

## Preparing for the Future War: The Soviet Military and Industrial Buildup from 1924 to 1933

Harvey D. Munshaw

On January 21, 1924 V. I. Lenin, leader of the *Bolshevik* revolution and founder of the Soviet state, died of a cerebral hemorrhage. During the next three years Joseph Stalin consolidated his power over the Soviet state. In 1927 he began preparing the Soviet Union to wage an aggressive war aimed at the heart of Europe, in order to advance Marx's prophesied world proletarian revolution. To achieve this, Stalin's government began the buildup of a massive military industrial infrastructure capable of producing vast quantities of weapons, and other equipment which could support a modern army waging aggressive warfare. To prepare for the anticipated war in Europe, the U.S.S.R. embarked on a revolution in military strategic thought, rapid industrialization, extensive expansion of infrastructure, and widespread economic and industrial espionage. Due to the development of new military theories by Tukhachevsky, Triandafillov and Snitko, as well as its vast expansion of military industrial infrastructure, the Soviet Union was transformed from an agrarian nation incapable of fielding a modern army, into a powerful industrial state capable of waging aggressive warfare.

**Background.** Although the actual buildup of the Red Army began in 1928, its philosophical underpinnings were rooted in the events of the October Revolution of 1917, and the Russo-Polish War of 1920. On November 7, 1917 Lenin led a successful coup to topple the provisional government, which led to the founding of the world's first proletarian state. In the months and years following this coup Lenin's government was forced to engage in a civil war, which it won in early 1920. In 1920 the Polish Army under Marshal Joseph Pilsudski launched an offensive aimed at expansion into the Ukraine, but the Soviet Army led by Trotsky and Tukhachevsky launched a counterattack which drove the Poles back to within ten miles of Warsaw. Although infighting between Trotsky and Stalin ultimately cost the Soviet Union victory over

Poland, Lenin and the other *Bolshevik* leaders believed that they had had a glimpse of the future. The Red Army had nearly succeeded in taking Poland, and in Western Europe various Moscow-led communist groups had launched work stoppages and strikes which crippled France and England's ability to send armaments to Poland. Until Pilsudski turned the Soviets back before Warsaw, delegates to the Second Congress of the Third International in session in Moscow followed with enthusiasm as the Soviet forces advanced. The situation in Western Europe was different; there the Germans saw the Soviet advance with great alarm, fearing that it could happen in their country.<sup>1</sup>

In 1924 Lenin died and a power struggle ensued between Stalin, Trotsky, Zinoviev, and others, resulting on Stalin gaining complete control of the party and the state, with Trotsky exiled and ultimately assassinated, and Zinoviev executed as an enemy of the people. One of the chief contentions in this power struggle was what the future development of the revolution would be. Trotsky and Zinoviev favored revolutions, popular uprisings, and coups inspired by the Soviet model, and accused Stalin of abandoning world revolution. Although Stalin spoke of building socialism in a single state, he had no intentions of forgoing expansionist policies. In his preface to the book *On the Road to October*, Stalin wrote

the victory of socialism in one country is not a self sufficient task. The revolution which has been successful in one country must not regard itself as a self sufficient entity, but as an aid . . . for hastening the victory of the proletariat in all countries. For the victory of the revolution in one country . . . is the . . . beginning . . . and pre condition for the world revolution.<sup>2</sup>

After waging, and ultimately winning the battle for control of the Soviet State, Stalin purged the Communist Party of his opponents and set about transforming the Soviet Union into a modern industrial nation. Many of his critics, especially Trotsky, saw this as proof that he had abandoned world revolution; however in his report to the Seventeenth Party Congress in 1934, Stalin clearly had world revolution on his mind. This could be inferred when he said

some comrades think that, once there is a revolutionary crisis, the bourgeoisie is bound to get into a hopeless position, that its end is a

---

<sup>1</sup> George F. Kennan, *Soviet Foreign Policy, 1917 – 1941* (New York: D. Van Nostrand Company, INC., 1960), 30.

<sup>2</sup> Joseph V. Stalin, *Works*. Vol. 6. 1924 (Moscow: Foreign Language Publishing House, 1953), 415.

foregone conclusion . . . that is a profound mistake. The victory of the revolution never comes of itself. It must be prepared for and won.<sup>3</sup>

During this plenum, Stalin attempted to portray his program as the construction of a technologically and culturally modern peace loving state; nevertheless Stalin was not able to completely conceal his ambitions of a worldwide revolution, as he prophesied how that the capitalist world would soon be at war, which he felt would ultimately lead to a revolutionary crisis. Even though Stalin implied that the aim of the Soviet foreign policy was to preserve the peace, he made something of a Freudian slip when he said “quite clearly things are headed for a new war.”<sup>4</sup>

***Transformation in Military Thought Leading to Industrialization.***

Stalin was a pragmatist, who realized that global proletarian revolution could not be achieved by the efforts of the militant, but miniscule, communist organizations operating in nations across the world. He felt that the revolution needed a strong military vanguard to advance it, and as such he set about building up an ultra modern military. Stalin was aided in turning his dream of advancing the revolution into reality by three military strategists: Mikhail Tukhachevsky, Vladimir Triandafillov, and Nikolai Snitko. The most important of these was Marshal Mikhail N. Tukhachevsky, Deputy Commissar of Defense and Chief of the General Staff of the Red Army. Tukhachevsky was a *Bolshevik* in his politics, and brilliant in military matters. In 1914 “Tukhachevsky passed out from the Alexandrovsky College as one of the best students in its history” and was commissioned lieutenant in Nicholas II’s army; in 1915 he became a German prisoner of war, and in 1918 he joined the Red Guards during the Russian Civil War.<sup>5</sup> Tukhachevsky first gained prominence during the march on Warsaw in the Russo-Polish War of 1920, when his army marched to within ten miles of Warsaw. Tukhachevsky, like so many other early Red Army commanders, was shaped by this battle. Shortly after the retreat from Warsaw, he declared that “the Communist International should set up a general staff for the executing of the World Revolution.”<sup>6</sup>

Tukhachevsky was a firm believer in revolution at the tip of the bayonet, and this is seen in his study called *The Future War*. This study examined

---

<sup>3</sup> Joseph Stalin, *The Essential Stalin: Major Theoretical Writings, 1905-1952* (Garden City, NY: Anchor Books, 1952), 237.

<sup>4</sup> *Ibid.*, 232.

<sup>5</sup> Harold Shukman, *Stalin's Generals* (London: Phoenix Press, 1993), 259.

<sup>6</sup> Lennart Samuelson, *Soviet Defense Industry Panning: Tukhachevskii and Military-Industrial Mobilization 1926 - 1937* (Stockholm: Stockholm Institute of East European Studies, 1996), 42.

the vulnerability to revolution of states which were likely to engage the Soviet Union in battle, and it outlined the steps that the Red Army had to take to win the coming clash. *The Future War* hypothesized two scenarios for the next war. In the first scenario the Soviet Union would be attacked by an imperialist power, and in the second “a successful social revolution in a ‘major nation’ would call for an armed intervention by the Red Army.”<sup>7</sup> In 1926, Tukhachevsky commissioned the *Future War* study by issuing orders to several Red Army departments, charging them with researching the strengths and weaknesses of likely enemy states’ coalitions, and with examining the measures needed to guarantee victory in the coming conflict. *Future War* was comprised of six main parts, which covered ideology, enemy demographics, arm requirements, technological aspects of warfare, internal political factors of the states, and a summary of what was discussed before. This 1928 study was aimed at giving rational arguments for massive military investment, and it became the foundation “for the views of the military leadership concerning the economic development required for the new kind of warfare that was expected.”<sup>8</sup> According to Raymond W. Leonard’s *Secret Soldiers of the Revolution*, Tukhachevsky’s study predicted a long war of attrition using tanks, aircraft, machine guns, artillery, and vehicles which caused Soviet authorities to seek to:

set in motion in peacetime the ability to produce military supplies and equipment in quantities greater than those consumed during the world war. . . New weapons and military technologies needed to be researched or ‘acquired,’ tested, manufactured, and liberally distributed to combat units . . . It was necessary to prepare transportation networks . . . to support the massive movement of supplies for continuous operations. All of these tasks were urgent, for the Future War would likely come in a matter of a few years.<sup>9</sup>

The goal was to either “crush” the enemy, or devastate “their material and human resources.” This offensive doctrine was elaborated by Vladimir Triandafillov, and Mikhail Tukhachevsky.

General Vladimir Triandafillov was Chief of Operations and Deputy Chief of the Soviet General Staff. In 1929 Triandafillov wrote *Nature of the Operations of Modern Armies*. In this, the author seemed to focus on the beginning, or the first period of a future war, and the strategies that would be

---

<sup>7</sup> Ibid., 48.

<sup>8</sup> Ibid., 178-9.

<sup>9</sup> Samuelson, *Soviet Defence Industry Planning*, 49.

necessary.<sup>10</sup> Triandafillov's work is divided into two parts. The first part evaluates the development of military equipment following the First World War, possible numerical strength of mobilized armies, and organization. The second part covers operations of modern armies including premises, operations, and successive operations. Triandafillov began by discussing the armament developments following the First World War in western nations, to encourage similar developments within the Soviet Union. He suggested that chemical weaponry, tanks, and aviation were the most crucial weapon developments of the First World War. Triandafillov encouraged the development of chemical weapons because "they promise the most surprises in a future war," and most importantly:

defensive equipment lags behind offensive equipment. Extant filters are applicable only to the toxic agents known today. There are no guarantees against new secret chemical weapons. Moreover, the present state of affairs concerning protective clothing is completely unsatisfactory.

He highly valued the role of tanks, and this is seen when he wrote that:

No one today doubts the great tactical significance of tanks for a future war . . . Suppressive assets (artillery) lag behind defensive assets which promote tanks as one of the mightiest offensive assets for a future war.<sup>11</sup>

He supported tanks because they are fast, well armed, and highly mobile. In a time when airpower theory was being developed by persons such as the American Colonel William Mitchell, British Marshal Arthur Harris, and Italian General Giulio Douhet, Triandafillov called for the development of a modern air force complete with formations of reconnaissance, pursuit, and bomber aircraft.

Triandafillov thought that the quality of an army was going to be more important than its sheer number in troops. The quality was reflected in the possession of modern weaponry and motorization. He stated that "the shock force of these armies manifests itself in a large number of high-speed tanks, motorized artillery, and combat aviation."<sup>12</sup> The mechanization of the

---

<sup>10</sup> V.K. Triandafillov, *The Nature of the Operations of Modern Armies*, (Portland: Frank Cass and Co. LTD, 1994), 7.

<sup>11</sup> *Ibid.*, 20 - 27.

<sup>12</sup> *Ibid.*, 27.

armed forces would serve to both strike the “vital centers of the enemy country” and “hurl the enemy back” while seizing its territory.

Triandafillov also envisioned a war involving clashes between million-man armies, predicting the armament of “virtually the entire able-bodied male population,” whom would be called up into the army. He predicted that the U.S.S.R. would win the coming war because the:

Soviet state . . . has every reason to rely upon the broad toiling masses, but the capitalist world must consider the ‘unreliability’ of these masses and undertake mass mobilization with certain circumspection, certain constraints, and additional measures.<sup>13</sup>

The unreliability of the masses in the armies of the capitalist world would lead to problems for the capitalist nations because “primacy in war will go to the side employing high technology and able to field the larger army at the front,” which meant that the capitalist states would have to worry about dissent amongst the members of their large armies and large industrial work forces. The next war was going to require such a great number of ammunition and military equipment that “the entire metallurgical industry of even the most powerful capitalist countries fully mobilize and shift to ‘defense’ work.” This transition of industry to full scale defense buildup signified a reduction of commercial supplies for the civil population, which would cause great stress on the industries. This was likely to result in a revolutionary situation, because dissatisfaction against the capitalist classes would undermine the capitalist states at the front, and in the rear. Triandafillov concluded that the Soviet Union would win the coming conflict because it could arm and fight a total war with the full support of its citizenry, whereas the capitalist world could not.<sup>14</sup>

Tukhachevsky and Triandafillov’s plans for offensive war were supported by the head of *GOSPLAN*’s (State Planning Committee of the U.S.S.R.) Military Division, Nikolai M. Snitko. In March 1930, Snitko wrote a memorandum in which he discussed three likely scenarios of war between the Soviet Union and its capitalist enemies.<sup>15</sup> In the first type of war, the Soviet Union would be attacked by an imperialist power. In the second variant the Soviet Union would ally with one camp of imperialist powers against another camp, and in the third variant:

provided there existed a revolutionary movement in capitalist society and the Soviet Union had a sufficiently solid economic and political

---

<sup>13</sup> Ibid.

<sup>14</sup> Ibid., 45- 47.

<sup>15</sup> Samuelson, *Soviet Defence Industry Planning*, 112.

basis, plus the necessary military preparedness (the Red Army would launch 'an armed attack on capitalism.'<sup>16</sup>

Snitko focused mainly on the first variant, which previewed the U.S.S.R. being attacked first. He believed that victory in the coming conflict implied "a total crushing of the enemy's armed forces and state apparatus, and the subsequent transformation of these countries to 'Soviet Republics.'" To enable such an offensive, Snitko called for a great expansion of the Red Army and the Air Force. His plan involved a "maximum effort," in which he argued for a Red Air Force of between 25 to 30,000 airplanes, half of which were attack and light bomber planes, which were supposed to be "in front-line service at the start of the war. Tank requirements in Snitko's scenario were equally shocking as he called for "15000 light and 7000 heavy tanks at mobilization."<sup>17</sup> Snitko's call, along with those of Tukhachevsky and Triandafillov, for a fully mechanized army and powerful air force required full scale industrialization. Therefore, it is not by accident that the five year plans started the same year, 1928, that Tukhachevsky, Triandafillov, and Snitko reported their findings to Stalin.

***The First Five Year Plan*** began in 1928 and lasted until 1933.

Ostensibly, the First Five Year Plan was intended to build a model socialist state; however, the plan was also intended for the "preparation for another world war," with the totality of the industrial buildup "geared to military needs."<sup>18</sup> At a time when the United States, Great Britain, and France were engaged in disarmament and Germany was still six years from launching full scale rearmament, the Soviet Union was building a modern military and the infrastructure with which to support it. The First Five Year Plan was meant to prepare the U.S.S.R. for the type of warfare envisioned by Tukhachevsky, and other leading military strategists, and in terms of output alone it was highly successful. In 1934 the rest of Europe combined had 500 tanks whereas the Soviet Union was manufacturing 170 tanks per year by 1930, and 3,509 tanks per year by 1933.<sup>19</sup> The Soviet Union was also building more combat aircraft than the rest of Europe combined, and one commentator stated in 1935 that the peace loving people of the Soviet Union had more bombers at their disposal than anyone else on the planet. Before the five year plans began, the *NKVM* (People's Commissariat for Military and Naval Affairs) was allocated less than fifteen percent of the annual Soviet budget, but by the conclusion of the First Five Year Plan, the *NKVM* received nearly twenty three percent of the

---

<sup>16</sup> Ibid., 113.

<sup>17</sup> Ibid., 113-114.

<sup>18</sup> Richard Pipes, *Communism: A History* (New York: Random House, 2001), 58.

<sup>19</sup> Mark Harrison, *Soviet Planning in Peace and War, 1938 -1945* (New York: Cambridge University Press, 1985), 8.

state budget.<sup>20</sup> In addition to the copious quantities of tanks, aircraft, artillery, machine guns, rifles, and ammunition produced during the First Five Year Plan, the foundation for a colossal armaments industry was laid. In his report to the Seventeenth Party Congress on January 26, 1934, Stalin proclaimed the First Five Year Plan a success, because the Soviet Union had been “radically transformed . . . New industries have been created,” which involved “the production of machine tools, automobiles. . . chemicals, motors, aircraft, harvester combines, powerful turbines and generators, high-grade steel, ferro-alloys.”<sup>21</sup>

As implied by Stalin’s speech, one of the aims of the First Five Year Plan was “to transform the Soviet Union from a country importing equipment into a country that manufactures equipment.” In 1933 *GOSPLAN* published the *Summary of the Fulfillment of the First Five Year Plan*, which provides an overview of the achievements of the First Five Year Plan. In 1928 the Soviet Union trailed most of Western Europe and the United States in the manufacture of industrial machinery, but by 1931 the Soviet Union was second in machine production behind only the United States. Machine building created “a powerful base for the technical reconstruction of the . . . economy and for the defense of the country.” The large volume of industrial equipment the Soviet Union constructed enabled it to build a base for mass production of armaments and other goods, as they assured “the precision without which the modern conveyer methods of assembly based on the interchangeability of parts would be impossible.”<sup>22</sup>

In 1933 *GOSPLAN* reported that the First Five Year Plan resulted in the creation of a firm base “for the defence of the country.”<sup>23</sup> Furthermore, *GOSPLAN* proclaimed that “one of the most important results of the First Five Year Plan is that the U.S.S.R. has been transformed from an agrarian country into an industrial country.” In a handbook written for prospective American investors, AMTORG recorded the enormous achievements made during the First Five Year Plan. The Soviet Union tripled iron ore production from six million metric tons in 1928, to fifteen million metric tons in 1933. Pig iron production doubled from three million metric tons in 1928, to six million

---

<sup>20</sup> David R. Stone, *Hammer and Rifle: The Militarization of the Soviet Union, 1926-1933* (Lawrence, KS: University Press of Kansas, 2000), 90.

<sup>21</sup> Joseph V. Stalin, *Works*, Vol. 13 (Moscow: Foreign Language Publishing House, 1953), 314.

<sup>22</sup> State Planning Commission of the U.S.S.R., *Summary of the Fulfillment of the First Five Year Plan for the Development of the National Economy of the U.S.S.R.* (Moscow: State Planning Commission of the U.S.S.R, 1933), 65.

<sup>23</sup> *Ibid.*, 64 – 69.



metric tons in 1933. Steel production rose from eight million metric tons in 1928, to nearly twelve million metric tons in 1933. Manganese production escalated from 710 thousand tons in 1928, to more than one million tons in 1933. Electricity was needed to fuel industry, and electricity production tripled from five million kilowatts in 1928, to sixteen million kilowatts in 1933.<sup>24</sup>

Electrification was needed to give the Soviet Union a modern industrial base, and *GOSPLAN's Summary of the Fulfilment of the First Five Year Plan* elaborated on this, as it expounded on the significance and development of the U.S.S.R's electrical grid. It stated that "the first plan for the industrial restoration and reconstruction of the economy of the country was the plan of electrification." It continued by saying that the development of electrical infrastructure resulted in the doubling of the capacity of power stations between 1928 and 1932, and a tripling of output during the same period. *Summary* stated that the increase in electrical production was based on the construction of new district power stations. *GOSPLAN's* report emphasized that "in 1928 there were eighteen district stations in the U.S.S.R. with a total capacity of 610,000 kw," and "by the end of 1932, forty-three district stations were working with a total capacity of 2,624,000 kw." *GOSPLAN* credited the construction of these power plants in assisting the development of Soviet industrial complexes, because they reduced "the need for the building of special power plants at factories." By 1932, the Soviet government was able to boast that the capacity of Soviet power stations was better utilized than their western counterparts. One of the chief benefits of electrification was the supplying of sustainable energy sources to provide for:

the mechanization of a number of highly labor absorbing industries, particularly the coal industry; the mechanization of all the main operations at the metallurgical works; the introduction of the conveyer system in the machine building industry; the organization of the manufacturing of ferro-alloys, of high grade steel, aluminum, etc.<sup>25</sup>

Fuel was as vital as electricity for building the Soviet Union's military and industrial infrastructure. According to *GOSPLAN*, the development of the "entire economy of the country during the first Five-Year Plan period depended" on "the development of the fuel base of the Union," for the continued improvement of industry. During the First Five Year Plan the Soviet Union nearly doubled fuel production. In 1932, the total supply of fuel "amounted to 110.6 million metric tons . . . as compared with 56.8 million tons

---

<sup>24</sup> American-Russian Chamber of Commerce, *Handbook of the Soviet Union* (New York: American Russian Chamber of Commerce, 1936), 130, 200.

<sup>25</sup> State Planning Commission, *Summary of the Fulfilment of the First Five Year Plan*, 85 -97.

in 1927-28.” Coal production increased from 35,250,000 tons in 1928, to 62,983,000 tons in 1932. In order to fuel tanks, planes, trucks, ships, and industry, the Soviet Union needed oil, and stemming from this need petroleum production was emphasized during the First Five Year Plan. The number of oil wells increased from 4,760 in 1928 to 5,986 in 1932, which allowed for a doubling of petroleum production. In reviewing the results of the First Five Year Plan, *GOSPLAN* stated that:

the big successes attending the development of the fuel industry . . . ensure the further development of the power resources to the extent required for the completion of the technical reconstruction of the economy of the country as a whole.<sup>26</sup>

In addition to powering Soviet industry, developments of new fuel sources were vital to establishing a firm transportation infrastructure.

Transportation infrastructure, crucial in moving troops, weaponry, food, and supply in wartime, was rapidly increased during the First Five Year Plan. Five thousand new miles of railroad track were laid out, and freight traffic increased from 150 million tons in 1928, to 268 million tons in 1933. Water transportation showed significant increases during the First Five Year Plan, as river freight nearly tripled from eighteen million tons in 1928, to fifty two million tons in 1933. This increase was facilitated by the construction of several canals, including the White Sea-Baltic Canal, and Moscow-Volga Canal. Although the amount of paved roadways in the Soviet Union still lagged behind Europe, after the First Five Year Plan road construction increased “the total length of all roads suited for any kind of vehicular traffic from 24,300 kilometers . . . to 41,000 kilometers.” During the same time there were substantial increases in overland freight traffic, and the number of automobiles in the Soviet Union increased from 18,700 in 1928 to 179,500 in 1934.<sup>27</sup> The epicenters for the Soviet Automotive industry were the Stalin Automobile Works in Moscow, the Molotov Automobile Works in Gorky, and the Yaroslavl Works in Yaroslavl. Because the Red Army needed trucks to transport its troops and supplies, it is not surprising that “a distinguishing feature of the Soviet automobile industry is the large proportion of trucks that are turned out,” and by 1933 *GOSPLAN* claimed that “the Soviet automobile works” could “produce approximately as many trucks as were produced in 1929 by all the automobile works in Europe combined.”<sup>28</sup> The First Five Year Plan resulted in stupendous increases in the production of railroad equipment. In 1928 the

---

<sup>26</sup> *Ibid.*, 98 - 108.

<sup>27</sup> American-Russian Chamber of Commerce, *Handbook*, 240, 259.

<sup>28</sup> State Planning Commission, *Summary of the Fulfilment of the First Five Year Plan*, 78.

Soviet Union produced 479 locomotive engines per year, and by 1932 this number was 827 per year. The Soviet Union built 9,130 freight cars in 1928, and by 1932 this number was 21,612.

Because of its vast distances, the U.S.S.R. benefited heavily from aviation. During the First Five Year Plan Soviet civil aviation networks increased from a little over 10,000 kilometers to more than 43,000 kilometers. While civil aviation made modest strides during the First Five Year Plan, military aviation benefited the most. According to the American-Russian Chamber of Commerce, the Soviet Union relied heavily on imported airplanes and motors before 1928, situation that was changed during the first Five-Year Plan. It stated that “at the present time practically all planes in service . . . are of domestic make.”<sup>29</sup> The First Five Year Plan enabled Soviet authorities to boast that:

the production of airplane motors, both air and water-cooled, has been organized, and motors up to 700 hp., are now being built. All types of modern planes for civil and defensive purposes are now manufactured in the U.S.S.R. . . . Important research and experimental work in airplane construction is carried on at three aviation institutes. The foremost of these is the Central Aero-Hydrodynamics Institute (*TsAGI*) in Moscow.<sup>30</sup>

During this time the Soviet Union established several design bureaus, most notably Polikarpov, Ilyushin, Petlyakov, Tupolev, Antonov, Sukhoi, Lachovkin, and Mikoyan and Guryevich. These built planes that flew nonstop over the pole from Moscow to San Francisco, giants such as the *Maxim Gorky*, heavy bombers such as the TB-3, medium bombers such as the DB-3, advanced fighters such as the I-16, and dirigibles.

Along with the development and expansion of transportation infrastructure in the First Five Year Plan period came the development of radio, telegraph, and telephony. Communications infrastructure was important for linking the distant population centers of the Soviet Union, as well as for improving the command, control, and communication systems of the Red Army. *GOSPLAN's Summary of the Fulfilment of the First Five Year Plan* details the enormous gains made in the Soviet communication infrastructure. The Soviet government proclaimed that “the total length of interurban telegraph and telephone lines in 1934 reached 1, 870,000 km., as compared with . . . 890,000 km. in 1928.” The advancement of telephony allowed for rapid communication across the Soviet Union and between the U.S.S.R. and the rest of the world. Radio usage saw gigantic gains as the “number of radio receiving ‘points’ rose

---

<sup>29</sup> American-Russian Chamber of Commerce, *Handbook*, 267.

<sup>30</sup> *Ibid.*

from 348,000 in 1928 to 2.3 million in 1934.” The Soviet government encouraged the development of “an extensive system of local amateur stations.” There was also considerable development of shortwave radio, and the “Moscow radio-telegraph center is the fourth largest in the world.”<sup>31</sup> Although the development of these communication systems served to link the distant population centers of the Soviet Union, they also assisted in military communication. The Moscow radio-telegraph center was used before the abolishment of the *Komintern* in 1938, to communicate with Soviet agents involved in fomenting uprisings and coups across the globe. During the Second World War it was used to communicate with the British and American governments, as well as with the various departments of the Red Orchestra spy ring to communicate intelligence reports from Berlin, London, and Tokyo to the *Stavka* (Soviet General Staff Headquarters).

**Obtaining Foreign Economic and Technological Assistance.** The Soviet Union needed to acquire capital from the nations of Europe and the United States to finance the construction of an advanced military-industrial infrastructure. The need for foreign money was extreme because “the fund of foreign exchange in the Soviet Treasury was woefully inadequate for the first-line industrial departments.”<sup>32</sup> One of the ways in which *SOVNARKOM* obtained capital was by selling Soviet grain. *SOVNARKOM* also sought funding by normalizing trade relations with the rest of the world, and to do this the U.S.S.R. established several trading companies such as ARCOS (Anglo Russian Shipping Company) and AMTORG (American Trade Organization). Although AMTORG and ARCOS were used as front organizations by the *NKVD* (People’s Commissariat for Internal Affairs) and the *GRU* (Military Intelligence) for espionage purposes, they were also successful in obtaining foreign capital. AMTORG and other Soviet trade consortiums were able to collect nearly 50,000,000 dollars from foreign investors in 1928, with 7,150,000 dollars of that sum coming from the United States.<sup>33</sup> In 1929 AMTORG published a prospectus giving a general idea of the possibilities, character, and dimensions of the foreign trade relations of the Soviet Union in the next few years.<sup>34</sup> Pavloff’s pamphlet stated that “capital investments in industry

---

<sup>31</sup> *Ibid.*, 271 - 273.

<sup>32</sup> Walter G. Krivitsky, *In Stalin’s Secret Service: Memoirs of the First Soviet Master Spy to Defect* (New York: Enigma Books, 2000), 102.

<sup>33</sup> Stuart Chase, Robert Dunn, and Rexford G. Tugwell, *Soviet Russia in the Second Decade: A Joint Survey by the Technical Staff of the First American Trade Union Delegation* (New York: The John Day Company, 1928), 348.

<sup>34</sup> Joseph M. Pavloff, *The Upbuilding of Soviet Russia: Five-Year Plan for Industrial Development of the Soviet Union* (New York: AMTORG Trading Corporation, 1929), 1.

enumerated in the plan will become effective only towards the end of the five year period or even later.” In 1936 an AMTORG subsidiary, The American-Russian Chamber of Commerce, published *The Handbook of the Soviet Union*. The book was a guide to foreign investors and was meant to “provide an authoritative basis upon which to build an understanding of the Soviet trade, industry, and agriculture in recent years.”<sup>35</sup> Although the Soviet Union was somewhat successful in attracting foreign investors and raising funds for industrialization through legal means, Stalin’s government also pursued money in more illicit ways. Perhaps the most infamous case of Stalin’s questionable fundraising was his counterfeiting scheme. Stalin’s government counterfeited American currency, mostly 100 and 500 dollar bills, and “put into circulation throughout the world about ten million dollars in bogus American currency.”<sup>36</sup> Another questionable way in which the Soviet Union acquired foreign currency was what was called, the “Dollar Inquisition,” which implied a “systematic extortion from Soviet citizens of relief remittances” sent by their relatives living in the U.S. Many were “imprisoned and tortured by the *OGPU* until ransom money arrived from abroad.”<sup>37</sup>

In addition to acquiring money, Soviet industrial development necessitated the acquirement of foreign technology, technical assistance, and equipment. AMTORG was crucial in procuring American tank technology. According to Leonard,

(In) October 1928 . . . I.A Khalepski, a leading Soviet tank expert and a close friend of Tukhachevsky’s, entered the United States on a visa arranged by AMTORG. His declared purpose was to negotiate a deal with the Ford Motor Company.<sup>38</sup>

Khalepski spent considerable time in the United States visiting arsenals and examining American military technology, and “during his stay he became familiar with the work of J. Walter Christie, who was experimenting with a series of advanced tank design prototypes that incorporated an innovative suspension system.” Christie’s tank designs excited American and Polish interest, and when Christie developed a new design known as the M1930, AMTORG was determined to acquire it for the Red Army. In 1930 AMTORG was able to outbid the Polish government for the revolutionary M1930 *Christie* tank. Initially, the American government was reluctant to provide the Soviet Union with the tank, but the AMTORG representatives were able to convince

---

<sup>35</sup> American-Russian Chamber of Commerce, *Handbook*, xxiii.

<sup>36</sup> *Krivitsky, In Stalin’s Secret Service*, 101-2.

<sup>37</sup> *Ibid.*

<sup>38</sup> Leonard, *Secret Soldiers of the Revolution*, 110.

Congress that they intended to use the Christie for agricultural purposes. To complete the deal, Christie shipped two M1930s to the Soviet Union “completely equipped and ready to fight except for mounting the gun,” in crates labeled *tractors*. When the M1930 reached the Soviet Union it became the basis of the BT family of tanks, and its suspension system became incorporated into the superb T-34 medium tank.

AMTORG was able to convince American industrialists to erect factory complexes within the U.S.S.R., and proclaimed that the use of “American equipment and engineering techniques” were very important for the development of Soviet cars and tractors. Ford Motor Co. was one of the American companies that contributed to this development. Foreign technical assistance was crucial to Soviet military buildup and:

beginning in 1928, more than two-score contracts were concluded with American engineering concerns providing for the cooperation of the latter in the design, construction operations of mines, electrical plants and installations, and industrial enterprises of the U.S.S.R. . . . In addition, hundreds of individual engineers and technicians were engaged for various Soviet industries.<sup>39</sup>

The leading American firms in providing technical assistance to the Soviet Union, the Ford Motor Company, RCA, DuPont, Curtiss-Wright, and General Electric, and other western corporations, were extremely interested in investing in the Soviet Union because during the tumultuous economic downturn of the early 1930s, the U.S.S.R. promised a safe market. Although Stalin’s government owned all foreign built and operated factories within the Soviet Union, foreign companies granted leases to build industrial complexes within the U.S.S.R., and were guaranteed “the repayment of capital invested . . . and a certain amount of profit.”<sup>40</sup> Furthermore, Western investors were intrigued by contracts with the Soviet authorities granting the U.S.S.R. ownership of the industrial complexes, while granting themselves ownership of raw materials, finished products and money. The Soviet Union was an appealing target for Western investment because nations like Great Britain could sell to it large amounts of raw materials from its colonial holdings, while other nations such as France, Italy, and the United States enjoyed cheap labor, and extremely favorable balances of trade, as the fledgling Soviet state imported much more than it exported.<sup>41</sup> Germany had a darker motive for seeking strong trade relations with the Soviet Union, as it

---

<sup>39</sup> American-Russian Chamber of Commerce, *Handbook*, 164, 375-6.

<sup>40</sup> Grigory Grigoryan, *What, How, and Why? The Young Soviet State and Foreign Investments* (Moscow: Novosti Press Agency Publishing House, 1966), 34.

<sup>41</sup> American-Russian Chamber of Commerce, *Handbook*, 326-340.

could build up large amounts of armaments, flouting limitations placed on it by the Versailles Treaty.

**Conclusion.** Born out of Stalin's dream for Soviet Expansion and the military genius of Tukhachevsky, Triandafillov, and Snitko, the First Five Year Plan transformed Soviet Russia from a backwards, agrarian, and militarily weak nation into a fully industrialized militarily superpower. The call of Stalin and his military commanders for an aggressive war utilizing a highly mechanized army, and incorporating large numbers of planes, tanks, and artillery required the Soviet Union to establish a formidable armaments industry and the infrastructure needed to support it. The First Five Year Plan allowed the Soviet Union to outpace the rest of the world combined in combat aircraft, artillery, tank, and small arms production by its conclusion in 1933. Production of steel, iron, copper, aluminum, manganese, magnesium, potash, and coal, vital to the establishment of an armaments industry, experienced tremendous growth. Dozens of new cities and hundreds of new industrial complexes sprang up, providing the U.S.S.R. with the basis for an extensive military-industrial infrastructure. Transportation and communications systems were greatly expanded as hundreds of miles of canals were dug, thousands of miles of new track were laid, tens of thousands of miles of roads were paved, hundreds of radio stations were built, and several thousand miles of telephone wires were posted. The accomplishments of the First Five Year Plan paved the way for the advances of the second and third Five Year Plans. Despite great loss of human life, chaos, and confusion, the First Five Year Plan achieved its aimed military production. During the execution of the First Five Year Plan the Soviet Union was able to obtain foreign financial and technological assistance for its industrialization program, and was greatly aided in this by its extensive espionage network, which allowed it to acquire weapons systems such as the Christie Tank.

The industrial, transport, communication, and military infrastructure established during the First Five Year Plan allowed for the rapid technological development of the Soviet military. This fact was reflected by the Peoples' Commissar for Defense Kliment Voroshilov's speech in December 1939, on the occasion of Stalin's sixtieth birthday which praised the five year plans for the "industrialization of the country." Voroshilov continued his praise for the five year plan by stating that "It is only thanks to this that our army is now technically better equipped than any other army in the world." Although Triandafillov died in a plane crash in 1931, and Snitko and Tukhachevsky were eliminated during the purge of the Red Army High Command in 1937, the military strategies and the industrial infrastructure they helped create allowed the Red Army to survive the perilous days of 1941, and achieve ultimate victory at Berlin in 1945 while Sovietizing half of Europe in the process. While writing his memoirs in the late 1960s, Marshal Georgi Zhukov said that the five year

plans were instrumental in developing the Red Army into “an up-to-date army that measured up to the latest standards.”



### Appendix A: Abbreviations and Terms

|           |  |
|-----------|--|
| AMTORG    | American Trade Organization  |
| ARCOS     | All-Russian Co-operative Society   |
| GOSPLAN   | <i>Gosudarstvennyi Komitet po Planirovaniyu</i> , State<br>Committee for Planning  |
| GRU       | <i>Glavnoye Razvedyvatel'noye Upravleniye</i> , Main<br>Intelligence Directorate of the Red Army   |
| NKVD      | <i>Narodnyi Komissariat Vnutrennikh Del</i> , People's<br>Commissariat For Internal Affairs  |
| NKVM      | <i>Narodnyi Komissariat Voennykh i Morskikh Del</i> , Peoples<br>Commissariat for Military and Naval Affairs   |
| OGPU      | <i>Ob'edinennoe Gosudarstvennoe, Politicheskoe Upravlenie</i> , Joint<br>State Political Directorate   |
| SOVNARKOM | <i>Sovet Narodnykh Komissarov</i> , Council of Peoples<br>Commissars. Nominal Government of the Soviet<br>Union, functioning as a cabinet of ministers |
| TsAGI     | <i>Tsentr'al'nyi Aerogidrodinamicheskii Institut</i> , Central<br>Aerohydrodynamic Institute   |

## Appendix B: Tables

### Soviet Weapons Production, 1930 - 1933

|                                 | <u>1930</u> | <u>1931</u> | <u>1932</u> | <u>1933</u> |
|---------------------------------|-------------|-------------|-------------|-------------|
| Combat Aircraft                 | n/a         | 220         | 146         | 627         |
| Bombers                         | n/a         | 100         | 72          | 291         |
| Fighters                        | n/a         | 120         | 74          | 336         |
| Tanks                           | 170         | 740         | 3,038       | 3,509       |
| Artillery Pieces                | 952         | 1,966       | 2,574       | 4,638       |
| Medium and Large Caliber        | 608         | 926         | 1,602       | 1,754       |
| Machine Guns                    | 9,700       | 41,000      | 45,000      | 32,700      |
| Rifles; Carbines, in thousands. | 126         | 174         | 224         | 241         |

*Source:* Harrison, *Soviet Planning in Peace and War*, p. 250.

### Soviet Heavy Industry Output, 1928-1933

|   | <u>1928</u> | <u>1929</u> | <u>1930</u> | <u>1931</u> | <u>1932</u> | <u>1933</u> |
|---|-------------|-------------|-------------|-------------|-------------|-------------|
| Iron ore, in million metric tons              | 6.0         | 7.8         | 10.4        | 10.9        | 12.2        | 15.1        |
| Pig Iron, in million metric tons              | 3.4         | 4.3         | 5.0         | 4.9         | 6.2         | 7.2         |
| Steel Ingots, in million metric tons          | 4.3         | 4.9         | 5.8         | 5.4         | 5.9         | 6.9         |
| Rolled Steel, in million metric tons          | 3.5         | 3.9         | 5.0         | 4.1         | 4.2         | 4.9         |
| Manganese Ore Output, in thousand metric tons | 710.0       | 1,237.0     | 1,543.0     | 876.0       | 833.0       | 1,040.0     |
| Coal, in million metric tons                  | 35.5        | 40.1        | 47.8        | 56.8        | 62.8        | 76.3        |

|  |      |      |      |      |      |      |
|--|------|------|------|------|------|------|
| Petroleum, in million metric tons      | 11.6 | 13.7 | 18.5 | 22.4 | 21.4 | 21.5 |
| Electricity, in billion kilowatt hours | 5.0  | 6.2  | 8.4  | 10.7 | 13.5 | 16.4 |
| Motor Vehicles, in thousands of units  | 0.8  | 1.7  | 4.2  | 4.0  | 23.9 | 49.7 |

*Sources:* Iron and Steel: American-Russian Chamber of Commerce, *Handbook*, p. 131; Manganese: American-Russian Chamber of Commerce, *Handbook*, p. 139; Coal, Petroleum, Electricity and Motor Vehicles: Harrison, *Soviet Planning in Peace and War*, p. 253.

#### Soviet Transportation and Communications Development

|   | <u>1928</u> | <u>1933</u> |
|---|-------------|-------------|
| Length of rail lines in Operation, in thousands of kilometers     | 76.9        | 82.6        |
| Volume of Railroad Freight Traffic, in millions of tons           | 150.6       | 268.1       |
| Freight carried on inland waterways, in million tons              | 18.3        | 46.9        |
| Length of Usable Roads, in thousands of kilometers                | 24.3        | 41.0        |
| Aviation lines, in thousands of kilometers                        | 11.4        | 37.0        |
| Length of Interurban Telegraph and Telephone Lines, in kilometers | 890,000     | 1,870,000   |

*Sources:* Railroads: American-Russian Chamber of Commerce, *Handbook*, p. 240; Inland Waterways: American-Russian Chamber of Commerce, *Handbook*, p. 251; Paved Roads: American-Russian Chamber of Commerce, *Handbook*, p. 259; Civil Aviation: American-Russian Chamber of Commerce, *Handbook*, p. 264.