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HR 70-14

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CENTRAL INTELLIGENCE AGENCY
WASHINGTON, D.C. 20505

4885

9 November 1973

MEMORANDUM FOR: The Director of Central Intelligence

SUBJECT : MILITARY THOUGHT (USSR): The Employment of
Rocket and Artillery Troops in
Conventional Warfare

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 compares modern artillery operations in conventional warfare with those of World War II. The major differences pointed out by the authors are the constant threat of the use of nuclear weapons and the significant increase in numbers of weapons on the battlefield. The main problem which the authors visualize is the loss of firepower resulting from replacement of artillery by missiles which are not effective with conventional warheads. This article appeared in Issue No. 2 (75) for 1965.

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.

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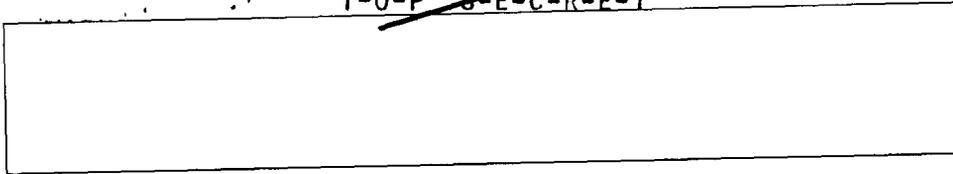
William E. Nelson
Deputy Director for Operations

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DIRECTORATE OF OPERATIONS

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Intelligence Information Special Report

COUNTRY USSR

DATE OF INFO. Mid-1965

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DATE 9 November 73

SUBJECT

MILITARY THOUGHT (USSR): Rocket Troops and Artillery in Offensive Operations Conducted Without the Use of Nuclear Weapons by Either Side

SOURCE Documentary

Summary:

The following report is a translation from Russian of an article which appeared in Issue No. 2 (75) for 1965 of the SECRET USSR Ministry of Defense publication Collection of Articles of the Journal "Military Thought". The authors of this article are General-mayor of Artillery I. Konoplev and General-mayor of Artillery V. Kuznetsov. This article compares modern artillery operations in conventional warfare with those of World War II. The major differences pointed out by the authors are the constant threat of the use of nuclear weapons and the significant increase in numbers of weapons on the battlefield. The main problem which the authors visualize is the loss of firepower resulting from replacement of artillery by missiles which are not effective with conventional warheads. Some calculations of numbers of artillery pieces needed for various tasks are included.

End of Summary

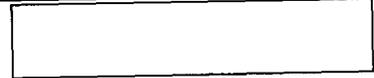
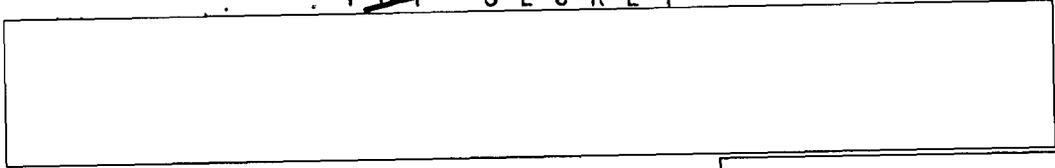
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Comment:

There is no information in available reference materials which can be firmly associated with the authors. 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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Rocket Troops and Artillery in Offensive Operations
Conducted Without the Use of Nuclear Weapons by Either Side

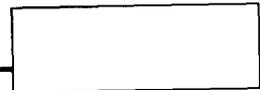
by

General-major of Artillery I. Konoplev
and General-major of Artillery V. Kuznetsov

While examining this question we would like, first of all, to recall certain conclusions drawn from the richest experience of the offensive operations of World War II, the twentieth anniversary of which we observed this year. We believe that, by taking advantage of this experience with due consideration to postwar changes in the organization of troops and to the constant threat of the use of nuclear weapons by the enemy, it is possible to arrive at the most rational solution of this question.

What, then, are the conclusions which interest us so much in this case? First, the greatest efforts required of troops in operations were, as is well known, in a breakthrough of enemy position defenses. The concentration of forces and means along the axis of the main strike of an army was based on the following characteristics: a division breakthrough sector was 1.5 to 2 kilometers; a corps, 3 to 4 kilometers; and an army, 5 to 6 kilometers (two corps in the first echelon with adjacent flanks). On the average, one battalion of defending German troops was attacked by two or three rifle regiments supported by artillery, the density of which approached 150 to 250 pieces and more for one kilometer of the breakthrough front. Second, the basic fire strike force of the ground forces was artillery which, together with aviation, accomplished all the missions of breaking into the enemy defense, repulsing his counterattacks, and providing support for the infantry and tanks in the course of the operation. Third, the principal weapon for hitting the enemy reserves and the targets in his operational rear was aviation.

And what can be said about this plan in modern offensive operations conducted without the use of nuclear



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weapons? What obvious conclusions suggest themselves from the point of view of the employment of rocket troops and artillery? First of all, there is the fact that the main and determining feature of such operations is the constant threat of the use of nuclear weapons by the enemy and the constant readiness of our forces to make immediate use of the same weapon. Consequently, this places limitations on the scale of the concentration of troops and means along the chosen axes in order to avoid creating favorable conditions for the enemy for the use of nuclear weapons. It requires deploying and bringing to combat readiness our own means of nuclear attack, conducting reconnaissance not only in support of the use of conventional means of destruction, but also nuclear means. And this considerably broadens the field of reconnaissance activity.

Another distinctive feature which must be considered is the vast amounts of tanks and armored personnel carriers (combat vehicles) with which both sides have been equipped. This means a greatly accelerated rate of offensives, an increase in troop maneuverability during operations, and growing importance of antitank means in offensive combat.

The third feature is the sharp increase in the defensive capabilities of our potential enemies, because of an increase in the combat means with which they are equipped, especially their tanks, armored personnel carriers, and antitank guided missiles. All this leads to the conclusion that we need to focus on the increasing role of fire means in an offensive to overcome enemy defenses.

At the same time, in examining the postwar changes in the structure of our ground forces, one cannot help but note that, with the development of rocket troops, the role and amount of artillery needed in operations has considerably diminished. Thus, including its support weapons, a modern front can have at its disposal 2,500 to 2,800 guns and mortars (not including antitank artillery and antitank guided missiles), while in operations during World War II it had from 6,000 to 13,000. The development of rocket troops has also affected the composition of front aviation, whose number of bombers has decreased somewhat.

As in the past, the greatest effort that will be required of troops in a modern offensive operation without the use of nuclear weapons will be during a breakthrough of

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enemy defenses. And, in our opinion, the need for a breakthrough will occur rather frequently, because the enemy is capable of organizing a defense at virtually every line. How many and what kind of fire means, then, should an army have in order to succeed in overcoming an enemy defense?

A modern combined-arms army has rocket troops and artillery at its disposal for this purpose. However, we hasten to mention that the use of rockets with conventional charges will be greatly limited because of the constant threat of the use of nuclear weapons, thus making it necessary to keep the rocket troops in a state of readiness to deliver a nuclear strike against the enemy. Besides, given the existing dispersion and comparatively low effect of rockets on targets, the results achieved in using them with conventional charges are quite limited, necessitating the expenditure of a considerable amount of munitions to destroy a target. Calculations show that the neutralization of even such comparatively small targets as a battalion in a concentration area, or a command post, requires such a large number of rockets and, consequently, of rocket troops, that it exceeds the capabilities of a modern front. For example, the neutralization of one motorized rifle battalion in its area of concentration requires simultaneous firing by sixty-six R-300 missile launchers. Yet, a modern front formation consisting of four or five armies may have only fifty-four to sixty-three operational-tactical missile launchers.

Army and front rocket troops, evidently, are only capable of such missions as the harassment of personnel or the disruption of the regular activity of the various elements of the operational rear area, which require a considerably smaller expenditure of forces and means. It must be noted, however, that the wide-scale use of rocket troops to fulfil such missions may reveal our rocket grouping and expose it to enemy strikes. This would also greatly reduce the degree of readiness of our rocket troops for immediate delivery of a nuclear strike, because the reloading of the launchers and the preparation of missiles for the next launching require a considerable amount of time.

In the future, the role of the combat use of rocket troops will grow, of course, as the rate of fire of launchers sharply increases, as the grouping of fire rises

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considerably, and as the destructive power of rocket warheads increases or the missiles are armed with incendiary substances. It should be noted that the use of rockets armed with chemical charges will force us to make an entirely different assessment of the role of rocket troops in operations. However, the possibility of using chemical weapons without simultaneous use of nuclear means is highly problematical. The effectiveness of modern chemical weapons closely approaches the effectiveness of nuclear means, so, if the enemy decides to use means of mass destruction, he will use them in combination.

Because of the limited participation of rocket troops in the type of operations under discussion, the entire operational defensive depth becomes the exclusive combat operational zone of aviation. At the same time, under non-nuclear conditions, it is not feasible for rocket troops to render assistance to aviation by destroying part of the enemy SAM batteries, because it is impossible to destroy small-sized targets with missiles armed with conventional charges. Because of this, and also in view of the fact that aviation will have to overcome a powerful enemy air defense system with its own forces alone, the possibility of using aviation to neutralize defensive targets in the tactical zone is sharply reduced. Thus, with the present strength of a front air army, a combined-arms army operating along the main axis can expect no more than one or two regimental flights of fighter-bombers a day in direct support of troops. With the use of two regimental flights during preparatory fire, it is possible to destroy up to six batteries of Honest John, and nuclear or conventional artillery; this constitutes no more than five to ten percent of the total number of targets in the tactical zone which should be neutralized during this period.

Thus, the main burden of fulfilling all the tasks of neutralizing the defense in operations without the use of nuclear weapons will devolve upon artillery, which will be the main firepower of the ground forces just as it was in World War II. And in addition to the tasks it had usually fulfilled in the past, artillery will also have a mission of prime importance, namely, the destruction of the enemy tactical means of nuclear attack. This makes it imperative to equip the advancing large units and units with a vast quantity of artillery. What, then, are the artillery needs of an army under modern conditions?

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The basis for determining this is the amount of artillery needed to fulfill the most important and difficult mission during the operation. At the same time, artillery needs depend greatly on the concept of fulfilling a particular mission. For example, if an army has the mission of defeating an army corps in a meeting engagement, its artillery needs will be determined by the strength of the forces and means of the opposing grouping, as well as by the amount and depth of the planned strikes. It is one thing when each division of the army first echelon delivers a frontal strike; but it is a different matter if it is planned to contain the enemy grouping along the axis of the main strike of the army by part of our forces, while concentrating our main effort for a strike on converging axes by the large units on the flanks. During a breakthrough of enemy defenses, the artillery needs of an army will depend directly on the number and widths of planned breakthrough sectors.

The experience of World War II indicated that the greatest amount of artillery was needed in breaking through a position defense and then, in order of sequence, in conducting a meeting engagement, and in repulsing a large-scale counterstrike. Theoretical calculations of the artillery needs of an army lead us to the same conclusions.

In determining artillery needs, one proceeds from the number and nature of the targets to be neutralized simultaneously by artillery fire at the moment our tanks and infantry launch their attack. First among these objectives are those which may break up the attack with their own fire (artillery batteries, mortar sections, and enemy forward subunits with their fire means), as well as control posts, the destruction of which will disrupt troop command. Also to be taken into consideration are the probable, or the already established, enemy grouping, the purpose of the operation and the missions of aviation. Artillery needs are determined for each axis or breakthrough sector in the zone of the army offensive; these are then computed to arrive at the total artillery needs of the army to fulfill its assigned operational missions.

The calculation of artillery needs for modern conditions differs from similar calculations during World War II in that, at present, in order to reduce the concentration of artillery along a selected axis, we do not

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include such targets as the battalions of the second echelons of brigades which will be destroyed successively during the preparatory fire.

We shall cite some examples of calculations. Let us assume that along one of the army axes where a motorized rifle division is operating, a meeting engagement is expected with an enemy grouping whose first echelon comprises two tank and one motorized infantry battalions supported by the fire of up to two artillery battalions and three mortar sections. In this case, the army on this axis will require nine artillery battalions (162 pieces) for the destruction of three enemy battalions, three batteries (18 pieces) for the destruction of three sections of 106.7-mm mortars, and three artillery battalions (54 pieces) for the destruction of six artillery batteries. This is a total of thirteen artillery battalions (234 pieces).

Another example. On one of its axes, an army is engaged in a breakthrough of enemy defenses on a front of about seven kilometers. Defending this front are two battalions of the first echelon of a mechanized division.* Fire can be directed on the breakthrough sector by four mortar sections, up to eighteen artillery batteries, and one Honest John battery. And the command post of the defending brigade has been located. In addition, it is assumed that the enemy can set up armored defense positions consisting of one or two tanks plus antitank guided missiles and up to three armored personnel carriers in trenches (ramps) in each company strongpoint, i.e., up to twelve armored defense positions in each battalion. The neutralization of defense targets is carried out by two regimental flights of fighter-bomber aviation, which destroy five batteries of nuclear artillery and one Honest John battery. In this case, on this axis, the following weapons are needed to destroy the targets indicated: six artillery battalions (108 pieces) are required to destroy the personnel in the company strongpoints of two battalions of the brigade first echelon; eight artillery battalions (144 pieces) to destroy up to twenty-four armored defense positions; four batteries (24 pieces) to destroy four 106.7mm mortar sections; six artillery battalions (108 pieces) to destroy twelve artillery batteries (six are destroyed by aviation); and one artillery battalion (18 pieces) to destroy the brigade

*We are using a US motorized infantry division, reinforced by two artillery battalions, and defending a front of fifteen kilometers.

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command post. This is a total of 22.5 artillery battalions (402 pieces, or 67 pieces per kilometer of the breakthrough front). Similar calculations concerning the fulfillment of each operational mission along all the axes are used to determine the total artillery needs of the army. In determining the artillery reinforcement the army will require from the Supreme High Command reserve, the total amount calculated does not include the organic means of the army operating (or planned to be operating) along the selected axes.

Thus, for example, if an army is to conduct a breakthrough of enemy defense along two axes (the breakthrough front is up to eight kilometers; the width of the offensive zone is sixty to eighty kilometers), then, the above-mentioned density of enemy defenses will require 536 pieces (67 X 8). If the breakthrough is contemplated to be effected by two divisions with adjacent flanks along one axis and by one division along another, then a total of 300 pieces can be used along these axes (the organic artillery of three divisions of the first echelon, and the army artillery gun brigade). In this case, the army should be reinforced by 236 pieces (536 minus 300), or one artillery division from the Supreme High Command reserve. If the army can use the artillery of the second echelon divisions along these axes (which is possible only when there is no direct threat of the use of nuclear weapons, i.e., the risk is slight), the need for artillery from the reserve of the Supreme High Command is somewhat diminished.

Reinforcement means, in particular the artillery of the reserve of the Supreme High Command, must be supplied to the army at the beginning of the operation, even if there is no particular need for artillery during the early days of combat actions. The reason for this is that, because of the distances and gaps between armies during an operation, it will be extremely difficult, and at times simply impossible, to move artillery within the front.

Under favorable conditions of attack during direct contact with the enemy, it may be possible, if time permits during the preparation of the breakthrough of enemy defenses, to use tanks armed with rifled guns to take part in the preparatory fire. The use of even one separate tank

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battalion (51 tanks) from an attacking army will reduce the artillery needs in the breakthrough sector by 34 pieces,* and the use of a tank regiment will reduce it by 60 pieces.

A somewhat different situation prevails during a breakthrough of defenses by an attack from the march. Under these conditions, it is unlikely that the tank battalions can be brought to their firing positions beforehand. Besides, in order not to expend their munitions reserve on wheels, it will be necessary to deliver the munitions for the tanks to the firing positions beforehand and to place them on the ground; this means that two or three ammunition handlers will have to be assigned to each tank to help maintain its fire, or about two companies of gunners for one tank battalion. We must also take into consideration that the heavy personnel losses suffered during wartime make it difficult to expect tank troops to maintain effective fire from indirect fire positions. All this impedes and limits the use of tanks for these purposes. And after they are rearmed with smoothbore guns or missiles, this capability will be completely eliminated.

The sharp increase in the role of artillery in operations compels us to go back to its grouping during World War II, when each combined-arms commander, including the army commander himself, had under his own authority an artillery group which he could actively employ to influence the course of a battle or engagement. It is obvious that it will be necessary to create regimental artillery groups in the regiments of the first echelon of divisions, divisional artillery groups in the divisions, and army artillery groups in the armies. The latter will be needed most often when breaking up the enemy position defense along the axis of the army's main strike. Their principal mission will be counterbattery activity, primarily fire against tactical nuclear means, protection for the boundaries of the divisions advancing along the main strike axis, and the destruction of control posts. The absolute necessity of centralizing warfare against tactical nuclear means along the main strike axis requires that a question be raised about the inclusion of an army artillery group in the operational structure of the army as its essential element even under conditions in which nuclear arms are used (naturally, in a somewhat different, broadened, and reorganized form).

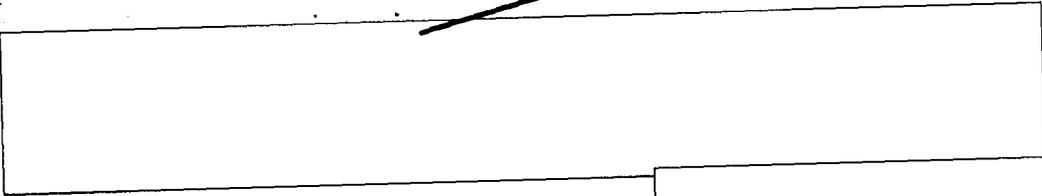
*Based on calculations that three tanks are considered equal to two ground artillery pieces.

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Particular Importance is attached to determining the correct duration of preparatory fire. The fact of the matter is that under modern conditions the mobility of enemy reserves has sharply increased, while possibilities for massing artillery in the zone of the front offensive along several axes simultaneously have decreased considerably. Therefore, if preparatory fire for an offensive is too prolonged, the enemy, by rapidly bringing up his reserves, can localize our offensive at its very inception. To prevent this, brief but effective preparatory fire is needed. At the same time, substantial massing of artillery on a comparatively narrow sector creates favorable conditions for the enemy to frustrate our offensive by using his nuclear weapons against our artillery grouping. The enemy will need one to one-and-one-half hours in which to clearly define the targets to be destroyed in this grouping, to allocate tasks to subunits possessing means of nuclear attack, and to carry out the attack on a corps or division scale. This, in turn, calls for maximum reduction in the duration of time for such a large concentration of artillery and, consequently, also in the duration of time for preparatory fire.

According to World War II experience, it took thirty to forty minutes to neutralize the personnel in emplacements and trenches with losses for them of up to thirty percent. We must assume that it will take at least as much time to fulfill a similar mission under modern conditions, especially if we take into account the fact that there will be less artillery than in the past, and that the neutralization of personnel in the second-echelon battalions will have to be carried out by the same amount of means in the second firings. In this case, the total duration of preparatory fire will be forty to fifty minutes. However, we are not taking into account here the time needed to destroy defensive structures which, as we know, in the past had always considerably lengthened the time required for artillery preparation, because it was necessary to conduct methodical correction of fire by observing each burst. But there is no need for this now. The experience of postwar exercises has shown that this problem can be resolved successfully by direct laying of guns which are prepared for fire in advance, even if the targets are completely covered by a smokescreen; and this, of course, does not require any additional time.



A typical feature in the organization of preparatory fire is the immediate destruction of detected enemy tactical nuclear means and his artillery, i.e., those means which may adversely affect our forces even during the deployment of battalion columns into approach march formation and then into battle formation. The second distinguishing feature of preparatory fire will be the destruction of enemy armored defense positions by concentrated artillery fire from indirect firing positions, as well as by the direct laying of gun and tank fire.

The most typical mission for artillery in the fire support of an offensive will be the destruction of enemy tactical nuclear means. Meanwhile, tank and infantry support will be carried out, as a rule, by successive concentrated fire to the depth of the first enemy position (up to four kilometers); centers of enemy resistance in depth will be destroyed by concentrated fire upon requests for fire by unit commanding officers; and counterattacks will be repelled by defensive fire. As in the past, artillery still retains such missions as the consolidation of enemy lines seized during battle, and the protection of boundaries with adjacent troops. Artillery will carry out all these missions in coordination with aviation.

When providing fire support for an offensive, artillery will usually be dispersed along the axes as well as in depth, and therefore will not present a tempting target for destruction by nuclear weapons. However, should it be necessary to overcome hastily occupied defensive lines, it will have to conduct a certain massing of fire on the breakthrough sector, especially since the possibilities of employing tanks for firing from indirect fire positions will be quite limited under conditions of a comparatively fast-moving offensive. Under these conditions, preparatory fire and further planning for artillery fire and moves will be carried out by the divisions. The army command will have responsibility for organizing artillery reinforcement within the army.

Of special concern to the army command are the organization of the march and the deployment of rocket troops, the reinforcement of their security in their siting areas and on the march, and the maintenance of their constant readiness for the immediate delivery of a nuclear strike. This is why, during the entire operation,

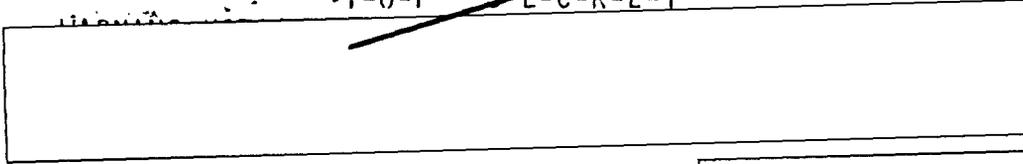
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reconnaissance, especially aerial reconnaissance, is conducted in support of rocket troops, keeping them constantly informed concerning likely targets for nuclear strikes in both the tactical and in the operational depth of enemy defenses. After the headquarters of the rocket troops and artillery of the army receives orders from the army commander concerning when and against which targets in a given situation the rocket troops must be prepared to deliver strikes, it allocates tasks to the rocket troop units (including the rocket battalions of the divisions of the first echelon), determines the necessary yield of nuclear warheads to be used in the destruction of each target, and monitors the successive transition of rocket units to the necessary degree of readiness.

Since the initial employment of nuclear weapons by front means is envisioned as a massive nuclear strike in the entire depth of the operational structure of the enemy group of armies, the front, and consequently the army, command, on a daily basis during the offensive operation, will refine the plan which had been developed for the initial strike and, in case of abrupt changes in the situation, will make the necessary changes. In short, during the operation the army staff and the headquarters of rocket troops and artillery of the army will perform the same work, and even a considerably greater volume of it, as they do under conditions in which nuclear weapons are used. They will also have to be deeply involved in the question of the combat use of artillery, which, under conditions of the use of nuclear weapons, is basically a divisional level function. This, then, obliges the army command, in exercises conducted during peacetime, to occupy themselves to a considerably greater degree with the question of the use of artillery and its overall support.

Incidentally, the matter of providing munitions for artillery under the conditions under consideration becomes a very acute problem. The fact is that the expenditure of artillery and mortar munitions increases sharply in operations in which nuclear weapons are not employed and, as calculations show, may amount to 4 to 6 army units of fire (whereas in the last war it varied between 2 and 2.5 units of fire). The average expenditure for preparatory fire in overcoming even a hastily occupied defense (which in the course of an offensive operation may happen more than once, especially if the enemy engages in mobile defense) will



constitute 0.8 to 1.0 units of fire. The supplying of such quantities of munitions in short periods of time over extended lines of communications will place an exceedingly great strain on the army rear. Therefore, it would be most useful in exercises to check the capabilities of an army to supply munitions, because during the last war the lack of sufficient quantities of munitions for artillery led to operational lulls in an offensive.

