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STUDY OF SOVIET RIVER TRANSPORT

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4 August 1950

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1 WATERWAYS

The USSR has 108,000 rivers approximately, for a total length of 2,400,000 km and about 2,000 lakes. More than 50 rivers are over 1,000 km long.

About 520,000 km of rivers can be used for navigation.

1. Waterways exploited by the Ministry of River Fleet

	Length of waterways (in million kilometers)			
	Buoyed for navigation during the day and at night	Buoyed for navigation during the day	Not buoyed	Total length
1913	36.0	4.0	32.0	72.0
1928	31.0	18.9	18.5	68.4
1932	47.3	20.9	9.4	77.6
1937	57.4	22.8	7.0	87.2
1940	67.1	25.2	1.7	94.0
1945	63.8	30.6	2.4	96.8
1950	71.0	28.2	1.6	100.8

2. Total length of waterways exploited in the USSR

The total length of waterways exploited by organizations other than the Ministry of River Fleet is only about 2 to 3 thousand kilometers. By 1950 it should reach about 15,000 kilometers. Therefore the over-all length of waterways exploited in the USSR should reach 115,000 kilometers in 1950.

2 GENERAL ORGANIZATION OF RIVER TRANSPORT

Thirty-five navigation companies (Ship Lines) existing carry out river transport.

From the view point of the organization:

- 32 companies are under the Ministry of River Fleet USSR (in Moscow)

- 2 companies are under the Main Administration of the Northern Sea Route (in Moscow)

- 1 company is under the Council of Ministers Latvian SSR (in Riga)

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On the following river systems transportation is carried out by River Navigation Companies [illegible]:

A. Central River systems

I. Volga River System: 8 companies

1) "Volgotanker" River Navigation Company (petroleum)

Head office: Astrakhan

2) Volga River Navigation Company for Freight Transport

Head office: Kuybyshev

3) Volga River Navigation Company for Freight and Passenger Transport

Head office: Gor'kiy

4) Moscow-Volga Canal River Navigation Company

Head office: Moscow

5) Moscow-Oka River Navigation Company

Head office: Moscow

6) Kama River Navigation Company

Head office: Molotov

7) Vyatka River Navigation Company

Head office: Kirov

8) Belaya River Navigation Company

Head office: Ufa

B. Northern river systems

I. Pechora river system: 1 company

9) Pechora River Navigation Company

Head office: Kanin

II. Mezen', Northern Dvina and Onega river system: 2 companies

10) Northern River Navigation Company

Head office: Arkhangel'sk

11) Sukhona River Navigation Company

Head office: Vologda

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III. Lake Peypus river system: 1 company

12) Lake Peypus River Navigation Company

Head office: Tartu

IV. Northwestern river system: 3 companies

13) Northwestern River Navigation Company

Head office: Leningrad

14) ~~White Sea~~-Onega River Navigation Company

Head office: Petrozavodsk

15) Sheksna River Navigation Company

Head office: Cherepovets

C. Southern river systems: 11 companies

I. Western Dvina river system: 1 company

16) Western Dvina River Navigation Company

Head office: Riga

II. Neman river system: 1 company

17) Neman River Navigation Company

Head office: Kaunas

III. Dnestr river system: 1 company

18) Dnestr River Navigation Company

Head office: Bendery

IV. Dnepr river system: 2 companies

19) Dnepr River Navigation Company

Head office: Kiev

20) Upper Dnepr River Navigation Company

Head office: Gomel'

V. Don and Kuban' river systems: 1 company

21) Don River Navigation Company

Head office: Rostov on Don

VI. Kura river system: 1 company

22) Kura River Navigation Company

Head office: Baku

VII. Ural river system: 1 company

23) Ural River Navigation Company

Head office: Ural'sk

VIII. Aral river system: 1 company

24) Central Asiatic River Navigation Company

Head Office: Chardzhou

IX. Balkhash river system: 1 company

25) Balkhash-Ili River Navigation Company

Head office: Iliysk

X. Issyk-Kul' river system: 1 company

26) Issyk Kul' River Navigation Company

Head office: Rybach'ye

D. Eastern river systems: 9 companies

I. Ob' river system: 3 companies

27) West Siberian River Navigation Company

Head office: Novosibirsk

28) Lower Irtysh River Navigation Company

Head office: Omsk

29) Upper Irtysh River Navigation Company

Head office: Semipalatinsk

II. Yenisey river system: 2 companies

30) Yenisey River Navigation Company

Head office: Krasnoyarsk

31) East Siberian River Navigation Company

Head office: Irkutsk

III. Lena river system: 2 companies

32) North Yakutian River Navigation Company

Head office: Yakutsk

33) Lena River Navigation Company

Head office: Yakutsk

IV. Yana River Navigation Company

Head office: Yansk

V. Amur river system: 1 company

38) Amur River Navigation Company

Head office: Khabarovsk

3. Local transport and transport on small rivers

Organized either by local sections of river navigation companies or by special administrations under the executive committees of administrative regions.

III PROBLEMS STRESSED IN RIVER TRANSPORT BY THE FIVE-YEAR PLAN

A. General plans

Among other production increases, the following are provided by the 1946-1950 Five-Year Plan:

petroleum industry products	51 percent
~~iron~~ metallurgy products	35 percent
timber	59 percent
agricultural products	27 percent
mineral fertilizers	70 percent

This plan requires a considerable increase in transport, mainly in river transport, since the products above are among the most important to be shipped by inland waterways.

At the end of the Five-Year Plan the total amount of merchandize shipped must increase

by railroad	28 percent
by river	38 percent

which will increase the ~~transportation~~ volume ~~by~~ river transport in the overall volume of traffic.

In 1950, inland waterways must carry out the following transportation (in ton-kilometers)

38.2 percent of the total transport of timber
21.8 percent " of petroleum products
13.1 percent " of ~~cereals~~ grain
7.2 percent " of building materials

B. Guiding principles

The guiding principles of the ~~evolution~~ development in river transport for 1946-1950 are as follows:

1. Complete absorption of timber log transport by rivers crossing forest areas, and parallel to railroads, railroad transport of such timber being totally discontinued.

2. Maximum possible absorption of petroleum shipments by the Volga, Kama, Dnepr and Amur.

3. Development of river transport in basins where no railroads are available (i.e. lower Ob' and Yenisey) to an extent which would ensure the development of the productive forces of these basins.

4. Development of long distance river shipments, those of essential goods in the first place.

5. Complete absorption of local merchandize traffic in regions contiguous to inland waterways.

C. Increase in river fleet exploitation

Figures below show the mean utilization of the river fleet in 24 hours, for tug boats per horse power, for barges per ton of burden, as compared to 1913:

	tug boats (HP)	barges for dry goods	tank-barges
1913	100	100	100
1937	182	168	254
1940	200	160	326
1950 (plan)	222	214	355

These figures provide a general idea of river transports, since most of them were done by towing which represented

in 1946 96 percent and

in 1951 (plan) 94 percent of the total volume of traffic

D. Increase in length of average run

	1940	1945	1950 (plan)
timber in rafts	356 km	314 km	437 km
timber in ships	378 "	279 "	392 "
building materials	193 "	261 "	209 "
petroleum products	1,259 "	1,164 "	1,400 "
[illegible]	424 "	594 "	497 "
coal	540 "	370 "	510 "
salt	1,224 "	1,515 "	1,405 "
length of average run	491 km	505 km	539 km

E. Mechanization of loading and unloading operations

1913	0 percent
1928	0 "
1932	12.0 "
1937	35.7 "
1940	46.4 "
1945	56.6 "
1946	58.0 "
1947	64.4 "
1950 (plan)	75.0 "

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F. Increase in inland waterway freight and passenger traffic

	FREIGHT			MILLION
	Compared to 1913	Million tons	Billion ton-kilometers	PASSENGERS
1913	100	about 35	about 18.5?	?
1918	23.5	8.3		?
1928	52.3	18.3		17.8
1932	124.0	46.9		43.6
1933		44.7		41.6
1934		52.7		41.2
1935		64.7		41.5
1936		69.3		46.8
1937	191.0	66.9	33.1	63.1
1940	209.5	74	35.9	73
1945	?	?	18.3	38.5
1950 (plan)	258.0	91.5	49.3	73

C. Distribution of shipment over river systems

River Systems	Total run in billion ton-kilometers in 1950 (plan)	Development compared with	
		1940	1945
Central River Systems	35.25	143 percent	266 percent
including the Kama river	7.92	255 percent	510 percent
Northern River Systems	5.61	113 percent	372 percent
including the Northwestern river system	2.04	123 percent	725 percent
Southern River Systems	2.99	140 percent	454 percent
including the Dnepr river system	1.78	130 percent	553 percent
Eastern River Systems	5.25	130 percent	190 percent
including the Ob' river system	2.24	129 percent	204 percent
and the Yenisey river system	1.11	160 percent	206 percent
Total	49.30 billion ton-kilometers	138 percent	270 percent

IV PRINCIPAL GOODS SHIPPED BY RIVER TRANSPORT

Total figures of goods to be shipped by river in 1950 according to the Five Year Plan:

	Million tons	Billion ton-kilometers	Average run in km
timber in rafts	43.0	18.8	437
timber in ships	8.6	3.4	392
building materials	10.5	2.2	209
petroleum products	9.5	13.3	1,400
cereals	5.7	2.8	497
coal	4.0	2.0	510
salt	1.7	2.4	1,405
miscellaneous	8.7	4.4	
Total	91.5	49.3	539

Passenger traffic: 73 million persons

This table shows that essential goods represent 90 percent of the total shipment.

A. Timber

Timber remained the most important merchandize shipped by river.

Timber shipped in 1950:

43.0 million tons in rafts (18.8 billion ton-kilometers for an average run of 437 km)

8.6 million tons in ships (3.4 billion ton-kilometers for an average of 392 km)

In 1950 timber shipment by river in ton-kilometers will reach 61 percent of timber shipment by rail and 38.2 percent of the total by rail and river.

1) Forests of the Upper-Kama

Timber will be sent down the Kama river to the Volga River.

Timber transport on the Kama river was 2.5 million tons in 1940; this quantity must increase to

7.4 million tons in 1950.

This timber is designed for the regions along the Middle and Lower Volga; transfer ports of Astrakhan', Stalingrad and Saratov, for further rail shipment toward the Donets industrial basin, the region of Rostov, the Northern Caucasus and the Transcaucasian regions.

Timber transport on the Kama River will be developed by building a hydrostatic center in Molotov, the first part of which will be completed at the end of the 1946-1950 Five-Year Plan. The Molotov dam not only will raise the water level of the Kama river itself but that of its affluents as well.

2) Forests of the Upper-Volga (above Shcherbakov), of the Shcherbakov Water Reservoir, of the Sheksna, of Belozersk and of Lake Kubenskoye.

This lumber is shipped to Moscow on the Moscow-Volga canal.

The lumber supply of Moscow by water, including lumber shipped from the South via the Oka and Moskva rivers, will increase 13 percent in 1940 and 30 percent in 1950.

3) Forests of the Northern basin (regions of the Northern Dvina, the Onega and the Mezen')

In 1950 water transport of timber will reach 8.3 million tons, which will surpass the prewar levels.

Timber shipped by water will be used as follows:

by the Arkhangel'sk timber industry, the most important in the USSR.

by the industrial center of Koltas (at the junctions of the Northern Dvina and the Vychegda, 61° 15' N, 46° 38' E)

by the Arkhangel'sk export.

4) Forests of the Northwestern basin and of the Karelo-Finnish USSR.

The Five-Year Plan provides that transportation of timber by river

must be re-established at prewar levels in the Northwestern basin (Leningrad-Ladoga-Svir'-Volkhov region). This will become possible through a considerable increase of timber import from the Karelo-Finnish SSR (See also No 5 below).

5) Timber shipping in the Dnepr basin

In 1946-1950 the increase of transit shipment of timber in the Dnepr-Western Dvina basin (from the Dvina to the Dnepr?) will be limited, since the main part of the Belorussian economic production has suffered considerably from the German occupation. In addition to Belorussian timber, the Ukraine will receive timber from other regions, Karelia in particular. This timber will be shipped by combined transport (rail and river). Timber transfer ports, from rail to river, are:

Gomel' (on the Sozh, a tributary of the Dnepr, 52° 25' N, 31° 00' E)

Pkhov (on the Pripyat', a few kilometers above Mozyr' which is located at 52° 03' N, 29° 16' E)

Zhlobin (on the Dnepr, 52° 54' N, 32° 02' E)

The total lumber shipment in the Dnepr basin for 1950 will be 2.3 million tons, including 700,000 tons by combined transport.

6) Forests of the Lower-Irtysh

River shipments of lumber will reach 1.16 million tons in 1950, i.e. 24 percent more than in 1940.

1. Forests of the Tavda (tributary of the Irtysh) and of the Sos'va (tributary of the Tavda) will be used to cover the needs of the Urals. Transfer from river to rail is operated at Tavda (on the Tavda River; 58° 03' N, 65° 19' E; terminal of the Sverdlovsk railroad).

2. Timber from the Lower Irtysh forests will be sent to Omsk (on the Irtysh) for transfer to rail and shipment to the Kazakhstan, in particular to the Karaganda coal basin (49° 52' N, 73° 10' E).

7) Forests of the Ob'

1. Timber from the Altay in stocks in the Upper Ob' and its tributaries will be entirely sent to the Soviet Central Asia. Transfer

on rail will be operated at Barnaul (on the Ob' River, 53° 20' N, 83° 48' E). For this purpose the Altay timber industry and Barnaul as a transfer base will be developed.

2. In the Tom' basin(tributary of the Ob' River, junction with the Ob' at 56° 50' N, 84° 30' E approximately) where timber resources are very large, storage of timber for the Kuznetsk coal basin (center: Stalinsk, previously Kuznetsk, 53° 45' N, 87° 09' E) will be developed. Timber supply from the Narym region, the shipment cost of which is very high, could be reduced to the minimum. Shipment of this latter supply is a combined one by river to Tomsk (on the Tom' river at 56° 29' N, 84° 59' E) where timber is transfered onto rail.

8) Forests of the Angara

A considerable increase of timber floatage on the Yenisey, from the Angara forests to the saw-mills of the Lower Yenisey at Igarka (67° 28' N, 86° 36' E) and Dudinka (69° 24' N, 86° 10' E) is contemplated.

B. Building materials

The following transportations by river were scheduled for 1950 in the Five-Year Plan.

10.5 million tons of building materials (2.2 billion ton-kilometers for an average run of 209 km); this figure represents 7.2 percent of the total amount shipped by both rail and river.

The percentage of building material shipment by river to the principal cities with increase considerably. In the past this supply came by rail for lack of ships.

1) Volga river system

Transport of building material is being considerably developed:

in 1940 - 3.5 million tons

in 1950 - 4.3 million tons

Shipment of building material to Moscow via the Oka and Moskva rivers and the Moscow-Volga canal will reach 2.4 million tons in 1950. The volume of shipment by river compared to the total volume of shipment, river and rail, will increase from 20 percent in 1940 to 35 percent in 1950.

In the area of the Volga river system the principal large quarries of building material, the production of which is shipped by river, are as follows:

a) Samarskaya Luka

(Wharves: Shiryayevo and other)

lime and limestone quarries.

b) Junction of the Volga and Kama rivers

large deposits of gypsum and lime.

c) Lower Kama

gravel quarries

d) Ples region

(Ples: on the Upper Volga between Kineshma and Kostroma, 57° 27' N, 41° 01' E)

very large gravel quarries.

e) Dmitrov region

(On the Moscow-Volga canal, Dmitrov 56° 21' N, 37° 32' E)

Very large gravel quarries.

f) Kaluga-Aleksin region

(On the Upper Oka, Kaluga 54° 31' N, 36° 16' E; Aleksin 54° 31' N, 37° 06' E).

Limestone quarries. Main source of the Moscow supply in limestone.

2) Other river systems

Transport of building material by river is contemplated for the Dnepr, the Don-Kuban' and the Northwestern basins.

C. Petroleum products

According to the new Five-Year Plan, shipment of petroleum products

will hold one of the leading positions in river transport. In 1950 the tonnage shipped will be

9.5 million tons (13.3 billion ton-kilometers for an average run of 1,400 km). This represents 21.2 percent of the total shipment in ton-kilometers for both river and rail.

The major part of these products, 7.54 million tons (average run 1,618 km) will be shipped on the Volga river system. The average carrying capacity of tank-barges on this system is 6,000 tons, the maximum being 12,000 tons.

1) Baku petroleum

From Baku to Astrakhan' petroleum is shipped by the Merchant Marine ships (Caspian Navigation Company for Petroleum Shipment, alias "Kasptanker", head office in Baku, and Caspian Roadstead Navigation Company for Petroleum Shipment, alias "Reydtanker", head office in Astrakhan') and also certainly by the Baku-Kizlyar-Astrakhan' railroad.

Shipment of petroleum in the Volga-Kama basin is carried by the "Volgatanker" River Navigation Company, head office in Astrakhan'. The following organizations were identified as being placed under its jurisdiction:

"Exploitation Sectors" on the Volga in Astrakhan', Stalingrad, Saratov, Kuybyshev, Gor'kiy and Yaroslavl' and on the Kama in Molotov.

a. "Petroleum Bureau" in Kamskoye Ust'ye (on the Volga, not far from the junction with the Kama)

- "Station" at Batraki.

Shipment of petroleum from Baku to the Dnepr basin is carried from Baku to Poti or Batumi by rail or pipe-line, from there to Odessa on ships of the Merchant Marine (Black Sea Navigation Company for Petroleum Shipment, alias "Sovtanker", head office in Odessa) In Odessa the petroleum is transfered to the River fleet ships (Dnepr River Navigation Company, head office in Kiev).

The main river lines for petroleum shipment from Baku are as follows:

a) Astrakhan'-Shcherbakov hydrostatic center (at the junction of the Volga and the Sheksna rivers, 58° 03' N, 38° 52' E).

Uglich hydrostatic center (on the Volga 57° 32' N, 38° 19' E) - Moscow-Volga canal - Moscow.

B) Astrakhan'-Volga-Shcherbakov hydrostatic center (at the junction of the Volga and the Sheksna, 58° 03' N, 38° 52' E) - Sheksna - Mariinskiy system (Sheksna - Lake Beloye canal - Kovsha - Mariinskiy canal - Vytegra - Onega canal) - Svir' - Lake Ladoga - Novaya Ladoga canals - Neva - Leningrad.

The transit capacity of the Mariinskiy system is not sufficient under its present condition, and as long as its reconstruction is not completed, the use of combined transport will remain considerable. The transfer point from water to rail is at Cherepovets (on the Sheksna 59° 08' N, 37° 56' E).

c) Astrakhan'-Volga-Batraki near Syzran' on the Volga 53° 10' N, 48° 40' E) where petroleum is transfered onto rail and forwarded to Siberia and Kazakhstan. Shipment on this line of purified petroleum was also planned, although in rather small quantities. Other petroleum products and crude oil from Baku for Siberia and Kazakhstan are to be shipped on the Caspian Sea to Gur'yev, from there sent through the pipe line or by rail to Orsk (51° 12' N, 58° 35' E) and from Orsk farther on.

Kazakhstan and Siberia will be supplied with gasoline and fuel oil from local petroleum industries, from coal distillation in special Siberian plants and from the Ufa (on the Belaya 54° 43' N, 55° 56' E) and the Krasnokamsk (on the Kama 58° 04' N, 55° 39' E) plants, which are on the extreme Eastern part of the "Second Baku" petroleum area.

d) Dnepr river system. It was planned that in 1950 river shipment of petroleum products will reach 477,000 tons. In 1940, 25 percent of petroleum products supply for the Dnepr region came by river; the Five-Year Plan provided an increase of this figure. The average

run will be increased. This depends on increasing shipments of petroleum products from Odessa to Kiev and to regions located farther up on the Dnepr river system.

2) "Second Baku" petroleum

A certain part of the "Second Baku" petroleum products will be shipped on the Kama river and its tributaries to the Volga. River transport is expecting difficulties in the organisation of these shipments.

(See also: Baku petroleum, paragraph c).

3) Far Eastern petroleum

On the Amur river shipment of petroleum products from local petroleum plants will increase considerably, which will come with some reduction in shipment of crude oil.

D. Cereals

The Five Years plan provides for 1950 cereals shipments by river for a total amount of:

5.7 million of tons (2.8 billion ton-kilometers, average run 497 km)

The principal river basins of the USSR also are regions of large cereals production.

1. Volga river system

The plan has provided for 1950 the following tonnage of ~~cereals~~ grain shipped by river:

1.89 million tons. The average run will be 810 km, i.e. 43 percent larger than in 1940.

Regions producing large quantities of ~~cereals~~ grain are those of the Middle Volga, partly of the Lower Volga, of the Kama, of the Belaya and of the Viatka. Rivers of the Volga river system will transport ~~cereals~~ grain produced in the Urals, the Kazakh SSR will transfer on river in Saratov, and those produced in the region of Chkalov will transfer in Kuybyshev.

The principal mill centers are in the Upper Volga regions. The construction of a large elevator was planned in the Western Port of Moscow, near the mill combine, for the reception of ~~cereals~~ grain in that city.

2. Dnepr river system

The plan for 1950 provides

0.9 million tons of grain to be shipped by river. The average run will be 135 km (118 km in 1940)

3. Don and Kuban' river systems

Planned grain shipments for 1950

0.65 million tons. The average run will be 220 km, which is 42 percent larger than in 1940.

A considerable importance is attached to the development of grain shipments from points located at the interior of regions alongside the rivers; this development will take place in a parallel way with the development of transport on the main rivers.

4. Ob' river system

In 1950 transport of grain on the Ob' and Irtysh will surpass the prewar levels. Shipments on tributaries toward the main rivers will have an important role.

E. Coal

Coal shipments by river were provided as follows in the Five-Year Plan:

4.0 million tons (2 billion ton-kilometers for an average run of 510 km)

1. Vorkuta coal

(Vorkuta: 67° 30' N, 64° 03' E)

According to the plan, coal shipments on the Pechora will be in 1950 twice larger than in 1940.

Principal lines for coal shipment from Vorkuta:

a) When depth of the approaches to the sea of the Nar'yan-Mar port is increased (Pechora estuary 67° 38' N, 53° 00' E) coal will be sent by rail from Vorkuta to Kanin (on the Pechora, near Ust'-Kazhva which is at 65° 09' N, 57° 02' E) where it will be transfered to river and forwarded to Nar'yan-Mar. Terminals of these shipments are ports of the White Sea and Murmansk.

b) Development of combined transport has been planned for supplying Arkhangel'sk with coal. Coal will be shipped by rail from Vorkuta to Kotlas (at the junction of the Northern Dvina and the Vychegda 61° 15' N, 46° 38' E) and from there by on the Northern Dvina to Arkhangel'sk.

2. Donbass coal (Donets industrial basin)

a) Coal shipped by river to the Don river basin comes (mainly?) from the Krasnodonetskaya mine (48° 02' N, 40° 55' E)

b) Coal for the Volga river system is shipped by rail to Krasnoarmeysk (on the Volga 48° 51' N, 44° 33' E/ near Stalingrad) where it is transfered to river.

c) Coal for the Dnepr river basin is transfered from rail to river in Dnepropetrovsk (on the Dnepr 48° 28' N, 35° 02' E)

3. Kizel coal

The Kizel coal shipped on rivers of the Volga system is brought by rail to Solikamsk (on the Kama 59° 38(N, 56° 47' E) which is the transfer point to river.

4. Ekibas-Tuz coal

(Ekibas-Tuz: 51° 40' N, 75° 20' E)

This coal is shipped by rail to Pavlodar (on the Irtysh 52° 17' N, 76° 57' E) where it is transfered on the river.

5. Chernogorsk coal

(Chernogorsk: 53° 49' N, 91° 14' E)

Coal is shipped by rail to Podkunino (no exact location available; should be near Krasnoyarsk) for transfer on the Yenisey river.

6. Other transfer points

The following localities have been also identified as transfer points from rail to river:

a) Kambarka (on the Kama 56° 11' N, 54° 12' E)

b) Cheremoshniki (in Tomsk, which is on the Tom', 56° 29' N, 84° 59' E)

c) Kemerovo (on the Tom' 55° 21' N, 86° 04' E)

d) Omsk (on the Irtysh 55° 00' N, 73° 23' E)

e) Makar'yev (location unknown)

F. Salt

For 1950 the plan has provided for the transportation of the following amounts of salt:

1.7 million tons (2.4 billion ton-kilometers; average run 1,405 km)

Salt shipment by river from the salt water lake Baskunchak (48° 12' N, 46° 54' E) will be increased. Vladimirovka (on the Volga 48° 18' N, 46° 10' E) is the transfer point from rail to river.

In 1946 approximately one million tons of salt were shipped on the Volga river.

Rivers will be also used for shipment of ~~technical~~ industrial salts from Solikamsk (on the Kama 59° 39' N, 56° 47' E). These salts are obtained from potassium ore.

G. Chemical products

The plan provides for a speedy development of shipment of chemical products. In 1950 such shipments must amount to:

0.72 million tons. The average run will be 1,050 km, twice that of 1940.

1. Volga river system

Chemical products shipped from the Caspian regions will be transfered from sea (and rail?) on river in Astrakhan'.

The principal products shipped are:

a) The production of the Kara-Bogaz-Gol Chemical Combine (on the Eastern shore of the Caspian Sea 41° 03' N, 52° 55' E)

The production of this combine, which includes a soda solution plant and a bromide plant, is obtained by treating chemical products from the Kara-Bogaz-Gol Bay and from salt water lakes located in the vicinity.

b) Barium (Ba) ore from the Caspian region

c) Pyrite and other raw materials for production of sulfuric acid, with transfer on river in Kambarka (on the Kama 56° 11' N, 54° 12' E)

d) Potassium salts from Solikamsk (on the Kama 59° 39' N, 56° 47' E). These shipments will be developed considerably, when a water reservoir [redacted] is built because of the important rise of the Kama water level.

e) Supply in raw materials for the Voskresensk plant (on the Moskova River 55°19' N, 38° 44' E). Chemical combine; 1942 output X X /words deleted/ per month: 13,000 ton of sulfuric acid and unknown quantity of explosives.

f) Supply in raw materials of the Chemical Combine No 26 in Dzerzhinsk (on the Oka 56° 15' N, 43° 29' E)

/Several lines deleted/

Shipments of apatite concentrates will start from Kirovsk (67° 37' N, 33° 40' E) with transfer points from rail to water transport at Kandalaksha (on the Northwestern shore of the White Sea 67° 09' N, 32° 25' E). The "Nevskiy" Chemical plant in Leningrad will be supplied in the first place (planned production for 1939: 300,000 tons of superphosphates), thus when the Volga-Baltic waterway is rebuilt regions of the Volga river system will be also supplied.

H. Various merchandizes.

Among other merchandizes the following are provided as return cargo for ships which have carried essential goods:

1. On the Volga sailing down-streams:

a) Timber for mine props from the Shcherbakov Water Reservoir, the Sheksna and the Lake Beloye.

b) Saw timber and timber to be finished into special products with Yaroslavl' and Gor'kiy as transfer points.

c) Phosphate fertilizers from the Voskresensk plant (on the Moskova River 55° 19' N, 38° 44' E)

d) Scrapped iron, metallic products, machinery and motor cars from Moscow, Yaroslavl' and Gor'kiy.

e) Motor car engines from Yaroslavl'

f) Textiles, various industrial products and food industry products

SECRET

SECRET

I. Passengers

In 1940 - 73 million passengers were shipped.

In 1945 - 38,5 million " " "

In 1950 there will be

73 million passengers

including 22.6 million in local communications and transit and 50.4 million in suburban and intra-urban traffic.

Local and transit traffic will increase the most on the Volga, the Moscow-Volga canal and the Oka, where the level will surpass that of the prewar period.

A special attention will be given to the development of suburban and intra-urban traffic. Thus, for instance, on the Moscow-Volga canal which became one of the favorite vacation resorts of the Moscow population, will ship 3.3 million passengers in 1950, while in 1940 only 1.8 million passengers were shipped.

SECRET

V RIVER FLEET AND ITS DEVELOPMENT

A. Shipbuilding in the prewar Five-Year Plans

Obviously the major part of the Soviet river ships are old and for lack of ship repair enterprises their maintenance is poor.

85 percent of self-propelled ships in service in 1945 were built before the Revolution of 1917.

Until 1928 shipbuilding was very low. It was only during the first Five-Year Plan (1928-1932) that the River fleet started to be developed considerably. During this plan

91,000 HP of self-propelled ships and

2,308,000 tons of non self-propelled ships were built.

As one can see, the great priority was given to the renewal of useful tonnage. During the Second Five Year Plan (1.1.1933 - 4.1.1937)

207,000 HP of self propelled ships and

317,000 tons of non self-propelled ships were built.

Shipbuilding figures of the Third Five Year Plan, started in 1938 and interrupted by the war, are not known.

B. War losses

During the war the river fleet lost:

More than 1,000 self-propelled ships and

more than 3,000 non self-propelled ships were destroyed, sunk or damaged; 60 percent of these losses are beyond repair.

In 1946 more than one half of ships which it was possible to salvage were repaired and put into service, which amounts to less than 20 percent of war losses.

Losses include more than 300 passenger ships, most of which are motor boats, totaling a power of more than 50,000 HP.

C. Fourth Five-Year Plan

1. Development of river fleet

The Fourth Five-Year Plan provided for the development of river fleet by building:

300,000 HP of self-propelled ships and

3,000,000 tons of carrying capacity of non-self propelled ships.

If such a program is carried out, the River fleet will not only recover from war losses but will surpass its prewar level 25 percent.

In comparison with 1948, new ships include:

49 percent of self-propelled ships

75 percent of non-self-propelled ships.

In 1947 building plans were not carried out completely: several large plants did not fulfill their assignments in self propelled shipbuilding and [redacted] construction yards were 50,000 tons short in wooden shipbuilding.

At this point it is still impossible to state whether or not the shipbuilding plan will be fulfilled.

In the different river systems the enlargement of the river fleet was planned as follows:

Self Propelled Ships

	Totals on 12.31.45 in HP	Increase in percent	Increase in HP	Totals on 1.1.51 in HP
Central river systems	295,000	43	127,000	422,000
Northern river systems	113,000	54	61,000	174,000
Southern river systems	54,000	132	71,000	125,000
Eastern river systems	152,000	27	41,000	193,000
Total	615,000	49	300,000	915,000

Non Self-Propelled Ships

	Totals on 12.31.45 in tons	Increase in percent	Increase in tons	Totals on 1.1.51 in tons
Central river systems	2,335,000	66	1,540,000	3,875,000
Northern river system	700,000	96	670,000	1,370,000
Southern river system	335,000	131	440,000	775,000
Eastern river system	650,000	54	350,000	1,000,000
Total	4,000,000	75	3,000,000	7,000,000

In 1951 the river fleet must be composed as follows:

Self-Propelled Ships

Tugboats built from 1946 to 1950	about	220,000 HP
" " 1917 to 1945	"	250,000 HP
" " before 1917	"	300,000 HP
	about	770,000 HP
Passenger motor boats built from 1946 to 1950	about	33,400 HP
" " Before 1946	about	15,000 HP
	about	48,000 HP
Other self propelled ships	about	95,000 HP
	about	95,000 HP
Total	about	915,000 HP

Before 1945, 12 percent of all the tugboats were equipped with diesels or gas generators. Tugboats which were to be built between 1946 and 1950 are subdivided as follows (in percent of their total power):

52 percent diesel

32 percent steam

16 percent gas generators

Variations in proportions among the different types of engines is motivated by experience data. The diesel ship is cheaper, requires about 1/3 as much fuel, provides for an economy of 20 to 25 percent for the maintenance in service and presents considerable advantages in comparison with the steam ship.

The construction of gas generator ships is from 35 to 49 percent cheaper than that of steam ships, requiring in particular one half of the metal. Similarly fuel expenditure and maintenance in service of the gas generator ship is more economical than that of a steam ship.

The majority of self propelled ships is composed of tugboats, the principal type of which is the paddle-wheel driven tugboat. The number of screw driven boats did surpass 20 percent of the total in 1945.

Non Self-Propelled ships

metallic barges built from 1946 to 1950	about	820,000 tons
" before 1946	"	1,650,000 tons
wooden barges built from 1946 to 1950	about	1,650,000 tons
" before 1946	"	2,540,000 tons
other non self-propelled ships	"	3,000,000 tons
Total	about	7,000,000 tons

Metallic barges to be built from 1946 to 1950 were subdivided as follows:

tanker barges	about	320,000 tons
dry cargo barges	"	500,000 tons

Although the building costs of metallic barges is higher than that of wooden barges, metallic barges present numerous important advantages from the viewpoint of operation and economy.

2 Standardization of Ship Types

The shipbuilding program is based upon the standardization of ship types.

At present in the Volga river basin alone there are more than 150 different types of dry cargo barges, up to 40 types of tank barges, and hardly two or three dozens wooden barges with absolutely identical structure and dimensions.

To standardize ships, waterways were classified into five categories. A limited number of types of ships is built for each of these categories.

River categories and their corresponding tugboat and barge types are as follows:

1. Deep main rivers such as

the Volga

the Kama up to Molotov

the Ob' up to Novosibirsk

the Irtysh up to Pavlodar

the Amur up to Blagoveshchensk

a) Steam tugboat (2 propellers)

Power: 2 x 400 HP

Dimensions: 45 x 9 x 2.0 meters

b) Diesel tugboat (2 propellers)

Power: 2 x 300 HP

Dimensions: 37 x 6 x 1.8 meters

c) Steam tugboats (2 propellers)

Power: 2 x 200 HP

Dimensions: 40 x 8 x 1.45 meters

d) Steam tug-boats (2 propellers)

Power: 2 x 100 HP

Dimensions: 28 x 6 x 0.9 meters

e) metallic tank-barges 6,000, 4,000 , 2,000 and 250 tons

f) 3,000-ton metallic barges for dry goods (for the Volga river only)

g) 1,500-ton metallic barges for dry goods (Dnepr and principal Eastern rivers)

h) 2,500-ton decked wooden barges

i) 1,500-ton open wooden barges

j) 2,000 and 1,000-ton wooden barges without holds.

2. Shallow main rivers

These are the other rivers and their principal tributaries the standard depth of which does not surpass 0.70 to 0.80 meters, such as

the Don

The Oka

the Northern Dvina.

a) Steam tugboat (paddle-wheels)

Power: 1 x 400 HP

Dimensions: 53 x 7.6 (hull) x 1.0 meters

b) Diesel tugboat (2 propellers)

Power: 2 x 150 HP

Draught: 0.80 to 0.85 meters

c) Steam tugboat (paddle wheels)

Power: 1 x 200 HP

Dimensions: 45 x 7 (hull) x 0.75 meters

d) Diesel tugboat (1 propeller)

Power: 1 x 150 HP

Dimensions: 29 x 5.5 x 0. 75 meters

e) 1,000-, 650-, 500-, and 300-ton open wooden barges

f) 600 and 250-ton wooden barges without hold.

3. Swift current rivers such as

the Yenisey

the Upper-Amur

the Upper Irtysh

the Upper Angara

the Amu-Dar'ya.

a) Tug-boats are specially built with additional reinforcements. Shape of hull is improved, for reducing the resistance of water.

b) 300-ton metallic barges for dry goods

c) 1,500-ton decked wooden barges

d) 600-, 300-and 100-ton open wooden barges.

4. Coastal roadsteads, lakes and canals such as the Bay of Ob' - Tazov

the Gulf of the Yenisey

Bays of the Okhotsk Sea (probably small distance coastwise shipping with small propeller river ships)

Lake Ladoga

Lake Onega

Lake Baykal

Shcherbakov water reservoir

a) Steam tugboats (2 propellers)

Power: 2 x 200 HP

Dimensions: 35 x 7.2 x 2.0 meters

b) Steam tugboat (1 propeller)

Power: 1 x 200 HP

Dimensions: 25 x 6.2 x 1.7 meters

c) 1,000-ton decked wooden barges

d) 1,000-ton decked wooden lighters.

5. Small rivers

a) Gas generator tugboats (2 propellers)

Power: 2 x 60 HP

Dimensions: 19 x 4.8 x 0.6 meters

b) Gas generator tugboat (1 propeller)

Power: 1 x 60 HP

Dimensions: 14 x 3.5 x 0.5 meters

c) 90; 40; 20-ton open wooden barges.

3 Shipbuilding in 1946-1950

During the prewar Five-Year Plans almost all the self-propelled and metal non self-propelled ships were built by ministries other than the Ministry of River Fleet. The considerable development of the industry of this latter made it possible in the new Five-Year

Plan to build the majority of new ships in its own enterprises, namely:

80 percent of the tugboats

50 percent of the metallic barges

75 percent of the dredgers

100 percent of the wooden ships.

Ships will be also delivered by the Ministry of Transport Machine Building.

Moreover a large quantity of new ships will be delivered by the USSR satellite countries as war-damage compensation.

At present 94 industrial enterprises which are now building river ships or which probably will be used for this purpose have been identified. The major part of these enterprises belong to the Ministry of River Fleet, the others to the other river transport organisations and to the Ministry of Transport Machine Building. No enterprise building river ships under the new Five-Year Plan has yet been identified as belonging to the Ministry of Shipbuilding Industry.

In several of these 94 enterprises prefabrication in shops of large ship sections has been started; these parts being later assembled in docks. The speed of ship building was considerably increased through this method.

The 94 enterprises identified are the following:

A. Central river systems

I. Volga River system

1) Astrakhan' - Ship Repair Plant imeni Stalin

(on the Volga estuary 46° 21' N, 48° 02' E)

Production identified:

in 1948, 2 tank barges 4,000 tons each.

2) Astrakhan' - Ship Repair Plant imeni Uritskiy

(on the Volga estuary 46° 21' N, 48° 02' E)

in 1948: two 100-HP motor boats for 350 passengers each

3) Astrakhan' - Shipbuilding and Repair Plant

(on the Volga Estuary 46° 21' N, 48° 02' E)

will be built

Planned annual production:

50,000 tons of large tank barges.

4) Gor'kiy - Ship Repair Plant imeni Molotov

(at the junction of the Volga and the Oka 56° 19' N, 44° 00' E)

Production identified:

in 1947 one 400-HP tugboat

5) Gorodets - Wooden ~~Naval Construction~~ Shipbuilding Yard

(on the Volga 46° 39' N, 43° 28' E)

6) Gorokhovets - ~~Naval Construction~~ Ship Yard

(on the Klyaz'ma 56° 12' N, 42° 42' E)

Production identified:

in 1948 a few 2,000 ton tank barges

7) Kashira - Shipbuilding Plant

(on the Oka 54° 59' N, 38° 10' E)

Production identified

in 1948: 15 metal~~lic~~ barges for dry goods to operated on small rivers.

8) Kletino - ~~Naval Construction~~ Ship Yard

(on the Oka 54° 59' N, 41° 14' E)

9) Kostroma - Wooden ~~Naval Construction~~ Ship Building Yard imeni Komsomol'skaya Pravda (at the junction of the Volga and the Kostroma 57° 46' N, 40° 57' E)

10) Kuybyshev - Metal~~lic~~ ~~Naval Construction~~ Ship Building Yard

(the yard is at the junction of the Sukhaya Samarka and the Volga (left bank, 35 km above the city of Kuybyshev located at 53° 12' N, 50° 06' E)

Production identified

in 1948 - 10 diesel 600-HP tugboats

18 metallic 3,000-ton barges for dry goods

Planned annual production (after completion of the yard)

50 diesel 600-HP tugboats

11) Krasnoarmeysk - Naval Construction Yard

(on the Lower Volga 48° 31' N, 44° 33' E)

Must have delivered in 1948: 10 steam tugboats and 18 large barges

12) Leont'yevo - Wooden Naval Construction Yard imeni Zhelyabov

(on the Mologa 58° 57' N, 36° 36' E)

Production identified

in 1948: wooden barges

13) Moksha - Wooden Naval Construction Yard

(The Moksha River is a tributary of the Oka, the junction of the two rivers is at 54° 45' N and 41° 50' E approximately)

Production identified:

in 1948 - 1,000-ton barges

14) Molotov - (Staryy Burlak?) Plant

(on the Kama 58° 00' N, 56° 13' E)

Production identified:

in 1948 (?) 4 steam tugboats

15) Mordovshchikovo - Naval Construction Yard

(on the Oka 55° 33' N, 42° 10' E)

Planned production for 1949

floating stations for pumping petroleum.

16) Moscow - Naval Construction Yard

Production identified:

in 1947: 20 metallic ships

in 1948: 29 diesel 150-HP tugboats

in 1949 (planned): 150-HP diesel tugboats

17) Moscow - Shipbuilding and Repair Plant

Production: Diesel motor boats for 120 passengers

The production of these motor boats has started in 1948.

The total will be 120.

18) Orel - Naval Construction Yard of Molotov

(on the Kama 59° 19' N, 56° 38' E approximately)

The place where the yard is located will be submerged when the Molotov dam is built.

19) Pamyat' Parizhskoy Kommuny - Ship Repair Yard

(on the Volga 56° 04' N, 44° 33' E)

Production identified in 1948: self propelled ships.

20) Kazanskiye - Naval Construction Yard imeni Gor'kiy

(on the Volga 56° 10' N, 45° 45' E approximately)

21) Saratov - Naval Repair Plant

(on the Volga 51° 32' N, 46° 01' E)

Production identified:

in 1948 - lighters

22) Sormovo - "Krasnove Sormovo" plant imeni Zhdanov

(on the Volga 56° 22' N, 43° 55' E approximately)

Production identified in 1948:

2 tank-barges, 3,700 tons each

8 freighters, 2,000 tons each

1 or 2 steam tugboats

6 diesel 600-HP tugboats

23) Stalingrad - Ship Repair Plant

(on the Volga 48° 42' N, 44° 30' E)

The Plant has been designated for shipbuilding exclusively

planned annual production:

up to 20 metallic barges, 2,000 tons maximum carrying capacity.

Production identified:

The two first 3,000-tons metallic barges for dry goods will be launched in May 1949.

24) Stalingrad (?) Shops

Production identified (launches in 1948?):

two 288-HP passenger ships

a few metal tank-barges.

25) Shcherbakov - ~~Navy Construction~~ Ship Yard imeni Volodarskiy

(at the junction of the Volga and the Sheksna 58° 03' N, 38° 52' E)

This yard is being rebuilt. Annual production planned after reconstruction (towards 1950): 30 steam, 400-HP tugboats with two propellers.

Production identified:

in 1947 - 3 steam tugboats

in 1948 - 3 to 6 steam tugboats

26) Tambov - Shipbuilding Plant

(on the Tsna 52° 43' N, 41° 27' E)

27) Chusovoy - Wooden ~~Naval Construction~~ Ship Building Yard of Molotov

(on the Kolva 60° 24' N, 56° 29' E)

Under construction. Must reach the full production in 1949

Annual production planned:

50,000 tons of barges

In 1948 the production was from 1/7 to 1/6 of the production planned.

28) Chistopol' - ~~Naval Construction~~ Ship Yard

(on the Kama 55° 22' N, 50° 38' E)

29) Yaroslavl' - Motor boat Building Plant

(on the Volga 57° 38' N, 39° 53' E)

In 1948 has started to produce metal motor tugboats on assembly line.

30) Zvenigovo- Plant imeni Boutyakovo (Butakov?)

On the Volga 55° 58' N, 48° 02' E)

Total production from 1871 to 1946: 110 river ships. A single passenger motor boat completed in 1947 could be identified.

B. Northern River Systems

I. Northern Dvina River Systems

31) Limenda - Shipbuilding Repair Plant

(on the Limenda 65° 08' N, 46° 50' E)

Production identified:

in 1946 - 8 tugboats (gas generators?)

in 1947 - 10 steam tugboats (propellers, 200 HP)

in 1948 - 10 diesel tugboats (300 HP)

in 1949 (planned) - several dozens of diesel tugboats.

32) Sokol - Wooden Ship Building Yard

(on the Sukhona 59° 28'N, 40° 08' E)

33) Tot'ma - Wooden Ship Building Yard

(on the Sukhona 59° 57' N, 42° 45' E)

34) Velikiy Ustyug - Shipbuilding and Repair Plant

(on the Sukhona 60° 46' N, 46° 18' E)

Production identified

in 1946 wooden (barges?)

in 1948 wooden barges)

Annual productive capacity (in 1948): 650-to 1,000-ton barges for a total carrying capacity of 120,000 tons. Metal barge building was also planned together with wooden ships (barges?)

35) Vychegda - Wooden Ship Building Yard

(Vychegda River, function with the Northern Dvina

61° 15' N, 46° 35' E)

Production identified in 1948:

6 barges, 1,000 tons each

2 barges (1,000? tons each?)

12 piers.

II. Northwestern River System

36) Leningrad - Concrete Ship Building Yard

37) Leningrad - Ship Mechanics Machine Repair Shops

These shops have built the majority of self-propelled barges operating in the Leningrad River Port.

SECRET

B. Northern River Systems

I. Northern Dvina River Systems

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in 1946 - 8 tugboats (gas generators?)

in 1947 - 10 steam tugboats (propellers, 300 HP)

in 1948 - 10 diesel tugboats (300 HP)

in 1949 (planned) - several dozens of diesel tugboats.

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These shops have built the majority of self-propelled barges operating in the Leningrad River Port.

SECRET

38) Medvezhegorsk - Wooden Naval Construction Yard (Ship Building)

(on the Northern Shore of Lake Onega 62° 55' N, 32° 27' E)

39) Novgorod - Wooden Naval Construction Yard (Ship Building)

(on the Volkhov 58° 31' N, 31° 17' E)

40) Petrokrepost' - Ship Repair Plant

(on the Western Shore of Lake Onega 59° 17' N, 31° 02' E)

31° 02' E

Will be built (is being built?)

Planned production: tugboat building cnassembly line; steam engine, two propellers, 400 HP for navigation on lakes.

41) Pindushi - Wooden Naval Construction Yard (Ship Building)

(on the Northern shore of Lake Onega 62° 56' N, 32° 33' E

approximately

Destroyed during the war, is now being rebuilt

Annual production planned: several dozens of 1,200-ton barges.

42) Podporozhiye - Svir' Wooden Naval Construction Yard (Ship Building)

(on the Svir' 60° 55' N, 34° 12' E)

Under construction. Will be the largest in the USSR.

planned production

3,000-ton barges.

43) Cherepovets - Metal Naval Construction Yard (Ship Building)

(on the Sheksna 59° 18' N, 37° 56' E)

Under construction. Annual production planned: 80 metal barges for dry goods, 3,000 tons each. The construction of 5,000-ton barges was also planned.

C. Southern River Systems

1. Western Dvina river system

44) Riga - Shipbuilding plant

(estuary of the Western Dvina 56° 59' N, 24° 09' E)

will be designed for shipbuilding exclusively. Is now being enlarged. Two tugboats must be launched.

Annual production planned: 8 steam 400-HP tugboats with two propellers, for lakes. After the plant is restored, 800-HP steam tugboats for lakes will be built there.

45) Yelish - ~~Naval Construction~~ Ship Yard

(on the Western Dvina 55° 36' N, 31° 11' E)

II. Neman (Niemen) river system

46) Kruk (sk) - ~~Naval Construction~~ Ship Yard

(location not determined)

III. Dnestr river system

47) Bendery - Ship Repair Shops

(on the Dnestr 46° 50' N, 29° 28' E)

IV. Dnepr river system

48) Shatsilki - Wooden ~~Naval Construction~~ Ship Building Yard

(on the Berezina 52° 37' N, 29° 45' E approximately)

under construction

49) David Gorodok - Wooden ~~[illegible]~~ Ship Building Yard

(on the Goryn' 52° 03' N, 27° 13' E approximately)

Under construction

50) Kherson - Ship Repair Plant Imeni Komintern

(on the Dnepr 46° 38' N, 32° 37' E)

Annual production planned: up to 40 tugboats with two propellers and 300-HP diesel.

Has built six 150-HP tugboats in 1948.

In 1949, ~~small~~ shallow draught 150-HP tugboats will be built.

51) Kiev - Shipbuilding Plant ~~"[illegible]"~~ "Komintsheya krasnitsa"

(on the Dnepr 50° 27' N, 30° 30' E)

Production identified from 1946 to 1948:

200 steam 400-HP tugboats

52) Makoshino - ~~Naval Construction~~ Ship Yard

(on the Desna 51° 28' N, 32° 21' E)

53) Narovlya - Wooden Ship Building Yard

(on the Pripyat' 51° 49' N, 29° 31' E)

Under construction

54) Petrikov - Ship Yard

(on the Pripyat' 52° 08' N, 28° 30' E)

55) Rechitsa - Wooden Ship Building Yard

(on the Dnepr 52° 22' N, 30° 22' E)

Under construction

56) Slavgorod - Ship Yard

(on the Dnepr 48° 08' N, 35° 15' E?)

57) Yatka - Ship Yard

(on the Sozh 52° 33' N, 31° 11' E)

58) Zaporozh'ye - Metal Ship Building Yard

(on the Dnepr 47° 50' N, 35° 08' E)

Under construction

Annual production planned

12 steam 400-HP tugboats with paddle-wheels and 30 barges, 1,500 tons each.

V. Don river system

59) Borovaya - Ship Yard

(on the Oskol 49° 25' N, 37° 37' E approximately)

60) Kletskaya - Ship Yard

(on the Don 49° 20' N, 43° 05' E)

61) Pavlovsk - Ship Repair Plant

(on the Don 50° 27' N, 40° 06' E)

Production identified:

In 1948 six metal barges for dry goods

In 1949 new series of barges of various sizes will be built.

62) Rostov - Ship Repair Plant "Krasnyy Don"

(at the Don estuary 47° 14' N, 39° 42' E)

will probably be designated for shipbuilding.

63) Voronezh - Ship Repair Shops

(on the Voronezh 51° 40' N, 39° 12' E)

Production identified:

in 1948: 3 self-propelled and 6 non self-propelled ships.

VI. Ural river systems

65) Aral'sk - Ship Repair Plant

(on the Northeastern shore of the Aral Sea 46°47' N, 61° 39' E)

Production identified:

1948 - 1949: 8 motors boats

66) Chardzhou - Ship Repair Plant

(on the Amu-Dar'ya 39° 06' N, 63° 34' E)

In 1947 started to assemble a series of 20 diesel 100 HP ships

67) ? Ship Assembly Yard

(location not determined exactly, in one of the bays of the Aral Sea)

In (1947?) - 1948 has assembled a total of 15 sea-barges and 15 river barges.

D. Eastern River Systems

I. Ob' river system

68(Barnaul - Metal[redacted] Ship Building Yard

Under construction Can reach its full production output only after 1950.

69) Barnaul - Shipbuilding and Repair Plant

(on the Ob' 53° 20' N, 83° 48' E)

No activity observed since 1944.

70) Baturino - [redacted] Ship Yard

(on the Chulym 57° 46' N, 85° 11' E)

71) Bobrovka - Ship Repair Plant

(The Bobrovka is a river at 57° 31' N, 62° 30' E)

Production identified:

in 1947 one steam tugboat has been launched.

73) Shatrovo - [redacted] Ship Yard

(on the Mostovka 56° 32' N, 64° 40' E)

Production identified:

in 1947 four 50-ton barges

73) Novosibirsk - Ship Repair Plant

(on the Ob' 55°02' N, 82° 56' E)

Must start operating between 1947 and 1950.

74) Novosibirsk - Wooden [redacted] Ship Building Yard

(on the Ob' 55°02' N, 82° 56' E)

Production identified:

one steam ship in 1948

75) Omsk - Metal[redacted] Ship Building Yard

(on the Irtysh 55° 00' N, 73° 23' E)

Under construction. Can reach its full production output after 1950 only.

Annual production planned:

25 steam 400-HP tugboats with paddle-wheels

5 steam 800-HP tugboats with propellers.

76) Omsk - Ship [redacted]Repair Plant imeni Stalin

(on the Irtysh 55° 00' N, 73° 23' E)

Construction of self-propelled ships (1948)

77) Samus' - Ship Repair Shop

(on the Tom' 56° 45' N, 84° 41' E)

Production identified:

on steam ship launched in 1948

78) Semipalatinsk - Ship Repair Plant

(on the Irtysh 50° 25' N, 80° 16' E)

Construction of self-propelled ships (1948)

79) Tavda - Upper Tavda Wooden [redacted] Ship Building Yard

(on the Tavda 58° 03' N, 65° 19' E)

Production identified:

in 1947-1948 - wooden barges

II. Yenisey river system

80) Barguzin - [redacted] Yard (?)

(on the Barguzin 53° 37' N, 109° 39' E)

The existence of this yard has not been confirmed.

81) Shumilovo - [redacted] Yard

(on the Angara 55° 58' N, 103° 00' E approximately)

Construction of barges (1947)

82) Yeniseysk - Wooden [redacted] Yard

(on the Yenisey 58° 27' N, 92° 11' E)

Construction of barges (1947)

83) Krasnoyarsk - Wooden [redacted] Yard

(on the Yenisey 56° 01' N, 92° 50' E)

Production identified:

in 1947 nine high-speed motor boats

in 1948 started assembly line production of 150-HP diesel motor boats.

84) Krasnoyarsk - Ship Repair Plant

(on the Yenisey 56° 01' N, 92° 50' E)

Production identified

one 200-HP steam tugboat launched in 1947.

85) Listvenichkoye /Listvyanka/ [redacted] Yard imeni Yaroslavskiy

(on the Northern shore of the Lake Baykal 51° 57' N, 104° 50' E approximately)

86) Predivnoye - Wooden [redacted] Yard

(on the Yenisey 57° 01' N, 93° 20' E)

Production identified

in 1947 - barges

in 1948 - three 1,850-ton barges

III. Lena river system

87) Kachug - [redacted] Yard

(on the Lena 53° 58' N, 105° 54' E)

88) Ostrovo - [redacted] Shipyard

(7 km from Ust'-Kut which is on the Lena at 56° 45' N, 105° 39' E)

Construction of barges (1947)

89) Poleduy - [redacted] Shipyard

(on the Lena 59° 39' N, 112° 48' E)

90) Sangary - [redacted] Shipyard

(on the Lena 63° 49' N, 127° 50' E)

IV. Amur river system

91) Blagoveshchensk - [redacted] Shipyard

(at the junction of the Amur and the Zeya 50° 17' N, 127° 33' E)

Has started or will start metal[redacted] barge construction.

92) Innokent'yevka - [redacted] Plant

(on the Amur 49° 17' N, 129° 40' E approximately)

No activity observed since 1941.

93) Surazhevka - [redacted] Shipyard

(on the Zeya 51° 24' N, 128° 08' E)

Construction of barges (1947).

94) Sretensk - [redacted] Shipyard

(on the Shilka 52° 15' N, 117° 43' E)

4 Ship Repair

In 1945 the majority of ship repair enterprises had no equipment answering the requirements of the modern technics. Thus 40% of the machine tools were either obsolete or worn out.

With a few exceptions the majority of enterprises had no cranes able to hoist assembled machinery, boilers, etc. onto the ships; they had no presses, no furnaces and no means to bring ships into dry places.

In order to improve these conditions, large works have been planned for the reconstruction and enlargement of enterprises and for the improvement of their equipment. Moreover, plants and shops will be built in bases where ship repair enterprises do not exist.

The great variety of ships makes it difficult to organize repairs, since separate work is necessary for each ship. However most of the ships have identical auxiliary and even principal mechanisms, which makes it possible to replace them with other similar mechanisms without large delays in ship operating. Broken or worn out mechanisms are assembled by categories and repaired, mainly between two navigation compaigns.

New ships were planned to be thus repaired. This will make it possible not only to exchange parts on a ship, but also to have a standard production of parts for ships under construction.

The use of such methods will considerably reduce difficulties and cost of repairs, as well as the time required to do the job.

The standardized production of mechanisms and tool parts will be organized in a small number of specialized enterprises.

The Five-Year Plan provides for the specialization of enterprises according to the kinds of repairs and the type of ships. In the creeks of such enterprises the organization of floating or land shops for current repairs is contemplated.

Capital repairs. Before the war capital repairs were made on 2 to 3 percent of ships in service, while according to regulations this should have been done on 7 to 8 percent of the ships. As a consequence of the development of enterprises, by the end of the current Five-Year Plan the volume of repair will be matching that provided by the regulations: in five years capital repairs will be made on 20 to 25 percent of all the ships.

~~average~~ medium repairs. Regulations require that each ship be given periodical ~~average~~ medium repair in dry dock. In order to carry out this requirement, 20 installations for pulling ships out of water will be built, and mainly ships which answer best to the requirements of the modern technique. ~~Average~~ medium repairs will be made every year on 20 percent of all the ships. The volume of work accomplished during the ~~average~~ medium repair will increase considerably.