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INTELLIGENCE RESEARCH AID

ESTIMATED NUMBER, VALUE, AND DISTRIBUTION  
OF MERCHANT SHIPS  
CONSTRUCTED BY AND FOR  
THE PRINCIPAL COMMUNIST COUNTRIES  
1964

DIRECTORATE OF INTELLIGENCE  
Office of Research and Reports

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Excluded from automatic  
downgrading and  
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FOREWORD

The data presented in CIA/RR A.MRA 64-1, Estimated Number, Value, and Distribution of Merchant Ships Constructed by and for the Sino-Soviet Bloc, 1963, August 1964, ~~SECRET~~, are revised and updated in this research aid. Emphasis is given to the production and value of major maritime ships for the USSR and to developments in merchant shipbuilding. A general forecast of production up to 1970 for the USSR by both Communist and non-Communist countries has been made.

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ESTIMATED NUMBER, VALUE, AND DISTRIBUTION OF MERCHANT SHIPS  
CONSTRUCTED BY AND FOR THE PRINCIPAL COMMUNIST COUNTRIES\*  
1964

Summary

The long-range objective of the USSR to increase its maritime power by building up its merchant fleets has created a large demand for new ships that has persisted at a relatively high level since 1959, and present indications suggest that this demand will continue at about the same level until at least 1970.

Merchant ships\*\* constructed or imported by Communist countries in 1964 are valued at about \$1,827 million,\*\*\* of which the USSR constructed or imported ships valued at \$1,516 million, or 83 percent of the total.

\* The estimates and conclusions in this research aid represent the best judgment of this Office as of 15 July 1965. The term Communist countries includes the USSR, Poland, East Germany, Hungary, 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 non-Communist country. Production of ships in the other Communist countries -- Albania, Mongolia, North Korea, North Vietnam, and Cuba -- is negligible. Because of rounding, components may not add to the totals shown.

\*\* 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 service on the Caspian Sea.

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

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

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

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The value of merchant ships constructed or imported by the principal Communist countries during 1959-64 is estimated as follows:

	Million 1960 US \$					
	<u>1959</u>	<u>1960</u>	<u>1961</u>	<u>1962</u>	<u>1963</u>	<u>1964</u>
Construction in Communist countries	1,128	1,188	1,038	1,135	1,193	1,401
Imports from non-Communist countries	110	135	142	221	216	425
Total	<u>1,238</u>	<u>1,323</u>	<u>1,180</u>	<u>1,356</u>	<u>1,410</u>	<u>1,827</u>

Compared with the previous year, the total value of construction and imports of merchant ships by the principal Communist countries in 1964 showed an increase of \$417 million, and this increase was distributed almost equally between construction and imports.

The following tabulations list the value of merchant ship construction by Communist countries and imports from non-Communist countries for 1964, together with comparative totals for 1959-63:

Construction by Communist Countries

	Million 1960 US \$					
	<u>Maritime</u>					
	<u>Cargo</u>	<u>Tanker</u>	<u>Miscellaneous</u>	<u>Fishing</u>	<u>Inland</u>	<u>Total</u>
USSR	113	67	42	367	185	774
Poland	189			70		259
East Germany	97		49	69	7	222
Communist China	17		3		14	34
Hungary	21				15	36
Bulgaria	7	15	3		9	33
Rumania	17				13	29
Czechoslovakia					14	14
Totals						
1964	460	82	96	506	256	1,401
1963	394	55	78	420	247	1,193
1962	364	50	95	387	239	1,135
1961	301	42	88	375	232	1,038
1960	351	68	107	409	253	1,188
1959	250	76	154	396	252	1,128

Imports by Communist Countries from Non-Communist Countries

Million 1960 US \$

	Maritime				Total
	Cargo	Tanker	Miscellaneous	Fishing	
USSR	113	118		164	395
Bulgaria	10				10
Rumania				9	9
North Korea				12	12
Totals					
1964*	123	118		185	425
1963	120	50	20	26	216
1962	124	55	16	26	221
1961	69	40	33		142
1960	99	22	7	7	135
1959	55	27	6	22	110

In terms of number, tonnage,\*\* and value, the USSR in 1964 constructed, imported, or exported cargo ships, tankers, and major fishing ships as follows:

\* For a complete breakdown of these figures, see Appendix A, Tables 1 through 23.

\*\* 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 items 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]

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	<u>Construction</u>			<u>Imports</u>			<u>Exports</u>		
	<u>Num- ber</u>	<u>Thou- sand Tons</u>	<u>Value (Mil- lion 1960 US \$)</u>	<u>Num- ber</u>	<u>Thou- sand Tons</u>	<u>Value (Mil- lion 1960 US \$)</u>	<u>Num- ber</u>	<u>Thou- sand Tons</u>	<u>Value (Mil- lion 1960 US \$)</u>
		(DWT)			(DWT)				
Cargo ships	21	184	113	56	426	293			
Tankers	7	244	67	22	481	132			
Total	<u>28</u>	<u>428</u>	<u>180</u>	<u>78</u>	<u>908</u>	<u>426</u>			
		(GRT)			(GRT)			(GRT)	
Major fishing ships	83	149	197	45	216	265	4	2.2 4	

The principal motivation of the USSR in the development of a large maritime fleet is the drive for a larger share of world trade,\* but not to be overlooked is the political advantage of carrying aid, both military and economic, in Soviet ships to countries in the Free World that may be swayed toward Communism. The USSR has been acquiring large-hatch\*\* cargo ships since 1961 and evidently has accepted them as the norm for new cargo ships to be added to its maritime fleet. Twenty-six such large-hatch ships were completed by or for the USSR during 1964. The USSR now has a total of 57 ships of this type, and it is estimated that about 150 will have been completed by the end of 1970. These ships may be used for the secure transport of large items of military equipment below decks, as was demonstrated when the USSR transported missiles to Cuba in 1962.

The total construction by Communist countries and imports from non-Communist countries of maritime cargo ships and tankers is valued at \$783 million, of which the USSR acquired \$605 million, or 77 percent. Of the total number of maritime ships acquired, the USSR imported 70 percent and produced 30 percent in its own shipyards. Of the 56 cargo ships (426,000 DWT) imported by the USSR, 37 ships (252,000 DWT) valued at \$180 million were produced by other Communist countries, whereas 19 ships (175,000 DWT) valued at \$113 million were produced by non-Communist countries. Of the 22 tankers (481,000 DWT) imported by the USSR, 6 tankers 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 forecandle, 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.

\* In 1964, Soviet seaborne foreign trade made up an estimated 7.1 percent of the world total. In 1970, this figure is expected to reach 11 percent.  
\*\* A hatch of more than 50 feet in length is considered large.

(25,000 DWT) valued at \$15 million were produced by other Communist countries, whereas 16 tankers (456,000 DWT) valued at \$118 million were produced by non-Communist countries.

In contrast to maritime ships, of which the USSR imported 70 percent and constructed 30 percent, there was a more even distribution between production and imports of major fishing ships. The USSR imported 59 percent (45 ships -- 216,000 GRT) and constructed 41 percent (83 ships -- 149,000 GRT) of the total. Of the 59 percent imported, 35 percent (18 ships -- 129,000 GRT) valued at \$164 million came from non-Communist countries, and 24 percent (27 ships -- 87,000 GRT) valued at \$101 million came from other Communist countries. Soviet construction of major fishing ships is valued at \$197 million; thus the total value of construction and import of 128 major fishing ships by the USSR in 1964 amounts to \$461 million. In recapitulation, the USSR in 1964 built and imported 106 cargo ship and tankers totaling more than 1.3 million DWT and valued at \$605 million and 128 major fishing ships of about 365,000 GRT valued at \$461 million. The total aggregate value of Soviet construction and import of cargo ships, tankers, and major fishing ships in 1964 exceeded \$1 billion.

The average size of cargo ship acquired by the USSR in 1964 was approximately 7,925 DWT, an increase in average size of about 750 DWT compared with the average size in 1963. Tankers obtained by the USSR had an average size of about 25,000 DWT in 1964 which is an increase of about 4,300 DWT above that of 1963.

Future major shipbuilding activity by and for the USSR probably will continue at about the same general level as during 1959-65; for example, for the years 1966-70, it is estimated that production of new merchant ships by and for the USSR will exceed 1 million DWT per year.

In 1964, Communist China began negotiations to procure new ships from non-Communist countries. Contracts for five ships totaling 75,000 DWT may have been placed, and there may be other contracts for which no details are available. Communist China in 1964 built only four cargo ships, totaling about 31,000 DWT and valued at \$17 million. The total value of merchant ships constructed in Communist China in 1964 was \$34 million.

The Soviet Bloc\* and Communist China completed 10 percent, or about 1.1 million tons, of the total estimated GRT produced by the leading shipbuilding nations of the world during 1964. Individually, the USSR ranks as the world's fifth leading producer of ships, and Poland and East Germany rank tenth and fourteenth, respectively.

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\* The term Soviet Bloc, as used in this research aid, includes the USSR and the Eastern European Communist countries (Bulgaria, Czechoslovakia, East Germany, Hungary, Poland, and Rumania).

I. Introduction

The buildup of the shipbuilding industry for the production of merchant ships in the Soviet Bloc dates from shortly after World War II. Because the Eastern European Communist countries did not develop a program of any significance for producing naval ships, almost the total shipbuilding effort since that time has been devoted to the construction of merchant ships. Although the major part of the industrial development in the Eastern European Communist countries had been achieved by the mid-1950's, some countries, notably Poland, continued to improve and expand their shipbuilding capacity. At present, Rumania and Bulgaria are creating the facilities necessary to begin construction of the larger type of oceangoing ship.

Communist China's shipbuilding industry was expanded during 1954-60, and production of most naval ships and some merchant ships was accomplished with Soviet aid. The withdrawal of Soviet aid in 1960 and the general economic disruption in 1961-62 resulted in almost complete cessation of production. Some recovery was noted in 1964. Communist China is believed to be developing a balanced shipbuilding industry that, without foreign aid, eventually will be capable of designing and constructing both naval and merchant ships.

The shipbuilding industry of the USSR was rebuilt after 1945 on a permanent basis, and considerable effort has continually been made to improve this base. The ambitious program undertaken until about 1958 for producing naval ships essentially precluded major production of merchant ships until between 1955 and 1957.

During this period a shift in Soviet naval doctrine caused much of the program for naval construction to be terminated and released some resources and facilities for major construction of merchant ships. A determined effort was then made in the USSR to build up its merchant fleets and in particular its maritime and fishing fleets. Much of the production of the Eastern European Communist countries has been imported by the USSR, and contracts for the production of maritime ships with non-Communist countries have increased.

The value of merchant ships produced annually in the USSR and in the Eastern European Communist countries has held fairly steady since 1959, with a slight increase in 1964. On the other hand, the value of merchant ships completed by non-Communist countries for the principal Communist countries has increased nearly three times above that of 1959, with about half of the increase occurring in 1964. Practically all of this production was for the USSR.

II. Highlights of New Construction in 1964

A. Communist Countries\*

1. USSR

In 1964, the USSR built about 428,100 DWT (295,000 GRT) of cargo ships and tankers, about 29,200 GRT of miscellaneous maritime ships, and about 264,500 GRT of fishing ships. The total value of Soviet construction of seagoing ships of all types amounted to about \$588 million; the construction of inland ships in the USSR is valued at an additional \$185 million. The aggregate total of about three-fourths of a billion dollars for merchant shipbuilding in the USSR in 1964 is about \$78 million more than in 1963, which at that time represented an historical high water mark for merchant shipbuilding. As in 1963, less than 1 percent of Soviet construction was exported, and again as in 1963, all exports were to Ghana in the form of four fishing ships valued at \$3.6 million.

During 1964 the USSR constructed no new class of cargo ship but did complete 21 cargo ships as follows:

<u>Number</u>	<u>Class</u>	<u>Tonnage (DWT per Ship)</u>	<u>Cumulative Construction Through 1964</u>
4	<u>Leninskiy Komsomol</u>	16,040	24
4	<u>Perekop (large hatch)**</u>	12,690	7
5	<u>Vytegrales</u>	6,100	8
1	<u>Pavlin Vinogradov</u>	5,740	5
6	<u>Maloyaroslavets</u>	4,000	8
1	<u>Anguema</u>	8,700	3

A modified version of the Leninskiy Komsomol class, one with gas turbine propulsion, was under construction during 1964 and will be completed in 1965. This is the first instance in which a gas turbine\*\*\* propulsion system has been produced in the USSR for a maritime ship, but the trend in recent years has been to employ gas turbine propulsion in some new classes of Soviet naval ships. Reportedly, Sofiya-class tankers also will be built with gas turbine propulsion. Some advantages of gas turbines are their small size and comparatively light weight and the capability to use cheaper low-grade fuels.

\* For complete data on shipbuilding in the Communist countries, see Tables 2 through 22, Appendix A.

\*\* A hatch of more than 50 feet in length is considered large.

\*\*\* Designated GTU 20, consisting of two units of 6,500 horsepower each.

During 1964 the USSR completed seven tankers -- five of the Sofiya class and two of the Baskunchak class -- with total tonnage of about 244,200 DWT (152,200 GRT) and valued at about \$67 million. This figure represents the most tanker tonnage ever produced by the USSR in a given year. The previous high was about 150,000 DWT in 1956, at the height of construction of the Kazbek class. The Sofiya-class tanker, 48,220 DWT, under construction since 1963, is the largest tanker ever built in the USSR, and the Baskunchak-class tanker, 1,575 DWT, is a small tanker that made its first appearance in 1964. Cumulatively, seven of the former and two of the latter class have been produced.

Construction of major fishing ships reached its peak in 1964 with the completion of 83 ships totaling about 149,000 GRT and valued at about \$197 million. Eight major classes of fishing ships were produced as follows:

<u>Num- ber</u>	<u>Class</u>	<u>Type</u>	<u>Tonnage (GRT per Ship)</u>	<u>Cumulative Construction Through 1964</u>
2	<u>Andrey Zakharov</u>	(crab cannery ship)	10,700	8
1	<u>Yantarnyy</u>	(new class refriger- ator ship)	5,520	1
1	<u>Sibir</u>	(refrigerator ship)	3,025	5
4	<u>Tavriya</u>	(refrigerator ship)	3,230	21
3	<u>Zelenodolsk</u>	(new class refriger- ator ship)	690	3
22	<u>Mayakovskiy</u>	(fish factory traw- ler)	3,170	100
35	<u>Mayak</u>	(trawler)	550	51
14	<u>Mirnyy</u>	(whale catcher)	840	100

These classes of fishing ships reflect a Soviet program to improve the efficiency of the fishing fleet, to increase the fish catch, to process the catch rapidly, and, to get it to the consumer as quickly as possible. The Mayakovskiy class, of which 100 have now been built, has been under construction since 1958 and is considered to be the backbone of a large fleet of fish factory trawlers that the USSR is continually increasing. The USSR also imports similar types of trawlers from Poland and East Germany. A modified Mayakovskiy-type ship for oceanographic research, Akademik Knipovich, 3,300 GRT, was completed during 1964.

This new research ship is the first of five to be built, and its main task reportedly will be to search for new fishing grounds, to develop new fishing methods, and to conduct "complex ocean research." It is possible that the construction program for the Mirnyy class ended in 1964.

## 2. Poland

The rate of construction of ships in Poland has increased consistently since 1949. The value of ships produced in 1964, \$259 million, is about 19 percent more than in 1963 and consisted of about 274,700 DWT (203,100 GRT) of cargo ships and about 49,500 GRT of fishing ships.

About 66 percent (\$171 million) of the total value of Polish merchant shipbuilding was exported, mostly to the USSR. The production of ships for the USSR is as follows:

<u>Class</u>	<u>Tonnage per Ship</u>	<u>Number Exported to the USSR in 1964</u>	<u>Cumulative Total Exported to the USSR</u>
<u>Murom (B-44)*</u>	12,450 DWT	6	7
<u>Belomorskles (B-45)</u>	5,950 DWT	13	28
<u>Kosmos (B-26)</u>	2,670 GRT	3	9
<u>Pionersk (B-64)</u>	9,250 GRT	3	4

Other Polish exports during the year were as follows: one Marceli Nowotko (B-54) class to Indonesia, and one Kolejarz (B-512) class to Czechoslovakia. The Marceli Nowotko (B-54) is a cargo ship of 11,360 DWT, and the Kolejarz (B-512) is 12,500 DWT. The program for producing 41 ships of the Nowotko class is now completed, but to date only 5 ships of the Kolejarz class have been completed.

The lead hulls of two new classes of ships were completed in Poland in 1964 -- the Boginka (B-476), 660 DWT, a small cargo ship for retention, and the Flandre Bretagne (B-27), 410 GRT, a small trawler for export to France. In addition, the keels were laid for two new classes of cargo ship, the B-40 of 12,500 DWT for export to the USSR and the Krakow (B-455) of 6,000 DWT for retention.

## 3. East Germany

East Germany has shown a steady increase in the value of ships produced since 1961, and the value of production in 1964 of maritime and fishing ships, about \$215 million, is 30 percent greater than in 1963.

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

In 1964, East Germany completed about 140,600 DWT (108,800 GRT) of cargo ships valued at about \$97 million, about 35,500 GRT of miscellaneous maritime ships valued at about \$49 million, and about 63,100 GRT of fishing ships valued at approximately \$69 million.

About 73 percent of the total value of merchant shipbuilding (excluding inland) in 1964, \$158 million, was exported to the USSR. The following major classes accounted for most of the exports to the USSR:

<u>Class</u>	<u>Tonnage per Ship</u>	<u>Number Exported to the USSR in 1964</u>	<u>Cumulative Total Exported to the USSR</u>
<u>Vyborg</u>	12,375 DWT	4	5
<u>Povenets</u>	4,200 DWT	9	17
<u>Ivan Franko (new class)</u>	13,000 GRT	1	1
<u>Mikhail Kalinin</u>	4,870 GRT	1	19
<u>Mikhail Lomonosov</u>	4,400 GRT	2	4
<u>Tropik</u>	2,435 GRT	21	43

One Vyborg-class ship was delivered to Norway in 1964 -- this ship is the first large cargo ship to be built in East Germany and to be exported to a non-Communist country. Reportedly, a contract has been negotiated that calls for delivery of four ships of this class to Great Britain.

East Germany in 1964 delivered the last of a series of 19 Mikhail Kalinin-class passenger ships under a construction program that had begun in 1958. These ships operate on Baltic lines, Far Eastern lines, and probably the Barents Sea area, and carry about 340 passengers. A new passenger ship, Ivan Franko, completed in 1964, is the first hull of a group of three ships that will be delivered to the USSR. The Ivan Franko is the largest passenger ship ever built in East Germany (about 577 feet long, 77-foot beam, about 21,000 horsepower and a speed of 20 knots) and can carry about 750 passengers. One of these ships will operate on the newly organized Leningrad-Montreal passenger line, and the other two ships probably will operate between ports on the Black Sea.

Of the 21 Tropik-class fish factory trawlers completed by East Germany for the USSR, possibly three were sold immediately by the USSR to Bulgaria. East Germany completed an additional hull of this class, the Stubnitz, as a refrigerator ship, the first of a series of refrigerator ships for the East German fishing fleet.

In 1964, preparations were begun at a shipyard in East Germany for construction of a large fish factory ship, which is scheduled for completion in 1966 and is a step forward in modernizing the East German fishing fleet. Also, late in 1964, the keel was laid for the

first in a series of 21 trawlers that are to operate with the large fish factory ship. The tentative production schedule for the trawlers is 3 in 1965, 13 in 1966, and 5 in 1967.

Two research ships of the Mikhail Lomonosov class were completed in 1964 for the USSR. A total of four ships of this type have been built, and one more is expected to be constructed.

#### 4. Communist China

Communist China in 1964 completed five maritime ships of about 32,400 DWT (26,700 GRT) valued at about \$20 million, of which \$17 million was represented by four cargo ships and \$3 million by one passenger ship. No tankers or fishing ships were completed during the year.

Most important of the new ships completed in 1964 is the cargo ship Hung Chi, the second ship of the Leap Forward (Yueh Chin) class, 16,000 DWT, built at the Dairen Shipyard. This ship corresponds to the Soviet Leninskiy Komsomol type and is the largest and fastest ship in the Chinese Communist maritime fleet. The first ship of this class to be built in Communist China was the Leap Forward, which was lost in the China Sea.

Two hulls of the Ho Ping 25 class, 5,940 DWT, were completed in 1964, one each at the Dairen and the Chiangnan Shipyards. A total of nine ships of the class have now been completed. One hull of another, but smaller, class of coastal cargo ship, the Ho Ping 49, 3,400 DWT, was completed during 1964. This ship was first noted as being under construction in 1960, and a total of six ships of this class have been completed since the program began.

One miscellaneous maritime ship, a passenger ship of the Min Chu 14 class, 2,500 GRT, completed the production of maritime ships in Communist China during 1964, none of which was exported.

#### 5. Hungary, Bulgaria, and Rumania

The value of production of merchant ships in 1964 was above that of 1963 in Hungary, Bulgaria, and Rumania.

Hungary has been building small cargo ships at about the same rate since the early 1950's, and most of them have been exported to the USSR.

For the past several years, Bulgaria has produced passenger ships and tankers for the USSR. The tankers are small and are used mainly on the Caspian Sea. Bulgaria also built small cargo ships, and preparations are now underway to create the facilities necessary for construction of larger oceangoing ships.

Rumania also builds smaller cargo ships and only recently (1963) began to build them for the USSR. Rumania, like Bulgaria, is now establishing the required facilities for constructing larger oceangoing ships.

In 1964, Hungary built small cargo ships of the Keyla class, 1,265 DWT, and the Hazam class, 1,250 DWT, completing 11 of the former and 2 of the latter class for a total maritime production of about 16,400 DWT (16,400 GRT) valued at about \$21 million. Of this production, four ships of the Keyla class valued at \$6.8 million were exported to Norway and four to Indonesia. Three ships of this class valued at \$5.1 million were exported to the USSR. Hungary retained two ships of the Hazam class valued at \$2.4 million. A total of 56 Keyla-class and 10 Hazam-class ships have now been completed.

Bulgaria during 1964 completed 10 maritime ships -- 6 tankers, 2 cargo ships, and 2 passenger ships for a total of about 35,100 DWT (31,400 GRT) valued at about \$24 million. The tankers and passenger ships, valued at about \$17.6 million, were exported to the USSR, but Bulgaria retained two cargo ships, valued at about \$6.9 million, one of the Sofiya class, 6,670 DWT, and one of the Varna class, 3,100 DWT. The tankers exported to the USSR are of the Oleg Koshevoy class, 4,170 DWT, of which a total of 20 have now been completed, and the passenger ships are of the Georgi Dimitrov class, 900 GRT, of which a total of 13 have now been built. Regarding cargo ships, two Sofiya and seven Varna class have now been completed.

Rumania in 1964 completed seven maritime cargo ships totaling about 22,100 DWT (17,200 GRT) valued at about \$16.7 million, of which two ships of the Novyy Donbass class, 4,200 DWT, valued at \$6.2 million were exported to the USSR, and five ships of two smaller classes valued at about \$10.5 million, were retained. A total of four Novyy Donbass-class ships have now been completed.

B. Non-Communist Countries\*

The volume of ship production in terms of value by non-Communist countries for the Soviet Bloc has generally been increasing since 1959; the value of production in 1963 doubled that of 1959, and the value of production in 1964 doubled that of 1963. In addition to standard cargo ships and tankers, the USSR appears to desire ships built in the West (generally to Soviet end-use specifications) for the fishing fleet and equipped with trawling, refrigerating, or fish processing machinery.

1. Denmark

Denmark has been a small but almost continuous supplier of new ships, mostly refrigerator ships, to the USSR. With the completion

\* For complete data on shipbuilding in non-Communist countries, see Table 23, Appendix A.

in 1964 of two large-hatch ships of the Beloretsk class, 14,150 DWT, valued at a total of \$16.8 million, Denmark completed the contract calling for six of these ships to be completed for the USSR. Denmark also completed two refrigerator/factory ships of the Skryplev class, 4,700 GRT, valued at a total of \$10.4 million. Of 23 ships of this class authorized for the Soviet fishing fleet, 6 have now been completed. The two Skryplev-class ships completed in 1964 differ from the first four hulls completed previously in that, in addition to their refrigerator/factory functions, they can perform trawling operations.

## 2. Finland

Finland, traditionally the largest Western supplier of ships to the USSR (in terms of value of construction), was relegated to third place in 1964, being displaced by Japan and Sweden.

Thirteen cargo ships, 6 Krasnograd class of 12,200 DWT and equipped with large hatches, and 7 Irkutskles class, each 3,600 DWT, with a total value for the 13 of \$68.8 million, were delivered to the USSR, as were 5 Drogobich-class tankers, 4,480 DWT, valued at a total of \$13.5 million, for a total of 18 ships valued at about \$82 million. Under a contract calling for 18 Krasnograd ships to be produced, 15 have now been completed.

## 3. West Germany

While the Howaldtswerke, Kiel, a government-owned shipyard, has been the major West German builder of ships for the USSR, in 1964 the Nordseewerke, Emden, built six refrigerator ships of the Veter class, 4,700 GRT, with a total value of \$42.6 million, for the Soviet fishing fleet. The six ships complete a contract. These refrigerator ships reportedly have a speed of "more than 20 knots" and probably are the fastest ships in the fishing fleet.

## 4. Italy

Italy has shown little consistency as a supplier of new ships to the USSR. Rather, contracts seem to be entered into when Italy is building ships of a type that currently are of interest to the USSR. In 1964, Italy delivered four Leonardo da Vinci-class tankers, 47,240 DWT, with a total value of \$48 million, to the USSR. Five ships of this class have now been delivered to the USSR on a contract that calls for six ships.

## 5. Japan

The low cost of ship construction in Japan and its expanding search for markets undoubtedly have contributed to the marked increase in recent years in production of ships for the USSR. In 1964, in addition to its deliveries to the USSR, Japan for the first time built ships for Bulgaria and Rumania.

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The total value of Japanese shipbuilding for the nations of the Soviet Bloc, \$114 million in 1964, is the largest amount supplied by a non-Communist country to the Soviet Bloc and is 27 percent of the entire value of merchant shipbuilding for the Bloc by the non-Communist countries.

Japan completed three Omsk-class large-hatch ships of 12,050 DWT valued at a total of \$21.3 million for the USSR and two ore carriers of the Sredna Gora class of 8,860 DWT with a total value of \$10.2 million for Bulgaria. Also completed by Japan were seven tankers of the Lozovaya class, 35,000 DWT and valued at \$56 million, and three Leninskiy Luch-class tuna factory ships, 5,100 GRT, valued at \$17.7 million for the USSR, and two Constanta-class fish factory trawlers, 3,600 GRT, valued at \$8.8 million for Rumania.

#### 6. The Netherlands

In 1964, the Netherlands delivered the first new ship to a Communist country since 1961. This contract for the construction of a single refrigerator ship named Top Van Witte Berg, 7,200 GRT, was completed for North Korea and is valued at \$11.8 million.

#### 7. Sweden

Traditionally, Sweden's production of ships for the Soviet Bloc has been somewhat erratic. As in the case of some other countries that have built ships for the Bloc, contracts with Sweden seem to be made on a sporadic rather than on a continuing basis. During 1964, Sweden completed seven refrigerator ships of the Priboy class, 10,870 GRT, with a total value of \$93.1 million and, in terms of value, ranked second among non-Communist countries in production of merchant ships for the Bloc.

#### 8. Yugoslavia

In 1962, Yugoslavia for the first time entered into a contract to build ships for the USSR -- 15 tankers and 10 cargo ships. In 1964, the first of the 10 cargo ships, Pula, 12,000 DWT, valued at about \$6.4 million, was delivered to the USSR. This cargo class probably is equipped with large hatches.

### III. Future Major Shipbuilding Activity for the USSR

The long-range objective of the USSR to increase its maritime power through building up its merchant fleets has created a large demand for new ships -- a demand that present indications suggest will continue at least until 1970. Merchant shipbuilding activity by and for the USSR in the foreseeable future probably will continue at about the same general level as during 1959-65. This forecast is based on information concerning some Soviet trade agreements for 1966-70 with both Communist and non-Communist countries and on Soviet long-range predictions for the growth

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of the maritime fleet. Between 1966 and 1970, it is estimated that production of new merchant ships by and for the USSR will exceed 1 million DWT per year.

A. Communist Countries

1. Cargo Ships

It appears that the following classes of cargo ships will continue to be produced in the USSR as follows:

<u>Class</u>	<u>Tonnage (DWT per Ship)</u>
<u>Leninskiy Komsomol</u>	16,040
<u>Perekop</u>	12,690
<u>Anguema</u>	8,700
<u>Vytegrales</u>	6,100
<u>Pavlin Vinogradov</u>	5,740
<u>Maloyaroslavets</u>	4,000

The lead ship of the new Kaliningrad class, estimated 7,500 DWT, will be laid down in 1965 at the Zhdanov Shipyard, Leningrad, and will be completed in 1966. This new class possibly will be equipped with gas turbine propulsion, and if so, it could be one unit of the GTU 20 consisting of 6,500 horsepower.\* In addition, plans have been disclosed that call for construction of a series of cargo ships "having speeds exceeding 20 knots" and for construction of some "roll on/roll off" ships, but little is known of these projects.

Poland is scheduled to build 32 ships of the Murom (B-44), 12,450 DWT, large-hatch class, 15 at the Gdansk Shipyard (7 of which were completed by the end of 1964) and 17 at the Gdynia Shipyard, which has yet to complete its first ship of this contract. Construction of the Belomorskles (B-45) class, 5,950 DWT, will continue during 1965 and 1966. Eventually Poland will build a new B-40-class cargo ship of about 12,500 DWT. This class may be a large-hatch type and possibly a large series will be built.

Construction of the Vyborg-class large-hatch ship of 12,375 DWT will continue for the next several years in East Germany. Of 20 ships planned in this class, 5 have now been delivered. The Povenets class of 4,200 DWT also will continue to be built, and of an estimated 40 such ships planned, 17 units had been completed by the end of 1964.

Hungary, as it has in the past, will export Keyla-class small cargo ships to the USSR but in 1966 in a modified version, the design for which is now completed and under review by Soviet shipbuilding organizations.

\* See the footnote, p. 8.

## 2. Tankers

The Soviet Seven Year Plan (1959-65) called for the completion of 10 Sofiya-class tankers of 48,220 DWT each, and 7 ships of this class were delivered by the end of 1964. Construction of the small 1,575 DWT Baskunchak-class tanker, which began in 1964, probably will continue for the next several years.

Late in 1964, the USSR reported that it was working on the design of a 75,000-DWT tanker and that the design will be completed in 1965. This ship would be the largest tanker ever built in the USSR -- more than 800 feet in length and a beam of more than 120 feet -- with a speed of 18 knots and would have either steam turbine or diesel propulsion.

Poland plans to build and export, during 1966-70, 15 tankers of the B-72 class, each having an estimated 20,000 DWT. Most, if not all, of these tankers will be built for the USSR.

Bulgaria is the only remaining country of the Soviet Bloc that will build tankers for the USSR. This construction will consist of the small 4,170-DWT Oleg Koshevoy type which have been built in Bulgaria since 1959.

## 3. Fishing Ships

Crab cannery ships of the Andrey Zakharov class, 10,700 GRT, will be constructed during 1965 in the USSR, but this program is expected to terminate and to be replaced by a series of large new fish factory ships designated the Vostok class. The Vostok class will be more than 800 feet long, with a beam of about 88 feet, 26,000 horsepower, a crew of 582, and will carry 14 small automated fishing trawlers on deck. The ship will have a full load displacement of about 43,000 tons.

Four classes of refrigerator ships for the fishing fleet which were built by the USSR during 1964, the Sibir, 3,025 GRT, the Yantarnyy, 5,520 GRT, the Tavriya, 3,230 GRT, and the Zelenodolsk, 690 GRT, probably will continue to be produced for the next few years. The lead hulls of the Yantarnyy and the Zelenodolsk classes were completed in 1964.

Fish factory trawlers of the Mayakovskiy class, 3,170 GRT, will be built at the Baltic Shipyard, Klaipeda, in 1965. The Mayakovskiy program at the Nosenko Shipyard, Nikolayev, may end in 1965 and be replaced sometime next year by another class of fish factory trawlers.

The construction program in the USSR for the Mayak-class refrigerated medium trawler, 550 GRT, expands each year. In 1962, one shipyard in Kiev was engaged in the program; in 1963, two additional shipyards -- one in Khabarovsk and one in Volgograd -- started to build this class; now, the Krasnoye Sormovo Shipyard in Gor'kiy reportedly is

preparing to build trawlers of an unspecified type, probably the Mayak class. Additional shipyards might become engaged in construction of these trawlers, thus making the Mayak class potentially the largest shipbuilding program ever undertaken in the USSR.

Of the Eastern European Communist countries, Poland and East Germany are the only major builders of fishing ships for the USSR. Continued construction is foreseen in Poland of such classes as the Pionersk (B-64)-class factory ships (or a similar type known as the B-69), 9,250 GRT, and the Kosmos (B-26), 2,670 GRT, fish factory trawlers. East Germany will build more than 20 fish factory trawlers of the Tropik class, 2,435 GRT, to complete an order for the USSR for about 65 of these ships. The Tropik class will be replaced in 1966 by the Atlantik class, a similar fish factory ship, of which 103 are to be built by East Germany during 1966-70.

#### 4. Miscellaneous Ships

The USSR reported late in 1964 that preliminary design work was well underway for a second nuclear-powered icebreaker, which is to be completed in 1971, and that there are plans for a third nuclear-powered icebreaker. These new icebreakers are to have two reactors, will be smaller, more completely automated, and will be able to sail, without refueling, longer than the Lenin. The two new icebreakers reportedly will have 44,000 horsepower, which is about the same as that in the Lenin.

East Germany will complete two more large passenger ships of the Ivan Franko class (750 passengers), probably one each year in 1965 and 1966, and one more research ship of the 8,800-GRT Mikhail Lomonosov class in 1965. Also, the keel was laid in June 1964 for the Akademik Kurchatov, the first hull in a series of three new research ships\* for the USSR. The Akademik Kurchatov is scheduled for completion by the end of 1965, the second ship in 1966, and the third in 1967.

#### B. Non-Communist Countries

##### 1. Cargo Ships

Three more ships of the Krasnograd class, 12,200 DWT, will be delivered to the USSR by Finland in 1965. A Finnish-Soviet Trade Agreement calls for construction during 1966-70 of 22 similar type ships, as well as 40 ships similar to the Irkutskles class, 3,600 DWT.

Yugoslavia is to complete 10 ships of the 12,000-DWT Pula class during 1964-66. Possibly 20 more ships of this type will be completed during 1966-70 under the terms of a recent Yugoslav-Soviet Trade Agreement.

\* Some reported characteristics of this new class are length 407 feet, beam 56 feet, full load displacement 6,700 tons, 8,000 horsepower, speed 18 knots, crew of 85, and space for 81 scientific and research personnel.

2. Tankers

In 1965, Italy will deliver one more tanker of the Leonardo da Vinci class, 47,240 DWT, and Japan will deliver two tankers of the Lozovaya class, along with two small tankers for transporting low-pressure gas. Finland will continue to build small tankers -- 40 of about 4,500 DWT are scheduled for construction under the 1966-70 trade agreement with the USSR.

During 1965-66, Yugoslavia is scheduled to deliver 15 tankers, to be known as the Split class, 21,000 DWT each. Several of these tankers were launched during 1964.

3. Fishing Ships

In December 1964, the first of three large (8,000 GRT) factory trawlers, the Natalia Kovchova, was launched in a French shipyard for the USSR and will be delivered late in 1965. The second ship also will be completed in 1965; and the last ship is to be completed early in 1966.

West Germany and Japan each have launched the first in a series of eight factory ships for the Soviet fishing fleet. These 16 factory ships are to be delivered during 1965-66. The West German class is known as the Rybatskaya Slava, and the Japanese type is called Spassk class, both classes being about 19,000 GRT. Japan also will complete two more tuna factory ships of the 5,100-GRT Leninskiy Luch type in 1965.

Under a trade agreement covering the period up to 1969, Denmark was to build 23 refrigerator/factory ships of the Skryplev class, 4,700 GRT, and 6 have been completed.

Three 10,870-GRT Priboy-class refrigerator ships remain to be completed by Sweden; these ships will be delivered in 1965 and will complete a contract for 10 ships.

In November 1964, the Netherlands launched the Rembrandt, possibly 5,000 GRT, the first of four refrigerator/factory ships to be completed during 1965.

4. Miscellaneous Ships

Information available at the end of 1964 indicates that under the terms of the 1966-70 trade agreement, Finland will complete three icebreakers of 22,000 horsepower each, and three cable laying ships. These ships probably will be similar to the Moskva, 3,200 GRT, and the Ingul, 5,900 GRT, classes, respectively, which were built under the terms of the 1961-65 trade agreement with the USSR.

#### IV. Recent Shipbuilding Activity for Communist China

For the first time in recent years, Communist China began negotiations during 1964 to procure new ships from non-Communist countries. Contracts for five ships totaling about 75,000 DWT may have been placed, and there may be other contracts for which no details are known. In September 1964, China signed a contract with France for construction of two cargo ships, each about 15,000 DWT. Two French shipyards will participate in this order, each building one ship. In January 1965, it was reported that Great Britain also had agreed to build two cargo ships of 15,000 DWT each for Communist China. One ship is scheduled for delivery each year in 1965 and 1967.

Japan probably signed a contract in November 1964 to build a cargo ship of 12,600 DWT for Communist China, but rumor is that this contract will be cancelled because of complications concerning credit.

A ship of 14,800 DWT named the Guang-ming (Sunshine) was launched recently in the Netherlands for Communist China. This ship, originally planned for a British owner, is scheduled to be delivered to the Chinese Communists sometime in 1966.

#### V. Ships with Large Hatches

The USSR added 26 ships with large hatches to its maritime fleet during 1964, thus bringing the total number of these ships to 57. This type of ship is now considered to be composed of 9 classes, 6 of which will be under construction in 1965 in both Communist and non-Communist countries. Looking forward to 1970, it is estimated that the total number of large-hatch ships in the maritime fleet will exceed 150. The development of large-hatch ships was spurred largely by the improvements to be gained in the handling and storage of cargo. This type of ship also can provide secure transportation for large items of military equipment below decks as demonstrated in the transport of missiles to Cuba in 1962.

Except for the Leninskiy Komsomol-class ships, those designated as timber carriers or icebreaker transports, and the comparatively smaller types of cargo ships such as those built in Eastern European Communist countries, practically all large cargo ships completed after 1960 by and for the USSR were ships with large hatches. And this will probably be true in future years. These large-hatch ships evidently have been accepted by the USSR as the norm for new cargo ships to be added to the maritime fleet.

One new class of large-hatch ship was added during 1964, the Pula, 12,000 DWT, built in Yugoslavia. The first hull in the series of an additional new class of large-hatch ships, the B-40, 12,500 DWT, is scheduled for production in Poland. (See Table 24, Appendix A, for an annual summary of completion of large-hatch ships since 1961, by class names and country of origin.)

VI. Position of Communist Countries in World Shipbuilding

The Soviet Bloc and Communist China completed about 10 percent or about 1.1 million tons of the total estimated gross register tons produced by the leading shipbuilding nations of the world during 1964, based on data provided by Lloyd's Register of Shipping. Practically all of the above tonnage was completed by the USSR, Poland, and East Germany -- 559,000 GRT by the USSR, 253,000 GRT by Poland, and 207,000 GRT by East Germany. The remaining 90,000 GRT is the aggregate amount of production by Bulgaria, Communist China, Rumania, and Hungary. Individually, the USSR ranks as the world's fifth leading producer of ships with about five percent of the total, and Poland and East Germany rank tenth and fourteenth, respectively, each completing about two percent of the total.

The following tabulation lists the 18 leading shipbuilding nations of the world during 1964 according to position for GRT constructed, percent of total construction, and percent of construction exported to the USSR:

<u>Country</u>	<u>Position</u>	<u>Construction (1,000 GRT)</u>	<u>Percent of Total Construction</u>	<u>Percent of Construction Exported to the USSR</u>
Japan	1	4,085	37.7	5
UK and Northern Ireland	2	1,043	9.6	0
Sweden	3	1,021	9.4	7
West Germany	4	890	8.2	3
USSR	5	559	5.2	
France	6	510	4.7	0
Norway	7	409	3.8	0
Italy	8	368	3.4	34
US	9	276	2.5	0
Poland	10	253	2.3	60
Denmark	11	242	2.2	13
Netherlands	12	226	2.1	3
Spain	13	217	2.0	0
East Germany	14	207	1.9	58
Yugoslavia	15	169	1.6	5
Finland	16	161	1.5	57
Canada	17	108	1.0	0
Belgium	18	103	0.9	0
Total		<u>10,847</u>	<u>100.0</u>	

When viewed as a record of part of the shipbuilding in the world, the above tabulation indicates that exports of ships to the USSR are of significance as a percent of completions only from Finland, Italy, and Denmark in non-Communist areas and only from Poland and East Germany

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in the Communist countries. Finland, with about 57 percent of completions exported to the USSR, has been dependent on Soviet shipbuilding orders for the past decade. Italy's high percentage is unusual and temporary -- the result of fulfilling in 1964 a large part of a contract for tankers. In 1965 the percentage of Italy's completions to be exported to the USSR will be insignificant. Poland and East Germany have always been, and probably will continue to be, heavily dependent on the USSR for shipbuilding contracts.

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APPENDIX

STATISTICAL TABLES

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Table 2  
USSR: Construction and Deliveries of Merchant Ships a/  
1964

Type	Number	Value	Construction			Deliveries			
			LSD	DWT	GRT	USSR		Non-Communist Countries	
						Tons	Number	Value	Number
Maritime									
Cargo	21	112.8	85,060	183,860	142,760	21	112.8		
Tanker	7	66.8	65,770	244,250	152,200	7	66.8		
Miscellaneous	N.A.	41.8	27,345	N.A.	29,200	N.A.	41.8		
Total maritime	N.A.	221.4	178,175	N.A.	324,160	N.A.	221.4		
Fishing									
Crab cannery	2	26.4	17,620	14,760	21,400	2	26.4		
Refrigerator	10	40.8	26,605	19,515	26,560	10	40.8		
Factory trawler	22	77.0	51,040	28,160	69,740	22	77.0		
Medium trawler	35	31.5	20,650	11,025	19,250	31	27.9		
Whale catcher	14	21.0	13,160	4,340	11,760	14	21.0		Ghana
Small trawlers, seiners, and miscellaneous boats	1,960	170.4	N.A.	N.A.	115,770	1,960	170.4		
Total fishing	2,043	367.1	N.A.	N.A.	264,480	2,039	363.5	4	3.6
Inland									
Self-propelled	N.A.	144.0			N.A.	N.A.	144.0		
Non-self-propelled	N.A.	41.4			N.A.	N.A.	41.4		
Total inland (value only)		185.4					185.4		
Total merchant (value only)		773.9					770.3		3.6

a. Excluding a few small minor ships.

Table 3

USSR: Construction and Deliveries of Maritime Cargo Ships and Tankers  
1964

Value in Terms of Million US \$

Class of Ship and Shipyard	Number	Value	Construction		Deliveries		
			LSD	Tons DWT	GRT	Cumulative Construction Through 1964 (Number)	USSR (Number)
<u>Leninskij Komsomol</u>							
Kherson Shipyard, Kherson	4	30.0	24,240	64,160	49,140	24 3/4	4
<u>Perekop</u>							
Kherson Shipyard, Kherson	1	8.0	6,210	12,690	9,650	2	1
Imeni Nosenko, Nikolayev	3	24.0	18,630	38,070	28,950	5	3
Total	4	32.0	24,840	50,760	38,600	7	4
<u>Vytegrales</u>							
Imeni Zhdanov, Leningrad	3	14.1	10,050	18,300	14,100	5	3
Vyborg Shipyard, Vyborg	2	9.4	6,700	12,200	9,400	3	2
Total	2	23.5	16,750	30,500	23,500	8	2
<u>Pavlin Vinogradov</u>							
Baltic, Leningrad	1	4.4	3,110	5,740	4,650	2	1
<u>Arqueuema</u>							
Leninskij Komsomol'sk	1	6.1	4,840	8,700	8,180	3	1

Table 3  
(Continued)

Class of Ship and Shipyard	Number	Value	Construction				Cumulative Construction Through 1964 (Number)	Deliveries USSR (Number)
			LSD	Tons		GRT		
				DWT	GRT			
Cargo (Continued)								
<u>Maloyaroslavets</u>								
Oktyabr'skoye Shipyard, Oktyabr'skoye	2	5.6	3,760	8,000		6,230	4	2
Navashino Shipyard, Navashino	4	11.2	7,520	16,000		12,460	4	4
Total	<u>6</u>	<u>16.8</u>	<u>11,280</u>	<u>24,000</u>		<u>18,690</u>	<u>8</u>	<u>6</u>
Total cargo	<u>21</u>	<u>112.8</u>	<u>85,060</u>	<u>183,860</u>		<u>142,760</u>	<u>55</u>	<u>21</u>
Tanker								
<u>Sorlya</u>								
Baltic, Leningrad	3	38.4	38,400	144,660		90,000	4	3
Admiral'teyskiy, Leningrad	2	25.6	25,600	96,440		60,000	3	2
Total	<u>5</u>	<u>64.0</u>	<u>64,000</u>	<u>241,100</u>		<u>150,000</u>	<u>7</u>	<u>5</u>
<u>Baskunchak</u>								
Kerch Shipyard, Kerch	2	2.8	1,770	3,150		2,200	2 b/	2
Total tanker	<u>7</u>	<u>66.8</u>	<u>65,770</u>	<u>244,250</u>		<u>152,200</u>	<u>9</u>	<u>7</u>
Total cargo and tanker	<u>28</u>	<u>179.6</u>	<u>150,830</u>	<u>428,110</u>		<u>294,960</u>	<u>64</u>	<u>28</u>

a. Including six ships built at the Imeni Nosenko Shipyard, Nikolayev.  
 b. New class.

Table 4  
USSR: Construction and Deliveries of Miscellaneous Maritime Ships  
1964

Class of Ship and Shipyard	Number	Value	Construction			Cumulative Construction Through 1964 (Number)	Deliveries USSR (Number)
			ISD	Tons			
				IMT	GRT		
<u>Passenger</u>							
<u>Baku</u>							
Volgograd Shipyard, Volgograd	1	3.6	1,450	390	2,000	3	1
<u>Sulak</u>							
Vano Sturua, Baku	1	2.4	885	285	1,000	2	1
Total	2	6.0	2,335	675	3,000	5	2
<u>Port Icebreaker</u>							
<u>Dobrynya Nikitich</u>							
Admiral'tyevskiy, Leningrad	2	5.0	4,000	1,350	4,400	10	2
<u>Research ship</u>							
<u>Akademik Knipovich</u>							
Imeni Nosenko, Nikolayev	1	4.5	2,560	1,280	3,300	1 a/	1
<u>Ferry</u>							
<u>Sovetskiiy Azerbaydzhan</u>							
Krasnoye Sormovo, Gor'kiy	1	8.3	3,450	2,500	5,000	2	1
<u>Tugs</u>							
Various types	N.A.	18.0	15,000	N.A.	13,500	N.A.	N.A.
Total miscellaneous	N.A.	41.8	27,345	N.A.	29,200	N.A.	N.A.
a. New class.							

Table 5  
USSR: Construction and Deliveries of Fishing Ships  
1964

Class of Ship and Shipyard	Number	Value	Construction			Cumulative Construction Through 1964 (Number)	USSR (Number)	Deliveries	
			ISD	DWT	GRT			Non-Communist Countries	
								Number	Country
Crab cannery ship									
<u>Andrey Zakharov</u>									
Admiral'teyskiy, Leningrad	2	26.4	17,620	14,760	21,400	8	2		
Refrigerator ships									
<u>Yantar'nyy</u>									
Baltic, Leningrad	1	7.2	4,750	4,080	5,520	1 a/	1		
<u>Sibir'</u>									
Imeni 61 Kommunar, Nikolayev	2	12.6	8,400	4,500	6,050	5	2		
<u>Davriya</u>									
Okt'yabr'skoye Shipyard, Okt'yabr'skoye	4	18.0	11,400	9,840	12,920	21	4		
<u>Zelenodolsk</u>									
Imeni Gor'kiy, Zelenodolsk	3	3.0	2,055	1,095	2,070	3 a/	3		
Total	10	40.8	26,605	19,515	26,560	30	10		
Factory trawlers									
<u>Mayakovskiy</u>									
Imeni Nosenko, Nikolayev	18	63.0	41,760	23,040	57,060	94	18		
Baltic Shipyard, Klaipeda	4	14.0	9,280	5,120	12,680	6	4		
Total	22	77.0	51,040	28,160	69,740	100	22		

Table 5  
USSR: Construction and Deliveries of Fishing Ships  
1964  
(Continued)

Class of Ship and Shipyard	Construction						Deliveries	
	Number	Value	ISD	DWT	GRT	Cumulative Construction Through 1964 (Number)	USSR (Number)	Non-Communist Countries Number Country
Medium trawlers								
<u>Mayak</u>								
Leningradska Kuznitsa, Kiev	15	13.5	8,850	4,725	8,250	31	11	4
Ussuri South, Khabarovsk	20	18.0	11,800	6,300	11,000	20	20	Chana
Total	35	31.5	20,650	11,025	19,250	51	31	4
Whale catcher								
<u>Mirnyy</u>								
Imeni 61 Kommunar, Nikolayev	14	21.0	13,160	4,340	11,760	100 b/	14	
Small trawlers, seiners, and miscellaneous boats								
Various types	1,960	170.4	N.A.	N.A.	115,770	N.A.	1,960	
Total fishing	<u>2,043</u>	<u>367.1</u>	N.A.	N.A.	<u>264,480</u>	N.A.	<u>2,039</u>	4

a. New class.  
b. Possible end of program.

Table 6

Poland: Construction and Deliveries of Merchant Ships a/  
1964

Value in Terms of Million 1960 US \$

Type	Number	Value	Construction			Deliveries									
			LSD	DMT	GRT	Communist Countries			Non-Communist Countries						
						USSR	Poland	Other	USSR	Poland	Other				
			Number	Value	Number	Value	Number	Value	Country	Number	Value	Country			
Maritime															
Cargo	34	188.9	136,125	274,725	203,090	19	109.1	13	65.2	1	7.8	Czechoslovakia	1	6.8	Indonesia
Fishing															
Factory trawler B-15	3	10.2	6,795	3,660	8,010			3	10.2						
Factory trawler B-26	3	10.2	6,795	3,660	8,010	3	10.2								
Trawler B-23	7	12.6	8,400	4,200	4,900			7	12.6						
Trawler B-27	2	1.4	900	460	820								2	1.4	France
Factory ship B-64	3	36.0	24,000	30,000	27,750	3	36.0								
Total fishing	18	70.4	46,890	41,980	49,490	6	46.2	10	22.8				2	1.4	
Total merchant	52	259.3	183,015	316,705	252,580	25	155.3	23	88.0	1	7.8		3	8.2	

a. Excluding a few small minor ships.

Table 7

Poland: Construction and Deliveries of Maritime Cargo Ships  
1964

Value in Terms of Million 1960 US \$

Class of Ship and Shipyard	Number	Value	Construction			Cumulative Construction Through 1964 (Number)	Deliveries				
			LSD	Tons			USSR (Number)	Communist Countries		Non-Communist Countries	
				DMT	GRT			Poland (Number)	Czechoslovakia (Number)		Number
<b>Cargo</b>											
<u>Marcon (B-44)</u>											
Gdansk Shipyard	6	48.0	33,660	74,700	56,070	1	6				
<u>Belomorskijs (B-45)</u>											
Gdansk Shipyard	13	61.1	44,785	77,350	60,710	43 a/	13				
<u>Francisco Muller (B-41)</u>											
Gdynia Shipyard	2	11.2	8,000	18,600	12,000	3	2				
<u>Boginka (B-476)</u>											
Gdynia Shipyard	3	3.6	2,100	1,980	1,500	3 b/	3				
<u>Grudziadz (B-49)</u>											
Szczecin Shipyard	1	3.7	2,640	4,280	2,970	3	1				
<u>Marcell Nowotko (B-54)</u>											
Szczecin Shipyard	2	13.6	10,840	22,720	19,640	41 c/	1 d/			1	Indonesia
<u>Kolejarz (B-512)</u>											
Szczecin Shipyard	4	31.2	22,400	50,000	33,820	5	3		1		
<u>Domeyko (B-516)</u>											
Szczecin Shipyard	3	16.5	11,700	25,095	16,380	7	3				
<b>Total cargo</b>	<u>34</u>	<u>188.9</u>	<u>136,125</u>	<u>274,725</u>	<u>203,090</u>	<u>112</u>	<u>19</u>	<u>13</u>	<u>1</u>	<u>1</u>	

- a. Including 15 VOIGOLes (B-514) - class ships.
- b. New class.
- c. End of construction program -- including 29 hulls built at Gdansk Shipyard.
- d. May be sold to Communist China.



Table 9

East Germany: Construction and Deliveries of Merchant Ships a/  
1964

Value in Terms of Million 1960 US \$

Type	Number	Value	Construction			Deliveries													
			LSD	DWT	GRT	USSR			Communist Countries		Non-Communist Countries								
						Number	Value	Number	Value	Number	Value	Number	Value	Country					
Maritime																			
Cargo	18	97.1	67,620	140,595	108,750	13	59.4												
Miscellaneous	23	48.9	28,330	25,700	35,500	17	43.9	2	0.4	4	29.6	1	8.1					Norway	
Total maritime	41	146.0	95,950	166,295	144,250	30	103.3	2	0.4	6	30.0	2	12.3					West Germany	
Fishing																			
Factory trawler																			
Bertholt Brecht	2	6.8	4,520	2,560	6,000														
Tropik	21	54.6	35,910	28,480	51,135	21	54.6	2		2	6.8								
Refrigerator ship	1	2.8	1,890	700	2,580														
Cutters	24	4.8	3,240	1,200	3,360					1	2.8	9	1.8					Denmark	
Total fishing	48	69.0	45,560	32,940	63,075	21	54.6	3		3	9.6	24	4.8					Sweden	
Inland																			Iceland
Self-propelled	20	7.2	(12,000 horsepower)			12	4.3	8		8	2.9	27	17.1						
Total merchant	109	222.2				63	162.2	2	0.4	17	42.5	27	17.1						

a. Excluding a few small minor ships.

Table 10

East Germany: Construction and Deliveries of Maritime Cargo Ships  
1964

Value in Terms of Million 1960 US \$

Class of Ship and Shipyard	Number	Value	Construction			Deliveries					
			LSD	DWT	GRT	Communist Countries		Non-Communist Countries			
						USSR (Number)	East Germany (Number)		Number	Country	
<u>Edgar Andre (Type X)</u>											
Warnowrft, Warnemunde	4	29.6	19,720	40,920	30,000	6		4			
<u>Povenets</u>											
Neptune Werft, Rostock	9	27.0	18,900	37,800	33,750	17		9			
<u>Vyborg (Type VI)</u>											
Warnowrft, Warnemunde	5	40.5	29,000	61,875	45,000	6		4		1	Norway
Total cargo	<u>18</u>	<u>97.1</u>	<u>67,620</u>	<u>140,595</u>	<u>108,750</u>	<u>29</u>		<u>13</u>		<u>1</u>	

Table 11

East Germany: Construction and Deliveries of Miscellaneous Maritime Ships

Value in Terms of Million 1960 US \$

Class of Ship and Shipyard	Number	Value	Construction			Cumulative Construction Through 1964 (Number)	Deliveries			
			LSD	Tons	GRT		USSR (Number)	Poland (Number)	East Germany (Number)	Non-Communist Countries (Number)
Passenger ship										
<u>Ivan Franko</u>										
Mathias Thesen Werft, Wismar	1	25.0	12,060	5,850	13,000	1 a/	1			
<u>Mikhail Kalinin</u>										
Mathias Thesen Werft, Wismar	1	7.5	4,170	1,340	4,870	19 b/	1			
Total passenger	2	32.5	16,230	7,190	17,870	20	2			
Research Ship										
<u>Mikhail Lomonosov</u>										
Neptune Werft, Rostock	2	7.2	5,580	6,660	8,800	4	2			
Car ferry										
<u>Ilr1</u>										
Neptune Werft, Rostock	2	4.2	3,000	8,300	3,600	2 a/				2 West Germany
Salvage ship										
<u>K11-1</u>										
Neptune Werft, Rostock	1	1.8	1,200	1,950	3,150	1 a/	1			
Tug										
<u>MB-6060</u>										
Edgar Andre, Rothersee	12	2.4	1,740	1,200	1,560	27	12			
Unknown										
Edgar Andre, Rothersee	2	0.4	290	200	260	2	2			2
Total tug	16	3.2	2,320	1,600	2,080	31	12	2	2	2
Total miscellaneous	23	48.9	28,330	25,700	35,500	58	17	2	2	2

a. New class.  
b. Last ship of the series.

Table 12

East Germany: Construction and Deliveries of Fishing Ships  
1964

Value in Terms of Million 1960 US \$

Class of Ship and Shipyard	Number	Value	Construction			Cumulative Construction Through 1964 (Number)	Deliveries		Number	Country
			LSD	Tons			Communist Countries			
				DWT	GRT		USSR (Number)	East Germany (Number)		
Factory trawlers										
<u>Bertholt Brecht</u>										
Mathias Thesen Werft, Wismar	2	6.8	4,520	2,560	6,000	10	2			
<u>Tropik</u>										
Volkswerft, Stralsund	21	54.6	35,910	28,480	51,135	43	21 a/			
Total factory trawlers	<u>23</u>	<u>61.4</u>	<u>40,430</u>	<u>31,040</u>	<u>57,135</u>	<u>53</u>	<u>21</u>	<u>2</u>		
Refrigerator ship										
<u>Stubnitz b/</u>										
Volkswerft, Stralsund	1	2.8	1,890	700	2,580		1			
Cutters										
Unknown										
Schiffswerft, Rosslau	9	1.8	1,215	450	1,260	N.A.		9	Sweden	
Elbwerft, Boizenburg	9	1.8	1,215	450	1,260	N.A.		9	Denmark	
Elbwerft, Boizenburg	6	1.2	810	300	840	N.A.		6	Iceland	
Total cutters	<u>24</u>	<u>4.8</u>	<u>3,240</u>	<u>1,200</u>	<u>3,360</u>	<u>N.A.</u>		<u>24</u>		
Total fishing	<u>48</u>	<u>69.0</u>	<u>45,560</u>	<u>32,940</u>	<u>63,075</u>	<u>N.A.</u>	<u>21</u>	<u>3</u>	<u>24</u>	

a. Three ships have been sold to Bulgaria.  
 b. New class -- modified Tropik-class trawler.

Table 13

Communist China: Construction and Deliveries of Merchant Ships a/  
1964

Value in Terms of Million 1960 US \$

Type	Number	Value	Construction			Deliveries	
			LSD	DWT	GRT	Communist China	
						Number	Value
<u>Maritime</u>							
Cargo	4	16.9	12,730	31,320	24,195	4	16.9
Miscellaneous	1	3.0	1,770	1,100	2,500	1	3.0
Total maritime	5	19.9	14,500	32,420	26,695	5	19.9
<u>Inland</u>							
Self-propelled	N.A.	12.0				N.A.	12.0
Non-self-propelled	N.A.	2.3				N.A.	2.3
Total inland (value only)		14.3					14.3
Total merchant (value only)		34.2					34.2

a. Excluding a few small minor ships.

Table 14

Communist China: Construction and Deliveries of Maritime Cargo Ships  
1964

Class of Ship and Shipyard	Number	Value	Construction			Cumulative Construction Through 1964 (Number)	Deliveries Communist China (Number)
			LSD	Tons			
				DWT	GRT		
Value in Terms of Million 1960 US \$							
<u>Cargo</u>							
<u>Leap Forward (Yueh Chin)</u>							
Dairen Shipyard	1	7.5	6,060	16,040	12,285	2 a/	1
<u>Ho Ping 25</u>							
Chianganan Shipyard	1	3.7	2,650	5,940	4,730	9	1
Dairen Shipyard	1	3.7	2,650	5,940	4,730		
<u>Ho Ping 49</u>							
Shanghai Shipyard	1	2.0	1,370	3,400	2,450	6	1
Total cargo	<u>4</u>	<u>16.9</u>	<u>12,730</u>	<u>31,320</u>	<u>24,195</u>	<u>17</u>	<u>4</u>

a. One ship was a maritime loss.

Table 15

Communist China: Construction and Deliveries of Miscellaneous Maritime Ships  
1964

Value in Terms of Million 1960 US \$

Class of Ship and Shipyard	Number	Value	Construction			Cumulative Construction Through 1964 (Number)	Deliveries Communist China (Number)
			LSD	DWT	GRT		
Passenger ship							
<u>Min Chu 14</u>							
Hutung Shipyard, Shanghai	<u>1</u>	<u>3.0</u>	<u>1,770</u>	<u>1,100</u>	<u>2,500</u>	<u>6</u>	<u>1</u>

Table 15

Communist China: Construction and Deliveries of Miscellaneous Maritime Ships  
1964

Value in Terms of Million 1960 US \$

Class of Ship and Shipyard	Number	Value	Construction			Cumulative Construction Through 1964 (Number)	Deliveries Communist China (Number)
			LSD	DWT	GRT		
Passenger ship							
<u>Min Chu 14</u>							
Hutung Shipyard, Shanghai	<u>1</u>	<u>3.0</u>	<u>1,770</u>	<u>1,100</u>	<u>2,500</u>	<u>6</u>	<u>1</u>

Table 16

Hungary: Construction and Deliveries of Merchant Ships a/  
1964

Value in Terms of Million US \$

Type	Construction				Deliveries										
	USSR		Communist Countries		USSR		Other								
	Number	Value	Number	Value	Number	Value	Number	Value							
Maritime	Cargo	13	21.1	13,720	16,415	16,350	3	5.1	2	2.4	Hungary	4	6.8	Indonesia	
													4	6.8	Norway
Inland	Self-propelled	23	14.6	(24,300 horsepower)		17	12.0	1	0.5	1	0.5	Bulgaria	8	13.6	
													1	0.5	Cuba
	Total merchant	36	35.7			20	17.1	6	2.6	4	1.6	Hungary	8	13.6	

a. Excluding a few small minor ships.

Table 17  
Hungary: Construction and Deliveries of Maritime Cargo Ships  
1964

Value in Terms of Million 1960 US \$

Class of Ship and Shipyard	Number	Value	Construction			Cumulative Construction Through 1964 (Number)	Deliveries			
			LSD	Tons			Communist Countries		Non-Communist Countries	
				DWT	GRT		USSR (Number)	Other Number		Country
<u>Keyla</u>										
Angyalfoeld, Budapest	11	18.7	12,320	13,915	13,750	56	3		4	Indonesia
<u>Hazam</u>									4	Norway
Angyalfoeld, Budapest	2	2.4	1,400	2,500	2,600	10		2		Hungary
Total maritime	<u>13</u>	<u>21.1</u>	<u>13,720</u>	<u>16,415</u>	<u>16,350</u>	<u>66</u>	<u>3</u>	<u>2</u>		<u>8</u>



Table 19

Bulgaria: Construction and Deliveries of Maritime Cargo Ships, Tankers, and Miscellaneous Ships  
1964

Class of Ship and Shipyard	Number	Value	Construction			Deliveries			
			ISD	Tons		USSR (Number)	Communist Countries		Non-Communist Countries
				DWT	GRT		Other	Number	
Value in Terms of Million US \$									
<u>Sofiya</u>									
Georgi Dimitrov, Varna	1	4.7	3,150	6,670	4,800	2	1	Bulgaria	
<u>Varna</u>									
Georgi Dimitrov, Varna	1	2.2	1,470	3,100	1,900	7	1	Bulgaria	
Total cargo	2	6.9	4,620	9,770	6,700	9	2		
Tanker									
<u>Oleg Koshevoy</u>									
Georgi Dimitrov, Varna	6	15.0	10,740	25,020	22,920	20	6		
Miscellaneous									
Passenger									
<u>Georgi Dimitrov</u>									
Georgi Dimitrov, Varna	2	2.6	1,280	330	1,800	13	2		
Total maritime	10	24.5	16,640	35,120	31,420	42	8	2	

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Table 20

Romania: Construction and Deliveries of Merchant Ships a/  
1964

Type	Number	Value	Construction			Deliveries				
			LSD	DWT	GRT	USSR		Other		
						Number	Value	Number	Value	Country
<u>Maritime</u>										
Cargo	7	16.7	11,520	22,060	17,225	2	6.2	5	10.5	Romania
<u>Inland</u>										
Self-propelled	32	12.7	(21,200 Horsepower)			32	12.7			
Total merchant	39	29.4				34	18.9	5	10.5	

a. Excluding a few small minor ships.

Table 21

Rumania: Construction and Deliveries of Maritime Cargo Ships, by Shipyard  
1964

Value in Terms of Million 1960 US \$

Class of Ship and Shipyard	Number	Value	Construction			Cumulative Construction Through 1964 (Number)	Deliveries	
			LSD	DWT	GRT		Communist Countries	
							USSR (Number)	Other Number Country
<u>Cargo</u>								
<u>Galati</u>								
Galati Shipyard	2	6.6	4,720	8,860	7,200	13	2 Rumania	
<u>Novyy Donbass</u>								
Galati Shipyard	2	6.2	4,400	8,400	6,200	4	2	
<u>Roman</u>								
Turnu Severin Shipyard	3	3.9	2,400	4,800	3,825	4	3 Rumania	
Total cargo	7	16.7	11,520	22,060	17,225	21	2 5	

Table 22

Czechoslovakia: Construction and Deliveries of Merchant Ships a/  
1964

Type	Construction		Deliveries	
	Number	Value	USSR	
			Number	Value
<u>Inland</u>				
Self-propelled	18	13.5	18	13.5
		(22,500)		
Total merchant	<u>18</u>	<u>13.5</u>	<u>18</u>	<u>13.5</u>

a. Excluding a few small minor ships

Table 23

Construction and Deliveries of Merchant Ships by Non-Communist Countries for Communist Countries  
1964

Value in Terms of Million US \$

Country, Type, and Class of Ship and Shipyard	Number	Value	Construction			Cumulative Construction Through 1964 (Number)	Deliveries		
			USD	DWT	GRT		USSR	Other	Country
Denmark									
Cargo									
Beloretsk									
Makskov Shipyard	2	16.8	13,920	28,300	21,300	6	2	16.8	
Fishing (refrigerator ship)									
Skryplev									
Burmeister and Wain, Copenhagen	2	10.4	6,880	5,120	21,400	6	2	10.4	
Total Denmark	4	27.2	20,800	33,420	30,700	12	4	27.2	
Finland									
Cargo									
Krasnograd									
Crichton-Vulcan, Turku	6	45.0	30,750	73,200	55,500	15	6	45.0	
Irkutskles									
Various shipyards	7	23.8	17,220	25,200	20,300	29	7	23.8	
Total cargo	13	68.8	47,970	98,400	75,800	44	13	68.8	
Tanker									
Drogobich									
Rauma-Repole, Rauma	5	13.5	10,500	22,400	16,500	36	5	13.5	
Total Finland	18	82.3	58,470	120,800	92,300	80	18	82.3	

Table 23  
(Continued)

Value in Terms of Million 1960 US \$

Country, Type, and Class of Ship and Shipyard	Number	Value	Construction			Cumulative Construction Through 1964 (Number)	Deliveries		
			USD	Tons	GRT		USSR	Other	Country
West Germany									
Fishing (refrigerator ship)									
Veter									
Rheinthal, Emden	6	42.6	28,320	30,720	28,200	6	42.6		
Italy									
Tanker									
Leonardo da Vinci									
Ansaldo, Genoa	4	48.0	48,000	188,960	125,180	2	48.0		
Japan									
Cargo									
Omsk									
Hitachi, Osaka	3	21.3	17,100	36,150	33,300	3	21.3		
Sweden Gota									
Nippon Koken, Shimizu	2	10.2	7,870	17,720	12,000	2		10.2	Bulgaria
Total cargo	5	21.5	24,970	53,870	45,300	10	21.3	10.2	
Tanker									
Lozovaya									
Ishikawajima, Harima	3	24.0	24,000	105,000	69,300	6	24.0		
Mitsubishi, Hiroshima	4	32.0	32,000	140,000	92,400	4	32.0		
Total tanker	7	56.0	56,000	245,000	161,700	10	56.0		

Table 23

Construction and Deliveries of Merchant Ships by Non-Communist Countries for Communist Countries  
1964  
(Continued)

Value in Terms of Million 1960 US \$

Country, Type, and Class of Ship and Shipyard	Number	Value	Construction			Cumulative Construction Through 1964 (Number)	Deliveries			
			USD	Tons DWT	GRT		USSR Number	USSR Value	Other Number	Other Value
Japan (Continued)										
Fishing (Tuna factory ship)										
<u>Leninsky Luch</u>										
Hitachi, Mukaijima (Fish factory trawler)	3	17.7	11,805	8,415	15,300	3 b/	3	17.7	2	8.8
<u>Constanta</u>										
Hitachi, Sakurajima	2	8.8	5,900	3,940	7,200	2 a/			2	8.8
Total fishing	5	26.5	17,705	12,355	22,500	5	3	17.7	2	8.8
Total Japan	17	114.0	98,675	311,225	229,500	25	13	95.0	4	19.0
Netherlands										
Fishing (Refrigerator ship)										
<u>Beck Dasein</u>										
Verolme, Alblasserdam	1	11.8	7,875	7,380	7,200	1			1	11.8
Sweden										
Fishing (refrigerator ship)										
<u>Priboj</u>										
Various shipyards	1	93.1	62,020	59,570	76,090	1 b/	1	93.1		
Yugoslavia										
Cargo										
<u>Pula</u>										
Ulanik, Pula	1	6.4	5,000	12,000	9,000	1 b/	1	6.4		
Total non-Communist	58	425.4	329,160	764,075	598,170	137	53	394.6	2	30.8
a. End of program.										
b. New class.										

Table 24

Construction for the USSR of Ships with Large Hatches  
1961-64

Class	Country of Origin	Estimated Length of Hatch (Feet)	Number				Cumulative Construction Through 1964	Remarks
			1961	1962	1963	1964		
<u>Omsk</u>	Japan	76	1	2	2	3	8	Series completed 40 to be built by the end of 1970
<u>Krasnograd</u>	Finland	74	1	4	4	6	15	
<u>Beloretsk</u>	Denmark	59 a/		2	2	2	6	Series completed
<u>Simferopol (B-43)</u>	Poland	52		4	3		7	Series completed
<u>Poltava</u>	USSR	78		1	1		2	Series completed
<u>Murrom (B-44)</u>	Poland	62			1	6	7	32 to be built
<u>Vyborg</u>	E. Germany	61			1	4	5	20 to be built
<u>Perekop</u>	USSR	78			2	4	6	Large series to be built
<u>Pula</u>	Yugoslavia	b/	2			1	1	30 to be built by the end of 1970
				13	16	26	57	Total of all classes eventually will consist of more than 150 ships

- a. Last two hulls are 53 feet.
- b. Length of the hatch is unknown but is estimated to be more than 50 feet.