

4857

~~TOP SECRET~~

CENTRAL INTELLIGENCE AGENCY  
WASHINGTON, D.C. 20505

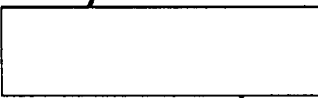
2 April 1974

MEMORANDUM FOR: The Director of Central Intelligence

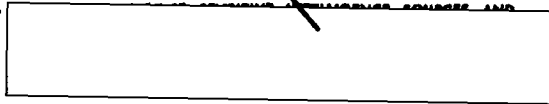
SUBJECT : MILITARY THOUGHT (USSR): Soviet Defense Industry Preparing for World War II

1. The enclosed Intelligence Information Special Report is part of a series now in preparation based on the SECRET USSR Ministry of Defense publication Collection of Articles of the Journal "Military Thought". This article discusses the organization and management of Soviet defense industry up to the eve of World War II. The defense appropriations and plan goals for the immediate prewar years are stated, with the author taking the position that Soviet defense industry performed admirably during this period. Ground Forces weapons and ammunition production figures are cited, and Stalin is given credit for the emphasis on production of artillery. This article appeared in Issue No. 2 (90) for 1970.

2. Because the source of this report is extremely sensitive, this document should be handled on a strict need-to-know basis within recipient agencies.

  
William E. Nelson  
Deputy Director for Operations

~~TOP SECRET~~



**Distribution:**

- The Director of Central Intelligence
- The Director of Intelligence and Research  
Department of State
- The Joint Chiefs of Staff
- The Director, Defense Intelligence Agency
- The Assistant to the Chief of Staff for Intelligence  
Department of the Army
- Director, National Security Agency
- Deputy Director of Central Intelligence
- Deputy to the Director of Central Intelligence  
for National Intelligence Officers
- Deputy Director for Intelligence
- Deputy Director for Science and Technology
- Director of Strategic Research
- Director of Weapons Intelligence
- Director of Economic Research

~~TOP SECRET~~



~~TOP SECRET~~



[Redacted]

## Intelligence Information Special Report

COUNTRY USSR

DATE OF INFO. Mid-1970

[Redacted]  
DATE 2 April 1974

SUBJECT

MILITARY THOUGHT (USSR): The Defense Industry of the USSR in the Prewar Years (1937 - June 1941)

SOURCE Documentary

Summary:

The following report is a translation from Russian of an article which appeared in Issue No. 2 (90) for 1970 of the SECRET USSR Ministry of Defense publication Collection of Articles of the Journal 'Military Thought'. The author of this article is Colonel V. Klevtsov, Candidate of Historical Sciences. This article discusses the organization and management of Soviet defense industry up to the eve of World War II. The defense appropriations and plan goals for the immediate prewar years are stated, with the author taking the position that Soviet defense industry performed admirably during this period. Ground forces weapons and ammunition production figures are cited, and Stalin is given credit for the emphasis on production of artillery.

End of Summary

[Redacted] Comment:

Colonel V. Klevtsov has written articles about the Russian Civil War, Military-Historical Journal, No. 1, 1971 and Pravda, 5, November 1970, and another regarding the commencement of World War II, Agitoriya, No. 11, 1971. Military Thought has been published by the USSR Ministry of Defense in three versions in the past -- TOP SECRET, SECRET, and RESTRICTED. There is no information as to whether or not the TOP SECRET version continues to be published. The SECRET version is published three times annually and is distributed down to the level of division commander.

Page 3 of 19 Pages

~~TOP SECRET~~

~~TOP SECRET~~

Page 4 of 19 Pages

The Defense Industry of the USSR in the Prewar Years  
(1937 - June 1941)

by  
Colonel V. Klevtsov  
Candidate of Historical Sciences

The process of rearming the Red Army with more modern types of combat equipment on the eve of World War II was highly intensive and complex. Under the direct supervision of the Central Committee of the Communist Party, a wide search was conducted for more combat-effective types of weapons, equipment, and means of support and supply. Various plans were worked out and adopted through a complex struggle of opinions. By getting the production and serial output of new types of weapons going, significant difficulties were overcome in the areas of technology, the supply of raw materials, the coordination and regulation of the complex system of the activities of the cooperative defense enterprises, etc.

Many of the most important aspects of this subject have not yet been fully studied. These include, for example, how a military-technical policy was developed; and how ways were determined to increase the pace of arms production and to equip the Red Army under the growing threat of imperialist aggression. A more thorough elaboration of this subject still is necessary, because there still exist rather oversimplified, onesided, and sometimes even subjectively biased, interpretations of the activities of the defense industry on the eve of the war.

Without setting ourselves the task of examining all the problems in their entirety, we shall try to trace only the basic tendencies and trends in the development of arms and ammunition production in the prewar years, as well as analyze some of the special features and difficulties of this process and ways of overcoming them.

\* \* \*

V. I. Lenin, having studied the nature of wars in the imperialist epoch in depth, irrefutably demonstrated that the imperialists use the very latest technical achievements and miraculous inventions in waging wars; on this basis he concluded that, apart from other factors, "the one who has the greatest technology and best machines will prevail" in such wars.<sup>1</sup> Attaching special significance to using the latest combat means to achieve

1 V. I. Lenin, Complete Works, volume 36, pages 116, 396.

~~TOP SECRET~~

~~TOP SECRET~~

Page 5 of 19 Pages

victory in war against imperialist aggressors, Lenin outlined ways of technically equipping the Red Army. The main one of these he believed to be the all-round development of the defense industry, based on general upgrading of the socialist economic structure and the whole national economy of the country.

The Communist Party, fulfilling the legacy of the leader, mobilized all the energy and creative forces of the Soviet people in order to renovate and regenerate in the shortest historical period--three prewar five-year plans--the economy of the Soviet country on the base of the foremost industrial technology, and on that basis radically reequip the army, air force and navy. This was a great feat for the party, the working class, and all our people.

In the mid-1930's, in response to imminent military danger from fascist countries, the Central Committee of the Party and the Soviet Government were forced to revise the previously planned orientation and working pace of the defense industry, and also to effect a transition from the compound system of building a regular Red Army.

At the end of 1936 and the beginning of 1937, by directive of the Central Committee of the All-Union Communist Party (Bolshevik) CC AUCP b the People's Commissariat of Defense reviewed the technical reconstruction of the Red Army. Along with great achievements, it also uncovered serious deficiencies which could become an impediment to fulfilling new, more complex military-technical tasks.

During the first two five-year plans, of all the types of weapons, the most attention was given to the production of the latest means of combat--tanks and aircraft. Their construction was given first priority in money allocations and in the assignment of production space, raw materials, equipment, and the most qualified cadre. And this was completely justified, since our aviation and tank industries were just barely able to stand on their feet and had to be developed at the earliest possible date.

Other fields of military production, for example, artillery and small arms, developed a little more slowly. To some extent, this was due to the views existing at the time that artillery in its earlier form would be used little in a future war. It was believed that the fulfilment of the majority of its tasks would be taken over by tanks and aviation, whose fire effect was expected to be greater than that of gunfire from indirect positions.

All was not well with the production and scientific-design base. The organization of production and its technology suffered from many

~~TOP SECRET~~

~~TOP SECRET~~

Page 6 of 19 Pages

deficiencies and did not meet modern requirements. The line production method had just begun to be introduced and was being assimilated slowly. Scientific-research institutes did not have solid links to industry, and because of this, experimental-design work developed slowly on a narrow scientific-technical and production base, without clearcut and purposeful direction. The construction of backup factories developed at a slow pace. As a result of these factors, by the beginning of 1937, an obvious lag in the production of guns, mortars, small arms and ammunition began to be felt. The annual increase of this armament was not high and far from covered the current demands of the rapidly growing formation of cadres. Thus, for example, at this time the Red Army had in its artillery inventory 23,798 guns,<sup>1</sup> 8,176 of which had been removed from the armament for modernization. Further, during 1937, approximately 7,000 additional guns were removed from the armament as obsolete models. Thus, on 1 April 1938 there remained available 8,622 guns, which comprised 35 percent of the estimated requirement. Rifles were in the same state. The army had in its armament 3,530 thousand rifles, or 54 percent of the necessary requirement.<sup>2</sup>

The lack of proper organizational work and the imprecise monitoring of the activities of defense enterprises on the part of the central directorates of the People's Commissariat of Defense and the General Staff also had an adverse effect on the production of arms and ammunition. For example, the Chief Artillery Directorate did not have available the necessary data on the readiness of defense enterprises to fill the quotas set by mobilization plans. The military representative apparatus at plants, which was subordinate to the Chief Artillery Directorate, did not have access to these plans and could not monitor their fulfillment. Because of this state of affairs, based on the experience of separate shops of 19 plants at the beginning of 1937, the attempt of the Chief Artillery Directorate to verify the readiness of the defense industry to fill the arms and ammunition production quotas stipulated by the mobilization plan was not realized.

Nor did the General Staff exert the proper influence on the work of defense industry. Its activities basically were limited to drawing up plans for supplying troops with weapons and combat equipment, and also to establishing the time limits for presenting plans of experimental and research work on new technical equipment and weapons models. In essence, it was not given the functions of monitoring and active intervention in the

- 1 Archives of the Ministry of Defense, f. 81, op. 2330, d. 6, 1. 482.
- 2 Ibid, op. 12,079, d. 45, 1. 71, 73 (we are referring to the first year of the war according to the mobilization deployment plan).
- 3 Archives of the Ministry of Defense, f. 81, op. 12,079, d. 45, 1. 135.

~~TOP SECRET~~

~~TOP SECRET~~

Page 7 of 19 Pages

activities of the central directorates having direct contact with the defense enterprises in order to eliminate the negative aspects of their work.

In connection with the limited supplies of artillery, small arms, and ammunition and their narrow base of production, and also in the absence of an orderly system of experimental and research work in this field, the question acutely arose regarding the prospective further development of these major types of weapons. The Central Committee of the Party and the Soviet Government, in response to the situation which had developed, adopted a whole series of urgent measures which permitted a sharp increase in the output of arms and ammunition and a change in the defense industry situation at its roots.

At the end of 1937 the Soviet Government considered and adopted a plan for scientific-research and experimental-design work for the next five-year plan. This plan defined the main tasks for creating modern weapons by developing new models and by modernizing promising existing weapons systems. With this purpose in mind, high-powered experimental shops and design bureaus staffed by qualified scientific-technical cadre from scientific-research institutes were organized in the shortest possible time at leading defense plants. At the same time, the system of planning research and experimental-design work and its direction by the General Staff were significantly improved. Considerable sums of money were allocated for this. During the years 1938-1939, 152,773 thousand rubles was appropriated for the Chief Artillery Directorate alone.<sup>1</sup>

At the same time, the structure of defense industry was improved. In January 1938, on the base of the People's Commissariat of the Defense Industry, branch People's Commissariats were created for aviation, the shipbuilding industry, ammunition, and arms. The defense enterprises were reinforced by technical cadre. In one year alone, 1938, five thousand young engineers were assigned to them.<sup>2</sup>

In order to achieve the all-round development of the military-technical base of our country the Soviet Government increased defense appropriations from year to year. They were 27 billion rubles in 1938, 41 billion in 1939, 56.9 billion in 1940 and 73 billion in 1941; and

1 Archives of the Ministry of Defense, f. 81, op. 12,079, d. 2, 1. 3, 4

2 XVIII meeting of the All-Union Communist Party (Bolshevik). Stenographic report. State Publishing House of Political Literature, 1939, page 436.

~~TOP SECRET~~

TOP SECRET

Page 8 of 19 Pages

the total of 197.9 billion rubles<sup>1</sup> was more than four times the appropriations made for the entire second five-year plan. The proportion of defense expenditures in the total budget in 1941 was more than double that in 1937.

Of all the branches of the defense industry, much attention was given in the prewar years to the production of artillery, mortars, and small arms. The heightened interest in the artillery industry was expressed by the General Secretary of the CC AUCP (b), I. V. Stalin. In the report of the Military-Industrial Committee of the Defense Committee of the People's Commissars of the USSR, dated 17 October 1938, he set forth his view that artillery, despite the emergence of new, exceptionally important types of combat equipment (aviation and tanks), remains a powerful and decisive factor in war, and should be given special attention.<sup>2</sup> The leaders of the party and government examined artillery armament as a major integral part of the equipment of every branch of service and arm of troops of the Red Army. Therefore, to accommodate the orders of the Chief Artillery Directorate, considerable sums of money were allocated for its production, as shown in Table 1.

The measures adopted permitted a broad expansion of experimental-design and scientific-research work on all types of armament in 1937 and, especially, in 1938; and by the beginning of 1939, these measures permitted the following to be submitted for consideration: 13 models of domestic automatic rifles; an improved carbine and a modernized Degtyarev light machinegun with a fixed feed block; the Silin 7.62mm medium machinegun; the Model 1938 12.7mm heavy machinegun; the Rukavishnikov 14.5mm semi-automatic antitank rifle;<sup>3</sup> the Model 1938 BM-7 82mm mortar to replace the Model 1936 Stoks mortar and the 50mm mortar; the 107mm and 120mm mortars, which were put into line production; a model of the 160mm mortar, which later was not completed due to a lack of the necessary heavy industry; the Model 1932 45mm gun; and the Model 1938 F-22 76mm gun, which was replaced in 1939 by the USV 76mm divisional gun, which was accepted into the armament.

1 Data are based on the Register of the Supreme Soviet of the USSR, taking into account additional allocations in each fiscal year, calculated by the author according to documents in the Defense Ministry Archives.

2 Archives of the Ministry of Defense, f. 2, op. 78,409, d. 40, 1. 14  
*prob. by Defense Committee*

3 The Rukavishnikov antitank rifle was accepted into the armament on 7 October 1939, but was removed in late 1940. This happened because the Chief Artillery Directorate incorrectly assessed the role of the antitank rifle, placing the whole burden of tank combat on artillery; the People's Commissariat for Armament, taking an incorrect position, did not develop the antitank rifle, justifying this by the technical complexity of the production process.

~~TOP SECRET~~



~~TOP SECRET~~

Page 9 of 19 Pages

Table 1  
Total cost of Chief Artillery Directorate orders by year  
(in thousands of rubles)\*\*

| Armament designation                              | 1936       | 1937       | 1938      | 1939       | 1940       | 1941        |
|---|------------|------------|-----------|------------|------------|-------------|
| Artillery technical equipment                     | 594,534    | 651,000    | 1,070,081 | 1,708,067  | 1,874,773  | 2,585,982   |
| Small arms  | 141,740    | 205,425    | 312,528   | 609,056    | 1,011,830  | 1,287,828   |
| Rifle rounds                                      | 123,026    | 162,680    | 487,546   | 614,452    | 683,328    | 830,262     |
| Artillery rounds                                  | 604,567    | 690,116    | 2,107,308 | 5,149,223  | 5,088,822  | 6,879,687   |
| Military instruments                              | 121,931    | 179,000    | 240,815   | 329,024    | ---        | ---         |
| Maintenance, organization of depots and equipment | 34,879     | 75,279     | 101,012   | 144,312    | 115,471    | 152,178     |
| Total   | 1,630,677* | 1,913,500* | 4,319,290 | 8,637,133* | 9,168,334* | 12,263,238* |
| Percentage based on 1936                          | 100        | 125        | 283       | 584        | 600        | 800         |

\* Translator's Note: The totals given here are incorrect.

\*\* Archives of the Ministry of Defense, f. 81, op. 12,079, d. 2, 1. 161.

~~TOP SECRET~~

~~TOP SECRET~~

Page 10 of 19 Pages

The expansion of arms and ammunition production was aided to a considerable extent by the 1939 mobilization plan, which was thoroughly developed and approved on 4 October 1938 by the Defense Committee of the Council of People's Commissars of the USSR; by the statute on military representatives of the People's Commissariat of Defense to industry, promulgated by the Soviet Government on 15 July 1939, and which required the military representatives to know the mobilization plan of their own plant and monitor the plant's readiness to fulfil this plan; and, by the expanded conference of the defense industry leaders, held in August 1939 by the Central Committee and the Council of People's Commissars, at which the work of a number of defense enterprises and people's commissariats which had hampered the filling of orders, was sharply criticized.

In the fourth quarter of 1939, when World War II had already begun in Europe, the CC AUCP (b) and the Soviet Government organized a check on industry preparedness to produce arms and ammunition according to the mobilization schedule. The quota that had been set for it was about halfway between the current plan and the mobilization plan. During the check it turned out that the production quota for artillery armament was almost completely filled, the production of artillery ammunition had just barely reached one-third of the established plan, and the output of mortars had been only 11.8 percent of the quota.

The check was a good lesson. It revealed considerable deficiencies, mainly of an organizational nature, in the mobilization plan. At the same time the experience later helped in developing and mobilizing the industry for wartime during World War II.

In spite of the deficiencies in the work of the defense industry in 1937-1938, this period may rightfully be considered the turning point for equipping the Red Army with various weapons and meeting modern requirements. It is noteworthy for the fact that industry succeeded in finally developing and putting into serial production a number of completely new, important weapons models.

By 1940 there had been a significant increase (in comparison with 1936) in the supply of arms and ammunition to the troops: rifles, 145 percent; machineguns, 60 percent; mortars 228 percent; 37 and 45mm guns, 66 percent, 76 and 122mm guns, 438 percent; 152mm and heavier guns, 354 percent; mortars, 637 percent; 37 and 45mm artillery ammunition, 116 percent; 76 and 122mm artillery ammunition, 290 percent; 152mm and heavier artillery ammunition, 613 percent; and rifle rounds, 110 percent.

The dynamics of the growth of arms and ammunition production in the period from 1937 through the first half of 1941 are shown in Table 2.

1 Archives of the Ministry of Defense, f. 81, op. 12,079, d. 45, 1. 11, op. 12,076, 1. 2, 1. 215; d. 46, 1. 112, 112.

~~TOP SECRET~~

~~TOP SECRET~~



Page 11 of 19 Pages

Table 2

| Arms and ammunition designation                          | 1937                 | 1938               | 1939      | 1940      | First half of 1941 |
|--|----------------------|--------------------|-----------|-----------|--------------------|
| Rifles and carbines (by piece)                           | 560,545              | 1,124,664          | 1,330,667 | 1,375,822 | 791,977            |
| Machineguns (light, medium, tank, heavy)                 | 26,456               | 52,564             | 73,562    | 42,189    | 9,848              |
| Mortars (50, 82, 107, 120mm)                             | 1,587<br>(82mm only) | 802<br>(82mm only) | 4,098     | 37,867    | 10,441             |
| Small caliber guns (anti-tank and tank)                  | 3,768                | 7,125              | 8,485     | 6,254     | 1,824              |
| Medium & heavy caliber guns (76 and 210mm)               | 1,705                | 5,214              | 8,863     | 8,792     | 6,179              |
| Automatic weapons (sub-machineguns)                      | -                    | -                  | -         | 81,118    | 8,978              |
| Rifle rounds (thousands of rounds)                       | 744,000              | 1,313,000          | 1,404,000 | 1,529,612 | 872,116            |
| Mortar rounds (thousands of rounds)                      | 28                   | 602                | 3,360     | 18,121    | 5,396              |
| Small caliber projectiles (thousands of rounds)          | 3,091                | 7,226              | 7,780     | 6,668     | 5,529              |
| Medium & heavy caliber projectiles (thousands of rounds) | 6,687                | 17,644             | 25,850    | 22,454    | 5,392              |
| Manufactured gunpowder (tons)                            | 15,599               | 25,877             | 50,595    | 59,482    | -                  |

~~TOP SECRET~~



~~TOP SECRET~~

Page 12 of 19 Pages

By the beginning of 1940 the defense industry had achieved marked successes in arms production, which made it possible in that year to have a sufficiently high percentage of new and modernized artillery systems in the Red Army artillery inventory: Model 1937 45mm antitank guns, 95 percent; Model 1939 USV 76mm divisional guns, 16 percent, and together with the Model 1936 guns, 91 percent; Model 1938 76mm mountain gun, 81 percent; Model 1938 122 and 152mm howitzers, about 20 percent; Model 1938 85mm antiaircraft guns, 21 percent; Model 1931-1937 122mm howitzer, 136 percent; and Model 1937 152mm gun-howitzer, 168.3 percent.<sup>1</sup>

Despite the successes achieved in the production of arms and combat equipment in the years 1937-1939, the growing threat of imperialist aggression against the Soviet Union required still more rapid expansion of the defense industry capacity, primarily in the output of tanks, aircraft, naval artillery, automatic small arms, and ammunition.

The production of ammunition evoked particular alarm. The program of the first half of 1940 was 82 percent fulfilled for medium-caliber artillery rounds, 54 percent for heavy-caliber, and 84 percent for mines.<sup>2</sup> The seriousness of the situation with respect to ammunition production was pointed out in the report of the People's Commissar of Defense to the CC AUCP (b) and to the Council of People's Commissars in January 1941. "All measures we have taken in the field of developing artillery, aviation and tankbuilding," the report said, "may prove to be completely unrealized goals, if ammunition production is not set on a strong footing at the same time."<sup>3</sup>

The mobilization plan in effect in the defense industry, and which had been drawn up prior to 1939, still did not meet the requirements of equipping the army and navy with combat equipment and arms, and was rescinded. In April-May 1941, the CC AUCP (b) and the Council of People's Commissars of the USSR approved an expanded program for the production of naval guns and the output of tanks, aircraft and ammunition. But since there were almost no possibilities of creating new capacities and increasing the old ones for the production of the required types of artillery systems, mainly because there was not enough time, the government was forced to make the decision to temporarily suspend or curtail the production of these kinds of artillery and small arms, with which the Red Army was more or less satisfactorily supplied and could to some degree manage with the available, though low, supplies for a short time.

- 1 Archives of the Ministry of Defense, f. 81, op. 12,079, d. 42, 1. 12.
- 2 Archives of the Ministry of Defense, f. 81, op. 12,078, d. 42, 1. 14, 32.
- 3 Archives of the Ministry of Defense, f. 81, op. 12,079, d. 42, 1. 17, 18.

~~TOP SECRET~~

~~TOP SECRET~~

Page 13 of 19 Pages

In accordance with the decisions adopted, the Kirov factory, which previously had produced regimental guns and guns for fortified areas, began the output of naval guns. The production of regimental guns was transferred to Plant No. 7. But in view of its increased program for the output of 57mm tank and antitank guns, the People's Commissariat for Armament, which was unable to perform two tasks simultaneously, soon completely ceased producing regimental guns. A similar situation also arose in respect to the 76mm divisional gun, which was manufactured at Plant No. 92; it was temporarily removed from production in May 1941 for the same reason.

Because the shops of Plants No. 66 and No. 2 were switched over to the production of aviation armament, their fulfilment of the previous program for the output of machineguns (light, medium, tank, and heavy) and automatic weapons gradually began to break down. To restore the production of machineguns, a new shop was constructed at Plant No. 2, and was supposed to be put into operation no earlier than July 1941. The production of Shpagin design automatic weapons was projected for Plant No. 367, which was in the initial stage of construction.

The measures taken indicate that, before the war actually began, sufficiently drastic steps were taken to satisfy army requirements for the most important types of armament, and not to appear weaker than the enemy. These measures, if translated into military language, could be called unique production-technical manipulation of the enterprises for the purpose of concentrating the main efforts of production on fulfilling the main tasks, falling back upon secondary sectors in unavoidable temporary limitations.

The contention of a number of authors that supposedly because of the view of certain military leaders and other responsible persons, machineguns, antitank guns, regimental guns, and other weapons were taken out of production on the eve of the war, thereby committing a gross blunder which affected the initial period of World War II, cannot be considered conclusive and sufficiently valid.<sup>1</sup> Undoubtedly, not everything in the enormous and complex process of improving arms systems could be ideal and proceed without mistakes. Through a thorough study of the situation in that period we could have succeeded in finding additional reserves, and then it would not have been necessary to resort to some slackening in the production of ground artillery and automatic small arms. But there was no time to search for these reserves. If steps had not been taken quickly to increase the firepower of aviation and armored troops, we really could have found ourselves in a difficult situation.

1 Military-Historical Journal, 1962, No 2, pages 79, 81, 82. Questions of History, 1969, No. 1, pages 122, 126.

~~TOP SECRET~~

~~TOP SECRET~~

Page 14 of 19 Pages

The drastic measures taken by the CC AUCP (b) and the Soviet Government, and the selfless labor of workers and engineers, led to huge successes in the production of all the basic types of combat equipment and arms. During 1940 and the first half of 1941, the Red Army received 2,719 of the latest aircraft;<sup>1</sup> 4,589 tanks of which about 50 percent were of completely new design;<sup>2</sup> and more than 23 thousand guns and 48 thousand mortars,<sup>3</sup> including M-8 and M-13 rocket launchers. The armament system of the Soviet Armed Forces proved to be so perfected and forward-looking, that during World War II it did not require any significant modification or radical changes connected with a serious breakdown of the military industry.

By the beginning of the war, defense industry had successfully solved the problem of producing ammunition, which was the basic indicator of the combat advantage of one type of weapon or another. In this respect the statement of I. V. Stalin is highly noteworthy: "Everything is reduced," he said, "to the destruction of the target....the force of the ammunition explosion determines the might of all arms of troops...and serves as a criterion of the military-economic expediency of expenditures for one type of combat equipment or another. It is unwise to build an expensive bomber with a long radius of operation, if the charge of the aerial bomb is insufficiently powerful." <sup>4</sup>

The production of ammunition was the most labor-consuming and expensive in the defense industry system. It absorbed about 50 percent of the budgetary appropriations. Owing to the construction of new factories, the reconstruction of existing ones, the assignment of local enterprises to the manufacture of projectile elements, and the transition to quarterly planning, we succeeded in increasing ammunition production in 1941 to more than three times that of 1940.

During all the prewar years connected with fulfilling the third five-year plan, the average annual increase in gross output of all industry was 13 percent, but in the defense industry it reached 39 percent. The Party and the Soviet people consciously embarked on such colossal, intensive military industry in order to strengthen the defensive capability of the country in every possible way.

1 Central State Archives of the October Revolution, f. 8418, op. 25, d. 198, 1. 1-5.

2 Ibid, f. 5446, op. 32, d. 45.

3 Archives of the Ministry of Defense, f. 81, op. 12,079, d. 45, 1. 11, op. 12,078, d. 2, 1. 215, d. 46, 1. 113.

4 Questions of History, 1969, No. 1, page 127.

~~TOP SECRET~~

~~TOP SECRET~~

Page 15 of 19 Pages

During these years the CC AUCP (b) and the Soviet Government applied great efforts to creating and locating backup factories in the east of the country (east of the Volga). In Table 3 below it can be seen that by 1941 about 12 percent of all industry manufacturing arms and ammunition, and more than 25 percent of some types, was in the east. Moreover, the construction of defense factories in the Urals and in Siberia was accelerated. The measures taken by the Party and Government in that direction played an enormous role during the war.

Table 3  
Distribution of factories of the People's Commissariat of Arms  
and Ammunition on the eve of World War II<sup>1</sup>

| Designation of types of production             | Total factories                          | Located east<br>of the Volga R. |
|--|--|---------------------------------|
| Production of artillery<br>technical equipment | 21                                       | 3                               |
| Production of mortars                          | 17                                       | 2                               |
| Production of small arms                       | 7  | 1                               |
| Production of shell and mine<br>casings        | 196 (116 of them<br>were in the Ukraine) | 20                              |
| Shell production                               | 11                                       | 3                               |
| Production of fuses and detonators             | 38                                       | 4                               |
| Production of explosives and powder            | 12                                       | 3                               |
| Production of cartridges and grenades          | 8  | 1                               |
| Total  | 310                                      | 37                              |

<sup>1</sup> Archives of the Ministry of Defense, f. 81, op. 12,079, d. 42, 1. 151-163.

The status of the defense industry on the eve of World War II was characterized not only by the quantity and quality of products turned out in peacetime, but also by the availability of a considerable reserve capacity created for it at the beginning of war. This reserve capacity made it possible during the first two months of the war to almost double the productivity of the defense plants just by switching them over to a wartime working routine.

~~TOP SECRET~~

~~TOP SECRET~~

Page 16 of 19 Pages

Due to the tireless, daily concern of the Party and Government, and the selfless, creative labor of the workers and the engineer-technical staff, the domestic defense industry on the eve of the war had equipped the Red Army with modern armament, surpassing the armament of the West European armies, including the German, in combat and operating characteristics.

The dynamics of growth in equipping the Soviet Armed Forces with small arms and artillery in the prewar years is given in Table 4.

Table 4

| Armament designation                                   | Arms available to the Red Army, without the mobilization reserve |                   |                   |                   |                    |
|--|--|-------------------|-------------------|-------------------|--------------------|
|  | As of<br>1/1/1937 <sup>1</sup>                                   | As of<br>1/1/1939 | As of<br>1/1/1940 | As of<br>1/1/1941 | As of<br>22/6/1941 |
| Rifles and carbines, each                              | 2,980,000  | 4,373,000         | 5,973,229         | 6,530,886         | 7,084,801          |
| Automatic weapons, each                                | -  | -                 | 38,938            | 81,333            | 110,000            |
| Light machineguns, each                                | 88,200   | 111,000           | 149,138           | 161,962           | 1,568,815          |
| Medium machineguns, each                               | 53,300   | 63,600            | 64,400            | 71,135            | 71,994             |
| Heavy-caliber machineguns, each                        | -  | -                 | 1,624             | 1,948             | 2,033              |
| Mortars (50, 82, 107, 122mm), piece                    | 1,500  | 4,280             | 31,015            | 45,107            | 54,730             |
| Antitank guns 45mm, piece                              | 3,930  | 7,700             | 11,668            | 14,148            | 15,126             |
| Tank guns (45mm, 76mm), piece                          | 10,479   | 14,497            | 19,316            | 22,772            | 25,586             |
| Antiaircraft guns (76mm, 85mm), piece                  | 1,645  | 2,690             | 3,858             | 5,946             | 8,321              |
| Ground artillery medium-caliber guns (76,107mm), piece | 7,468  | 9,869             | 12,830            | 15,354            | 16,462             |
| Ground artillery heavy-caliber guns (122,305mm), piece | 5,010  | 7,274             | 10,325            | 14,563            | 17,613             |

<sup>1</sup> Accounting documents for 1938 are missing from Chief Artillery Directorate Archives

\* Ministry of Defense Archives, f. 81, op. 12,079, d. 42, l. 14, d. 45, l. 11, d. 194, l. 22, op. 12,094, d. 16, l. 18, d. 28, l. 192, 193, op. 12,076, d. 2, l. 215, 241 (all figures rendered according to the accounting documents of the Chief Artillery Directorate).

~~TOP SECRET~~



~~TOP SECRET~~

Page 17 of 19 Pages

The arms requirements of the Red Army according to the supply plan for 1940 were almost fully satisfied, especially in regimental, divisional, and corps artillery. The troops had a sufficient quantity of antitank, antiaircraft artillery, and artillery of the Reserve of the High Command.<sup>1</sup> Therefore the declaration of B. L. Vannikov, one of the prominent leaders of the defense industry in the past, that "the arms industry engaged in the production of artillery and small arms was the best prepared for the beginning of war,"<sup>2</sup> sounded convincing and impressive.

The economic victory of the Soviet Union over Fascist Germany in World War II was not accidental. The sources of this victory are rooted in the advantages of socialist economics and the Soviet governmental structure, in the wise leadership of the Party and the industrious heroism of the toilers of the rear. The measures taken by the Party and government on the eve of the war played an important role in this. "The defense industry which was created in the prewar years provided the armed forces of the country with modern combat equipment."<sup>3</sup>

Not one of the bourgeois countries escaped blunders and mistakes in preparing armament for their armies on the eve of World War II. The Soviet Union also had miscalculations and errors, but they were not of such a deeply catastrophic nature as in Hitler's Germany, militarist Japan, and their satellites. Their military production did not stand the tests of war.

The advance preparation of military industry, the careful consideration of the achievements of scientific-technical thought, and the sound foresight of the nature of a future war were the major prerequisites for ensuring the victory of the Soviet Union over the forces of aggression and fascism in the World War II years.

\* \* \*

Under modern conditions the activities of defense industry have become highly complex. Defense industry now has to meet armed forces requirements for conducting a nuclear war and a war with the use of only conventional means of destruction. In both cases, it obviously has to work in peacetime on a narrow base and within the framework of the entire industry of the country, which is far from mobilized and not placed on a military footing. This dichotomy of tasks to be accomplished creates specific peculiarities

1 Archives of the Ministry of Defense, f. 81, op. 12,079, d. 42, 1. 31-36.

2 Questions of History, 1969, No. 1, page 130.

3 50 Years of the Great October Socialist Revolution. Theses of the CC CPSU. State Publishing House of Political Literature, 1967, page 18.

~~TOP SECRET~~

~~TOP SECRET~~

Page 18 of 19 Pages

and a rather complex situation for military industry in satisfying the requirements of the armed forces for various types of weapons and combat equipment both before the beginning and during the course of a war.

Therefore, the proper choice of the optimum and most promising direction for the development of arms systems, which would not only guarantee immediate but rather long-term technical superiority over the enemy, and would create technical surprises for him during the war, is now of paramount importance. Because of the rapidly increasing pace in the development and improvement of modern armament and combat equipment, and because of the complexity of their design and the increasing production costs, any decisions made on replacing one armament system with another, more effective one, must be based on a thorough scientific prognosis as to building up the branches of the armed forces, taking into account the economic capabilities of the country, the probable nature of the strategic and operational tasks, and the methods they will use to accomplish them in wartime.

The prewar experience, the experience of World War II, and postwar development all point convincingly to the fact that for a relatively lengthy period the production of old and new armament will have to proceed simultaneously, based on a compound principle. However, because of the military-technical revolution, the emergence of newer and more advanced means of armed combat leads to the rapid obsolescence of existing weapons systems. The process of competition of quantity and quality in armament and equipment has now become so very dynamic that switching from one arms system to another during production actually does not have sharply defined limits.

And when appraising arms systems under these conditions it is especially important to correctly determine the most advantageous relationship between the new, the obsolescent, and the latest means of armed combat which would ensure qualitative and quantitative superiority over the enemy.

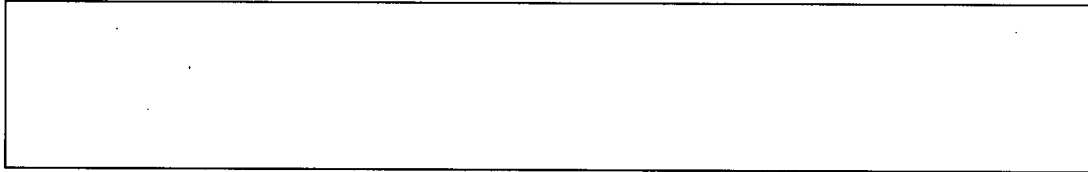
This is a very complex and difficult task. But it is completely resolvable, if the planning and managerial organs of the Ministry of Defense, the Ministry of Defense Industry, the troops and scientific-research institutes take a very active part in fulfilling it, using the latest accomplishments of scientific prognostication methods. Successful solution of this problem will make it possible to accurately determine and plan the volume and intensity of defense industry work to satisfy the armed forces requirements for combat equipment and armament in the prewar period and during the war itself.

~~TOP SECRET~~

~~TOP SECRET~~



Page 19 of 19 Pages



~~TOP SECRET~~

