Russian and Soviet Northern Ports, 1915-1945

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The northern ports of the Russian Empire were backwaters in 1914, until World War I broke out and most of Russia's major ports were blocked from international trade by the Central Powers, Russia's enemy. Russia embarked on a crash program to upgrade its northern ports and railroads, including building a brand new port, Murmansk, and a brand new railroad to it. As cargo for the war effort began to arrive, the region became a theater of the WW1 naval war, with Germany mining the seas and attacking ships with submarines. Before the expanded northern ports could have a significant impact on the war, war-weary Russia collapsed in two revolutions in 1917, with the communist Bolsheviks seizing power.

The Bolsheviks soon made peace with the Central Powers and fought their domestic rivals in the Russian Civil War. The northern ports again became a theater of war, as Russia's former allies intervened there with ships, troops, and aircraft to occupy the ports and the surrounding areas. However, the Allied countries had little interest in waging a major war in Russia. As the Bolsheviks won the civil war, the Allied countries withdrew their forces from the region.

The Bolsheviks gained control of the country and established the USSR. The northern ports became backwaters again, although under Stalin's five-year plans the region was further developed, mostly by forced labor of

prisoners.

History echoed itself in 1941, when Germany invaded the USSR, as most of the USSR's major ports were blocked from international trade, like had happened to the Russian Empire in 1914. However, the war followed a different path. German forces in Finland marched on the northern ports but failed to take them, like German forces further south failed to conquer the Soviet heartland. The northern ports region became a major entry point for Allied war aid flowing to the USSR, which triumphed over Germany in 1945.

Russian Empire, 1914 Territory of Russia, 1914 Territory lost to Japan, 1905 Russian protectorates (puppet states) Russian sphere of influence (N. Iran) or administration (CER Zone in China) Arctic Ocean Pacific Ocean Norway (Sakhalin Island) Sweden (Finland) Stockholm Arkhangelsk Japan Germany Sankt-Peterburg •Berlin Petrograd (from Sept. 1914) nd) (Manchuria) Yarshava CER Zone **Vladivostok** Austria Moskva **Russian Empire** Hungary. _Kazan Irkutsk Kiev Samara (Tuva) Odessa Nikolaev • Tsaritsyn Rostov-na-Donu China Beijing Konstantiniyy akhan Ottoman Empire (Khiva) Aug. 1914: World War I Central Asia) Europe descends into warfare as Germany and Austria-Hungary go to (Bukhara) (N. Iran) war with Serbia, Russia, France, • Tehran Belgium, and Britain. Russia attacks west with mixed results in 1914. Iran (Persia)

Russian Northern Ports in World War I

(Photograph: Russian infantry; unknown photographer; c. 1914)

The Russian Empire had extensive international trade in the early 20th Century. Agriculture and raw materials dominated the Russian Empire's economy, although the empire did have a relatively small but growing industrial base. The empire thus mostly exported agricultural products (particularly wheat) and raw materials¹ while mostly importing processed materials and manufactured products, as well as raw materials and agricultural products not available in

the empire. The majority of trade was conducted by sea, although some went by railroad to European countries, mostly to or through Germany. Although I have not confirmed this to my satisfaction, in the early 20th Century I believe about 75% of Russian trade flowed through the Baltic Sea, Black Sea, and European railroads², 16% through the White Sea, and 6% through other routes³.

Neighboring Germany was the empire's largest trading partner. Germany was an advanced industrial country that needed food and raw materials. Thus, both countries wanted what the other produced, a classic case for trade. While this was good for the overall Russian economy, as it kept costs down, it was a mixed blessing for the Russian chemical industry. Readily-available and sometimes relatively cheap German manufactured products and processed materials helped to inhibit the growth of the Russian chemical industry. Since the empire's chemical industry found it difficult to compete against imports of German advanced chemicals, the Russian industry remained relatively small and somewhat concentrated on more-easily-made basic chemicals. Overall, in normal times, this situation didn't matter much. However, normal times ended in 1914.

The outbreak of World War I in late July 1914 quickly hurt the empire's ability to trade. The enemy, the Central Powers (initially just Germany and Austria-Hungary), ceased trading with the Russian Empire. Further, they controlled almost all of the rail connections between the empire and the rest of Europe, so railroad trade virtually halted⁴. Germany also mostly dominated the entrance of the Baltic Sea and this, along with German naval superiority over the Russian Baltic fleet, greatly disrupted the empire's Baltic trade routes⁵.



A British view of the war in 1914. Russia is about to steamroll the Central Powers, reflected the belief that the large Russian army would be overwhelming. It was not. The Ottoman Empire is attacking Russia with its German warships and closing the Turkish Straits. (Art: unknown artist; 1914)

The Baltic ports were very important but not crucial, as the empire had major ports on the Black Sea, with trade flowing through the Turkish Straits and then the Mediterranean Sea. However, the Ottoman Empire was hostile to the Russian Empire and grew hostile to Russia's allies, Britain and France. In one series of events, the Ottomans allowed two German warships in the Mediterranean to escape from Allied ships and join the Ottoman Navy while remaining crewed and captained by Germans. In retaliation, the British blockaded Ottoman ships from entering the Mediterranean from the straits. In turn, in September 1914 the Ottomans closed the straits to all international shipping, which had the intended effect of cutting off trade to the Russian Black Sea ports. A month later the Ottomans attacked Russia, entering the war on the side of the Central Powers. The straits would remained blocked for the rest of the war, as Allied attempts to open them failed. In 1915, with the European railroads, Baltic Sea, and Black Sea mostly or completely blocked, Russian exports were 75% lower than in peacetime.

All major combatants at first believed the war would be short, over in a matter of months. Russian military planning in 1910, for example, assumed that a future European war would last less than six months. This governed how the Imperial Russian Army prepared itself, and military stockpiles were insufficient for a long war⁶. By the end of 1914, after about five months of intense combat with no overall victor, it became increasingly clear that the war would continue for some time. The Western Front, with France and Britain fighting Germany, had deadlocked into trench warfare and a war of attrition. The Eastern Front, with Russia fighting Germany and Austria-Hungary, was more fluid, but neither side had a clear way to win quickly. Thus, by the start of 1915 the disruption of trade meant the Russian Empire was facing a growing shortage of various materials, products, and supplies it needed to fight the war and to support its economy. The empire tried to counter this by increasing domestic production and by developing alternative trade routes. For example, the empire needed a large supply of explosives as well as other chemicals, including chemical warfare agents once chemical war began in earnest in 1915, and it undertook mostly-successful emergency measures to build up the domestic chemical industry⁷.

The Central Powers' disruption of the Baltic and Black Seas trade routes was difficult to overcome. The empire had other ports, but these were smaller, more difficult to use, and in more remote regions of the country. Nonetheless, the empire had to rely on them and took emergency measures to improve the situation.



Vladivostok in the Russian Far East was usable year round⁸ but was thousands of miles/kilometers away from the empire's major population centers and factories. Cargo arriving there had to be sent west via the Trans-Siberian Railroad. Trains at best took a week to make the Vladivostok-Moskva trip, and, for most freight, typically 10 or more days. The

capacity of the Trans-Siberian Railroad, fortunately, was fair. Its original capacity was low, but this hindered the ability of the empire to fight the Russo-Japanese War of 1904-1905, which it lost, together with its base at Port-Artur and the southern part of Chinese Eastern Railway. After that war, the empire spent considerable resources to build up the Trans-Siberian's capacity⁹.

During World War I, aside from Vladivostok, there were only a few minor ports in the Russian

far east. Developing them or other east Asian ports and connecting them to the "Trans-Sib" was not practical, because as far as I can tell the Trans-Sib was running near or at full capacity just with wartime freight from Vladivostok. Building substantially greater capacity on the Trans-Sib was impractical, as it would have been very expensive and time consuming. Ports elsewhere in Asia could not be used, as there were no rail connections between them and the Russian Empire, and building rail connections to them would have been very expensive and taken too long.

Although Vladivostok and the Trans-Sib were indeed useful, they were completely insufficient to replace the Baltic and Black Sea ports. One region, however, had the potential for expansion: the ports and harbors in northern European Russia.

Arkhangelsk, near the mouth of the Northern Dvina River by the White Sea, was somewhat remote to the major Russian cities but was much closer than Vladivostok. Its position meant the port at the start of the war mostly served the local region (one important export was timber cut from the extensive nearby forests), and it was inadequate for high volumes of cargo. It lacked even a single crane to load or unload ships. Under normal circumstances, the port was unusable for several months each year because of ice. Historically, it was icebound for about six months¹⁰. Icebreakers could keep the port open for a while once the ice started forming, sometimes into January or even February¹¹. Soon after the war started,



Sankt-Peterburg was renamed Petrograd in Sept. 1914 and then Leningrad in Jan. 1924. It reverted to its traditional name in Sept. 1991. the empire's need for imports was so great that the port was used even after it had frozen in the winter. When conditions allowed, ships would arrive at the edge of the ice near Arkhangelsk, wait to be frozen in, and then unload their cargo directly onto the ice. The ships would then be broken out of the ice to leave, while the cargo would be hauled over the ice to land¹². Even with all these impediments, in the winter of 1914-15 cargo arrived at Arkhangelsk much faster than it could be transported south.

While Arkhangelsk was on the Russian rail net, the rail line from Vologda to Arkhangelsk, several hundred miles/kilometers in length, was single tracked and narrow gauge, meaning it had low freight capacity. Cargo quickly built up at Arkhangelsk, overwhelmed the warehouses, and had to be stored in the open. In 1915, when it became clear that the war would not be over soon, the Russian Empire decided to improve Akhangelsk's port facilities and railroad. The port was expanded and improved with cranes, freight conveyor belts, more warehouses, and more icebreakers. Some of the work ended up using equipment imported from the USA. Britain assisted with the port, in the hopes that keeping Russia supplied would relieve the pressure on the Western Front. At some point, the British brought in British icebreakers. They also expanded Ekonomiya, a satellite port on an island in Northern Dvina's delta north of the city, and built a short rail line linking this location to the main port.



Arkhangelsk during the World War I era (Photograph: unknown photographer; picture taken estimated 1915-1920)

The Russians undertook significant work on the Vologda-Arkhangelsk rail line. The ultimate plan was to have a double-track, broad-gauge line all the way between the two cities, although this work was done in stages. Sources somewhat disagree on the specifics, but it seems that the first part, due to be done in August 1915, was to build a single-track, broadgauge rail line adjacent to the narrow-gauge one from Nyandoma to Arkhangelsk and to convert the existing narrow-gauge line to broad gauge from Vologda to Nyandoma. This by itself significantly boosted the capacity of the line, but construction difficulties delayed the completion of the work past August 1915. It seems likely that work was finished in late 1915 or possibly early 1916¹³.

The next stage was to convert the narrow-gauge Nyandoma-Arkhangelsk line to broad gauge and to build a second broad-gauge track from Vologda to Nyandoma next to the existing track that had just been converted to broad gauge. Logically, this stage would begin immediately after the first stage was done and, if so, should likely have been finished in 1916 or early 1917. However, I haven't been able to find a date for when this actually occurred¹³.

Arkhangelsk also was connected to the rest of Russia by rivers and canals. It was in the delta of the Northern Dvina River, with canals connecting the river to the Volga River, from which more canals connected to many other rivers in European Russia. In warm weather, when the waterways were not frozen, barges could carry cargo from Arkhangelsk to many cities in the European portion of the empire. However, hot weather in summer lowered the Northern Dvina's water levels, exposing numerous shallows that larger barges could not navigate. Smaller barges had to be used, which reduced freight capacity.



View from Mount Gorelaya of part of Murmansk in 1918 (port on the left) (Photograph: unknown photographer; 1918)

Although Arkhangelsk was icebound at least half the year, there actually was a harbor in northern European Russia that was ice-free year round, because the northern end of the Gulf Stream¹⁴ warmed the waters in this region. However, it was in a remote, low-population area, and the harbor itself had no settlement, no port facilities, and no railroad. Construction of the

port, town, and railroad all began in 1915, with the location being named Romanov-na-Murmane in 1916 and then Murmansk in 1917¹⁵. Also in 1917, a local sawmill was converted into a naval shipyard, the start of Murmansk eventually becoming an important naval base and ship repair center.

Railroad construction was expensive and required tens of thousands of workers, including Russian peasants, Central Powers prisoners of war, and Chinese laborers from Manchuria. Some sources claim up to 20,000 died during the construction, although this might be propaganda. The railroad, called the Murman Railroad (renamed the Kirov Railroad in 1935) was completed on 16 November 1916 (3 November per the Julian or Old Style Calendar in use in the empire at the time), although further work was required before freight traffic could begin on 14 January 1917 (1 January, Julian). The railroad was in frequent need of additional work to repair its hastily-built structures. Although the creation of Murmansk was a notable accomplishment, the port did not have a significant impact on the empire's war effort¹⁶. By the time freight traffic from Murmansk began, the Russian Empire was war weary, with much of the populace and military upset with the many defeats, heavy losses, material deprivations, high inflation, and growing food shortages. In March 1917 the empire would be overthrown for a republic, with the republic then being overthrown by the Bolsheviks in November 1917.



Construction of the Murman Railway in the winter of 1916 (Photograph: unknown photographer; 1916)

The construction of the Murman Railroad made the village of Soroka at the mouth of the Vyg River on the White Sea practical as a minor port. Plans were made to dredge the harbor and built port facilities in 1915, with the railroad there becoming operational in December 1915. Soroka had little significance during the war. The Murman Railroad project also allowed the fishing port of Kem on the White Sea to be developed as a minor port. Kem is north of Soroka and the railroad there probably opened sometime in 1916. Like Soroka, Kem had little significance during the war.

The Murman Railroad also connected Kandalaksha, a minor port at the head of the Kandalaksha Gulf on the White Sea, to the rest of Russia by rail. The geography of the region meant that the Murman line had to pass through the town, and at some time in 1916 the railroad was operational to this location¹⁷. Like the other minor northern parts, Kandalaksha had no appreciable impact on the war effort.

Large amounts of cargo flowed to the Russian northern ports, particularly Arkhangelsk, during the war. Before the war, the region received about 100,000 tons of cargo per year. In 1915, about 1,200,000 tons arrived (including 700,000 tons of coal), with 2,500,000 tons arriving in 1916. Plans for 1917 called for 3,500,000 tons of cargo to be delivered in the region, but Russian labor unrest and the revolutions of March 1917 and November 1917 must have disrupted these plans to some degree.

The increasing importance of the northern ports made the region strategically important during the war. Russia's wartime allies sent ships and equipment to help the Russians, including icebreakers and trawlers. At times, old British battleships were used as improvised icebreakers. The Russians also purchased new, British-built icebreakers, which arrived in 1917.

British warships also arrived to provide naval security to the region. Germany was aware of the increasing importance of the region to Russian trade and at times mined the approaches to the White Sea and sent submarines to attack cargo ships. The British responded by sending minesweepers as well as warships to protect the cargo ships and hunt for submarines. The Russians also increased their naval forces in the region for the same reason, often with ships from their Pacific Fleet, which was in an inactive theater of the war. Nonetheless, some cargo ships were lost to mines and dozens were sunk by submarines.

The Northern Ports in the Russian Civil War

World War I strained the Russian Empire to the breaking point. At the front, years of heavy casualties among the troops with frequent loss of territory to the enemy had its toll. Occasional victories occurred but also came at heavy losses followed by new defeats. In the rear areas, the country was increasingly beset with shortages of goods and food. Government policies to finance the war, especially the release of a flood of paper money not backed by anything of value, caused an inflationary spiral that increasingly hurt the peasants and other poor people and then the middle class, undermining confidence in the government. Finally, in March 1917, revolution overthrew the Russian Empire with the Tsar abdicating.

A provisional government took over and eventually declared the country a republic. However, the government not only remained in the unpopular war against the Central Powers, but to finance the war it had to continue the same inflationary policies that undermined the monarchy. Revolutionary and anti-war groups opposed the provisional government, especially the Petrograd Soviet, which acted like a rival government and became dependent on the violent Bolshevik Party. In November 1917, a second revolution led by the Bolsheviks overthrew the republic. The Bolsheviks set up a Bolshevik-dominated government of socialists and attempted to take control of the entire country. Many groups resisted the Bolsheviks, with both sides quickly resorting to armed violence, resulting in the Russian Civil War.

The Bolsheviks arranged a cease-fire with the Central Powers and opened peace negotiations. In turn, Russia's former wartime allies, including by 1917 the USA as well as Britain, France, Italy, Japan, and others, ceased cooperation with the Bolsheviks. The Allies had sent a considerable amount of goods to Russia in 1916-17 to support its war effort, and substantial stockpiles of these were believed to still be in warehouses in the Russian ports. Also, the Bolsheviks had turned on the Czechoslovak Legion, which was in Russia. The Russian Empire had raised this force of Czechs and Slovaks from Austria-Hungary to fight for their lands' independence from that empire. After the Bolshevik Revolution, the legion sought to withdraw from Russia. It got caught up in the fighting the Russian Civil War after the Bolsheviks attempted to disarm it. Several Allied countries wanted to help the legion escape the Bolsheviks and leave Russia.

The situation of the stockpiles and the Czechoslovak Legion were used by many Allied countries as reasons to intervene in Russia with naval, land, and air forces. While these reasons were indeed goals, for some countries they were also a pretext for another goal. At least some of the intervening countries hoped the intervention would



MAP SHOWING APPROXIMATE POSITIONS OF BOLSHEVIST AND ANTI-BOLSHEVIST FORCES ON ALL THE FIGHTING FRONTS IN RUSSIA, (MARCH, 1919)

The "Murman Force" and the "Archangel Force" in the Russian northern ports region were composed of Allied troops. (Map: Published in the *New York Times*; unknown artist; 1919)

weaken the Bolsheviks, helping the Bolsheviks' opponents win the civil war. Starting in 1918, Allied forces intervened in many places including the northern ports area, Vladivostok, the Trans-Siberian Railroad from Vladivostok to the shores of Lake Baykal, and places in the Black Sea, Caucasus, and Central Asia regions.



RAF aircraft at Kem, 1919 (Photograph: AIR 1/9/15/1/34 (20 Aug 1919); unknown photographer; 1919)



 American soldiers landing at the Bakaritsa¹⁸ dock at Arkhangelsk, 5 Sept. 1918. (Photograph: Item 19, Folder 3, Print No. 39259, United States Army Signal Corps photograph collection, 1918-1919, Bentley Historical Library, University of Michigan.)

In the northern ports area, Allied forces were soon in military action against Bolshevik forces. Starting in July 1918, Allied troops landed at Murmansk and began securing the area. By August, Arkhangelsk was under Allied control. At the height of the northern intervention, Allied land forces included American¹⁹, British Empire²⁰, French, Italian, and Serbian troops. The naval forces were predominantly British, assisted by a single American cruiser and a single French cruiser. Allied forces not only secured the ports, they also fanned out to take control of the towns and countryside. They fought the local Bolshevik forces opposing them, with at least hundreds of casualties being incurred. The military actions were not just skirmishes but at times outright battles with machinegun and artillery fire. The British on two occasions used chemical weapons against the Bolsheviks.

The naval forces set up a river flotilla, based at Arkhangelsk, to patrol the Northern Dvina River, in hope of making contact with part of the Czechoslovak Legion. The flotilla also clashed with Bolshevik land and riverine forces along the river.

The Allied countries, however, had little interest in waging in a major war in Russia, especially after World War I ended in November 1918. The northern intervention force, for example, secured most of the White Sea area and pushed down the Murman Railway, gaining control of much of Karelia. However, these forces had no orders to march further, such as to threaten the Bolshevik stronghold of Petrograd. As the Bolsheviks gained the upper hand against their opponents in the civil war, most of the Allied intervention forces, including the forces in the

northern ports area, withdrew from Russia in 1919-20 with very little to show for their efforts.

The Northern Ports in Soviet Times

All the port and rail construction work the Russian Empire undertook during World War I in northern European Russia did little to help the empire during the war. One ultimate beneficiary, however, was the Soviet Union, which took over this infrastructure. In the 1920s, the northern ports mostly became backwaters again, of importance mainly to their local areas, as the ports on the Baltic and Black Seas quickly regained their economic dominance. The rail construction proved more useful, as the improvements to the Arkhangelsk line and the construction of the Murman line allowed their regions to be better integrated into the country's overall economy, with timber, mineral, and fishery resources there being exploited more.



Poster celebrating the first two years of the first five-year plan, with farming on the left and industry on the right²¹. (Poster: *Congratulations*; M.M. Cheremnykh; 1930)

As with the rest of the USSR, the northern ports region was economically developed during the five-year plans that started in 1928, soon after Stalin achieved dictatorial control of the USSR. Like most remote places in the country that had harsh climates and low populations, forced labor of prisoners was often used to build and operate projects there. Indeed, as early as 1919 the Bolshevik secret police had established forced-labor camps in the Arkhangelsk area²². These became the Northern Special Purpose Camps (SLON)²³, informally called "Elephant" because their Russian abbreviation, SLON, was also the Russian word for elephant (*slon*).

In 1923, the region had the dubious distinction of having the "mother of the GULag" founded there. From the 15th Century, a Russian Orthodox monastery existed on the Solovetskie Islands in the White Sea. The isolation of the islands led to the monastery also becoming a site of exile and imprisonment for religious and political prisoners in the Russian Empire, albeit on a small scale²⁴. The prison, however, became infamous for harsh conditions and was officially closed in 1883, although the monastery continued to be used as a place of religious exile until 1903. The Bolsheviks, who were hostile to religion, closed the monastery itself in 1920.





Icon of Solovetskie Monastery (Icon: unknown artist; c. 1680)

Since it often seems that some things rarely change much in Russia, it should be little surprise that the Soviets decided to turn the monastery site into a prison and forced-labor camp. In 1923, the Soviet leadership ordered its conversion into a prison for both political prisoners and criminals, as the Solovki Special Purposes Camp²⁵ (also abbreviated SLON and again informally called "Elephant" because of its abbreviation). It assimilated the other SLON forced labor camps in the region, with these prisoners being sent to the islands. However, Solovki soon established branch camps in various places throughout the northern European Russia area.

Conditions for the political prisoners initially were benign, including keeping them separate from the criminal prisoners. However, over time Solovki became notorious for its brutal treatment of political prisoners, including torture and extra-judicial executions, as well as for harsh forced-labor conditions. Prisoners who escaped both the camp and the country published books on their treatment in 1926-31²⁶, bringing unwelcome international attention to the Soviet treatment of prisoners, which the Soviets denied and countered with propaganda and deception. For example, when British dignitaries toured the northwestern USSR in 1931 in part to check on Soviet claims that forced labor was not being using in the timber industry, the Soviets simply moved the forced-labor timber operations to remote areas²⁷. After the British visitors left, the prisoners were moved back, and operations resumed as before.

When the GULag was founded in 1930, Solovki was used as a model example for how the system would function. One particular attraction of Solovki was its low cost to the Soviet state. The secret police ran Solovki to be as self-sufficient as practical, with the prisoners making much of what the camp needed. Forced labor of its prisoners also made positive contributions to the Soviet economy. The Solovki example was thus copied as the GULag expanded under Stalin.



Prisoners arriving at the Solovki Special Purposes Camp in 1927 or 1928 (Photograph: unknown photographer; 1927 or 1928)

Many Solovki prisoners were used for logging and making lumber products, which could be used in the Soviet economy, or, preferentially, exported to earn foreign currency for the USSR. The Soviets were very eager to earn foreign currency, as it allowed them to purchase foreign industrial and technological products and foreign expertise unavailable in the USSR. For example, in the 1920s-30s the Soviet purchased advanced (for the time) aircraft engines (which they then engineered into their own versions of the engines), automotive technology (including an entire automotive factory built in the USSR under direction of the US Ford Company, making Soviet versions of Ford cars and trucks), and military equipment (such as a German antitank gun that became the basis of a line of antitank and tank guns extensively used by the Soviet military and turned on the Germans themselves when they invaded in 1941).

The desire for foreign currency to industrialize the country was so great it led to the Soviets to export wheat. The Russian Empire before World War I had been a major wheat exporter (12 million metric tons in 1913), and there was no reason preventing the USSR from becoming the same, if done right. It wasn't. Instead, exports occurred along with forced, badly-managed collectivization of Soviet agriculture and the destruction of the kulaks (supposedly well-off peasants believed to be class enemies of the state). A poor harvest meant most peasants missed the high quotas the Soviets had imposed on them. The Soviets responded with draconian confiscations of grain that resulted in severe famines in the grain-growing areas of the USSR in 1932-33. This in turn affected the forced-labor projects in the northern ports area, as prisoners' rations were cut, weakening them and increasing their death rate.

As Solovki became internationally infamous for poor treatment and forced labor, various foreign groups and countries tried to restrict the international trade in prison-labor lumber products. The Soviets responded by redirecting prison labor to internal infrastructure projects. The Soviet leadership apparently saw this as having a dual benefit: extremely cheap prison labor would reduce the cost of expensive infrastructure projects, and, since nothing was being

sold internationally, foreign boycotts couldn't be organized. The Soviets even came up with a positive spin on forced labor to answer foreign objections: hard labor was reformative for prisoners, turning them from criminals into useful citizens.



The Solovki Special Purposes Camp, showing lumbering work. The domes of the former monastery are visible in the background. (Photograph: unknown photographer; unknown date)

SLON at its height had over 70,000 prisoners in 1930, although this dropped to about 15,000 the next year. The reason for this was the construction of the White Sea Canal, which began in 1931 and used forced labor. Prisoners were transferred from SLON to the GULag's White Sea-Baltic Camp²⁸ to work on the canal. SLON was officially disbanded in 1933, but this really meant that it was just assimilated into the GULag system, becoming part of the White Sea-Baltic Camp.

In 1937-1939, during Stalin's Great Purges, the SLON site became the Solovetskie Special Purpose Prison (STON)²⁹, informally called "Groan" because its Russian abbreviation, STON, was also the Russian word for groan (*ston*). This prison was run directly by the secret police rather than being part of the GULag, as the secret police used STON almost like a death camp, part of a massive plan to defeat "the whole gang of anti-Soviet elements in the most merciless way" (per NKVD Order № 00447). Many prisoners at STON ended up being executed by the secret police, although most were first transferred to nearby Soviet Karelia on the mainland for actual execution, since it was easier to hide mass graves in the Karelian forests than on the

small Solovetskie Islands³⁰. STON closed in 1939 and the site then became a Soviet naval base³¹.



Building the White Sea Canal

Left: Prisoners working on the canal in 1932. (Photograph: unknown photographer; 1932)

Right: Poster exhorting the workers to work with the message, "Canal-Armyist! The heat of your work will melt your prison term". Canal workers who survived the work had their GULag sentences reduced.

(Poster: unknown artist; 1931)

The White Sea Canal, officially the Stalin White Sea-Baltic Canal³², was a premiere project for the northwestern USSR area. The Soviets decided to open a ship route from the Baltic Sea at Leningrad to the White Sea that would allow transit of cargo vessels as well as warships up to the size of a destroyer. While it was called a canal, it was really a shipping channel, as most of its route was along existing rivers and lakes³³, which were to be dug deeper to allow passage of vessels of the target size.

The waterway was built in 1931-33 with a work force of over 100,000 prisoners from the GULag. The workers had to be replaced frequently because of the high death rate, with an official toll of 12,000 deaths and credible estimates of 25,000³⁴. The USSR greatly publicized the project as a triumph of both socialism and Stalin's first five-year plan. The fact that prisoners were used to build the canal was not hidden but, instead, presented as reformative labor, turning criminals into productive members of the USSR through hard labor. What was hidden was the prisoners' harsh treatment and high death rate³⁵.

During the project, political goals ended up overriding the economic goals of the canal. The canal was planned to be finished in just two years, a very tight schedule, and was to be built cheaply, by forced labor mostly by hand with shovels, wheelbarrows, and the like. Only the minimum amount of expensive construction machinery was to be used. After construction

started, it soon became evident that the plan was unrealistic for the northern part of the canal. Either the schedule had to be extended to allow the prisoners to dig the canal mostly by hand, or expensive construction machinery, including imported machinery, would have to be brought in to complete the canal on time. Neither option was acceptable to the Soviets.

Since the Soviet state was little concerned about the human cost of forced labor, it might seem that extending the time to build the canal by forced labor was a practical solution. However,

the canal was bound up with the USSR's first five-year plan. This plan was greatly publicized and promoted as a major transformation for the USSR. After the first two years of the plan, the Soviets announced they were ahead of schedule, and, at that rate, the next two years would complete the plan. A 2+2=5'' propaganda campaign promoted completing the plan's work in two sets of two years. (It seems likely George Orwell was aware of this Soviet propaganda and adapted it as a theme in 1984, his satire of Stalinism.) All this affected the White Sea Canal project, and, rather than extending the schedule, work was rushed to finish in just 20 months, four months ahead of the original schedule. The Soviets decided to dig the northern part of the canal only to 67% of the depth originally planned. This allowed the canal to be completed on its accelerated schedule, but with the consequence that the canal had a much lower capacity than originally planned. The Soviet Union thus realized far less economic and military benefit from the canal than it could have, and the canal quickly faded from Soviet propaganda³⁶.



Propaganda exhorting workers to achieve the goals of the first five-year plan in four years (Poster: Yakov Guminer; 1931)

The canal project also remade Soroka, one of the northern ports the Russian Empire worked on during the war. Soroka was at the mouth of the Vyg River, very near the terminus of the White Sea Canal at the White Sea. (The canal diverted from the Vyg River just south of Soroka and followed the nearby, small Shizhnya River, entering the White Sea at the canal's 19th or "Last" Lock.) Soroka thus was upgraded into a small port city. In 1938, Soroka and several adjoining settlements were merged into the city of Belomorsk (derived from the Russian for "White Sea", *Beloe More*).



View of part of Belomorsk (Photograph: unknown photographer; unknown date)

The White Sea Canal was the largest project in the northern area, but there were other important ones. As already mentioned, Soroka, the future Belomorsk, was upgraded. The Murman Railroad (renamed the Kirov Railroad in 1935) was improved, and Murmansk was further built up as a port and naval base. From the initial shipyard based on a sawmill in 1917,

the Murmansk area by 1941 had three shipyards: two at the port itself and one at the nearby settlement of Rosta (Rosta would later be incorporated into Murmansk). The shipyards had some small shipbuilding capabilities, but their main function was for repairing ships. Two handled warships and auxiliary vessels of the Northern Fleet of the Soviet Navy and one was for civilian ships, particularly fishing trawlers and other fishing vessels.



Kandalaksha in 1939. The settlement had been upgraded in status from village to city on 20 April 1938. (Photograph: unknown photographer; 1939)

Kandalaksha grew into a small resource-extraction and industrial area, with its port being upgraded once the White Sea Canal opened. Kem's port possibly was upgraded in the 1930s, although I have not found a reference to this.

The Soviets also built a new rail line in the region, running east from Belomorsk on the Kirov Railroad to Obozerskiy on the Vologda-Arkhangelsk rail line. This linked the two northern transportation nets and gave the Kirov line strategic depth. The Kirov line was moderately close to the Finnish border in several places, particularly at Kandalaksha in the north and Petrozavodsk in Soviet Karelia. It was thus vulnerable to being cut in a future conflict³⁷. The Belomorsk-Obozerskiy line became operational in mid-1941. As part of this work, the port settlement of Onega at the mouth of the Onega River on the White Sea became linked to the Soviet rail net³⁸.

World War II affected the northern region, as it did every part of the Soviet Union. At first, the USSR was officially neutral but had a secret agreement with Nazi Germany that split eastern Europe and Finland into Soviet and German spheres of influence. Finland was allocated to the Soviets, and they attempted to conquer the country in the Winter War of November 1939-March 1940. They failed in this but were able to annex parts of Finnish Karelia (in eastern Finland). They joined these territories with Soviet Karelia to form the Karelo-Finnish Soviet Socialist Republic, with Kem as its capital³⁹.

The secret agreement made Germany and the USSR almost semi-allies, and considerable

trade flowed between them, using railroads as well as ports. In June 1941, however, Germany invaded the USSR, plunging it into what the Soviets called the Great Patriotic War⁴⁰. The USSR's trade situation in 1941 immediately became quite similar to the Russian Empire's in 1914. The outbreak of the war cut off rail trade with Europe and blocked the Soviet Baltic ports from foreign trade. The Black Sea ports in theory remained unblocked, as the Turkish Straits remained open to cargo as Turkey, unlike the Ottoman Empire in World War I, remained neutral. However, Italy and Germany through their conquest of Greece in 1941 controlled the Aegean Sea and thus controlled the exit of the straits. Further, the rapid German advance into Soviet territory in 1941 meant that most of the major Soviet ports on the Black Sea were soon conquered or isolated. The USSR liberated these ports in 1943-44, but the Germans wrecked them as they retreated.

So, like the Russian Empire, the USSR lost the use of its major trading links: the European railroads, the Baltic ports, and the Black Sea ports. Once again, the northern ports as well as Vladivostok and the Trans-Siberian Railroad became major conduits of trade, which consisted mostly of military aid, food, and economic aid from the USSR's new allies, including the USA, Britain, and Canada. Unlike in World War I, one further route was also built up, the "Persian Corridor" with the roads and railroads from the Persian Gulf through Iran to the southern USSR.



The left picture shows RAF-crewed Hurricanes patrolling the Murmansk area in 1941. Two RAF squadron of Hurricanes were briefly sent to the USSR soon after the Germans invaded the Soviet Union in June 1941.

The right picture shows American M3 medium tanks on rail cars in the Murmansk area (possibly in 1942). The USA sent 1,386 M3s to the USSR in 1941-43, with 410 being lost to enemy attack during transit.

The northern ports thus became quite important for the USSR, particularly Murmansk and Arkhangelsk. The improvements in ports and rail lines made by the Russian Empire starting in 1915 and by the Soviets in the 1920s-30s paid off during the Great Patriotic War, with 23% of Allied aid reaching the USSR through this northern route. These ports were even more important during the early war years, when the Persian Corridor had low capacity⁴¹. From September 1941 to June 1942, about two-thirds of all aid to the USSR used the northern

route42.

While the northern ports were very important in the war, the White Sea Canal had little impact and instead was partly destroyed. A day after the war started, Germany tried to destroy key locks on the canal using a tiny special operations force of Finnish volunteers flying from Finland in German seaplanes, which could land on the canal. (Finland was not yet at war with the USSR, and the volunteers wore German uniforms.) The attempt failed, but subsequently several bombing raids targeted various locks on the canal. The canal was finally put out of action by the advance of Finnish ground forces, which reached the canal along the Svir River, between Lake Ladoga and Lake Onega. The Soviets demolished the locks in the area to prevent the Finns from capturing them, making the canal unusable. Repair work began soon after the Soviets recaptured the area in 1944, but this work continued into 1946 before the canal could be reopened.

The Germans attempted to block the northern Lend-Lease route. German air and naval forces attacked the Arctic convoys which had to pass by German-occupied Norway to reach the Soviet northern ports. While the Germans were not strong enough to stop the convoys, they sunk many ships and at times caused the Allies to abandon running convoys in the summer, when the Arctic's continuous daylight made it easier for the Germans to spot ships. The Germans also conducted air raids on the rail line with occasional success. Further, the Germans attempted to take the port of Murmansk and, failing that, to cut the Kirov Railroad in several places, but every German attempt was stopped. However, the Finns, allies of the Germans, cut the Kirov Railroad in September 1941 when they took Petrozavodsk and occupied parts of Soviet Karelia. Nonetheless, this did not cut rail shipments from Murmansk, as Petrozavodsk was south of the Belomorsk-Obozerskiy bypass rail line that connected the Kirov Railroad to the Arkhangelsk rail net.

Once the war began, the Soviets were concerned that Murmansk was vulnerable to conquest by German forces operating from Finland, while Kandalaksha and Kem were vulnerable to the advancing Finnish forces. Industrial enterprises and population were evacuated from Kandalaksha and Kem to Arkhangelsk. Some of the equipment of the Murmansk shipyards was also evacuated to Arkhangelsk, but the rest remained behind so that the port would still be able to repair ships.

The Murmansk shipyards, however, assumed a much bigger role than ship repair throughout the war. They converted 46 fishing trawlers into minesweepers and patrol boats, made grenades, machinegun parts, and other equipment for Red Army forces in the region, made naval mines for the Northern Fleet, and in the winter made skis for the troops and sleds to haul weapons across the snow. With the arrival of Allied aid convoys, the shipyards also helped to unload the cargo and to repair the many Allied ships damaged by enemy air and naval forces in the dangerous run past German-occupied Norway⁴³. They also made storage tanks for the considerable amounts Allied-aid fuel being sent to the USSR (primarily aviation gasoline and octane-boosting light gasoline fractions). The shipyards also made dummy replicas of Soviet warships to deceive German bombing efforts. They made machinegun turrets for armored trains. They mastered the production of 82-mm mortars and went on to supply the Red Army with many hundreds of mortars and considerable amounts of mortar ammunition. In some Red Army units, all their mortars were made in the shipyards.

The 1941 German operations to take Murmansk and cut the Kirov Railroad were of secondary or even tertiary importance to the German invasion of the USSR. The German high command

expected to decisively defeat the bulk of the Red Army in the western USSR over the course of several weeks, with much of the European Soviet Union then being occupied, from Arkhangelsk to Astrakhan. Thus, taking Murmansk or cutting the Kirov Railroad in order to cut future Allied aid to the USSR was not very important. Of course, the 1941 offensives failed to defeat the Red Army, and German resources after 1941 were too stretched to muster sufficient forces to take the port or close the rail line.

The Arctic was also secondary to the Soviets, as their primary focus was halting the Germans drives further south. However, they accorded the Arctic strategic importance. They allocated sufficient defensive forces to halt the Germans in the north, even though the Finns gained the territory they had lost the Winter War, plus some parts of Soviet Karelia. The Soviets continued to reinforce the area so that they were able to launch a "spring" offensive in April 1942 against the Germans. Although by the calendar it was spring, in the Arctic the land was still snowbound, temperatures below freezing, and major snowstorms occurring. The offensive, partially using ski troops, made some progress against some German positions but petered out with the thaw by the end of the month and was abandoned after German defensive moves and counterattacks in May.

This offensive was one of a series of Soviets offensive across most of the entire front from December 1941 through May 1942, in which the USSR sought to rout the enemy forces. However, the Soviet high command had dispersed its resources too widely, seeking a strategic defeat of the enemy, which failed despite some significant local successes. The Soviets learned from this. After halting the German 1942 summer offensive, the Soviets concentrated their efforts into fewer, stronger offensives. Finland and the Arctic became a distinctly secondary, defensive theater until 1944, when growing Soviet strength allowed new offensives there. In June 1944, the Soviets began operations that drove Finland out of the war in September. They followed this up in October in an offensive that sought to defeat the German Arctic forces. They achieved a breakthrough and pushed the German forces out of the Soviet and Finnish Arctic, back into northern Norway, capturing the ports of Petsamo in Finland and Kirkenes in Norway before halting with supply difficulties, facing renewed German defensive lines. The Germans were no longer a threat to the Soviet Arctic for the rest of the war.



Soviet offensives in the northern area of operations (Map: Adapted from a map in *The Petsamo-Kirkenes Operation*; James F. Gebhardt; 1989)

Notes

(1) According to "General Review of Foreign Trade along the European and Asiatic Frontiers", a 1915 report of the Russian Customs Department, in the years 1904-1913 Russian exports were approximately 60% "Food-stuffs", 33% "Raw material and half-manufactured goods", 5% "Manufactures", and 2% "Animal products". A table on this subject as well as much other related information can be found in *The Economic Development of Russia 1905-1914*; Margaret Miller; 2017. (Miller calls the report just "Review of Foreign Trade along the European and Asiatic Frontiers" but other sources call it "General Review of Foreign Trade along the European and Asiatic Frontiers".) "Half-manufactured goods" were typically raw materials that were partially processed but were not finished end-products in themselves. For example, the empire exported considerable amounts of timber, some of it unfinished (logs) and some of it sawed into lumber (which I believe counted as half-manufactured since the lumber itself would be used in the importing country for construction or to make

other products). Despite the empire having timber in abundance, higher-value wood products, such as cellulose, wood-pulp, and paper were not available for export in quantity due to industrial limitations and expense. For example, processed wood products required chemicals that were mostly not available in quantity domestically, due to the empire's limited chemical industry, while importing these chemicals added too much expense to the end products.

I believe "Animal products" were things like hides and leather, which is why this category was separate from "Food-stuffs".

- (2) Unfortunately, I don't have a breakdown showing the separate trade percentages for the Baltic Sea, Black Sea, and European railroads.
- (3) These other routes would be Vladivostok in the Russian far east as well as overland trade with various Asian countries from Turkey to China.
- (4) All but two rail lines going to European countries entered Germany or Austria-Hungary. One line entered Romania. From Romania, rail connections existed only to Austria-Hungary and to the eastern Balkan countries. Cargo could land at the port of Thessaloniki in Greece and travel by rail through Greece, Serbia, Bulgaria, and Romania to reach Russia. I have no information on whether any significant quantity of freight reached Russia this way. Even if so, this route would be closed to the Russians when Bulgaria joined the Central Powers in September 1915. The other line was through Finland (a part of the empire) to Sweden; this is covered in the next note.
- (5) Trade with the Russian Empire did go through Norway and Sweden. Cargo was landed in Bergen, a Norwegian port, and then sent by rail through Sweden to Finland. However, Sweden was hostile to Russia, which had for centuries conquered Swedish holdings in the eastern Baltic region. While Sweden did not block all trade going through the country to Russia, it did prohibit military equipment for Russia from going through Swedish territory.
- (6) The stockpiles also were insufficient for the intensity of the war, especially the amount of artillery ammunition that was being used even in the opening months. In September 1914 the Russian Ministry of War was taking steps to greatly increase domestic production of artillery shells and to order 9,000,000 shells from foreign companies for delivery in 1915. However, foreign companies were already swamped with orders from other countries and could not meet Russian requests. For example, one million shells were ordered from British companies but only 5,000 had been delivered even a year later.
- (7) The Russian Empire in World War I is sometimes portrayed as bungling, incompetent, and backwards and thus doomed to fall apart. The empire certain did have major problems, and its economic policies to fight the war ended up hurting and demoralizing the population. But, the empire did take vigorous and competent steps in some areas related to the war. The need for explosives and then chemical warfare agents was one, with the empire rapidly expanding its domestic chemical industry after attempts failed to import sufficient explosives and chemical agents from foreign sources.
- (8) Sea ice did form in the harbor during winter, but icebreakers kept the port open.
- (9) The existing line was rebuilt, such as with heavier rails, and single-track sections of the line were made double tracked.

The original line went through Manchuria in China, as the Chinese Eastern Railroad, as this was much shorter than building the line entirely in Russian territory.

Japan's expansion in Asia and 1905 defeat of the Russian Empire convinced the empire it needed a line entirely on Russian territory, as Manchuria was vulnerable to Japanese conquest. So, the Amur line was built on the Russian side of the Manchurian border, partly alongside the Amur River. Most of the work was done before the start of World War I. However, a long bridge across the Amur at Khabarovsk was needed to connect the line to Vladivostok (since the river runs northwest from Khabarovsk whereas the border turns south). The last two sections of the bridge were built in the western part of the empire and were being shipped by sea to the east, only to be lost when the Germans sunk their transporting ship in the Indian Ocean soon after the outbreak of war. The bridge was only finished in 1916, although the Amur line began limited operations in 1915.

- (10) According "Russia's Supplies" in the 23 October 1915 issue of *The Mercury* newspaper of Hobart, Australia, ice usually blocked the port in the first week of November and usually broke up in May. That year, however, the paper reported the port was icebound by 22 October.
- (11) "Port of Archangel, Russia" in the 4 March 1920 issue of *Commerce Reports*, from the US Department of Commerce, covers this situation in some detail. Arkhangelsk is actually in the delta of the Northern Dvina River, inland a bit from the White Sea. The port is along the banks of the river, which is quite wide and fairly deep at this point. Traditionally, the port closed when the river froze, which typically occurred in early November but could vary from October to December depending whether the weather was unusually mild or harsh. With the development of icebreakers, the port itself could be kept open for several more weeks, sometimes even into January or February in mild winters. However, access to the port also depended on conditions in the White Sea. The entrance or "neck" of the White Sea connecting it to the Barents Sea experienced extreme weather conditions and massive sea ice buildup in the winter, both of which could limit or prohibit navigation. During World War I, "strong" icebreakers could make the passage but it was "very difficult" to keep the neck open to cargo ships because of "the almost impassible ice". Even today, Arkhangelsk is occasionally closed due to ice conditions, although modern icebreakers are much more powerful and the White Sea itself is not as frozen over due to the now milder Arctic climate.
- (12) This process is described in "Existing and Proposed Russian Arctic Ports" in the 19 March 1915 issue of *Commerce Reports*, from the US Department of Commerce. This expedient had begun in late 1914 in response to the disruption of trade in the Baltic and Black Seas. The article also states that the Russian government expected ice-unloading to occur throughout the winter, but it casts doubts on this, opining that deteriorating conditions would deter ships from attempting this after some point in January.

Another problem noted for Arkhangelsk and all ports on the White Sea is that the northern "neck" of the sea froze over. The Russian Empire had a few icebreakers to keep the neck open, but these were mostly in poor condition with at least one out of operation, so there were significant doubts that the neck could be kept open through the winter of 1914/15.

(13) I have found it difficult to obtain exact information on the Arkhangelsk rail construction. The best I've found so far is "Russia's War-Time Outlets to the Sea" (*The Geographical Review*; Volume I, No. 1, January 1916; Isaiah Bowman and others, editors). It claims that, instead of an entirely new broad-gauge line being built, the southern half of the route had the existing narrow-gauge line converted to broad gauge. The northern half retained the existing narrow-gauge line but did have a new single-track, broad-gauge line built to Arkhangelsk. The article notes that the construction had significantly increased the line's freight capacity, as now there was a single-track, broad-gauge line all the way to Arkhangelsk. Further, the narrow-gauge line in effect had its capacity doubled, as the narrow-gauge trains carried freight to the halfway point (for reloading onto broad-gauge trains there), rather than all the way to Vologda.

While the title page of *The Geographical Review* lists "January-June 1916" for the volume, the later introduction just lists January 1916, which implies it was published no later than January 1916. If so, then the article's description of the rail work implies that this was the state of the rail line in late 1915.

"Railway Construction to Russia's Northern Ports" (*Railway Review*; Volume 58, No. 1, 1 January 1916) mentions that the August 1915 goal for the first stage of work was missed but opines that "it is doubtlessly finished by the present date".

Other works imply that work continued on the rails until there was a double-track, broadgauge line from Vologda to Arkhangelsk, although I have not yet discovered when this was finished.

- (14) Technically, this is called the North Atlantic Drift, the "northeastward extension of the Gulf Stream". You can find references claiming it is part of the Gulf Stream and others claiming it is a feature in itself (although dependent on the Gulf Stream).
- (15) In March 1917, revolution overthrew the Russian Empire, replacing the government with the short-lived Provisional Government that in September declared the country to be the Russian Republic. The Romanovs, the ruling family of the empire, had become deeply unpopular, so Romanov-na-Murmane was renamed. Similarly, the Siberian town of Alekseevsk, named in honor of Crown Prince Aleksey, son of the Tsar, was renamed Svobodnyy, the Russian word for "free". As fate would have it, Svobodnyy in the 1930s became one of the largest forced-labor camps in Stalin's GULag, with over 190,000 inmates in 1935.
- (16) Although the entire Murman Railroad was not open for freight until January 1917, it is possible that a limited amount of freight began flowing south when winter snows set in during late 1916. According to "Russia's War-Time Outlets to the Sea" (*The Geographical Review*; Volume I, No. 1, January 1916; Isaiah Bowman and others, editors), the railroad from what became Romanov-na-Murmane/Murmansk to Kandalaksha would be operational then, although the line south between Kandalaksha and Soroka would not be open. The plan was to rail freight to Kandalaksha and then haul it on sledges over the snow for 140 miles (225 km) to Rovaniemi, which was the northernmost point of the Finnish rail net (Finland at the time being part of the Russian Empire). The freight would then be railed south to Petrograd and beyond. Since the article was published in early 1916, this is not proof that sledges were actually used in the winter of 1916-17. Even if they were, it seems to me unlikely that a large volume of freight could be moved this way.
- (17) Another source states that the railroad linked Kandalaksha in 1918, but this must be incorrect. The Murman Railroad passed directly through Kandalaksha on its way to Murmansk, so the line must have been completed in 1916 and opened for freight no later

than January 1917.

(18) Bakaritsa, the correct transliteration of the Russian name, is given as "Bakharitza" in English-language primary documents and many secondary references on the British and American intervention to northern Russia, such as in *Russian Sideshow: America's Undeclared War, 1918-1920* (Robert L. Willett; 2003). Bakaritsa was (and still is) a docking area on the west bank of the Northern Dvina River, across the river from Arkhangelsk proper.



Map of the Northern Dvina River delta showing the locations of Arkhangelsk, Bakaritsa, and Ekonomiya (spelled Ekonomiia on the map).

Ekonomiya was a satellite port of Arkhangelsk, on an island north of the city itself, and was also a site for timber operations and other industries. To the English-language Allies of World War I, Ekonomiya was called "Economie". During World War I, the British built a railway from Ekonomiya to Arkhangelsk to help handle the large amount of freight arriving there during the war. During the Allied intervention in northern Russia in 1918-1920, Ekonomiya was one of the major Allied bases in the area, along with Arkhangelsk and Bakaritsa.

(Map from *Nouvelle Géographie Universelle* (Vol. V; E. Reclus; 1885) by C. Perron)

- (19) The original US orders for American forces had been only to secure the warehouses. However, the Bolsheviks, at least at Arkhangelsk, had already sent the supplies into the interior of the country, and American forces were instead sent into combat alongside the other Allied forces.
- (20) British Empire forces included not just British forces but also forces from the British Dominions, including Australian and Canadian troops.
- (21) The central building being entered by the lines of peasants and workers is the Congress of Soviets of the Soviet Union, officially the supreme Soviet governing institution. The congress did not meet continuously, so day-to-day government was conducted by other Soviet governmental bodies. When the congress met, its representatives officially had the

powers to approve the legislative decisions of the other Soviet governmental bodies, to amend the Soviet constitution, and to admit new union republics into the USSR.

In reality, the Bolsheviks controlled the elections to the congress as well as all other elected Soviet governmental bodies, as well as the appointments to non-elected Soviet governmental bodies. This placed them in full control of all aspects of the Soviet government. They used the Congress of Soviets to give formal approval of their decisions, mainly as political theater, as it was almost inconceivable that the congress would disapprove of anything they had decided. Under Stalin, the congress was just a rubberstamp body used for propaganda purposes. (In the 1930s, Stalin introduced a new Soviet constitution that replaced the congress with the Supreme Soviet of the Soviet Union, but the Supreme Soviet functioned much like the Congress of Soviets and remained a rubber-stamp body.)

(22) The Bolsheviks set up their first concentration or forced-labor camps in May 1918 to hold political prisoners and hostages, and the system grew throughout 1919-1923. About 100,000 were imprisoned in over 100 camps in 1921, with the secret police having about a quarter of the prisoners and other Bolshevik authorities the rest. By 1923 there were over 300 camps.

The Bolshevik secret police at the time was called the Cheka (an abbreviation of a much longer name). The secret police had their official name changed multiple times in the 1918-1945 period. Since their specific name at any particular time is not important to this work, for simplicity I usually just call them the "secret police".

- (23) Severnye Lagerya Osobogo Naznacheniya (SLON) [Северные лагеря особого назначения (СЛОН)].
- (24) The monastery often had only a few prisoners at a time and perhaps less than 600 prisoners total throughout its entire history, although Ivan the Terrifying allegedly sent 400 prisoners there during his reign.
- (25) Solovetskiy Lager Osobogo Naznacheniya (SLON) [Соловецкий лагерь особого назначения (СЛОН)].
- (26) An Island Hell: A Soviet Prison in the Far North; S.A. Malsagoff; 1926. My Twenty-six Prisons and My Escape from Solovetsk; J.D. Bessonov; 1928; Solovki; I.M. Zaitsev; 1931.
- (27) See *The Economics of Forced Labor: The Soviet Gulag* (Paul R. Gregory, V.V. Lazarev, editors; 2003), particularly Chapter 9, "The Gulag in Karelia, 1929 to 1941" (Christopher Joyce).
- (28) *Belomorsko-Baltiyskiy Lager* (BBL) [Беломорско-Балтийский лагерь (ББЛ)], also known as *BelBalLag* [Белбалтлаг].
- (29) Solovetskaya Tyurma Osobogo Naznacheniya (STON) [Соловецкая тюрьма особого назначения (СТОН)].
- (30) For example, see *Stalin's Meteorologist* by Ros Schwartz. The author had visited the Solovetskie Islands in 2012 and came across a book published by a daughter in honor of her father, who had been sent to the islands when she was four. For three years, he sent her letters from Solovetskie, with drawings of the local fauna and flora, plus riddles and lessons on arithmetic and geometry. Then the letters stopped.

The man was Alexey Wangenheim, who had been a Soviet meteorologist; indeed, the chief meteorologist who set up and first headed the United Hydrometeorological Service of the USSR. Unwittingly, he made an enemy, as the service was "united" by merging the existing all-country service with the service of the Russian SFSR. This eliminated the position of head of the RSFSR service, and this person got back. Among other incidents, Wangenheim wrote a popular piece on "new ideas in meteorology". His enemy complained that the piece not only neglected to make reference to Lenin ("it seems unbelievable that a person can forget Lenin by accident") but also failed to cite Stalin's works as recommended reading. This apparently got the attention of the secret police and by 1934 Wangenheim was arrested under the notorious Article 58 for anti-Soviet activity.

He was convicted, sentenced to 10 years in the GULag, and sent to the prison on Great Solovetskie Island, the largest of the six Solovetskie islands. He was there for three years. In 1937, as part of Stalin's Great Purges, N.I. Ezhov, the head of the NKVD, signed the secret NKVD Order № 00447, which was intended to rid the USSR of "anti-Soviet elements". Anti-Soviet elements were classified either as Category I, to be executed, or Category II, to be sent to the GULag for 10 years. Every region of the Soviet Union was assigned a quota to fill for Categories I and II. Ambitious NKVD operatives petitioned for their quotas to be increased, which Ezhov or other Soviet leaders agreed to. For example, Stalin himself agreed to greatly increase the quota of one operative, who he later promoted to a larger district.

By time of Order Nº 00447, Wangenheim was already in the GULag on a 10 year sentence, but the NKVD now secretly reexamined his case and assigned him to Category I, one of 1,800 inmates at Solovetskie condemned to death. Originally, the quota was 1,200 but was later increased to 1,800. Nº 00447 executions were supposed to be kept secret, away from public knowledge, and the bodies disposed of in secret mass graves. Great Solovetskie Island was judged to be too small to handle all 1,800 in this way, so just 200 were killed on the island and the rest were disposed of in other ways. In November 1937, Wangenheim and many others were sent by ship to the mainland at Kem, driven into the nearby Karelian forests, and shot in pits that became mass graves.

Order № 00447 resulted in a campaign lasting 15 months in 1937-1938, and "approximately 767,000 persons were condemned, of whom 387,000 (just over one half) were shot (see http://www.sciencespo.fr/mass-violence-war-massacre-resistance/en/ document/nkvd-mass-secret-operation-n-00447-august-1937-november-1938). This was at the height of the Great Terror in the USSR, which with other operations and actions saw a total of "1,550,000 convictions on political grounds. Over half of the condemned (800,000 persons) were executed, the remaining 750,000 sentenced to a ten-year term in the Gulag labour camps".

Wangenheim's family was not told of the execution. His letters just stopped arriving. His wife sent appeals seeking information about him, to be told in 1939 that Wangenheim was sentenced to a further 10 years in the GULag in 1937, losing the right to send or receive correspondence. This of course was a lie to hide the fact of the executions. The family did not learn of Wangenheim's actual fate until 1956, after Khrushchev denounced the cult of personality of Stalin and began a de-Stalinization drive.

Wangenheim's daughter went on to become a scientist, published her book, and left her estate to Memorial, the Russian organization that seeks the truth about Stalin's victims. The

NKVD records on Wangenheim were eventually found, and detective work uncovered the mass grave he was buried in. Perhaps unsurprisingly, Memorial has been having troubles with Russian Federation government, given Putin's nostalgia for the USSR and carefully-worded praise of Stalin.

- (31) In the 1960, the Soviets turned the monastery site into a museum. The USSR collapsed in 1991 and the Russian Orthodox Church in 1992 reestablished a monastery there, although the museum is still present, too.
- (32) *Belomorsko-Baltiyskiy Kanal imeni Stalina* [Беломорско-Балтийский канал имени Сталина]. The Stalin White Sea-Baltic Canal was unofficially often just called the White Sea Canal. In 1961 it was renamed White Sea-Baltic Canal with the removal of Stalin's name.
- (33) From the Baltic Sea to the White Sea: the Neva River, Lake Ladoga, the Svir River, Lake Onega, Lake Vyg, the River Vyg.
- (34) A canal from the Baltic Sea to the White Sea had been proposed numerous times in the Russian Empire, after the city of Sankt-Peterburg was built on the Baltic. The canal had never been built, because of its high cost. The Soviets reduced the cost by about two thirds through use of forced labor by GULag inmates. Since the GULag did not contain enough skilled workers and technicians for canal work, the canal planners in official documents recommended that skilled workers be arrested and assigned to work on the project. It is unknown how many, if any, innocent people were ensnared in the GULag because of this. (This was not an isolated incident, however. The Soviet aircraft industry was purged in the 1930s with prison design bureaus being set up by the secret police. It is claimed that some aircraft engineers and other aviation workers were arrested solely to help staff the prison-bureaus.)

The high death rate among the canal workers was due to overwork, with 16-hour days of manual labor being typical, along with poor housing and hygiene, inadequate medical care, and poor food rations. Things worsened after 1931, as the Soviet famine of 1932-33 caused the prisoners' food rations to be cut, with significant decreases of almost all food types. This weakened the prisoners, who were then more prone to die of disease or in accidents.

The White Sea Canal was the first massive construction project in the USSR to use GULag forced labor. The Soviet leadership apparently regarded it as a success because of its costs savings, as they soon were using GULag forced labor for other large construction projects, such as Dalstroy (the State Trust for Road and Industrial Construction in the Upper Kolyma Area), which was organized in 1931 in Siberia, and the I.V. Stalin Moskva-Volga Canal (later renamed the Moskva Canal). This canal project used up to about 200,000 inmates at a time from 1932-1937 to build an 80-mile (128-km) canal from the upper Volga near Dubna to Moskva. The purpose of the canal was to supply the growing capital city with more drinking water and also to create a shorter, deeper shipping route to the city than the existing Moskva River. Like the White Sea Canal, the Moskva Canal had a massive death toll, with an official tally of 22,842 deaths in the Dmitlag, the prison camp housing the workers. However, the actual death toll was likely higher, as it seems the 22,000 figure may only have recorded deaths at the camp itself, while many more workers died on the construction site, from accidents and other causes, including on-the-spot executions by the secret police.

For the White Sea Canal, see *The Economics of Forced Labor: The Soviet GULag*; Paul R. Gregory, V. V. Lazarev, editors; 2003. Specifically see Chapter 8, "The White Sea-Baltic

Canal"; Mikhail Morukov. (Morukov mentions the cut in the workers' rations but does not explicitly make the connection between that event and the Soviet famine of 1932-1933.)

- (35) The Soviets had a book written about the construction of the canal, The Stalin White Sea-Baltic Canal (Maksim Gorkiy, editor; 1934. Gorkiy became one of Stalin's most publicly celebrated writers, with the city of Nizhniy Novgorod, his birthplace, being renamed Gorkiy in his honor. (Gorkiy himself, a socialist, had at times supported the Bolsheviks but at other times opposed their repressive policies and went into exile from the USSR for years until lured back by Stalin.) Gorkiy and a "writer's brigade" of over 100 writers, under close supervision of the secret police, assembled material about the canal and wrote the book. It was a propaganda piece, extolling the forced labor as "successful rehabilitation of the former enemies of proletariat". Writers' interviews with the canal workers were highly controlled by the secret police. The police allowed access only to criminal prisoners and not to political prisoners, some of whom were feared might tell the truth about conditions at the canal even despite threats of punishment or execution. It seems likely that some if not most of the writers knew conditions at the canal were brutal but produced the propaganda piece either through loyalty to the state or fear of being sent to the GULag themselves. Gorkiy himself claimed the canal was built "without a single death", perhaps a self-deception or doublethink from a person who had gone into foreign exile over his criticism of Lenin before being welcomed back by Stalin. Nonetheless, Gorkiy by the second half of 1934 had become critical of the Soviets, resulting in him being placed under house arrest from then until his death in 1936.
- (36) While regular barges could used the southern part of the canal, only small, low-capacity barges could use the northern part, and building these barges became another forced-labor task for the prisoners. Militarily, the canal as originally planned would have been traversable by Soviet destroyers, but as built the northern part was too shallow for modern Soviet destroyers of the time. (The few shallower-draft destroyers the Soviets inherited from the World War I-era Imperial Russian Navy could traverse the entire canal.) The canal was eventually reworked and modernized in the 1960s and again in the 1970s, greatly increasing its capacity.
- (37) White Finnish troops briefly took Kem in 1918 and attempted but failed to take Petrozavodsk in 1919, so there was historical precedent of the Murman Railway being vulnerable from Finland. Also, the World War I Allies had seized most of the Murman Railway during their intervention in northern Russia in 1918-20, so there was historical precedent of the railway being vulnerable to a foreign alliance. By the 1930s the USSR was far too strong for Finland alone to be a threat, but given the events of 1918-20 the Soviets would have made defense plans based on the possibility of an international anti-Soviet alliance operating from Finnish territory.
- (38) Onega was already a minor port upon arrival of the railroad. In Tsarist times, Onega was one of the more important ports in the northern region, after Arkhangelsk. Onega had a small shipyard and exported substantial local timber resources to western European countries. Its importance may have diminished after the railroad to Arkhangelsk was built in the 19th Century, although sources I've seen do not make this clear. Without being on a railroad itself, Onega was connected to the greater Russian economy through ships running between the port and Arkhangelsk in the warmer, ice-free months.

Under the Soviets, Onega remained an important timber center. After the railroad arrived in 1941, I suspect the Soviets would have built up the port, like they did with the ports on the Murman/Kirov Railway, but these plans, if they existed, were likely disrupted when the Germans invaded the USSR in 1941. Onega saw further development of its timber industry in the 1950s, and I suspect the port was also developed more at that time, although I have not found a reference on this.

(39) Prior to this, Soviet Karelia was organized as the Karelian Autonomous Soviet Socialist Republic, a nominally autonomous part of the Russian Soviet Federative Socialist Republic, with the city of Petrozavodsk as the ASSR's capital. Parts of Finland occupied by the Soviets in the 1939-40 Winter War officially became territory of the Finnish Democratic Republic, a Soviet puppet state set up to take over the country. The conquest attempt failed, but the Soviets did gain considerable territory from Finland at the end of that war. The Finnish Democratic Republic and the Karelian ASSR were then merged to become the Karelo-Finnish Soviet Socialist Republic.

As a full SSR, this entity officially was a "union republic" as the same level as the Russian SFSR, the Ukrainian SSR, and all the other SSRs. While all the union republics were completely under control of the Soviet communist party, the Karelo-Finnish SSR even so seems to have remained more of a puppet state than an actual union republic. Its reason for existence most likely was as the Soviet entity that would absorb Finland should this event come to pass. By 1956, with the war well over and the USSR at peace with Finland (through a 1944 armistice and a 1947 peace treaty), the Karelo-Finnish SSR no longer had a reason for existence. That year, it was demoted and merged into Russian SFSR, as the Karelian ASSR. The capital was moved from Kem back to Petrozavodsk. The Karelo-Finnish SSR was the only Soviet union republic to be (mostly) carved out of another union republic and then be merged back in.

- (40) This was a deliberate appeal to Russian patriotism, evoking the Patriotic War of 1812 which saw Napoleon's invasion of the Russian Empire defeated. (The Russian Empire for similar reasons had often called their portion of World War I the Second Patriotic War.)
- (41) The Trans-Iranian Railway had been completed in 1938 and was taken over by British and Soviet forces in August-September 1941 when Iran was occupied. The railroad, however, needed considerable upgrading and expansion in order to send large volumes of freight to the USSR.
- (42) According to *Finland in the Second World War: Between Germany and Russia*; Olli Vehviläinen; 2002.

(43) E.M. Kondratova; "Vklad sudoremontnykh Predpriyatiy g. Murmanska v Pobedu nad Fashizmom v gody Velikoy Otechestvennoy Voyny" ("Contribution of Murmansk Shipyards to the Victory over Fascism during the Great Patriotic War"); 1999.