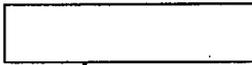
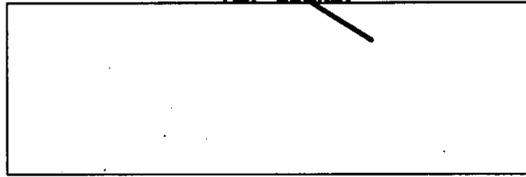


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CENTRAL INTELLIGENCE AGENCY  
WASHINGTON, D.C. 20505

11 April 1974

MEMORANDUM FOR: The Director of Central Intelligence

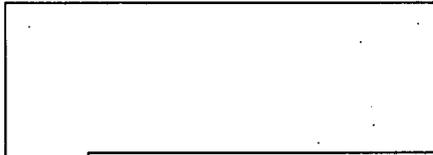
SUBJECT : MILITARY THOUGHT (USSR): Another View on the  
Determination of Artillery Ammunition Norms

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 was inspired by a previous article on this subject. The present author attacks the premise of the earlier author that Soviet industry had satisfactorily fulfilled World War II ammunition requirements. Soviet setbacks and defeats are attributed to the absence of ammunition or severe restrictions on its use. The author is pessimistic about the capability of industry to supply sufficient artillery ammunition under nuclear warfare conditions, and recommends careful correlation of targets, gun calibers, range of fire and ammunition costs. This article appeared in Issue No. 3 (91) for 1970.

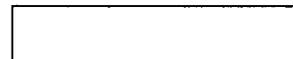
2. Because the source of this report is extremely sensitive, this document should be handled on a strict need-to-know basis within recipient agencies.



William E. Nelson  
Deputy Director for Operations



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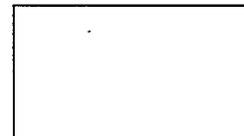


Page 2 of 8 Pages

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## Intelligence Information Special Report

Page 3 of 8 Pages

COUNTRY USSR

DATE OF INFO. Mid-1970

DATE 11 April 1974

### SUBJECT

MILITARY THOUGHT (USSR): Determining Norms for the Stockpiling and Expenditure of Ammunition by Artillery

SOURCE Documentary

### Summary

The following report is a translation from Russian of an article which appeared in Issue No. 3 (91) 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 G. Yefimov. This article was inspired by a previous article on this subject. The present author attacks the premise of the earlier author that Soviet industry had satisfactorily fulfilled World War II ammunition requirements. Soviet setbacks and defeats are attributed to the absence of ammunition or severe restrictions on its use. The author is pessimistic about the capability of industry to supply sufficient artillery ammunition under nuclear warfare conditions, and recommends careful correlation of targets, gun calibers, range of fire and ammunition costs. End of Summary

### Comment

Colonel G. Yefimov wrote "The Role of Cities in Armed Combat", Military Thought, Issue No. 3, 1971, the RESTRICTED version. 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.

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Page 4 of 8 Pages

Determining Norms for the Stockpiling and Expenditure of  
Ammunition by Artillery

by  
Colonel G. Yefimov

While agreeing with the opinion of retired Colonel-General of Artillery I. Volkotrubenko<sup>1</sup> concerning the majority of the questions and calculations set forth in his article, it is hardly possible to agree with some of the data recommended by him for practical application.

It is asserted in the article that the norms established by a decree of the Committee of Defense of the Council of People's Commissars in 1938 regarding the mobilization reserves of ammunition were clearly overstated and that the war introduced corresponding amendments in them. As evidence the article cites data concerning the actual annual expenditure of ammunition per gun during the war, which proved to be appreciably less than that provided for in the 1938 decree. However, it would obviously be inadequate to use only these data out of the very rich experience of World War II. We must not, for example, forget the numerous facts testifying that the expenditure of ammunition during the war was much less than the actual requirements of the troops and was determined in the majority of instances not by need but by available reserves and transport capabilities for hauling them.

The war offers many examples in which a shortage of ammunition delayed the time of the beginning of offensive operations, brought advancing troops to a standstill, etc. A particularly acute situation developed with regard to ammunition for defense where we were often limited to one or two rounds per gun for a 24-hour period and firing of 152-mm and 203-mm rounds was not permitted at all. Because of this, our defense was condemned to be passive. With impunity the enemy constructed engineer works, carried out missions, and maneuvered his forces and means without suffering losses. An even worse situation developed in repelling the enemy's advance.

Our troops experienced a shortage of ammunition during the first days of the war. Thus, operations of the Northwest Front for 23 June 1941

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1 Collection of Articles of the Journal "Military Thought",  
1970 No. 1 (89). ✓

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Page 5 of 8 Pages

showed that an acute shortage of every type of artillery ammunition was felt during the development of the first day of combat operations.<sup>1</sup>

On 27 June 1941 the commander of the 12th Mechanized Corps reported to the commander of the troops of the Northwest Front that the divisions completely lacked shells for 152-mm guns.<sup>2</sup>

In a report of the 8th Army to the Chief of the General Staff on the first two months of the war, it was stated that breakdowns in supplying 203-mm artillery shells for Model 1931 guns were felt with special acuteness, as a result of which these systems were withdrawn to the rear. There was also a shortage of shells for 76-mm guns.<sup>3</sup>

The operational-tactical essay "The Defense of Sevastopol", published by the Military Historical Department of the General Staff in 1943, stated that by 29 June 1942 "combat conditions ... for our units ... were becoming more and more difficult because of the acute shortage of ammunition....By this time some batteries had only 10 to 12 rounds left per gun (page 53-54), and in the period 25-26 June the shortage of ammunition led to almost complete inactivity by the antiaircraft artillery....The overall shortage of ammunition ... left the infantry without artillery support..." (page 58).

There is no doubt that if the troops defending Sevastopol had had adequate ammunition, the enormous enemy losses (The enemy lost about 300,000 officers and men at Sevastopol.) would have been even more considerable, and he would have needed not 250 days to take the city but a great deal longer.

In the book The Great Fatherland War of the Soviet Union the failure of the operation of the troops of the Leningrad Front and the Volkhov Front, conducted from January to April 1942 with the goal of freeing Leningrad from the blockade, was ascribed to the shortage of ammunition, among other reasons (page 136). On page 138, it is indicated that the absence of the necessary amount of equipment, weapons, and ammunition had an adverse effect on the rates of advance. On page 161, it is noted that the shortage of ammunition was felt acutely by our troops during the unsuccessful Kharkov Operation in 1942.

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- 1 Collection of Combat Documents of the Great Fatherland War, Volume 34, M. Military Publishing House, 1958
  - 2 Ibid., page 122.
  - 3 Ibid., page 230.
  - 4 The Great Fatherland War of the Soviet Union 1941-1945, A Short History, Military Publishing House, 1967.

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Page 6 of 8 Pages

Marshal of the Soviet Union G. K. Zhukov, in his memoirs, speaks very clearly of the shortage of ammunition at the front at the beginning of 1942: "The ammunition situation was particularly bad....It will probably be difficult to believe, but we had to set the norm for expenditure of ammunition at one to two rounds per gun per 24 hours. And this, take note, during an offensive." In a report from the front to the Supreme Commander-in-Chief on 14 February 1942, it was stated: "As shown by battle experience, a shortage of shells makes it impossible to conduct an artillery offensive. As a result, the enemy's fire system is not being destroyed, and our units, attacking enemy defenses which have been poorly neutralized, are sustaining very large losses without achieving appropriate success."<sup>1</sup>

Even in 1943 (for example, in the Battle of Kursk), despite the enormous concentration of ammunition in the front(s), there was enough only for the first days of battle. Our troops were particularly deficient in the supply of 45-mm and 57-mm shells for antitank artillery and 76-mm shells for field artillery, i.e., in those calibers which were extremely necessary against enemy tanks.<sup>2</sup> Some large units and formations arriving from the Reserve of the Headquarters of the Supreme High Command were short of ammunition for small arms and artillery when they were committed to the battle.<sup>3</sup>

Similar examples provide sufficiently convincing evidence that the expenditure of ammunition during the last war must not be identified with the actual ammunition requirements of the troops. These are completely different things. It is apparent that the author, too, understands this, since, for determining the requirements for the first two to three months of war, he recommends being guided by the data set forth in the book The Front Offensive Operation to the Full Depth of a Theater of Military Operations, published by the Academy of the General Staff. According to these data, the ammunition requirement for the troops in the Western Theater of Military Operations, for example for 122-mm howitzers, will be 13 units of fire for two months of war, while according to the experience of World War II, the average yearly requirement of the troops for this caliber is only ten units of fire. These are the figures taken from wartime experience which the author recommends as the basic data for

- 1 G. K. Zhukov, Recollections and Reflections, published by Novosti Press Agency, 1967.
- 2 G. A. Koltunov and B. G. Solovyev, The Battle of Kursk, M. Military Publishing House, 1970.
- 3 Ibid.

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Page 7 of 8 Pages

determining the requirements for a year of war. The incorrectness of such an assertion is obvious.

We consider that in determining the ammunition requirements for the Western Theater of Military Operations (being guided by the experience of exercises), it is necessary to proceed on the assumption that two to three successive front operations will have to be conducted.

If we take the ammunition expenditure for 122-mm howitzers for an operation (without the use of nuclear weapons) as equal to 6 units of fire (as recommended in the book cited and with which the author is in agreement), then the overall requirement of the troops for ammunition of this caliber for the Western Theater of Military Operations will be 12 to 18 units of fire, or an average of 15 units of fire (1,200 shells per gun).

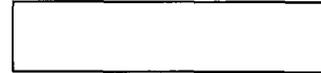
Since front operations within the framework of a strategic operation in a theater of military operations must be conducted successively, without appreciable intervals between them, the indicated amount of ammunition may be required within the first two to three months of war. As regards the annual requirement, we believe that it can be set only as purely a point of orientation, and we should scarcely assume here that industry will be able to produce a sufficient quantity of ammunition during a nuclear war, as the author points out on page 68. Under these conditions industrial capabilities will be severely limited and will be reduced to zero for certain types of ammunition. Therefore, the ammunition reserves set up for a theater of military operations must fully satisfy the requirements for an entire nuclear war, and also for war without the use of nuclear weapons, if only for the first two to three months.

Calculations show that two-month to three-month reserves for conducting non-nuclear war will in the main provide for the requirements of nuclear war as well. Therefore, they should very probably be taken as a base.

I. Volkotrubenko's article absolutely correctly points out that it is impossible to establish the same ammunition expenditure for all guns and complexes, as is often done in exercises. Such an approach is even more unallowable in determining norms for the overall stockpiling of ammunition for a war. In this case, perhaps we should be guided not only by operational-tactical considerations but also by economic considerations. In calculating the ammunition requirement for an operation (and this calculation is fundamental for all subsequent calculations), we must proceed from the possibility of carrying out the most numerous fire missions with the simplest and cheapest ammunition. Thus, for striking enemy personnel to a depth of 2 to 5 kilometers, it is most advantageous to use

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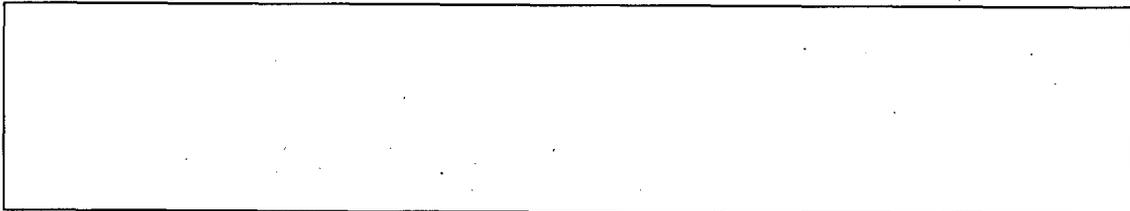


Page 8 of 8 Pages

mortars, and to a depth of 5 to 10 kilometers--122-mm and 152-mm howitzers. ~~Gun~~ systems should be used mainly for counterbattery bombardment and for striking nuclear attack means and other important targets within the depth of the enemy disposition. As regards the heavy systems, 203-mm and 240-mm, they must be used mainly for destruction fire.

The importance of taking these features into account is confirmed by the cost of the ammunition required to neutralize the personnel of an attacking enemy infantry battalion. If we take the cost of the 82-mm mortar shells needed to carry out this task as 100 percent, then the cost of 122-mm howitzer shells will be 340 percent, 130-mm gun shells will be 740 percent, and Grad rocket launcher rounds will be 760 percent.

These are some of the considerations which we believe must be kept in mind in the practical application of the recommendation expressed in the article by Colonel-General I. Volkotrubenko.



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