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Military-Economic Research Aid

ESTIMATED NUMBER, VALUE, AND DISTRIBUTION
OF MERCHANT SHIPS
CONSTRUCTED BY AND FOR
THE PRINCIPAL COMMUNIST COUNTRIES
1963



CIA/RR A.MRA 64-1

August 1964

CENTRAL INTELLIGENCE AGENCY

Office of Research and Reports

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FOREWORD

The data presented in CIA/RR A.ERA 63-5, Estimated Number, Value, and Distribution of Merchant Ships Constructed by and for the Sino-Soviet Bloc, 1962, June 1963, SECRET, and in other similar reports are revised and updated in this research aid. Emphasis is given to production in 1963 of major maritime ships for the USSR, whether or not these ships have been built in Soviet shipyards or in foreign shipyards, and to the estimated expenditures involved in building and buying these ships. Some discussion is given to the initiation of new shipbuilding programs and to the continuation or completion of programs begun before 1963.

Information in this research aid has been discussed informally at the working level with representatives of the Office of Naval Intelligence but has not been coordinated formally.

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ESTIMATED NUMBER, VALUE, AND DISTRIBUTION OF MERCHANT SHIPS
CONSTRUCTED BY AND FOR THE PRINCIPAL COMMUNIST COUNTRIES*
1963

Summary

The Soviet program for construction and import of cargo ships with large hatches, heavy lift equipment, and probably strengthened decks and hatch covers showed an increase in 1963 compared with 1962. A total of 17 of these ships valued at about \$123 million** were completed by or for the USSR in 1963 -- 4 more than in 1962. The USSR now has a total of 32 of these ships, and probably this special group eventually will consist of more than 100 ships.

The merchant ships*** constructed by and for the principal Communist countries during 1963 are valued at about an estimated \$1,410 million. The value of ships constructed or imported during 1959-63 is as follows:

* The estimates and conclusions in this research aid represent the best judgment of this Office as of 1 February 1964. The term Communist countries as used in this research aid includes the USSR, Poland, East Germany, Bulgaria, Rumania, Czechoslovakia, and Communist China. The terms non-Communist countries and non-Bloc countries are used to indicate all other countries. Previous reports in this series have included only that part of production of ships by Yugoslavia that is exported to the Communist countries listed above. For statistical convenience and ease in making comparative analyses, these Yugoslav exports have been treated as construction by a Western country. Production of ships in the other Communist countries -- Albania, Outer Mongolia, North Korea, North Vietnam, and Cuba -- is negligible.

** Dollar values are given in 1960 US dollars throughout this research aid and represent the cost of constructing similar ships in the US.

*** Ships listed in this research aid are considered to have been delivered, by a shipyard, complete and ready for service but not necessarily operational, and the total value of the ships has been credited to the year of completion. Ships noted as operational during the month of January are arbitrarily assumed to have been completed during the previous year. Because some ships are converted after completion to naval auxiliary and other services, the ships listed do not necessarily constitute additions to the several merchant fleets. All ships have been classified according to the following major categories:

Maritime -- including cargo ships, tankers, and miscellaneous ships such as passenger ships, tugs, port icebreakers, and research ships. These ships may be engaged in oceangoing and coastal service, including the Caspian Sea.

Fishing -- including whale factory ships; crab cannery ships; factory trawlers; medium trawlers; whale catchers; refrigerator transports and refrigerated/factory ships; support ships; and small trawlers, seiners, and the like.

Inland -- including passenger ships, tugs, and barges that may be used on inland waterways.

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	<u>Million 1960 US \$</u>				
	<u>1959</u>	<u>1960</u>	<u>1961</u>	<u>1962</u>	<u>1963</u>
Construction in Communist countries	1,128	1,188	1,038	1,135	1,193
Imports from non-Communist countries	110	135	142	221	217
Total	<u>1,238</u>	<u>1,323</u>	<u>1,180</u>	<u>1,356</u>	<u>1,410</u>

The value of merchant ships built by and for the USSR only during 1963 amounted to about \$1,212 million, or 86 percent of the total value for all Communist countries -- the greatest outlay ever made by the USSR in any one year. The USSR itself built ships valued at about \$696 million and imported ships valued at \$516 million.

In comparison with previous years the total value for construction and import of merchant ships by the Communist countries remains at about the same level, with slight fluctuations probably caused by the phasing in or out of production of various types and classes of ships. Since 1959 the average total value has been about \$1,300 million a year. Construction and import of ships by Communist country, major types of ships, and value of ships for 1963, together with comparative annual totals for 1959-62, are shown in the following tabulation:

	<u>Construction</u>					
	<u>Million 1960 US \$</u>					
	<u>Maritime</u>					
	<u>Cargo</u>	<u>Tanker</u>	<u>Miscellaneous</u>	<u>Fishing</u>	<u>Inland</u>	<u>Total*</u>
USSR	110	35	42	324	185	696
Poland	160	12		46		218
East Germany	84		33	48	7	173
Hungary	19				21	40
Bulgaria	7	8	3		6	22
Rumania	14				8	22
Czechoslovakia					12	12
Communist China				2	8	10
Totals						
1963	<u>394</u>	<u>55</u>	<u>78</u>	<u>420</u>	<u>247</u>	<u>1,193</u>
1962	<u>364</u>	<u>50</u>	<u>95</u>	<u>387</u>	<u>239</u>	<u>1,135</u>
1961	<u>301</u>	<u>42</u>	<u>88</u>	<u>375</u>	<u>232</u>	<u>1,038</u>
1960	<u>351</u>	<u>68</u>	<u>107</u>	<u>409</u>	<u>253</u>	<u>1,188</u>
1959	<u>250</u>	<u>76</u>	<u>154</u>	<u>396</u>	<u>252</u>	<u>1,128</u>

* Because of rounding, components may not add to the totals shown. For a complete breakdown of the figures for 1963 and photographs of selected ships, see Appendix B, Tables 1 through 27.

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Imports from Non-Communist Countries

Million 1960 US \$

	Maritime				Total
	Cargo	Tanker	Miscellaneous	Fishing	
USSR	92	50	20	26	188
Poland	14				14
Czechoslovakia	14				14
Totals					
1963	<u>120</u>	<u>50</u>	<u>20</u>	<u>26</u>	<u>216*</u>
1962	<u>124</u>	<u>55</u>	<u>16</u>	<u>26</u>	<u>221</u>
1961	<u>69</u>	<u>40</u>	<u>33</u>		<u>142</u>
1960	<u>99</u>	<u>22</u>	<u>7</u>	<u>7</u>	<u>135</u>
1959	<u>55</u>	<u>27</u>	<u>6</u>	<u>22</u>	<u>110</u>

The total value of ships imported by the USSR in 1963 was \$516 million. Of this amount, \$328 million (about 64 percent) represented ships built in other Communist countries, and \$188 million (about 36 percent) represented ships built in non-Communist countries. The overall value of these ships imported by the USSR in 1963 is nearly 19 percent greater than in 1962.

In terms of tonnage** the USSR in 1963 constructed, imported, or exported cargo ships, tankers, and major fishing ships as follows:

* For a complete breakdown of these figures, see Appendix B, Tables 1 through 29.

** Several abbreviations that are used repeatedly in the tables in this research aid may be defined as follows:

Light ship displacement (LSD) -- the weight, in tons of 2,240 pounds, of a complete ship, ready for service in every respect, including the weight of permanent ballast and liquids in the machinery at operating levels but excluding the weight of the members of the crew and their effects and any item of consumable or variable load such as stores, fuel, and cargo.

Deadweight tons (DWT) -- the carrying capacity of a ship, in tons of 2,240 pounds, including the members of the crew and their effects as well as the weight of all items of consumable or variable load such as stores, fuel, and cargo. The deadweight tonnage is the difference in tons between full load displacement and light ship displacement.

Gross register tons (GRT) -- a measure [footnote continued on p. 4]

	<u>Construction</u>			<u>Imports</u>			<u>Exports</u>		
	<u>Num- ber</u>	<u>DWT</u>	<u>GRT</u>	<u>Num- ber</u>	<u>DWT</u>	<u>GRT</u>	<u>Num- ber</u>	<u>DWT</u>	<u>GRT</u>
Cargo ships	21	193,900	149,885	56	358,295	284,480	0	0	0
Tankers	3	126,900	81,260	14	224,550	155,095	0	0	0
Fishing ships	54	67,535	125,620	23	55,190	83,090	4	1,260	2,200
Total	<u>78</u>	<u>388,335</u>	<u>356,765</u>	<u>93</u>	<u>638,035</u>	<u>522,665</u>	<u>4</u>	<u>1,260</u>	<u>2,200</u>

In the matter of imports by the USSR, 63 percent of the cargo DWT came from the European Satellites, but 78 percent of the tanker DWT came from the non-Bloc countries. For fishing ships the percentage (DWT basis) of European Satellite and non-Bloc construction was about equal, 51 and 49 percent, respectively.

The average size of cargo ships built and imported by the USSR in 1963 was about 7,170 DWT (5,640 GRT), which is a negligible increase above 1962, when the average size cargo ship acquired by the USSR was 7,060 DWT (5,560 GRT). Tankers built and imported by the USSR during 1963 averaged about 20,670 DWT (13,900 GRT), an increase of about 7,400 DWT (5,000 GRT) compared with 1962. This increase was the result of importing large new tankers from non-Bloc countries and the initiation of construction of a large new class of tankers in Soviet shipyards.

The outlook for the immediate future is that the USSR will continue to build most of the classes of ships that were under construction in 1963. Generally the USSR will continue to import more cargo ships from the European Satellites than from non-Bloc countries and more tankers from the non-Bloc countries than from the European Satellites.

Based on the quantity of GRT that it has completed, the USSR is estimated to have occupied sixth place in the world in 1963.* Poland and East Germany, the only other major shipbuilding nations of the Soviet Bloc, occupied 13th and 14th places, respectively. The aggregate GRT completed in 1963 by the USSR, Poland, and East Germany,

whereby the entire internal cubic capacity of the ship is expressed in register tons -- 100 cubic feet to the ton -- not including certain spaces such as peak tanks and other tanks of water ballast, open fore-castle, bridge and poop, hatchway excess, certain light and air spaces, anchor gear, steering gear, wheelhouse, galley, cabins for passengers, and other minor spaces specified by law.

* For a tabulation of the 15 leading shipbuilding countries of the world, see p. 18, below.

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903,000 tons, was equal to about 10 percent of world completions, a total that made these combined countries rank as the fifth largest shipbuilder exceeded only by Japan, Great Britain, West Germany, and Sweden.

Based on meager information, Western credit arrangements for the sale of ships to the USSR appear to be 30 percent down and the balance payable in equal installments every 6 months over a period of 5 to 6 years.

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I. Highlights of New Construction in 1963

A. Communist Countries

1. USSR

During 1963 the USSR built about 320,800 DWT (231,100 GRT) of cargo ships and tankers; about 30,600 GRT of miscellaneous maritime ships; and about 238,700 GRT of fishing ships, with a total value for all seagoing types of more than \$510 million. In addition, the construction of inland ships was valued at \$185 million. This total value, almost \$700 million for indigenous ship construction of all types, represents the largest annual outlay in the history of Soviet shipbuilding. In 1963, less than 1 percent of this construction -- four fishing ships valued at \$3.6 million -- was exported to Ghana.*

The lead hulls of four new classes of cargo ships were completed in 1963. The largest ship of this group, the Perekop, may be a modernized version of the Poltava class, construction of which began in 1962. The other three new classes of ships are timber carriers, the Vytegrales, Vyborgles, and Maloyaroslavets. The Vyborgles may be identical with the Vytegrales, but the lack of information at present makes it impossible to confirm this supposition.

The program to build Pekin-class tankers ended in 1963 with the completion of the seventh and last ship. Two Leningrad shipyards are building another new and larger class of tankers, the Sofiya, one unit of which was completed at each of the shipyards during that year. The Sofiya class is the largest tanker ever built by the USSR.**

Construction of fishing ships continued apace during the year with no new classes of ships being built but with the introduction of construction of an old class, the Mayakovskiy, at a second building yard. That class is now being built at the Baltic Shipyard in Klaipeda. The construction of the Tavriya class of refrigerator ships may be nearing completion because the Maloyaroslavets class of cargo ships is now under construction at the same shipyard that built the Tavriya class. This shipyard is a relatively new and small yard and is not believed to be able to simultaneously construct two classes of ships.***

* For total data on Soviet shipbuilding, see Table 2, Appendix B, p. 27, below.

** For number, tonnage, and shipyard data on construction of cargo ships and tankers, see Table 4, Appendix B, p. 30, below.

*** For number, tonnage, and shipyard data on construction of fishing ships, see Table 6, Appendix B, p. 33, below.

2. Poland

In 1963, Poland built about 269,000 DWT (205,400 GRT) of cargo ships and tankers and about 21,800 DWT (31,800 GRT) of fishing ships, with a total value of approximately \$218 million. As in the case of the USSR, this amount represents the greatest outlay ever for merchant shipbuilding in Poland.* Current indications are that production in 1964 will exceed that in 1963.

Unlike the USSR a large percentage of the total value of Polish shipbuilding, about 66 percent, or almost \$145 million in 1963, was exported. The greatest share, 16 cargo ships and 2 tankers valued at about \$100 million and 6 fishing ships valued at \$29 million, went to the USSR. Also during the year, Poland exported two cargo ships worth about \$14 million to Cuba and six fishing ships worth about \$1 million to Ghana.

In 1963, Poland completed the lead ship of four new classes of cargo ships, namely: the Murom (B-44),** an improved version of the Simferopol (B-43); the Francisco Nullo (B-41); the Grudziadz (B-49); and the Kolejarz (B-512). Of these four new classes of cargo ships, only the Murom is for export to the USSR. Also for the USSR, Poland completed two Bausk (B-70)-class tankers, and this construction program has now ended with the completion of five ships. Four of these tankers were exported to the USSR, and one was retained by Poland.***

Also completed were the lead hulls of two new classes of fishing ships, the Albacora (B-23), a stern trawler, for retention and the Pionersk (B-64), a factory-base ship, for the USSR. Construction also continued on two classes of factory trawlers, the Leskov (B-15) and the Kosmos (B-26), which is an improved version of the Leskov for the USSR.†

3. East Germany

Shipbuilding in East Germany in 1963 consisted of about 126,000 DWT (95,100 GRT) of cargo ships; about 26,200 GRT of miscellaneous maritime ships; and about 16,800 DWT (44,200 GRT) of fishing ships, with a total value for all seagoing types of more than \$165 million. The value of the inland ships constructed amounted to an additional \$7 million.††

* For total data on Polish shipbuilding, see Table 7, Appendix B, p. 35, below.

** The letter-numeral designator, following a ship name, is the official Polish designation for the class.

*** For number, tonnage, and shipyard data for Polish cargo ship and tanker construction, see Table 9, Appendix B, p. 37, below.

† For number, tonnage, and shipyard data on Polish fishing ship construction, see Table 10, Appendix B, p. 39, below.

†† For total data on East German shipbuilding, see Table 11, Appendix B, p. 40, below.

Of the maritime and fishing ships produced and valued at \$165 million, about 13 cargo types, 12 miscellaneous, and 14 fish factory trawlers, a total valued at approximately \$117 million, or 71 percent, were exported to the USSR.* East Germany also completed that year the lead hulls of two new classes of cargo ships, the Povenets and the Vyborg, both of which were exported to the USSR. Also during 1963, East Germany completed the last ship of the Dzkankoy class, a coal and ore carrier, making a total of 17 ships in this class, and all went to the USSR.

During 1963, East Germany completed for its own fishing fleet the lead hull of a new class of fishing ship, the Eisbaer, a small freezer-trawler.**

4. Communist China

In 1963, Communist China did not complete any construction of major ships.*** The country did complete one fishing ship, the Yuan-Lung, valued at about \$2 million and believed to be the first ship in a series of whale catchers. At present the Chinese Communists do not own a whale factory ship. Should future whaling operations require a factory ship, China probably would find it more economical to purchase a ship than to produce both the ship and the whale-processing machinery domestically. It is estimated that during 1963 Communist China also built ships valued at about \$8 million for the inland waterways.

The decline in shipbuilding in 1963 is related to the general economic dislocation of industrial activity; shortages of material for shipbuilding; and the probable inability to command priorities for scarce materials, as well as the inadequate industrial supporting base for the construction of major ship components.

5. Hungary, Bulgaria, and Rumania

Hungary in 1963 produced the Keyla-class and the Hazam-class maritime ships (resumed after an interruption of 2 years) with a total value of \$19 million. Hungary also constructed ships valued at \$21 million for the inland waterways. All the Keyla-class ships were constructed for export to the USSR and to Norway. Of the Keyla-class ships exported, about \$14 million worth went to the USSR and about \$3 million worth to Norway.†

* For number, tonnage, and shipyard data for East German cargo and miscellaneous ship construction, see Table 13, Appendix B, p. 43, below.

** For number, tonnage, and shipyard data on East German fishing ship construction, see Table 14, Appendix B, p. 45, below.

*** For number, tonnage, and shipyard data on Communist China, see Table 26, Appendix B, p. 57, below.

† For number, tonnage, and distribution of maritime cargo ships built in Hungary, see Table 17, Appendix B, p. 48, below.

In 1963, Bulgaria completed for its own use the cargo ship Sofiya and for Czechoslovakia a cargo ship of the Varna class, both of which were valued at about \$7 million. In the same year, Bulgaria built for the USSR tankers of the Oleg Koshevoy class valued at about \$8 million and miscellaneous maritime ships valued at about \$3 million.*

In 1963, Rumania continued construction of Galati-class cargo ships for retention and completed the lead ships of two new classes of cargo ships, the Roman class for retention and the Novyy Donbass class for export to the USSR. Of this construction, Rumania retained about \$8 million worth of maritime cargo ships and exported about \$6 million worth to the USSR.**

B. Non-Communist Countries***

1. Denmark

As in 1962, Denmark continued in 1963 to build cargo and fishing ships for the USSR and Poland. For Poland, delivery of two ships of the Kraszewski class valued at about \$14 million completed the contract. For the USSR, two cargo ships of the Beloretsk class valued at about \$17 million and two refrigerator/factory ships of the Skryplev class valued at about \$10 million were completed. Of a contract for 6 Beloretsk-class ships, 4 have now been completed, and of a total of 8 of the Skryplev class now authorized under a long-range building program for 23, 4 also have been completed.

2. Finland

Of the non-Communist countries building ships for the Bloc, Finland continues to achieve the highest value of construction because of the relatively large number and variety of ships completed. In 1963, Finland completed for the USSR four Krasnograd-class cargo ships and nine Irkutskles-class cargo ships (timber carriers) valued at about \$30 million and \$31 million, respectively. Delivery of these ships completed one-half of the contract for 18 ships of the Krasnograd class and slightly more than one-half of the contract for possibly 40 ships of the Irkutskles class. Five tankers of the Drogobitz class valued at about \$14 million were exported to the USSR in 1963, thus completing more than 30 tankers of a contract for about 40.

The second of two cable-laying ships of the Ingul class valued at about \$7 million each was completed and delivered to the

* For number, tonnage, and shipyard data on Bulgarian ship construction, see Table 20, Appendix B, p. 51, below.

** For number, tonnage, and shipyard data on Rumanian ship construction, see Table 23, Appendix B, p. 54, below.

*** For number, tonnage, and shipyard data on ship construction for the Communist countries by non-Communist countries, see Table 28, Appendix B, p. 59, below.

USSR in 1963. Other miscellaneous ships such as tugs and non-self-propelled barracks ships valued at a total of about \$14 million also were completed for the USSR in 1963.

3. West Germany

Under a contract that called for construction of two whaler/factory ships of the Vladivostok class, each valued at \$16 million, West Germany completed the second ship, and the contract, for the USSR in 1963.

4. Italy

Of a contract that called for six tankers to be built in Italy, the first ship, the Leonardo da Vinci, valued at \$12 million, was delivered to the USSR in 1963.

5. Japan

The Japanese completed two Omsk-class cargo ships valued at about \$14 million for the USSR in 1963. Five ships of this class have now been built, and three others are to be built. One coal and ore carrier named the Kosice and valued at about \$14 million was completed for Czechoslovakia in 1963.

Japan completed three tankers of the Lozovaya class valued at \$24 million for the USSR. Nine more tankers of this class will be built -- four at a shipyard in Harima and five at a shipyard in Hiroshima.

II. Outlook for Future Major Shipbuilding Activity

A. Communist Countries

1. Cargo Ships

The USSR will build ships of the Leninskiy Komsomol class but at a slower pace than in 1963, and possibly in the latter part of 1964 the first gas turbine variant of this class will be built. The Poltava class and its modernized twin, the Perekop, reportedly will form the nucleus of the dry cargo fleet and therefore should be built in large numbers. Two classes of timber carriers, the Vytegrales and its possible sister class, the Vyborgles, probably also are intended for large-series construction. Another program for timber carriers, the Pavlin Vinogradov class, a gas turbine ship of which four units already have been built, will end in 1966 with the completion of seven units. Still another class of timber carrier, the Maloyaroslavets, possibly will consist of a series of 15 to 20 units to be built over a period of 5 years. Construction of an icebreaking cargo ship of the Anguema class is estimated at the rate of one or two units per

year over the next several years. This class is the only diesel-electric cargo ship under construction in the USSR.

An indication as to which type of ship the USSR considers significant is provided when more than one shipyard in the country is engaged in its construction. The following classes of cargo ships are under construction in two shipyards: the Leninskiy Komsomol,* the Poltava (Perekop), and the Vytegrales (Vyborgles).

Reportedly, Poland will build 15 units of the Murom (B-44) for export to the USSR for the next few years, possibly through 1966. The total production of this class and of the Simferopol (B-43), which is very similar, should be about 22 units. The Belomorskles (B-45) timber carrier, which is being built for the USSR, also will remain in production for several years, as the total output of this class and of its sister class the Volgoles (B-514) should be about 60 units -- now about 50 percent completed. Continued construction of cargo ships for domestic use such as the Marceli Nowotko (B-54), the Francisco Nullo (B-41), the Kolejarz (B-512), and the Domeyko (B-516) also is expected.

East Germany will continue to build for its own use cargo ships of the Albatross class and the Edgar Andre (Type X) class. The Vyborg (Type VI) and Povenets classes will continue to be built in the foreseeable future for the USSR. Twenty units of the Vyborg class and an unknown number of the Povenets class will be built.

Hungary will build small cargo ships of the Keyla and Hazam classes or similar ships, but most of its exports probably will be confined to the USSR, Norway, and Indonesia. Bulgaria will build Novyy Donbass-class cargo ships during the next 2 years, at the end of which time the Soviet order for six ships will have been completed. Rumania probably will continue to build for retention Galati-class cargo ships at the rate of about two a year. Communist China can be expected to complete several classes of cargo ships during the next few years.

2. Tankers

Two shipyards in Leningrad have the Sofiya class of tankers under construction, and the USSR will continue to build them for the next several years. (According to a Soviet radio bulletin late in January 1964, Soviet engineers were then designing a tanker of 70,000 DWT.) Before that time the only tanker that had been built at more than one Soviet shipyard was that of the Kazbek class, the earliest postwar maritime shipbuilding program of any real consequence in the USSR.

* Actually, ships of the Leninskiy Komsomol class have been under construction at two shipyards for the past several years.

.Bulgaria and Poland are the only other countries of the Soviet Bloc to have built or expected to build tankers in the immediate future for the USSR. Bulgaria will continue construction of the Oleg Koshevoy-class tankers, and Poland may build a tanker of 20,000 DWT.

3. Fishing Ships

Apparently at least two more cannery ships of the Andrey Zakharov class will be built in the USSR, with a possibility of additional units. Late in 1963 a large factory ship of 35,000 tons displacement, called the Vostok class, probably was in the final stage of design. Construction of this ship may begin in 1964, with completion scheduled in 1965.

Refrigerator ships of the Sibir class probably will continue to be built, but the program for the similar, smaller Tavriya-class ship may have ended with a total of about 17 units completed. A new refrigerator ship for use on Soviet inland waterways and inland seas was under construction late in 1963 in Zelendolsk, from which city is derived the name of the class, the Zelendolsk. The first units of this class will be completed in 1964.

Factory trawlers of the Mayakovskiy class were under construction during 1963 at two Soviet shipyards. The Baltic Shipyard in Klaipeda completed its first hull in 1963, and the other yard, in Nikolayev, has been building these factory trawlers since 1958. The Nikolayev Shipyard is almost at the end of its construction program for the Mayakovskiy and is replacing it with a new construction program for a series of factory trawlers. This new factory trawler, to be known as the Sever class, will be an improved version of the Mayakovskiy class, incorporating such things as increased horsepower and range.

The construction program for the medium-size fishing trawler, which began slowly in 1962 with completion of the first Mayak-class trawler, gathered momentum during 1963 when, in addition to the original construction yard in Kiev, this class of trawler was under construction in shipyards in Volgograd and Khabarovsk. Other shipyards eventually may become involved in the Mayak program because several hundred of these trawlers reportedly will be built to replace many of the old medium-size fishing trawlers that are not refrigerated and that have less horsepower and a smaller operating range.

Mirnyy-class whale catchers, of which about 86 have been built since 1956, ought to be under construction for about 1 more year. It is estimated that 14 ships will be completed in 1964, making a total of 100 for the class and ending the entire construction program.

Factory trawlers of the Leskov (B-15) and Kosmos (B-26) types will continue to be built in Poland -- the former for retention

and the latter for export to the USSR during 1964. The USSR is to receive about 20 of these factory trawlers from Poland. Before 1963 the USSR had received from Poland 11 factory-base ships of the type known as the Severodvinsk (B-62). Now Poland is building an improved model, the Pionersk (B-64), at the rate of about two ships a year and will continue until 15 ships are delivered to the USSR. Poland also plans to build for its own use two ships of this class.

East Germany in 1964 will continue to build factory trawlers of the Bertholt Brecht class for retention and factory trawlers of the Tropik class for the USSR. East Germany has built 22 Tropik-class ships, and the USSR has ordered about 65 of this type.

4. Miscellaneous Ships

The construction program for the Uzbekistan-class passenger ship at the Zhdanov Shipyard in Leningrad ended in 1963 with a total of four units completed. (The shipyard may now shift the additional labor and facilities to the assembly of timber carriers that have been under construction since 1962.) Late in 1963, East Germany had in various stages of construction three large new passenger ships of a different type, the first of which, the Ivan Franko, should be completed late in 1964. These ships will be the largest ever built in East Germany and will be sent to the USSR. During 1964, East Germany is expected to complete for the USSR the last in a series of 19 passenger ships of the Mikhail Kalinin class.

Bulgaria is expected to continue to build for the USSR passenger ships of the class known as the Georgi Dimitrov at the rate of about two a year.

B. Non-Communist Countries

1. Cargo Ships

With the construction of two cargo ships of the Beloretsk class, Denmark will complete a contract with the USSR for six ships. Poland may build one ship of the Kraszewski class during 1964-65.

Finland will continue to build Krasnograd-class cargo ships and Irkutskles-class timber carriers for the next few years for export to the USSR.

In 1964, Japan may build three ships of the Omsk class, thus completing contracts that call for a total of eight ships to be delivered to the USSR. Japan also has a contract to build an ore carrier for Bulgaria during 1964.

Yugoslavia signed the first major shipbuilding contract with the USSR in Moscow in July 1962 and agreed to build 10 cargo ships to be delivered during 1964-65.

2. Tankers

Finland will continue to build small tankers of the Drogobitz class for the USSR during 1964-66.

Large tankers of the Leonardo da Vinci class will be under construction in Italy for the USSR during 1964-65, at which time the contract for six tankers of this class will be completed.

The Japanese will continue production during 1964 of large tankers of the Lozovaya class. Under a contract with the USSR that calls for a total of 12 tankers, 9 more are scheduled for delivery. Japan and the USSR signed a contract in July 1963 by which Japan would construct two small low-pressure gas tankers to be delivered in 1965.

Yugoslavia has contracted to build 15 tankers for the USSR. These tankers (a part of the contract mentioned under 1, above), probably will be delivered during 1964-66.

3. Fishing Ships

Late in 1963, Denmark launched the first hull of the second group of four refrigerator/factory ships (eight have been authorized), known as the Skryplev class, to be built for the USSR. The current Danish-Soviet Trade Agreement provides for delivery of 23 ships of this type during 1964-69.

France, which never before has built any fishing ships for the USSR, now is expected to complete three refrigerator/factory ships and two trawlers for that country in 1964. The names of the classes are not known.

In the past, West Germany has built a substantial number of fishing ships for the USSR and now has a contract that calls for construction and delivery in 1965-66 of eight fish factory ships, but the name of the class is not known.

During 1964 and 1965, Japan will build for the USSR five tuna factory ships of the Leninskiy Luchi class and during 1965 and 1966 will build eight large fish factory ships. For Rumania, Japan expects to complete during 1964 two fish factory trawlers of the Constanta class.

Several years ago, during 1955-56, the Netherlands built a series of refrigerator ships for the USSR. In July 1963 the Netherlands again signed a contract with the USSR for delivery in 1965 of four refrigerator/factory ships of an unnamed class.

In the early and mid-1950's, Sweden built a series of refrigerator ships for the USSR and at present is again building refrigerator ships, 10 of which are to be delivered during 1964-65.

4. Miscellaneous Ships

A large icebreaker of the Moskva class is now under construction in Finland for the USSR and will be delivered in 1965. This ship will be the third of its class built for the USSR.

Finland also should complete five non-self-propelled barracks ships of the C-214 class in 1964 and 1965. These ships will complete contracts with the USSR calling for a total of 13 ships.

III. Western Credit Arrangements with the USSR

In 1963 a small amount of information became available concerning credit arrangements with the USSR regarding shipbuilding contracts that had been signed during the year. Practically all of this information is from Japan, and the data are a fair guide as to the credit arrangements that the USSR may obtain from other nations of the Free World.

The USSR and Japan signed three shipbuilding contracts in May, June, and July 1963. The May order is for five tuna factory ships, the June order for eight fish factory ships, and the July order for two small low-pressure gas tankers. In all three cases, general credit arrangements are identical: 30 percent down and 70 percent payable in equal installments every 6 months over the next 5-1/2 years.

West Germany reportedly has granted the USSR credit for 5 years* in connection with a contract for eight fish factory ships. This contract is very similar to the Japanese order for eight fish factory ships, and West Germany has referred to it as the "other half" of the contract.

Based on the Japanese and West German experience, it would seem that in the future the USSR will try to arrange for ships built in the West on terms as favorable as 30 percent down and the balance over a period of 5 to 6 years.

IV. Ships with Large Hatches

Since late 1961 the USSR has been adding to its cargo fleet new ships capable of handling large and heavy cargo. These ships have been built both in foreign countries and in Soviet shipyards. As a group these ships are remarkable for large hatches (more than 60 feet),

* This credit actually was reported as 6 years, but it includes a guarantee of 1 year by the shipyard.

heavy lift equipment (60-ton cranes and booms), and probably strengthened decks and hatch covers. This group of ships possibly represents the optimum in Soviet facilities for cargo handling and stowage. Some of them transported military cargo to Cuba during the crisis in 1962.

Some characteristics of eight classes of cargo ships of large hatches are presented in the following tabulation:

<u>Class</u>	<u>Country of Origin</u>	<u>Estimated Length of Hatch (Feet)</u>	<u>Number at the End of 1963</u>	<u>Total Number to Be Built</u>
<u>Poltava</u>	USSR	78	3	N.A.
<u>Perekop</u>	USSR	78	2	N.A.
<u>Simferopol</u>	Poland	62	7	7
<u>Murom</u>	Poland	62	1	15
<u>Vyborg</u>	East Germany	87	1	20
<u>Omsk</u>	Japan	75	5	8
<u>Krasnograd</u>	Finland	72	9	18
<u>Beloretsk</u>	Denmark	60	4	6
Total			<u>32</u>	<u>74+</u>

At least one other class -- for example, the cargo ships at present on order from Yugoslavia -- may be added to the above list. Based on the known number of each class to be built and an estimate of the length of time for Soviet construction, this group of ships with large hatches probably eventually will consist of more than 100. For photographs of selected ships with large hatches, see Appendix A.*

V. Position of the Soviet Bloc in World Shipbuilding

Based on data provided by Lloyd's Register of Shipping and on estimates of GRT completed by the USSR, Poland, and East Germany in 1963, these countries collectively occupied fifth place in the world with an aggregate GRT completed of 903,000 tons, or about 10 percent of world completions. Among the 15 leading shipbuilding nations of the world, they rank individually as follows: the USSR in sixth place with 501,000 GRT, Poland in thirteenth place with 237,000 GRT, and East Germany in fourteenth place with 166,000 GRT.

* P. 19, below.

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The tabulation below ranks the 15 leading shipbuilding countries of the world according to the GRT completed:

<u>Country</u>	<u>Position</u>	<u>Completions (1,000 GRT)</u>	<u>Percent of World Completions</u>
Japan	1	2,269	24.7
UK	2	1,096	11.9
West Germany	3	1,051	11.4
Sweden	4	969	10.6
France	5	505	5.5
USSR	6	501	5.5
Netherlands	7	461	5.0
Italy	8	435	4.7
US	9	429	4.7
Norway	10	366	4.0
Denmark	11	294	3.2
Yugoslavia	12	269	2.9
Poland	13	237	2.6
East Germany	14	166	1.8
Finland	15	124	1.4
Total		<u>9,172</u>	<u>99.9</u>

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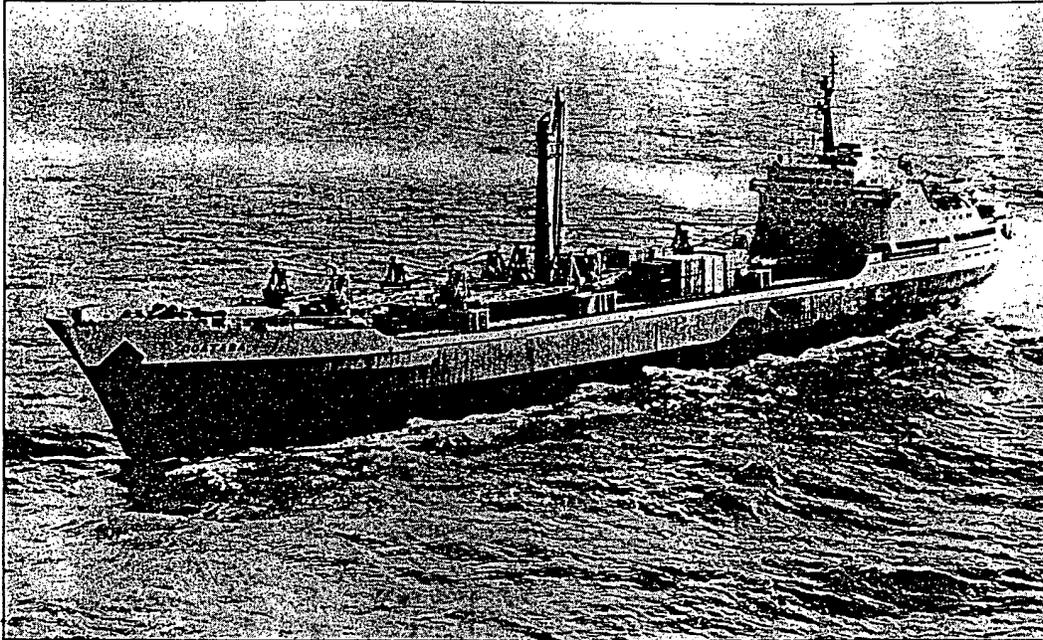
APPENDIX A

PHOTOGRAPHS OF SELECTED SHIPS WITH LARGE HATCHES

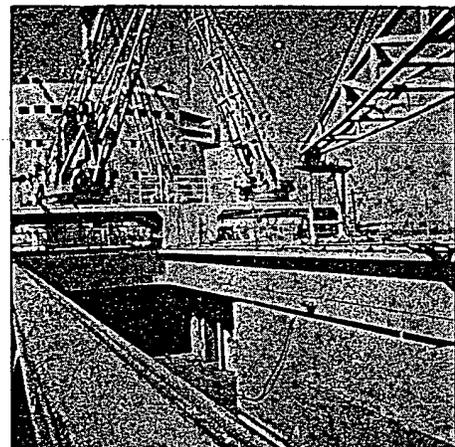
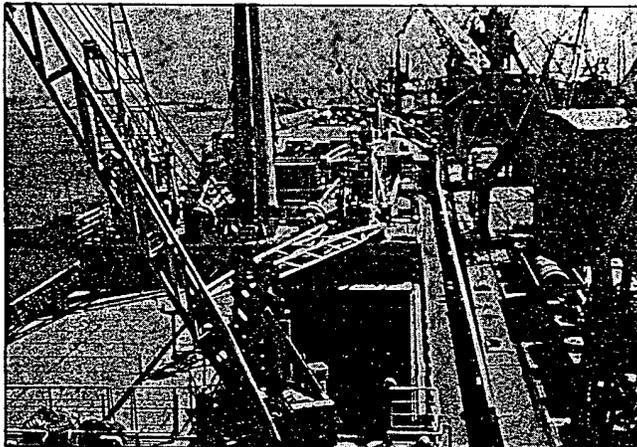
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Poltava-Class Cargo Ship Built at the Imeni Nosenko Shipyard, Nikolayev, USSR.



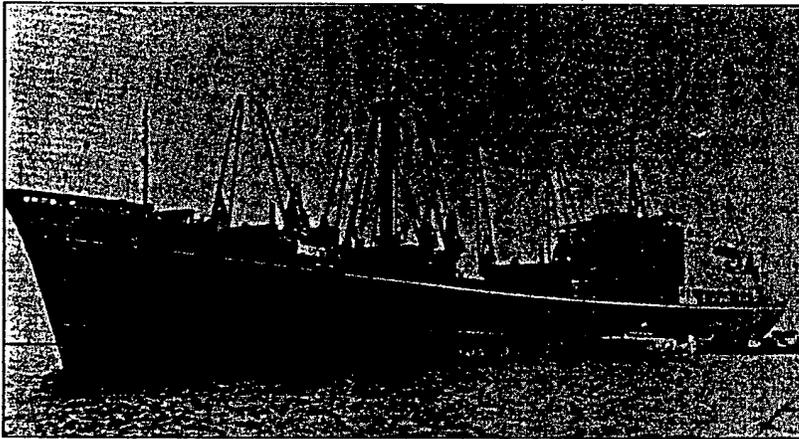
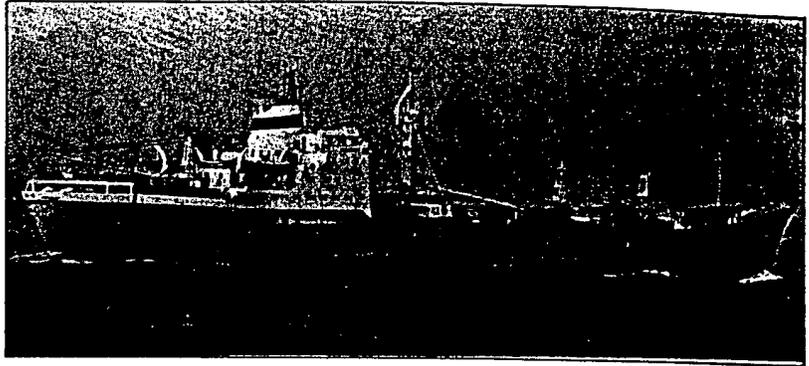
Two Views of the No. 4 Hatch, Starboard Side, of the Poltava-Class Cargo Ship, USSR.

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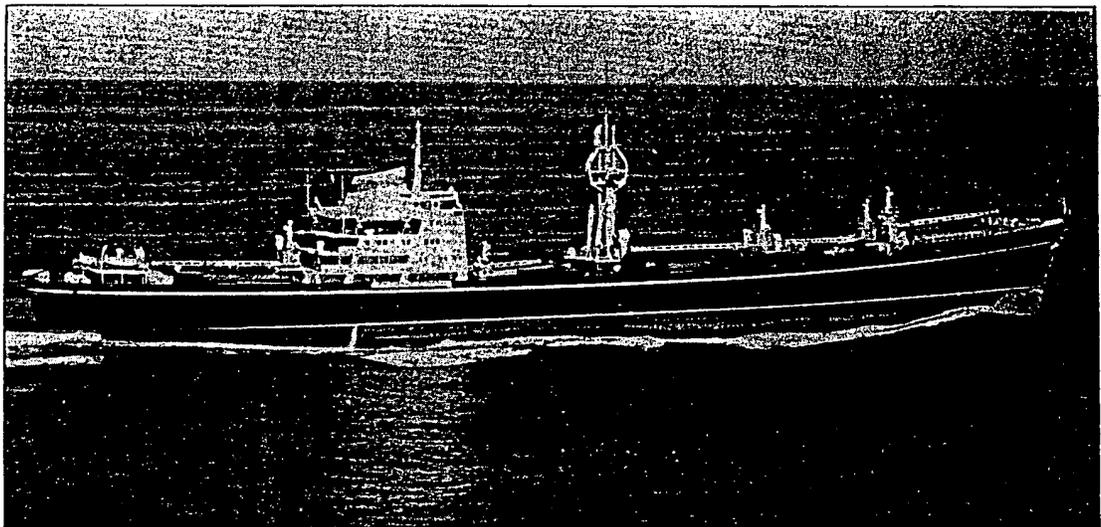
GROUP 1
Excluded from automatic
downgrading and
declassification

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Krasnograd-Class Cargo Ship Built at the Crichton-Vulcan Shipyard, Turku, Finland.



Omsk-Class Cargo Ship Built at the Hitachi Shipyard, Osaka, Japan.



Belorotsk-Class Cargo Ship Built at the Nakskov Shipyard, Denmark.

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APPENDIX B

STATISTICAL TABLES AND PHOTOGRAPHS OF SELECTED SHIPS

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Table 1

Summary of the Number, Tonnage, Value, and Distribution of Merchant Ships
Constructed by and for the Communist Countries, by Type of Ship a/
1963

Value in Terms of Million 1960 US \$

Country of Origin and Type	Number	LSD	Tonnage			Value	Distribution															
			DWT	GRT	Value		USSR		Poland		East Germany		Communist		Other		Non-Communist					
Communist Countries						Number	Value	Number	Value	Number	Value	Number	Value	Number	Value	Country	Number	Value	Country	Number	Value	
USSR																						
Maritime	24 b/	145,735	320,800 b/	261,785	186.8	24	186.8															
Fishing	1,967	N.A.	N.A.	238,720	323.6	1,963	320.0															
Inland (value only)				183.4	183.4		183.4															
Total USSR		N.A.	N.A.	500,505	695.8	1,987	692.2															
Poland																						
Maritime	34	128,790	268,990	205,375	171.8	18	100.5	14	57.7													
Fishing	19	30,495	21,780	31,840	45.8	6	29.0	7	15.6													
Total Poland	53	159,285	290,770	237,215	217.6	24	129.5	21	73.3													
East Germany																						
Maritime	36	77,870	136,395	121,260	117.0	25	80.3			11	36.7											
Fishing	22	31,910	16,760	44,250	48.4	14	36.4			4	11.2											
Inland (value only)				7.2	7.2		7.2															
Total East Germany		109,780	153,155	165,510	172.6	39	123.9			15	47.9											
Hungary																						
Maritime	12	12,600	15,150	15,100	19.4	8	13.6															
Inland (value only)				21.1	21.1		21.1															
Total Hungary		12,600	15,150	15,100	40.5	8	34.7															
Bulgaria																						
Maritime	7	11,270	22,610	19,960	17.0	5	10.1															
Inland (value only)					5.5		5.5															
Total Bulgaria		11,270	22,610	19,960	22.5	5	15.6															

a. Excluding a few small minor ships.
b. Excluding four passenger ships, two port icebreakers, three research ships, and an unknown number of tugs.

Table 1
(Continued)

Value in Terms of Million 1960 US \$

Country of Origin and Type	Number	ISD	Tons			Distribution													
			DWT	GRT	Value	USSR			Poland		East Germany		Communist			Other		Non-Communist	
						Number	Value	Number	Value	Number	Value	Number	Value	China	Number	Value	Country	Number	Value
Communist Countries (Continued)																			
Rumania																			
Maritime	5	9,920	18,860	14,600	14.1	2	6.2								3	7.9	Rumania		
Inland (value only)					8.3		6.4									1.9	Rumania		
Total Rumania		9,920	18,860	14,600	22.4	2	12.6							2	9.8				
Communist China																			
Fishing	1	940	310	840	1.5								1	1.5					
Inland (value only)					8.3														
Total Communist China		940	310	840	9.8														
Czechoslovakia																			
Inland (value only)					12.0														
Total Communist Countries				923,730	1,193.2	2,065	1,020.5	21	73.3	15	47.9	1	9.8	2	32.7		16	9.0	
Non-Communist																			
Denmark																			
Maritime	4	25,920	52,300	40,300	31.2	2	16.8												
Fishing	2	6,880	5,120	9,400	10.4	2	10.4												
Total Denmark	6	32,800	57,420	49,700	41.6	4	27.2	2	14.4										
Finland																			
Maritime	26	60,440	121,890	97,520	94.6	26	94.6												
West Germany																			
Fishing	1	10,000	21,650	17,000	16.0	1	16.0												

Table 3

Number, Value, and Distribution of Maritime Cargo Ships, Tankers, Miscellaneous Ships,
and Fishing Ships Constructed by the USSR
1963

Value in Terms of Million 1960 US \$

Cargo	Type and Class	Number	Value	Distribution								
				Communist Countries				Non-Communist Countries				
				USSR		Poland		East Germany		Communist China		Other
Number	Value	Number	Value	Number	Value	Number	Value	Number	Value	Country		
<u>Leningradskiy Komsomol</u>		5	37.5	5	37.5							
<u>Poltava</u>		2	14.2	2	14.2							
<u>Perekop</u>		2	16.0	2	16.0							
<u>Amurenska</u>		1	6.1	1	6.1							
<u>Vybzeral's</u>		2	9.4	2	9.4							
<u>Vybzeral's</u>		1	4.7	1	4.7							
<u>Pavlin Vinogradov</u>		1	4.4	1	4.4							
<u>Malovrosislavets</u>		2	5.6	2	5.6							
<u>Inzhener Belov</u>		5	12.0	5	12.0							
Total cargo		21	109.9	21	109.9							
<u>Tanker</u>												
<u>Sofiya</u>		2	25.6	2	25.6							
<u>PeKin</u>		1	9.2	1	9.2							
Total tanker		3	34.8	3	34.8							
<u>Miscellaneous</u>												
<u>Passenger</u>												
<u>Uzbekistan</u>		2	11.6	2	11.6							
<u>Baku</u>		1	3.6	1	3.6							
<u>Sulak</u>		1	2.4	1	2.4							
<u>Port Icebreaker</u>												
<u>Dobrynya Nikitich</u>		2	5.0	2	5.0							
<u>Research ship</u>												
<u>Bahr</u>		3	1.5	3	1.5							
<u>Tugs</u>												
<u>Various types</u>		N.A.	18.0	N.A.	18.0							
Total miscellaneous		N.A.	42.1	N.A.	42.1							

Table 4

Number, Tonnage, and Distribution of Maritime Cargo Ships and Tankers
Constructed by the USSR, by Shipyard
1963

Cargo	Class of Ship and Shipyard	Number of Ships	Tons			Cumulative Construction Through 1963	Distribution						
			LSD	DWT	GRT		Communist Countries			Non-Communist Countries			
							USSR	Poland	East Germany	Communist China	Other	Country	Number
<u>Leninskij Komsomol</u>													
	Kherson Shipyard, Kherson	4	24,240	64,160	49,140	14							
	Imeni Nosenko, Nikolayev	1	6,060	16,040	12,285	6	1						
	Total	5	30,300	80,200	61,425	20	2						
<u>Poltava</u>													
	Imeni Nosenko, Nikolayev	2	11,300	25,080	19,000	2							
<u>Perekop (New series)</u>													
	Imeni Nosenko, Nikolayev	1	6,210	12,690	9,650	1							
	Kherson Shipyard, Kherson	1	6,210	12,690	9,650	1							
	Total	2	12,420	25,380	19,300	2							
<u>Amglena</u>													
	Leninskij Komsomol, Komsomol'sk	1	4,840	8,700	8,180	2							
<u>Vytegrales (New series-timber carrier)</u>													
	Imeni Zhdanov, Leningrad	2	6,700	12,200	9,400	2							
<u>VyborGies</u>													
	Vyborg Shipyard, Vyborg	1	3,350	6,100	4,700	1							
<u>Pavlin Vinogradov (Timber carrier)</u>													
	Baltic, Leningrad	1	3,110	5,740	4,650	4							
<u>Inzhener Belov</u>													
	Navashino Shipyard, Navashino	2	7,850	22,500	17,000	23							
						30							

Table 4
(Continued)

Class of Ship and Shipyard	Number of Ships	LSD	Tons			Cumulative Construction Through 1963	Units											
			DWT	GRT	USSR		Communist Countries			Non-Communist Countries								
							Poland	East Germany	China	Other	Number	Country	Number	Country				
<u>Cargo (Continued)</u>																		
<u>Maloyaroslaveys (New series-timber carrier)</u>																		
Oktyabr'sk Shipyard, Oktyabr'sk	2	3,760	8,000	6,230	2	2												
Total cargo	<u>21</u>	<u>83,630</u>	<u>193,900</u>	<u>149,885</u>	<u>52</u>	<u>21</u>												
<u>Tanker</u>																		
<u>Pekin (End of program)</u>																		
Baltic, Leningrad	1	9,160	30,460	21,260	1	1												
<u>Sofiya (New series)</u>																		
Baltic, Leningrad	1	12,800	48,220	30,000	1	1												
Admiral'tseyskiy, Leningrad	1	12,800	48,220	30,000	1	1												
Total	2	<u>25,600</u>	<u>96,440</u>	<u>60,000</u>	2	2												
Total tanker	<u>3</u>	<u>34,760</u>	<u>126,900</u>	<u>81,260</u>	<u>2</u>	<u>3</u>												
Total cargo and tanker	<u>24</u>	<u>118,390</u>	<u>320,800</u>	<u>231,145</u>	<u>68</u>	<u>24</u>												

Table 5

Number, Tonnage, and Distribution of Miscellaneous Maritime Ships Constructed by the USSR, by Shipyard
1963

Class of Ship and Shipyard	Number of Ships	LSD	Tons			Cumulative Construction Through 1963	Units								
			DWT	GRT	USSR		Communist Countries			Non-Communist Countries					
							Poland	East Germany	Communist China	Other Number	Country	Number	Country		
<u>Passenger</u>															
<u>Uzbekistan (End of program)</u>															
Imeni Zhdanov, Leningrad	2	5,020	1,400	7,040	4	2									
<u>Baku g/</u>															
Volograd	1	1,450	390	2,000	2	1									
<u>Sulak g/</u>															
Vano Sturma, Baku	1	885	285	1,000	2	1									
<u>Total</u>	<u>4</u>	<u>7,355</u>	<u>2,075</u>	<u>10,040</u>	<u>8</u>	<u>4</u>									
<u>Port Icebreaker</u>															
<u>Dobrynya Nikitich</u>															
Admiral'sevskiy, Leningrad	2	4,000	1,350	4,400	8	2									
<u>Research ship</u>															
<u>Bahr</u>															
Leninskaya Kuznitsa, Kiev	3	990	1,725	2,700	5	3									
<u>Tugs</u>															
Various types	N.A.	15,000	N.A.	13,500	N.A.	N.A.									
<u>Total miscellaneous</u>	<u>N.A.</u>	<u>27,345</u>	<u>N.A.</u>	<u>30,640</u>	<u>N.A.</u>	<u>N.A.</u>									

a. Built for service on the Caspian Sea.

Table 6

Number, Tonnage, and Distribution of Fishing Ships Constructed by the USSR, by Shipyard
1963
(Continued)

Class of Ship and Shipyard	Number of Ships	LSD	Tons			Cumulative Construction Through 1963	Units										
			DWT	GRT	USSR		Communist Countries			Non-Communist Countries							
							Poland	East Germany	China	Other Communist	Number	Country	Number	Country			
Whale catcher																	
<u>Merny</u>																	
Imeni 61 Kommunar, Nikolayev	14	13,160	4,310	11,760	86	14											
Small trawlers, seiners, and the like																	
Various types	1,913	N.A.	N.A.	113,100	N.A.	1,913											
Total fishing	<u>1,967</u>	N.A.	N.A.	<u>238,720</u>	N.A.	<u>1,963</u>											

Table 9

Number, Tonnage, and Distribution of Maritime Cargo Ships and Tankers Constructed by Poland, by Shipyard
1963

Class of Ship and Shipyard	Number of Ships	Tons			Cumulative Construction Through 1963	Units							
		LSD	DWT	GRT		Distribution							
						Communist Countries			Non-Communist Countries				
Cargo					USSR	Poland	East Germany	Communist China	Other	Number	Country	Number	Country
<u>Smiferopol (B-43) (End of program)</u>	2	16,830	37,350	28,032	7	3							
<u>Odansk Shipyard</u>													
<u>Murom (B-44) (Improved B-43; new series for the USSR)</u>	1	5,610	12,450	9,345	1	1							
<u>Odansk Shipyard</u>													
<u>Belomorskles (B-45)</u>	12	41,340	71,400	56,040	15	12							
<u>Marcell Nowotko (B-54) (End of program at Odansk)</u>													
<u>Gdansk Shipyard</u>	3	16,260	34,080	29,460	29	1						2	Cuba
<u>Szczecin Shipyard</u>	2	10,840	22,720	19,640	10	2							
<u>Total</u>	2	27,100	56,800	49,100	32	3						2	
<u>Francisco Nullo (B-41) (New series for retention)</u>													
<u>Gdynia Shipyard</u>	1	4,000	9,300	6,000	1	1							
<u>Andrzej Borowy (B-458) (End of program)</u>													
<u>Gdynia Shipyard</u>	2	3,500	6,500	5,000	2	2							
<u>Grudziadz (B-49) (New series for retention)</u>													
<u>Szczecin Shipyard</u>	2	2,280	8,560	2,940	2	2							

Table 9

Number, Tonnage, and Distribution of Maritime Cargo Ships and Tankers Constructed by Poland, by Shipyard
1963
(Continued)

Class of Ship and Shipyard	Number of Ships	LSD	Tons			Cumulative Construction Through 1963	Units Distribution															
			DWT	GRT	Communist Countries							Non-Communist Countries										
					USSR		Poland	East Germany	Communist China	Other	Country	Number	Country	Number								
Cargo (Continued)																						
Kolejarz (B-512) (New series for retention)																						
Szczecin Shipyard	1	5,600	12,500	8,455	1		1															
Domeyko (B-516)																						
Szczecin Shipyard	2	1,800	16,730	10,920	4		2															
Total cargo													32	117,060	231,590	178,835	75	16	14			2
Tanker																						
Bauck (B-70) (End of program)																						
Odanek Shipyard	2	11,730	37,400	26,540	2		2															
Total cargo and tanker													34	128,790	268,990	205,375	80	18	14			2

Number, Tonnage, and Distribution of Fishing Ships Constructed by Poland, by Shipyard
1963

Class of Ship and Shipyard	Number of Ships	Tons			Cumulative Construction Through 1963	Units						
		LSD	DWT	GRT		Distribution						
						USSR	Poland	East Germany	Communist China	Other Country	Non-Communist Countries	
Factory trawlers												
Leskov (B-15)												
Gdansk Shipyard	3	6,795	3,660	8,010	16	1	2					
Kosmos (B-26)												
Gdansk Shipyard	4	9,060	4,880	10,680	6	4						
Total	7	15,855	8,540	18,690	22	5	2					
Trawlers												
Albacora (B-23) (New series for retention)												
Gdynia Shipyard	3	3,600	1,800	2,100	3		3					
Medyle (B-20)												
Gdynia Shipyard	2	2,230	1,080	1,200	19		2					
Total	2	5,830	2,880	3,300	22		5					
Outter (B-25)												
Repair Yard, Gdynia	6	810	360	600	41						6	
Factory ship												
Pionersk (B-64) (New series for the USSR)												
Gdansk Shipyard	1	8,000	10,000	9,250	1	1						
Total fishing	19	30,495	21,780	31,840	86	6	7				6	

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Table 11

Summary of the Number, Tonnage, Value, and Distribution of Merchant Ships Constructed by East Germany a/
1963

Value in Terms of Million 1960 US \$

Type	Number	ISD	Tons			Distribution											
			DWT	GRT	Value	Communist Countries						Non-Communist Countries					
			USSR	Poland	East Germany	Communist China	Other	USSR	Poland	East Germany	Communist China	Other					
Maritime																	
Cargo	22	58,640	126,015	95,110	83.9	13	54.5	9	29.4								
Miscellaneous	14	19,230	10,380	26,150	33.1	12	25.8	2	7.3								
Total maritime	36	77,870	136,395	121,260	117.0	25	80.3	11	36.7								
Fishing																	
Factory trawler	17	30,720	16,160	43,090	46.6	14	36.4	3	10.2								
Trawler	1	650	400	600	1.0			1	1.0					0.8			
Cutters	4	540	200	560	0.8									Sweden			
Total fishing	22	31,910	16,760	44,250	48.4	14	36.4	4	11.2					0.8			
Inland																	
Self-propelled	20	(12,000 horsepower)			7.2	20	7.2										
Total merchant	78				172.6	59	123.9	15	47.9					0.8			

a. Excluding a few small minor ships.

Table 12

Number, Value, and Distribution of Maritime Cargo Ships, Miscellaneous Ships, and Fishing Ships
Constructed by East Germany
1963

Value in Terms of Million 1960 US \$

Type and Class	Number	Value	Distribution															
			Communist Countries				Non-Communist Countries											
			USSR	Poland	East Germany	Communist China	Other	Country	Number	Value	Country							
Cargo																		
Star	4	4.0			4	4.0												
Povnets	8	24.0	8	24.0														
Albatross	2	4.2			2	4.2												
Zhbankov	4	22.4			4	22.4												
Lubbenau	2	13.8			2	13.8												
Edgar Andre	1	7.4			1	7.4												
Vyborg	1	8.1			1	8.1												
Total cargo	22	83.2	13	54.5	2	29.4												
Miscellaneous																		
Passenger																		
Mikhail Kalinin	3	22.5			3	22.5												
Seasmitz	1	5.4			1	5.4												
Crane ship																		
Kala	1	1.7			1	1.7												
Research ship																		
Ernst Haeckel	1	1.9			1	1.9												
Tug																		
MB-6060	8	1.6			8	1.6												
Total miscellaneous	14	33.1	12	25.8	2	7.3												

Table 12

Number, Value, and Distribution of Maritime Cargo Ships, Miscellaneous Ships, and Fishing Ships
 Constructed by East Germany
 1963
 (Continued)

Value in Terms of Million 1960 US \$

Type and Class	Number	Value	Distribution													
			Communist Countries				Non-Communist Countries									
			USSR	Poland	East Germany	Communist China	Other	Country	Number	Value	Country					
Fishing																
Factory trawler																
Bertholt Brecht Tropik	3	10.2														
Trawler	14	36.4														
Elisbaer	1	1.0														
Cutter																
Unknown	4	0.8												4	0.8	Sweden
Total fishing	22	48.4												4	0.8	
Total merchant	58	165.4												4	0.8	
			39	116.7		15	47.9									

Table 13

Number, Tonnage, and Distribution of Maritime Cargo Ships and Miscellaneous Ships
Constructed by East Germany, by Shipyard
1963

Cargo	Class of Ship and Shipyard	Number of Ships	LSD	Tons			Cumulative Construction Through 1963	Units										
				DWT	GRT	USSR		Communist Countries			Non-Communist Countries							
								Poland	East Germany	China	Other	Country	Number	Country	Number			
	<u>Star (End of program)</u>																	
	Peeneverft, Wolgast	4	2,340	3,340	2,480	23												
	<u>Albatross</u>																	
	Neptune Werft, Rostock	2	2,400	5,420	3,470	6												
	<u>Labbenau (Type IX) (End of program)</u>																	
	Warnoverft, Warnemunde	2	9,250	22,050	13,600	6												
	<u>Edgar Andre (Type X)</u>																	
	Warnoverft, Warnemunde	1	4,930	10,230	7,500	2												
	<u>Povenets (Improved Andizhan class; new series for the USSR)</u>																	
	Neptune Werft, Rostock	8	16,800	33,600	30,000	8												
	<u>Dehankoy (End of program)</u>																	
	Warnoverft, Warnemunde	4	17,120	39,000	29,060	17												
	<u>Vyborg (Type VI) (New series for the USSR)</u>																	
	Warnoverft, Warnemunde	1	5,800	12,375	9,000	1												
	<u>Total cargo</u>	<u>22</u>	<u>58,640</u>	<u>126,015</u>	<u>95,110</u>	<u>53</u>												

Table 13

Number, Tonnage, and Distribution of Maritime Cargo Ships and Miscellaneous Ships
 Constructed by East Germany, by Shipyard
 1963
 (Continued)

Class of Ship and Shipyard	Number of Ships	Tons			Cumulative Construction Through 1963	Distribution												
		LSD	DWT	GRT		Communist Countries			Non-Communist Countries									
						USSR	Poland	East Germany	Other	Number	Country	Number	Country					
Miscellaneous																		
Passenger																		
<u>Mikhail Kalinin</u>																		
Matthias Thesen Werft, Wismar	3	12,510	4,020	14,610	18	3												
<u>Sasnitz</u>																		
Neptune Werft, Rostock	1	3,360	3,360	6,500	2													
Crane ship																		
<u>Kala</u>																		
Neptune Werft, Rostock	1	1,000	1,600	2,800	1	1												
Research ship																		
<u>Ernst Haeckel</u>																		
Matthias Thesen Werft, Wismar	1	1,200	600	1,200	1													
Tug																		
<u>MB-6060</u>																		
Edgar Andre, Rothersee	8	1,160	800	1,040	15	8												
Total miscellaneous	<u>14</u>	<u>19,230</u>	<u>10,380</u>	<u>26,150</u>	<u>37</u>	<u>12</u>												
Total maritime	<u>36</u>	<u>77,870</u>	<u>136,395</u>	<u>121,260</u>	<u>100</u>	<u>25</u>												<u>11</u>

Number, Tonnage, and Distribution of Fishing Ships Constructed by East Germany, by Shipyard
1963

Table 14

Class of Ship and Shipyard	Number of Ships	Tons			Cumulative Construction Through 1963	Units							
		LSD	DWT	GRT		Distribution							
						Communist Countries			Non-Communist Countries				
					USSR	Poland	East Germany	Communist China	Other	Number	Country	Number	Country
Factory trawlers													
<u>Bertholt Brecht</u>													
Mathias Thesen Werft, Wismar	3	6,780	3,840	9,000	8			3					
<u>Tropik</u>													
Volkswerft, Stralsund	14	23,940	12,320	34,090	22	14							
<u>Trawler</u>													
<u>Bisbee (New series for retention)</u>													
Elbeverft, Boizenburg	1	650	400	600	1		1						
<u>Outter</u>													
<u>Unknown</u>													
Volkswerft, Brandenburg	4	540	200	560	16							4	Sweden
Total fishing	22	31,910	16,760	44,250	47	14	4					4	

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Table 17

Number, Tonnage, and Distribution of Maritime Cargo Ships Constructed by Hungary, by Shipyard
1963

Class of Ship and Shipyard	Number of Ships	Tons			Cumulative Construction Through 1963	United States Distribution									
		LSD	DWT	GRT		Communist Countries			Other			Non-Communist Countries			
						USSR	Poland	East Germany	China	Number	Country	Number	Country		
<u>Keyle</u>															
Angelfoeld Shipyard	10	11,200	12,650	12,500	45	8							2	Norway	
<u>Hazen</u>															
Angelfoeld Shipyard	2	1,400	2,500	2,600	8					2	Hungary				
<u>Total cargo</u>	<u>12</u>	<u>12,600</u>	<u>15,150</u>	<u>15,100</u>	<u>53</u>	<u>8</u>				<u>2</u>			<u>2</u>		

Table 18
Summary of the Number, Tonnage, Value, and Distribution of Merchant Ships Constructed by Bulgaria a/
1963

Value in Terms of Million 1960 US \$

Type	Number	USD	Tons			Value	Distribution							
			DWT	GRT	Value		Communist Countries				Non-Communist Countries			
						USSR	Poland	East Germany	Communist China	Other				
						Number	Value	Number	Value	Number	Value	Number	Value	Country
<u>Maritime</u>														
Cargo	2	4,620	9,770	6,700	6.9					1	4.7	1	2.2	Bulgaria Czechoslovakia
Tanker	3	5,370	12,510	11,460	7.5	3	7.5							
Miscellaneous	2	1,280	330	1,800	2.6	2	2.6							
Total maritime	7	11,270	22,610	19,960	17.0	5	10.1			2	6.9			
<u>Inland</u>														
Self-propelled	12	(9,200 horsepower)			5.5	12	5.5							
Total merchant	19				22.5	17	15.6			2	6.9			

a. Excluding a few small minor ships.

Table 19

Number, Value, and Distribution of Maritime Cargo Ships, Tankers, and Miscellaneous Ships
Constructed by Bulgaria
1963

Value in Terms of Million 1960 US \$

Type and Class	Number	Value	Distribution						Number	Value	Country
			Communist Countries			Other					
			USSR	Poland	East Germany	Communist China	Other				
			Number	Value	Number	Value	Number	Value	Number	Value	
Cargo											
<u>Sofiya Varna</u>	1	4.7					1	4.7	1	Bulgaria	
	1	2.2					1	2.2	1	Czechoslovakia	
<u>Total cargo</u>	2	6.9					2	6.9			
Tanker											
<u>Oleg Koshevoy</u>	3	7.5									
Miscellaneous											
Passenger											
<u>Georgi Dimitrov</u>	2	2.6									
<u>Total maritime</u>	7	17.0	2	2.6	2	10.1	2	6.9			

Table 20

Number, Tonnage, and Distribution of Maritime Cargo Ships, Tankers, and Miscellaneous Ships
Constructed by Bulgaria, by Shipyard
1963

Class of Ship and Shipyard	Number of Ships	Tons			Cumulative Construction Through 1963	Units						
		LSD	DWT	GRT		Distribution						
						Communist Countries			Non-Communist Countries			
					USSR	Poland	East Germany	Communist China	Number	Country	Number	Country
Sofiya (New series for retention)												
Georgi Dimitrov, Varna	1	3,150	6,670	4,800	1				1	Bulgaria		
<u>Varna</u>												
Georgi Dimitrov, Varna	1	1,470	3,100	1,900	6				1	Czechoslovakia		
Total cargo	2	4,620	9,770	6,700	7				2			
Tanker												
<u>Oleg Koshevov</u>												
Georgi Dimitrov, Varna	2	5,370	12,510	11,460	14				2			
Miscellaneous												
Passenger												
<u>Georgi Dimitrov</u>												
Georgi Dimitrov, Varna	2	1,280	330	1,800	11				2			
Total maritime	7	11,270	22,610	19,960	32				2			

Table 21

Summary of the Number, Tonnage, Value, and Distribution of Merchant Ships Constructed by Rumania a/
1963

Type	Number	LSD	DWT	GRT	Value	Distribution											
						Communist Countries										Non-Communist Countries	
						USSR		Poland		East Germany		Communist China		Other		Country	Country
	Number	Value	Number	Value	Number	Value	Number	Value	Number	Value	Number	Value	Country	Country			
Maritime																	
Cargo	2	2,920	18,860	14,600	14.1	2	6.2						3	7.2	Rumania		
Inland																	
Self-propelled	18	(13,900 horsepower)			8.3	15	6.4						2	1.2	Rumania		
Total merchant	23				22.4	17	12.6						5	2.8			

a. Excluding a few small minor ships.

Table 22
Number, Value, and Distribution of Maritime Cargo Ships Constructed by Rumania
1963

Value in Terms of Million 1960 US \$

Type and Class Cargo	Number	Value	Distribution						
			Communist Countries			Non-Communist Countries			
			USSR	Poland	East Germany	Communist China	Other		
			Number	Value	Number	Value	Number	Value	Country
Galati	2	6.6					2	6.6	Rumania
Novyy Donbass	2	6.2	2	6.2					
Roman	1	1.3					1	1.3	Rumania
Total cargo	5	14.1	2	6.2			3	7.9	

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Table 23

Number, Tonnage, and Distribution of Maritime Cargo Ships Constructed by Rumania, by Shipyard
1963

Class of Ship and Shipyard	Number of Ships	Tons		Cumulative Construction Through 1963	Units							
		LSD	DWT		USSR	Communist Countries			Other		Non-Communist Countries	
						Poland	East Germany	China	Number	Country	Number	Country
Galati Shipyard	2	4,720	8,860	11					2	Rumania		
Galati Shipyard	2	4,400	8,400	2					2	Rumania		
Novyy Donbass (New series for the USSR)												
Galati Shipyard	2	4,400	8,400	2								
Roman (New series for retention)												
Turnu Severin Shipyard	1	800	1,600	1					1	Rumania		
Total cargo	5	9,920	18,860	14					3			

Table 25

Number, Value, and Distribution of Fishing Ships Constructed by Communist China
1963

Value in Terms of Million 1960 US \$

Type and Class	Number	Value	Distribution																	
			Communist Countries						Non-Communist Countries											
			USSR	Poland	East Germany	Communist China	Other	Country	Number	Value	Country	Number								
Whale catcher																				
<u>Yuen-Lung</u>	<u>1</u>	<u>1.5</u>					<u>1</u>	<u>1.5</u>												

Table 26

Number, Tonnage, and Distribution of Fishing Ships Constructed by Communist China, by Shipyard
1963

Class of Ship and Shipyard	Number of Ships	Tons			Cumulative Construction Through 1963	Distribution									
		LSD	DWT	GRT		Communist Countries			Other		Non-Communist Countries				
						USSR	Poland	East Germany	Communist China	Number	Country	Number	Country		
<u>Yuan-Lung</u> Whale catcher	1	240	310	840	1										
Chinhain Shipyard, Shanghai															

Table 27

Number, Tonnage, Value, and Distribution of Merchant Ships Constructed by Czechoslovakia a/
1963

Value in Terms of Million 1960 US \$

Type	Number	Tons			Distribution										
		ISD	DWT	GRT	Communist Countries					Non-Communist Countries					
					USSR	Poland	East Germany	Communist China	Other	Country	Number	Value	Country	Number	Value
Inland															
Self-propelled	20	(20,000 horse-power)		12.0	20	12.0									
Total merchant	20			12.0	20	12.0									

a. Excluding a few small minor ships.

Table 28
 Summary of the Number, Tonnage, and Distribution of Maritime Ships
 Constructed for the Communist Countries by Non-Communist Countries
 1963

Country, Type, and Class of Ship and Shipyard	Number of Ships	Tons			Cumulative Construction Through 1963	Units				
		LSD	DWT	GRT		Distribution				
						USSR	Poland	East Germany	Communist China	Other Country
Denmark										
Cargo										
<u>Kraszewski (End of program)</u>	2	12,000	24,000	19,000	2					2
<u>Odense Shipyard</u>										
<u>Beloretak (6 to be built for the USSR)</u>	2	13,980	28,300	21,300	4					2
<u>Naksov Shipyard</u>										
<u>Total cargo</u>	4	25,920	52,300	40,300	6					2
Fishing Refrigerator/factory										
<u>Skryplev (23 to be built for the USSR)</u>	2	6,880	5,120	2,400	4					2
<u>Burmeister and Wain, Copenhagen</u>										
<u>Total Denmark</u>	6	32,800	57,420	49,700	10					2
Finland										
Cargo										
<u>Krasnograd (18 to be built for the USSR)</u>	4	20,500	48,800	37,000	9					4
<u>Orichon-Vulcan, Turku</u>										
<u>Irkutskias (Possibly about 40 to be built for the USSR)</u>	9	22,140	32,400	26,100	22					9
<u>Various shipyards</u>										
<u>Total cargo</u>	13	42,640	81,200	63,100	31					13

Table 28
(Continued)

Country, Type, and Class of Ship and Shipyard	Number of Ships	LSD	Tons		Cumulative Construction Through 1963	Units				
			DWT	GRT		Distribution				
						USSR	Poland	East Germany	Communist China	Other
Italy										
Tanker										
Leonardo da Vinci (6 to be built for the USSR)										
Ansaldo, Genoa	1	12,000	47,240	31,292	1	1				
Japan										
Cargo										
Omak (8 to be built for the USSR)										
Hitachi, Osaka	2	11,400	24,100	22,200	5	2				
Kosice										
Hitachi, Osaka	1	11,900	25,000	15,500	1				1	Czechoslovakia
Total cargo	3	23,300	49,100	37,700	6	2			1	
Tanker										
Lozovaya (6 to be built at each shipyard for the USSR)										
Ishikawajima, Harima	2	16,000	70,000	46,200	2	2				
Mitsubishi, Hiroshima	1	8,000	35,000	23,100	1	1				
Total tanker	3	24,000	105,000	69,300	3	3				
Total Japan	6	47,300	154,100	107,000	2	2			1	
Total non-Communist	40	162,540	402,300	302,515	118	37			2	

Table 29

Number, Value, and Distribution of Maritime Cargo Ships, Tankers, and Miscellaneous Ships
Constructed for the Communist Countries by Non-Communist Countries
1963

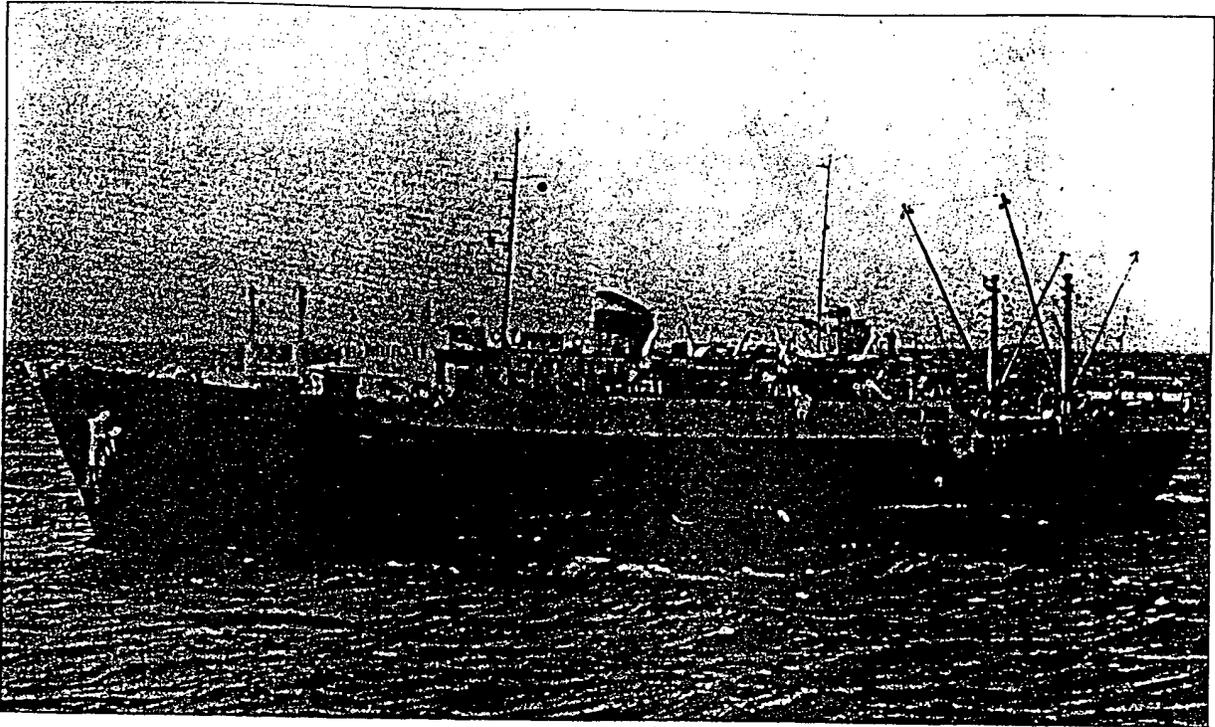
Country, Type, and Class	Number	Value	Distribution				
			USSR	Poland	East Germany	Communist China	Other Country
Communist Countries							
Denmark							
Cargo							
Kraszewski	2	14.4		14.4			
Beloretisk	2	16.8					
Fishing							
Skryplev	2	10.4			10.4		
Total Denmark	6	41.6		14.4	27.2		
Finland							
Cargo							
Krasnograd	4	30.0			30.0		
IRKUTAKLES	9	30.6			30.6		
Tanker							
Drogobitz	5	13.5			13.5		
Miscellaneous Cable layer							
Ingul	1	6.8			6.8		
Salvage tug							
Sterepushchik	2	5.2			5.2		
Barracks ship							
C-214	5	8.5			8.5		
Total Finland	26	94.6			94.6		

Value in Terms of Million 1960 US \$

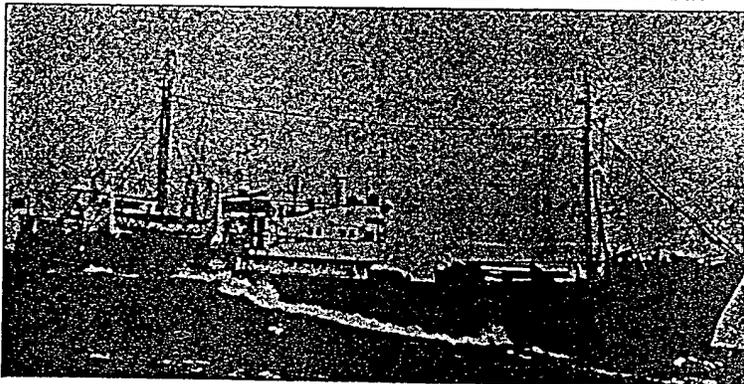
Table 29
(Continued)

Value in Terms of Million 1960 US \$

Country, Type, and Class	Number	Value	Distribution					
			USSR	Poland	East Germany	Communist China	Other Country	
West Germany								
Fishing								
Vladivostok	1	16.0	16.0					
Italy								
Tanker								
Leonardo da Vinci	1	12.0	12.0					
Japan								
Cargo								
Omsk	2	14.2	14.2				14.3	Czechoslovakia
Kosice	1	14.3						
Tanker								
Lozovaya	3	24.0	24.0					
Total Japan	6	52.5	38.2				14.3	
Total non-Communist	40	216.7	188.0	14.4			14.3	



Mayakovskiy-Class Factory Trawler Built at the Imeni Nosenko Shipyard, Nikolayev, and the Baltic Shipyard, Klaipeda, USSR.



Mayak-Class Medium Refrigerated Fishing Trawler, Built at the Leninskaya Kuznitsa Shipyard, Kiev, in Volgograd and Khabarovsk, USSR.

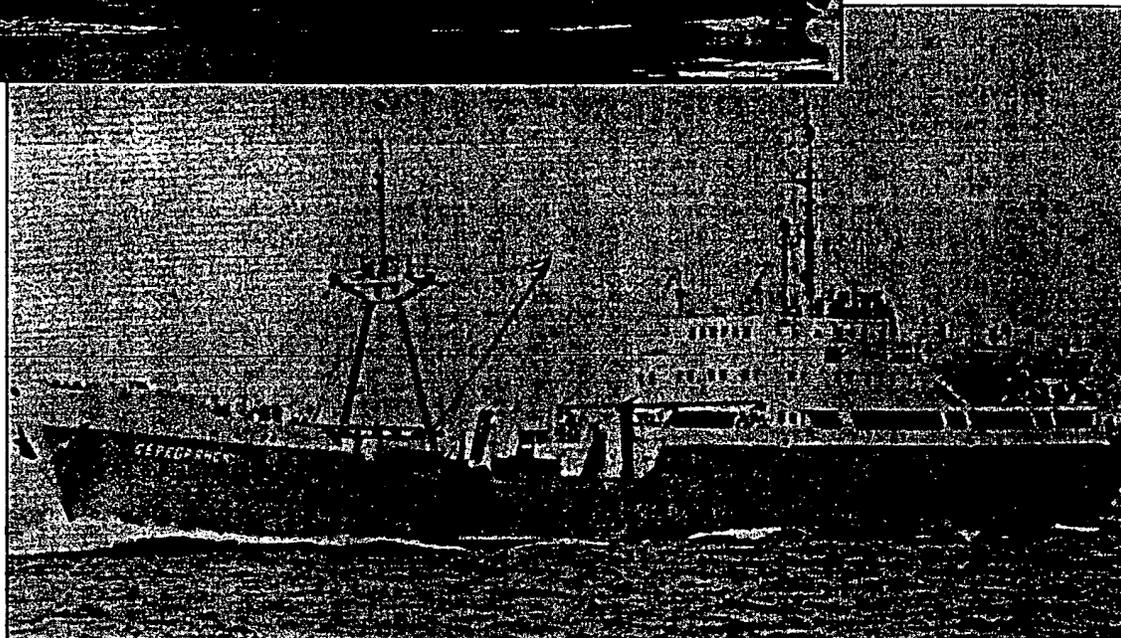
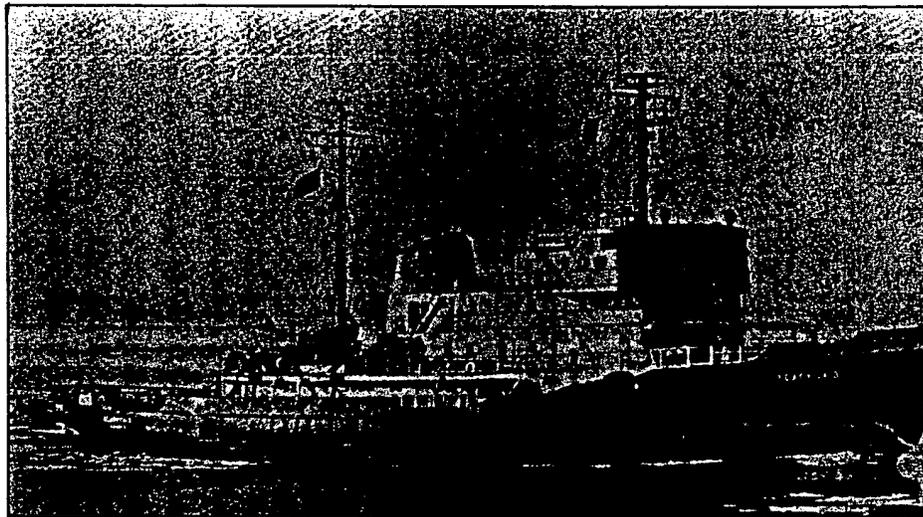
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Dobrynya Nikitich-Class Icebreaker Built at the Admiralteyskiy Shipyard, Leningrad, USSR.



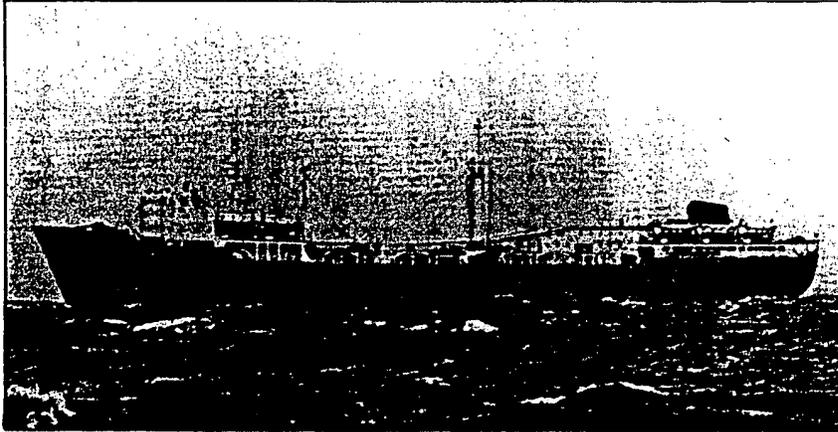
Tavrinya-Class Refrigerator Ship Built at the Oktyabr'skoye Shipyard a Few Miles South of Nikolayev, USSR.

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Andrey Zakharov-Class Crab Cannery Ship Built
at the Admiralteyskiy Shipyard, Leningrad, USSR.

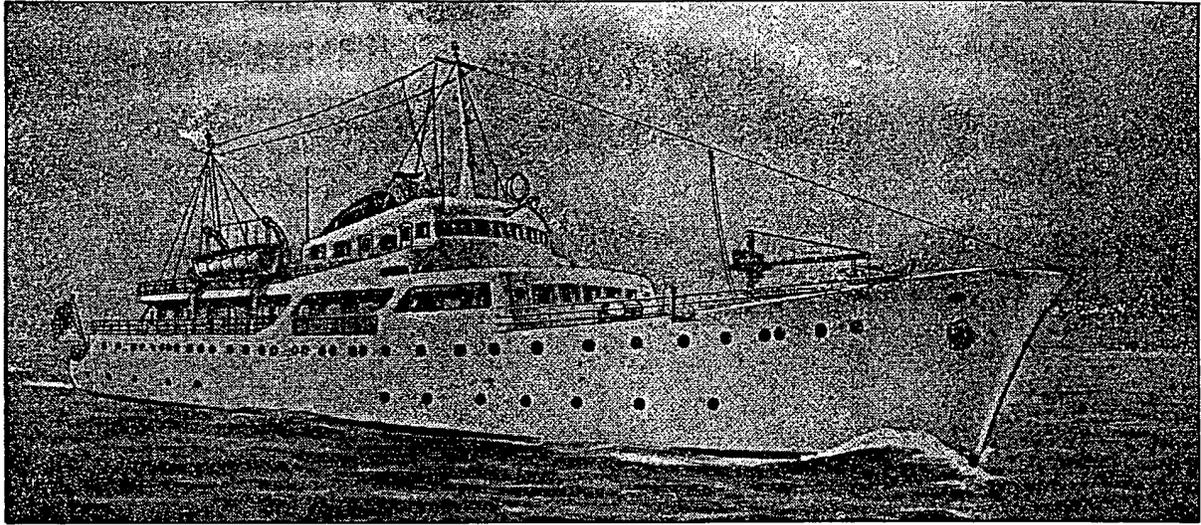


Pekin-Class Tanker Built at the Baltic Shipyard, Leningrad, USSR.

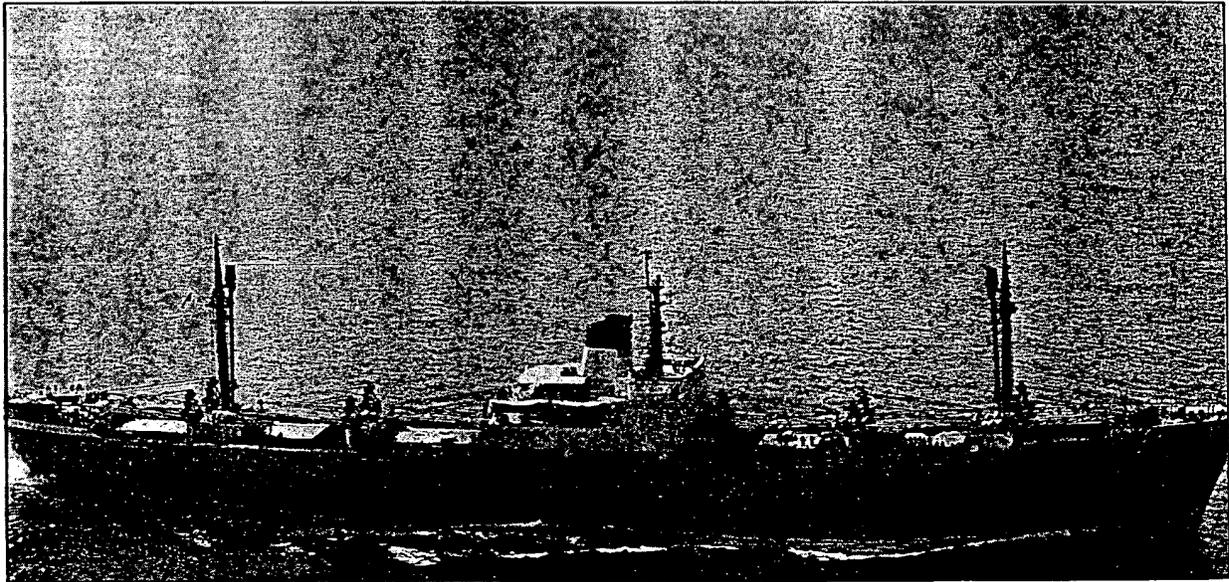
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Sulak-Class Passenger Ship Built at the Vano Sturua Shipyard, Baku, USSR.

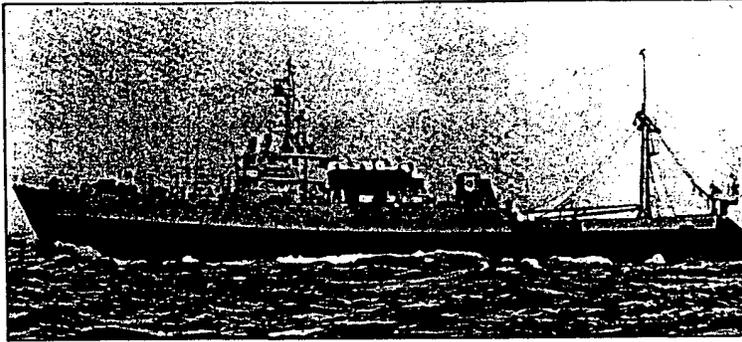


Leninskiy Komsomol-Class Cargo Ship Built at the Imeni Nosenko Shipyard, Nikolayev, and the Kherson Shipyard, Kherson, USSR.

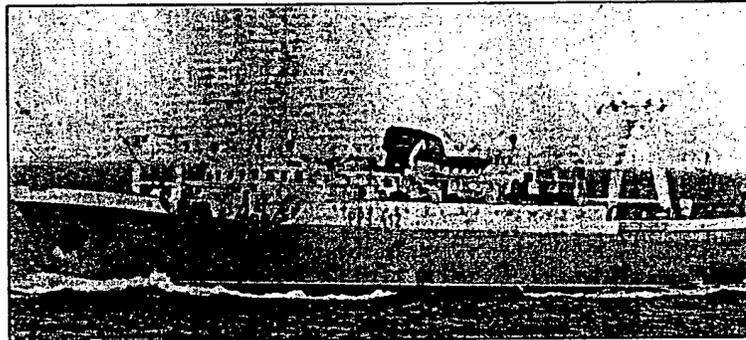
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Albacora (B-23)-Class Trawler Built at the Gdynia Shipyard, Poland.



Kosmos (B-26)-Class Factory Trawler Built at the Gdansk Shipyard, Poland.



Miedwie (B-20)-Class Trawler Built at the Gdynia Shipyard, Poland.

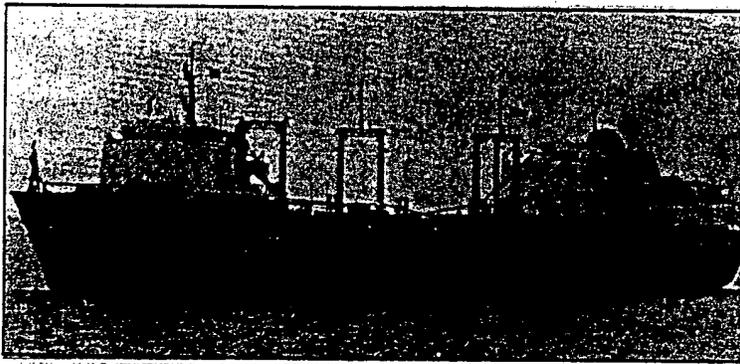
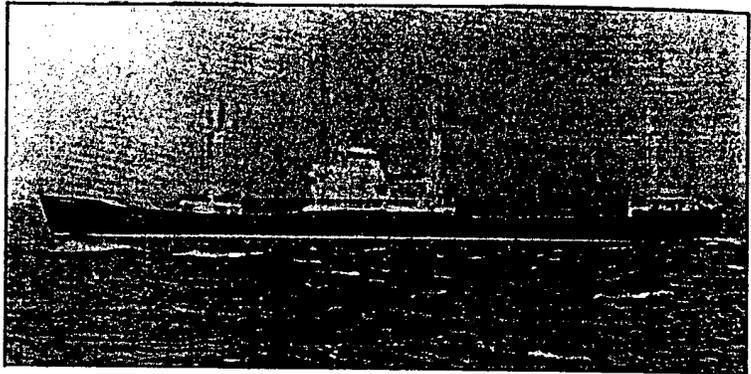
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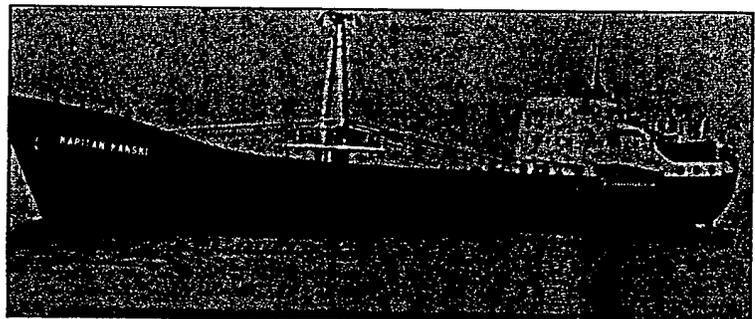
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Belomorskles (B-45)-Class Built at the Gdansk Shipyard, Poland.



Pionersk (B-64)-Class Factory-Base Ship Built at the Gdansk Shipyard, Poland.



Andrezej Borowy (B-458)-Class Built at the Gdynia Shipyard, Poland.

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Simferopol (B-43)-Class Built at the Gdansk Shipyard, Poland.



Bausk (B-70)-Class Built at the Gdansk Shipyard, Poland.

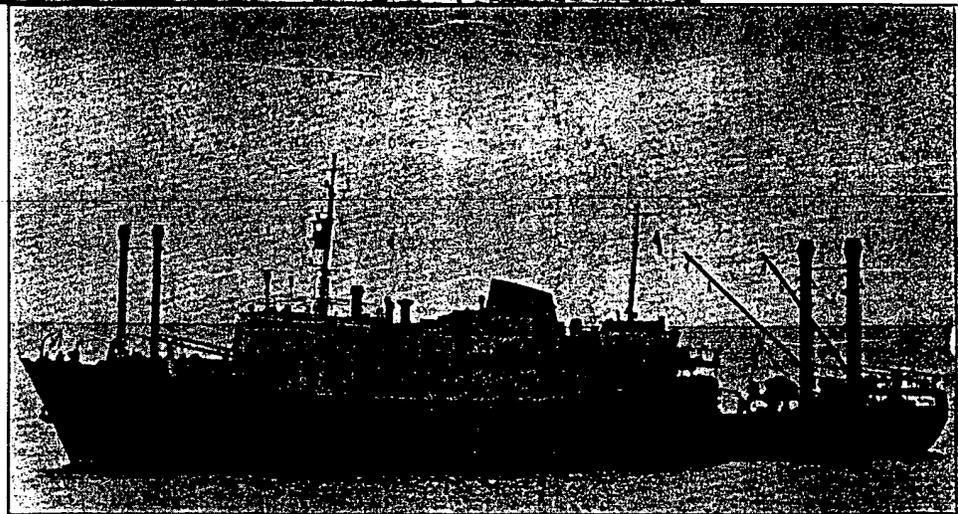
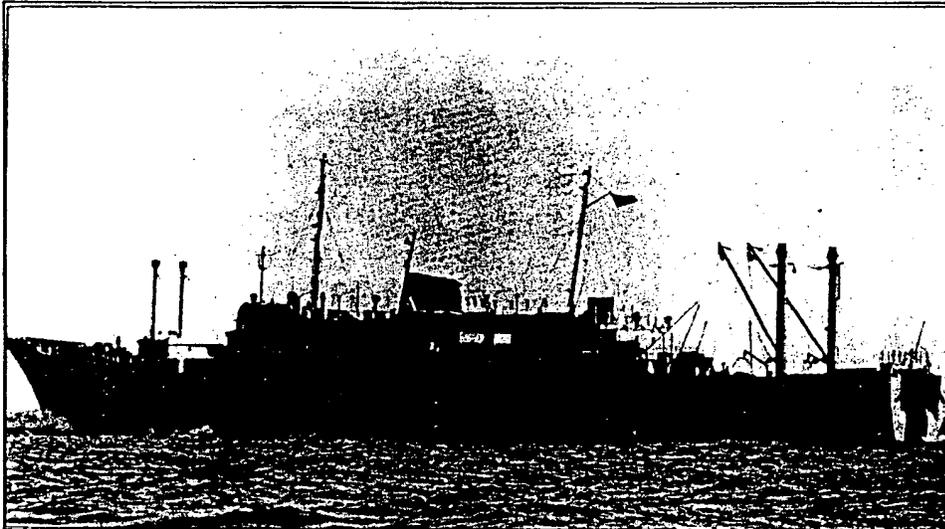


Grudziadz (B-49)-Class Cargo Ship Built at the Szczecin Shipyard, Poland.

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Bertholt Brecht-Class Factory Trawler Built at the Mathias Thesen Werft, Wismar, East Germany.



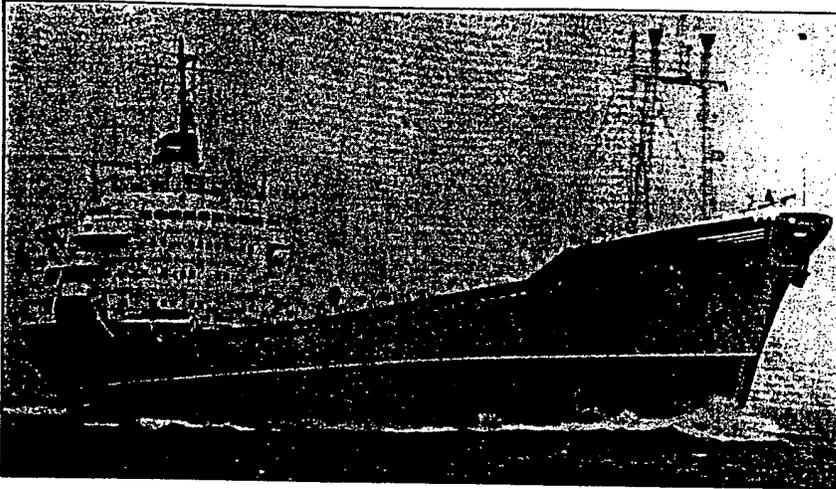
Tropik-Class Factory Trawler Built at the Volkswerft, Stralsund, East Germany.

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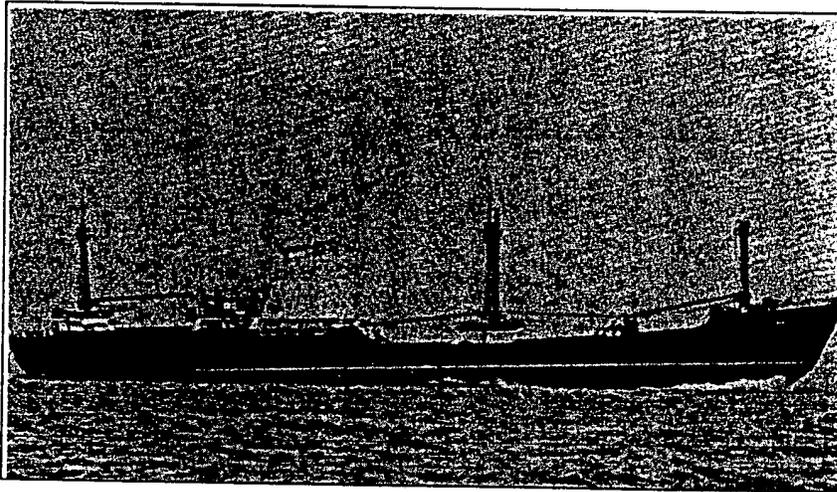
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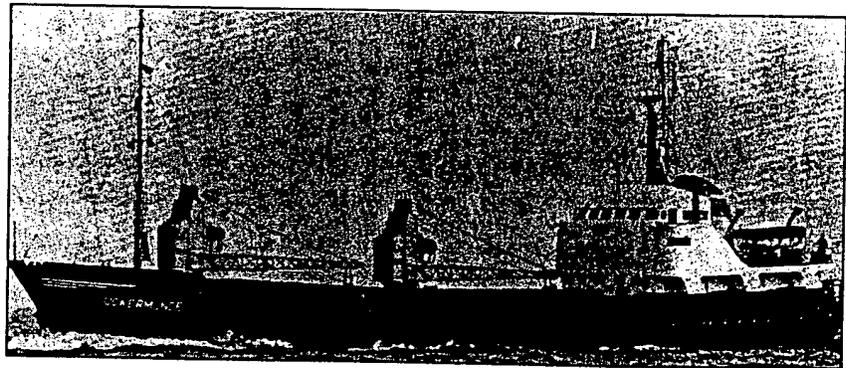
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Lubbenau-Class Cargo Ship Built at the Warnowerft, Warnemuende, East Germany.



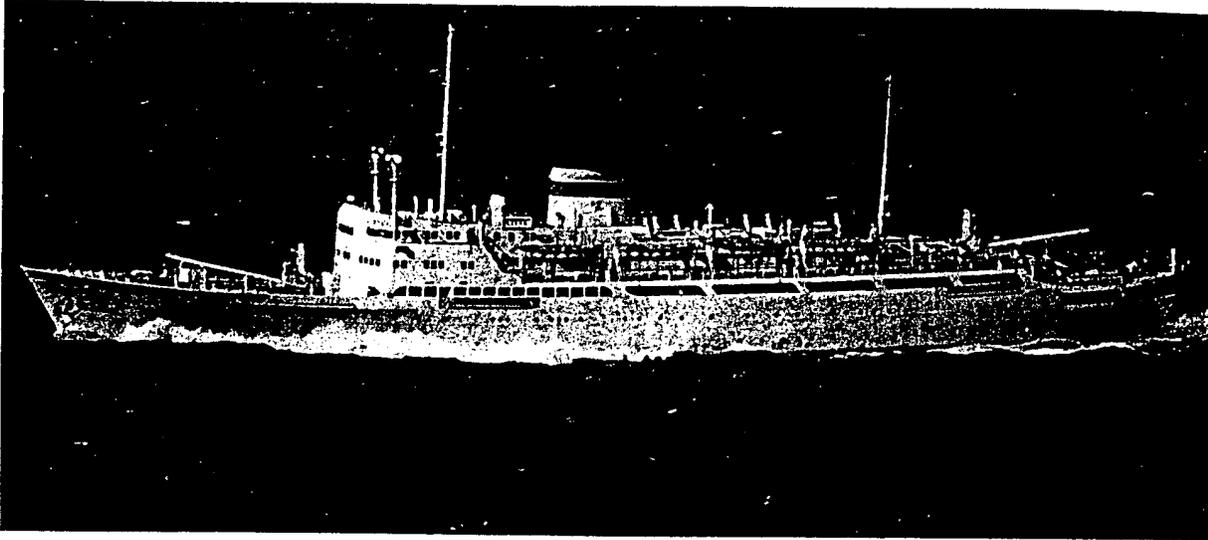
Povenets-Class Cargo Ship Built at the Neptunewerft, Rostock, East Germany.



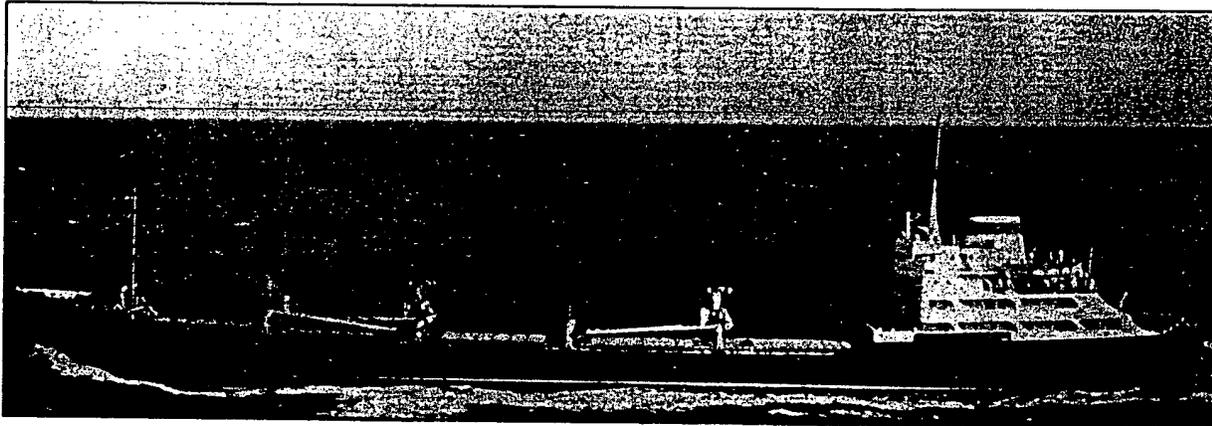
Star-Class Cargo Ship Built at the Peenewerft, Wolgast, East Germany.

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Mikhail Kalinin-Class Passenger Ship Built at the Mathias Thesen Werft , Wismar, East Germany.

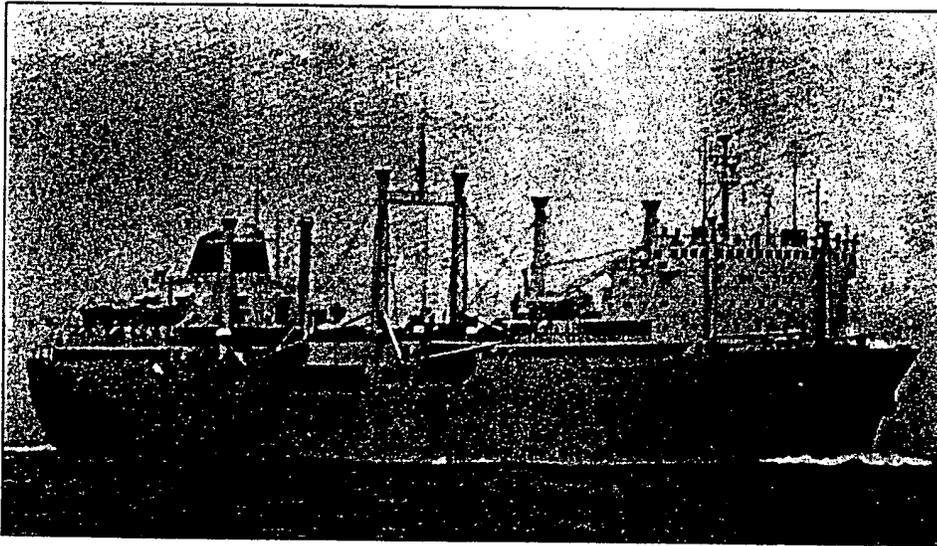


Dzhankoy-Class Coal/Ore Carrier Built at the Warnowerft , Warnemuende, East Germany.

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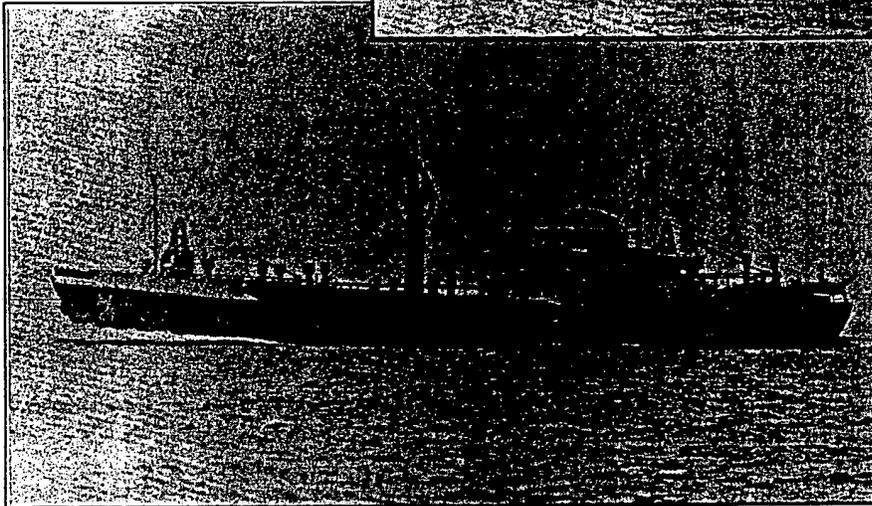
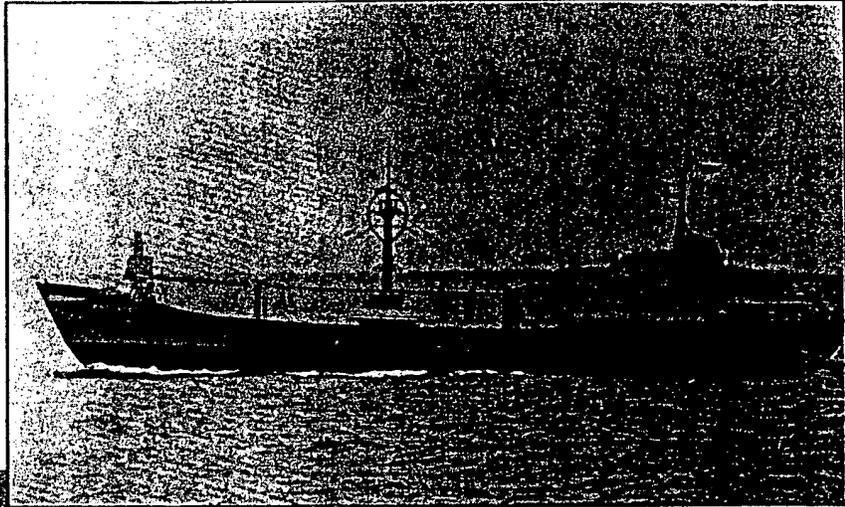
Vladivostok-Class Whaler/Factory Ship Built at the Howaldtswerke, Kiel, West Germany

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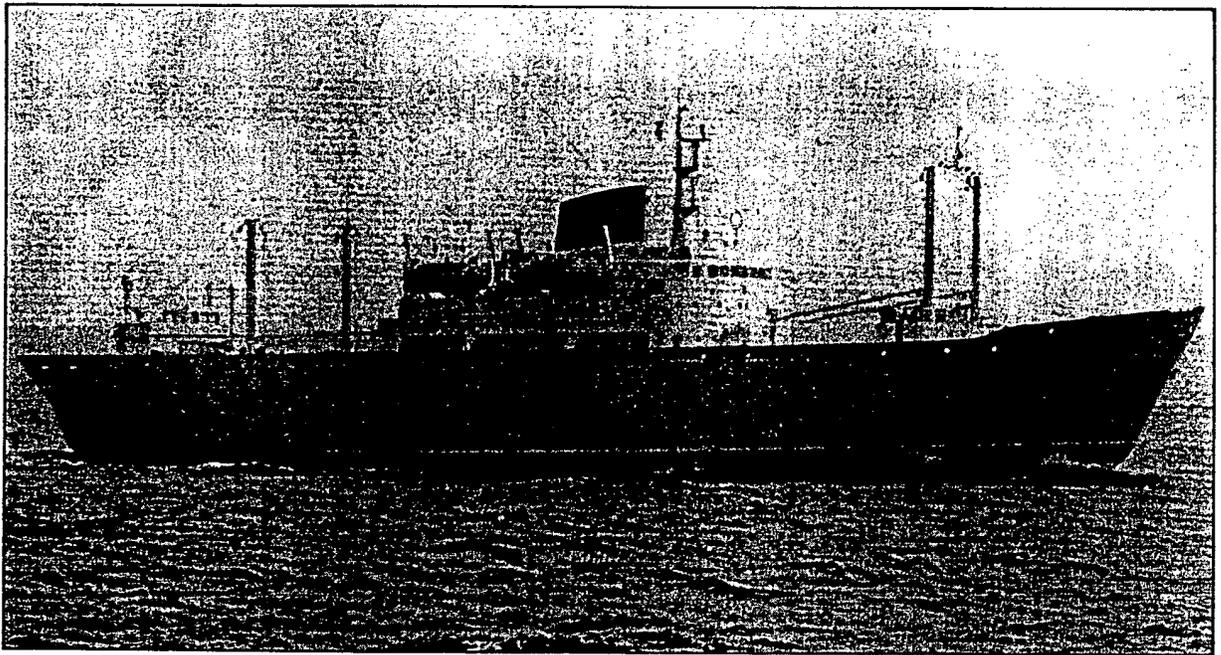


Irkutskles-Class Timber Carriers Built in Finland. Several shipyards are building this class of ship in two slightly different versions both of which are shown above.

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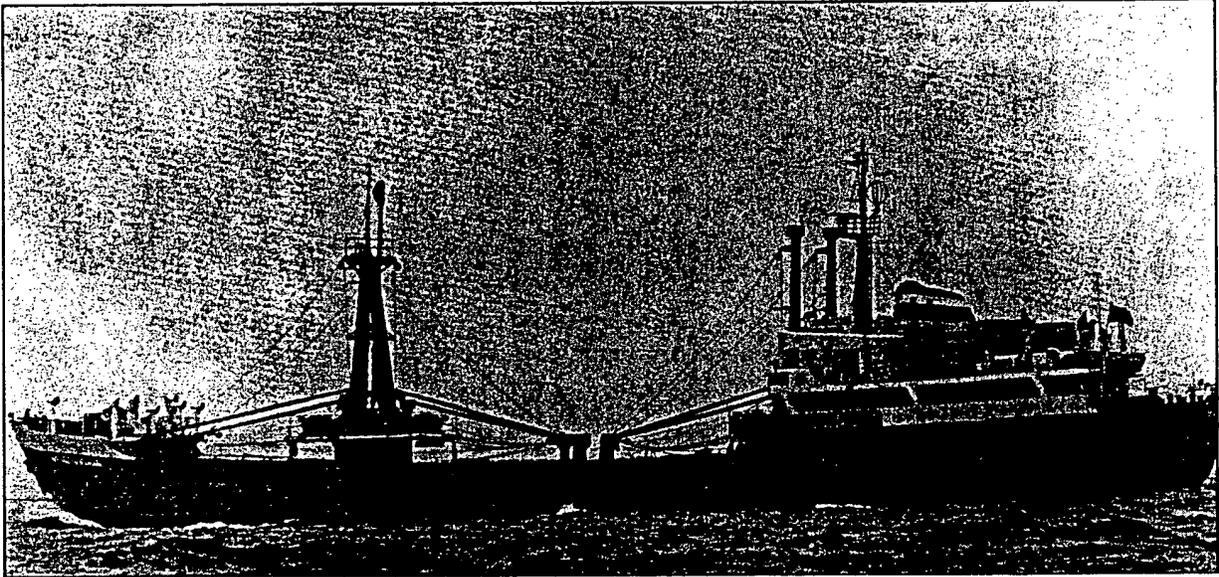
Skryplev-Class Refrigerator/Factory Ship Built at the Burmeister and Wain Shipyard, Copenhagen, Denmark.

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Keyla-Class Cargo Ship Built in Hungary.

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