aut Hafen 20
außerdem: 16	MANSFELD	DHWQ		1962									25/2/8	270362	aut 16
	SENFTENBERG	DHWU		1962										190462	aut 16
	TRATTENDORF	DHWW		1962										300862	aut 16
	ESPENHAIN	DHWR		1963									30/2/4	140663	aut Hafen 20
	VOCKERODE	DHWV		1963									25/2/8	210763	aut 16
Volldecker 22	MAXHÜTTE	DAVK	Swd	1955	148,92	18,03	8,80	8467	3352	12800	4560 (6200 PS)	13,0	34/–/–	100675	ex LADARO
Volldecker 22	CALBE	DDVK	Bel	1958	172,25	19,31	9,70	11722	6809	19296	4119 (5600 PS)	13,5	30/–/2	140465	aut Hafen; 20 ex MARLY I
Volldecker 22	THALE	DDVA	BRD	1960	171,78	22,40	10,28	14489	8057	22565	5296 (7200 PS)	14,5	30/–/4	180964	aut Hafen; ex 20 H. L. LORENTZEN
OBC Volldecker 22	WEIMAR	DDXU	DDR	1977	176,65	22,91	10,11	15979	8638	23200	8238 (11200 PS)	17,4	30/–/11	311077	aut 24

Schiffstyp	Schiffsname	U.-sign.	Bau-land	Bau-jahr	Lüa m	Breite m	Tfg. m	Vermessung BRT	NRT	t dw	Lstg. kW	Gschw. kn	Be/Pa/Le Pers.	In-dienst	Bemerkungen
außerdem:	JENA	DDXV		1978										260278	
	MEISSEN	DDXW		1978										301278	
Volldecker	HENNIGS-DORF	DCZG	Swd	1966	230,30	26,97	11,05	21739	14720	38070	8863 (12050 PS)	15,0	30/–/4	070372	aut 24; ex PONTOS
Baltic Volldecker	GRÖDITZ	DHZU	Sow	1972	201,30	27,85	11,21	22798	14633	38250	8826 (12000 PS)	16,0	30/–/–	291272	aut 24
außerdem:	GÖRLITZ	DHZV		1974										300874	
Erz/Öl-Frachtschiffe															
Volldecker	AUE	DAYT	Swd	1959	181,64	22,71	10,05	15611	9992	23320	5296 (7200 PS)	14,0	37/–/4	230569	aut Häfen; ex VIRTALA
außerdem:	ZWICKAU	DAYU		1958										270669	ex VITAFORS
Volldecker	EISENHÜTTEN-STADT	DAVN	Swd	1960	199,56	26,99	11,38	23357	11305	38242	8090 (11000 PS)	14,0	37/–/4	190170	ex MERTAINEN
Kühlschiffe (vorgestellt im „Jahrbuch der Schiffahrt 1978", Seite 50 ff)															
Wechseldecker	THEODOR STORM	DDWP	Bel	1966	135,01	17,33	6,83	4950	2676	4857	7649 (10400 PS)	20,5	29/6/4	300966	aut 24
außerdem:	THEODOR FONTANE	DDWO		1966										131266	
Wechseldecker	JOHN BRINCKMAN	DCZD	Swd	1964	138,77	18,45	7,86	4575	2381	6150	7134 (9700 PS)	19,0	31/–/4	041073	aut 24; ex BELNIPPON
außerdem:	FRITZ REUTER	DCZC	Nor	1964										231173	ex PAZIFIK EXPRESS
Wechseldecker	F. FREILI-GRATH	DHZX	Gbr	1967	152,62	19,23	7,64	5587	2858	6600	8017 (10900 PS)	21,0	31/2/4	030774	aut 24; ex PARMA II
außerdem:	G. WEERTH	DHZW		1968										190774	ex PADUA
Wechseldecker	ERNST MORITZ ARNDT	DDXD	Gbr	1973	140,69	18,05	9,01	6653	3603	9076	7980 (10850 PS)	23,0	33/–/4	261077	aut Hafen; ex KING EDMUND
außerdem:	GERHART HAUPTMANN	DEVE		1974										121277	ex KING EGBERT
Wechseldecker	HEINRICH HEINE	DHZK	Nor	1975	140,70	18,03	9,02	6641	3612	9147	9709 (13200 PS)	23,0	31/–/–	040775	aut 24
außerdem:	THEODOR KÖRNER	DHZL		1975										181275	
Öltanker															
Volldecker	LEUNA I	DHZO	Sow	1958	145,50	19,24	8,53	7644	4705	11670	2x1471 (4000 PS)	12,0	38/–/–	131058	
Volldecker	ZEITZ	DCZA	Dmk	1962	208,57	29,91	11,61	25533	15544	44348	12356 (16800 PS)	16,5	38/–/11	220569	ex DAGHILD
Volldecker	WOLFEN	DAVM	Swd	1962	214,83	29,02	11,65	24730	16019	45080	11032 (15000 PS)	16,0	38/–/4	080868	ex TARIM
Volldecker	GRIMMEN	DAYK	Swd	1966	217,79	29,60	12,16	28671	15777	51200	11032 (15000 PS)	15,5	38/–/2	271174	ex SEA BREEZE
Volldecker	SCHWARZ-HEIDE	DAYM	Swd	1964	243,84	36,68	13,07	42126	27365	78501	16781 (22800 PS)	16,0	38/–/–	140470	ex SOVEREIGN CLIPPER
Volldecker	LUETZKEN-DORF	DHZJ	Nor	1965	249,59	39,00	13,38	46406	29874	85680	15445 (21000 PS)	16,0	38/–/–	120974	ex SONJA
Volldecker	HEINERSDORF	DAYS	Jap	1968	256,00	38,57	13,33	47047	29858	88399	15225 (20700 PS)	15,5	43/–/–	090874	ex ATLANTIC MARCHIONESS
Leimtanker															
KÜMO 840 Freidecker	MALCHIN	DAVR	DDR	1958	59,46	9,82	3,66	535	212	724	368 (500 PS)	10,0	10/2/–	250861	aut 24
außerdem:	BELLATRIX	DAVQ		1961										230861	
KÜMO 1000 Freidecker	BARTH	DDWA	Ndl	1965	63,07	10,70	3,86	499	241	1050	971 (1320 PS)	12,0	9/–/–	171265	aut 24
Natronlaugetanker															
Volldecker	BUNA	DCZH	Ndl	1979	73,44	12,00	4,90	1347	512	1800	1655 (2250 PS)	12,5	15/2/–	131279	aut 24
außerdem:	SCHKOPAU	DDVJ		1979											
Fahrgastschiffe															
Freidecker	VÖLKER-FREUND-SCHAFT	DAYP	Swd	1948	160,07	21,06	7,54	12068	6287	4775	2x4413 (12000 PS)	18,0	225/550/–	240260	2 Schrauben; ex STOCKHOLM

Key to Table 6: 1--Ship type; 2--Ship name; 3--Identifying symbol; 4--Builder country; 5--Year built; 6--Beam; 7--Draft; 8--Size; 9--Capacity, kw; 10--Speed; 11-Crew, passengers, apprentices, in number of persons; 12--Commissioning; 13--Remarks; 14--Piece goods freighters of less than 1,600 t capacity (coastal motor freighters); 15--Flushdecker; 16--Further; 17--Stowage capacity for 25 20-foot containers; 18--Piece goods freighters, 1,601-5,000 t capacity; 19--Variable-deck vessels; 20--Automation in port; 21--Lumber motor freighter; 22--Full-scantling vessel; 23--Stowage capacity for 122 20-foot containers; 24--Piece goods freighters, 5,001-10,000 t capacity; KUMO--Coastal MV; BRT--GRT; PS--hp; 25--Piece goods freighters, 10,001-15,000 t capacity; 26--Ship illustrated in JAHRBUCH DER SCHIFFAHRT 1971, page 94; 27--This type illustrated in JAHRBUCH DER SCHIFFAHRT 1977, pp 59 ff.; 28--From here on in with bulge bow; 29--Two screws; 30--Fast freighter; 31--Full-container vessels; 32--Stowage capacity for 39 20-foot containers; 33--Stowage capacity for 56 20-foot containers; 34--Roll-on/roll-off vessels; 35--Heavy-cargo, roll-on/roll-off; 36--Bulk goods freighters; 37--Ore-oil freighters; 38--Refrigerator vessels (illustrated in JAHRBUCH DER SCHIFFAHRT 1978, pp 50 ff.); 39--Oil tanker; 40--Glue tanker; 41--Caustic soda tankers; 42--Passenger vessels; DDR--GDR.

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