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CENTRAL INTELLIGENCE AGENCY
WASHINGTON, D.C. 20505

14 June 1974

MEMORANDUM FOR: The Director of Central Intelligence
SUBJECT : MILITARY THOUGHT (USSR): Front Rocket Troops and Artillery in the Initial Offensive Operation

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 use of rocket troops and artillery during a front offensive operation, in which readiness for the initial nuclear strike should be maintained throughout the conventional warfare period. The author recommends involving armies and divisions in nuclear strike and artillery fire planning, and considers artillery the basic conventional weapon for breaking through defenses. This article appeared in Issue No. 1 (83) for 1968.

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. For ease of reference, reports from this publication have been assigned

William E. Nelson
Deputy Director for Operations

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Intelligence Information Special Report

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COUNTRY USSR

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SUBJECT

MILITARY THOUGHT (USSR): The Use of Rocket Troops and Artillery in the Initial Offensive Operation of the Front

SOURCE Documentary

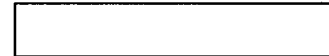
Summary:

The following report is a translation from Russian of an article which appeared in Issue No. 1 (83) for 1968 of the SECRET USSR Ministry of Defense publication Collection of Articles of the Journal "Military Thought". The author, Colonel P. Shkarubskiy, draws upon the experience of Belorussian Military District exercises in discussing the use of rocket troops and artillery during a front offensive operation. He recommends that front rocket troops be ready to deliver the initial nuclear strike throughout the conventional warfare period, citing the limited life of gyroscopic devices among the problems affecting strike readiness. The armies and divisions should participate in planning both the initial strike and artillery fire, and the relocation of the rocket units should be centralized. The author considers artillery the basic conventional weapon, of particular importance in breaking through defenses, and provides detail on grouping, density, fire performance and combatting enemy artillery and nuclear means.

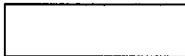
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Comment:

Colonel P. Shkarubskiy was associated with Information Collection of Missile Units and Artillery, (Index Ironbark series, July 1963). The author wrote an article about technical training of rocketeers in the October 1964 edition of Tekhnika I Vooruzheniye. The SECRET version of Military Thought was published three times annually and was distributed down to the level of division commander. It reportedly ceased publication at the end of 1970.

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The Use of Rocket Troops and Artillery in the
Initial Offensive Operation of a Front

by
Colonel P. Shkarubskiy

The use of front rocket troops and artillery in the non-nuclear period of the conduct of combat operations depends on many factors. The decisive one, however, is the time factor, which determines their constant readiness for the immediate delivery of massive strikes using the means of mass destruction.

Of course, the front, when preparing an operation, will be advised as to its nature by General Headquarters (Stavka). At the same time, it is very difficult to know in advance exactly when the enemy will decide to use nuclear weapons. Therefore, irrespective of what form the combat actions (with or without the use of nuclear weapons) will assume at the very onset of war, the front must plan and be prepared to use all available means of destruction when the operation begins.

When must the rocket troops be brought to combat readiness if the initiation of an operation without the use of nuclear weapons is anticipated?

To answer this question we first will endeavor, on the basis of the experience of exercises, to gain an understanding of what kind of situation may arise in the rocket troops by the beginning of an operation. Thus, in a Belorussian Military District command-staff exercise (July 1966), the rocket troops, upon moving into the operational deployment area, had a total of 16 ready rockets (10 operational-tactical rockets and 6 tactical rockets). The front required about 20 hours to provide all the rocket large units and units with rockets (counting one per launcher) and bring them to launch readiness. In the DNEPR strategic exercise the rocket troops of the "Western" and "Eastern" fronts spent up to 6 and 25 hours, respectively, preparing the initial nuclear strike. The higher level of readiness of the "Western" front rocket troops is explained by their undertaking in advance such measures as the supply of delivery rockets to rocket large units, the transition of the warheads from Special Readiness 4 (SG-4) to Special Readiness 5 and their concentration near the disposition areas of the rocket brigades, the timely selection and preparation of siting areas, etc.

These examples were cited to show that preparing the rocket troops to deliver strikes can take a considerable amount of time. Even if the rocket

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troops should have ready rockets when a combat alert is declared, they would be ready for the strike no earlier than 3.5 to 4 hours after receiving the command.

Thus, if the rocket troops are brought to combat readiness when the immediate requirement to use nuclear weapons arises, they may deliver the initial nuclear strike late and not complete the assigned tasks. Such a delay is most probable if the enemy plans regarding his use of the means of mass destruction cannot be discovered before the operation begins. The danger of a delay in delivering the initial nuclear strike also exists even when the front troop commander knows for certain that the enemy will begin combat actions or is already conducting them with the use of only conventional means of destruction, since the enemy may use nuclear weapons at any moment, literally in a few hours.

Therefore, so that the front rocket troops can deliver a timely initial strike under all conditions, they must be brought to readiness not during an operation beginning with the use of conventional means of destruction, but before it begins, as in an operation conducted with the use of nuclear weapons. In other words, under any conditions in which combat actions are conducted, before the operation begins the first nuclear strike must be planned, the rockets must be prepared and delivered to rocket large units and units, and the large units and units must be sent to the siting areas and be allocated specific tasks to destroy enemy targets. Of course, in so doing, appropriate measures must be undertaken to rule out the possibility of unsanctioned rocket launches. For many of the targets, in the planning for their destruction by nuclear weapons, there will be simultaneous provisions to subject them to an air strike and artillery fire with conventional means.

We now will examine certain special features of the delivery by front rocket troops of the initial nuclear strike during an offensive operation, which was most typical of the many exercises conducted lately.

The exercises showed that the initial nuclear strike must not be carried out according to a plan developed prior to the beginning of the operation, since great changes will occur in the enemy grouping and in the composition of the rocket troops in the first hours of the offensive. Certain targets planned for the initial nuclear strike may be destroyed by conventional means or captured by the troops on the offensive, others will lose their significance and, finally, new, more important targets will emerge. Changes will take place in the grouping of rocket troops as a result of losses and relocations of the battle formations of their large units and units. The contribution of tactical rockets in the initial strike will increase.

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The constant changes in the situation and the composition and grouping of the rocket troops, and the receipt of new and more accurate intelligence data on the enemy, will require a systematic refinement and reallocation of tasks among the rocket subunits, units and large units. The task of maintaining continuous coordination between the rocket troops and front aviation, as well as with the Strategic Rocket Troops, will become many times more complicated.

It is possible for troop control to be disrupted during combat actions, which will create serious difficulties for the timely refinement of the initial strike tasks for rocket large units and units. Finally, it should be taken into consideration that the initial nuclear strike has to be carried out under conditions of aggressive enemy actions, when the front troop commander, army commanders, chiefs of rocket troops and artillery, and their staffs will be fulfilling other important tasks along with preparing the initial nuclear strike. All this considerably complicates preparing and carrying out the strike.

Of course, under the conditions which have developed it will be difficult for the front to resolve all the problems of organizing and planning the initial nuclear strike independently, as it does when preparing an operation. Some of them have to be delegated to the armies and divisions. Consequently, all levels from front through division will take an active part in preparing the initial nuclear strike during an operation.

Which problems should be resolved in the front, army, and division?

The front troop commander is the only person who, on the basis of orders from Supreme High Command General Headquarters, can make the decision to use nuclear weapons. Therefore, as the experience of exercises has shown, the main problems connected with carrying out the initial strike will be resolved on a front scale: organizing reconnaissance of the enemy; selecting targets to be destroyed, primarily by operational-tactical rockets; determining the composition of the rocket troops, including tactical rocket units, the procedure and time frame for carrying out the strike; as well as maintaining coordination with the Strategic Rocket Troops.

The main task of the armies and divisions will consist of ensuring the timely readiness of subordinate rocket large units and units being assigned to the strike according to the front plan. Parallel with this the army and division commanders themselves may, in our opinion, designate the targets to be destroyed by their units, based on the tasks of the troops. This, on the other hand, allows the large units and units on the offensive to

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exploit the results of the initial nuclear strike more effectively and, on the other hand, it facilitates the selection of targets to be destroyed, especially by tactical rockets.

The experience of exercises has shown that the basic intelligence information on the targets to be destroyed by tactical rockets is concentrated right in the armies and divisions. In addition, the army or division commander knows better than anyone the situation which has developed at any given moment in his own zone of the offensive, and the status and tasks of his troops; and, consequently he can select the most desirable targets to be destroyed by his means.

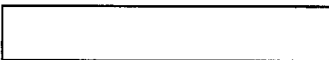
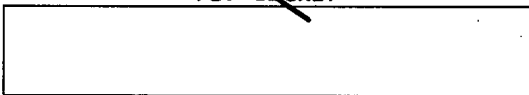
The participation of the army and division commanders in the preparation of the initial nuclear strike is important also because they get the opportunity to use at least part of their allocated nuclear munitions directly in support of their troops. In so doing, the front troop commander, the chief of rocket troops and artillery, and their staffs must constantly know against which targets and with which means the armies and divisions are planning their strikes. This must be ensured by continuous reciprocal information.

The timely conduct of the initial strike during an operation largely depends on the level of readiness of the rocket troops. The best solution would be to maintain the rocket troops in the highest level of readiness (Readiness No. 1) before the beginning of the operation and while it is in progress without the use of nuclear weapons. However, it is very difficult to do this in practice for a number of objective reasons. For example, the gyroscopic devices of operational-tactical rockets have a limited operating life, but the need to carry out the initial strike may not arise for a day or more after combat actions begin. Therefore, bringing the rocket troops to the highest level of readiness and determining the time they are held at this level must be based on careful calculations and a thorough analysis of the situation.

In a number of exercises the highest readiness of the rocket troops (Readiness No. 1) was established before the beginning of the operation, and by the moment the troops on the offensive performed such main tasks as, for example, breaking through the defensive lines and forcing water obstacles having operational and strategic importance for the enemy, repulsing the counterstrikes of the large operational reserves, and others.

The desirability of such a solution is obvious, since, just as the above tasks are being carried out, a critical situation arises for the enemy in which he voluntarily or involuntarily may resort to the use of nuclear weapons. Thus, in a research war game at the artillery academy,

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the "enemy" used tactical nuclear weapons in the battle for the final line of defense. In the DNEPR exercise the decisive nuclear period came after the "East" made an assault crossing to the operational depth of the Dnepr River. It stands to reason that it may become necessary to deliver the initial nuclear strike not only when the troops are carrying out the main tasks, but at any other time, for which it is necessary to be ready.

A few remarks about relocating the rocket troops during an operation. Up until the initial strike is carried out, in our view, strict centralization is necessary in relocating the operational-tactical rocket large units and units on a front scale, and the tactical rocket units on an army scale. During this time the targets of destruction assigned to them are transferred to other units and to aviation as primary or alternate targets, depending on their importance.

The relocation should be planned in such a way that all the rocket large units and units assigned to the strike are in siting areas by the moment the troops on the offensive carry out the main tasks. When it is impossible to ensure this by the required time, the rocket units must remain in their previously occupied areas, if destruction of the targets, even though at the maximum rocket launching range, is expected of them.

Thus, the main condition for timely delivery of a strike includes the anticipation of situation changes, constant knowledge of the enemy and his plans, as well as the timely allocation of tasks to the rocket troops and their relocation with consideration for the time required for their preparation.

1968 When an operation is conducted without using nuclear weapons, the maximum use of conventional means of destruction, especially artillery, becomes highly important. In this respect, the role of artillery will be constantly changing at various stages of the operation. At the beginning of combat actions and until nuclear weapons are used, artillery will be the main means of destroying the enemy and achieving initial success. According to calculations, up to 80 to 90 percent of the total amount of the fire tasks may be allotted to it in this period. The remaining 10 to 20 percent will belong to aviation, taking into account that its main function in this period is to destroy the operational reserves and the operational nuclear means of attack of the enemy, major command posts and control centers, as well as air defense means, that is, those targets which are located beyond the range of artillery fire.

After the initial nuclear strike, the scope of artillery tasks is reduced considerably and its activities become kind of a supplement to the actions of the primary means, which are the rocket troops.



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Unfortunately, the problems of using artillery still are not fully resolved in either case. First of all, it is unclear on what level and scale artillery fire during preparatory and supporting fire must be planned. In one exercise, all the artillery fire planning was assigned to the division, in another it was carried out on an army scale. Thus, in an exercise in the Belorussian Military District, in which two adjacent divisions were to break through enemy defenses on the main axis, the staff of the army rocket troops and artillery planned the entire scope of preparatory and supporting fire. The army commander designated the artillery composition and operating procedure, the commencement, structure and duration of preparatory fire, and the method and depth of fire support. In the DNEPR exercise, preparatory fire was planned on a front scale with one chart for all the armies and divisions.

It is difficult, of course, on the basis of the experience of two or three exercises, to provide definite recommendations suited to the majority of cases for the organization of preparatory and supporting fire. However, it is already obvious that the front, and even an army, are not able to plan preparatory and supporting fire independently and to take into consideration the special features of the offensive of each of the first-echelon divisions of troops, as well as the capabilities of their artillery and other means of destruction. This thesis was fully corroborated in the exercise referred to above. The "Eastern" front planned preparatory fire lasting 40 minutes for all the divisions, when, if the calculations had been more accurate, it should have been carried on for 20 to 25 minutes in offensive zone 38A, where the covering units of the "West" were defending themselves.

Preparatory and supporting fire should be planned in parallel in the front, armies, and divisions. The front, based on the concept of the operation and troop tasks, decides the artillery reinforcement of the armies, the procedure for assigning the artillery of the second-echelon army to preparatory fire, the tasks of artillery in the operation, the expenditure of munitions, and the periods of readiness.

The army, based on the orders of the front and taking into consideration the tasks of the divisions and the special features of their activities, in turn determines the artillery reinforcement of the divisions, its tasks, the expenditure of munitions on preparatory and supporting fire, the composition of the artillery assigned to preparatory fire from the second echelons, as well as the use of the army artillery group, if one has been organized. In a breakthrough of enemy defenses by two adjacent divisions the army can determine the duration of preparatory fire and work out the chart for it.

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In divisions it is desirable to carry out fire planning specifically, allocating the fire tasks to the direct executors. Intelligence data from all sources, including the data used in the plans of the front and armies, must be used for fire planning.

This procedure for planning the combat use of artillery when breaking through enemy defenses appears most desirable, since it allows concentrating its efforts on fulfilling the main task of the operation and, at the same time, using fire according to the specific actions of the troops on the offensive.

The detailed solution of the problems of using artillery on a front, and especially army, scale may be desirable when committing the second echelons to the engagement, when artillery fire from the depth and from other axes, in addition to the organic artillery of the large units and units, is assigned in support of troop actions. Planning the movement and deployment of this artillery and determining its tasks is the responsibility of the higher echelon.

Another problem requiring solution is the grouping of artillery. The attempt to ensure the divisions the greatest independence when conducting combat actions has resulted in practice, in resubordinating to them all army artillery and the artillery of the Reserve of the Supreme High Command available along the front.

In the DNEPR exercise, many of the first-echelon divisions had 10 or 11 artillery battalions, counting their organic artillery. Such a solution appears desirable at first glance, since it meets the requirements of ensuring the independence of actions of the combined-arms large units and units. But actually, in our view, scant consideration is given in this case to the special features of conducting an operation in the non-nuclear period of combat actions.

The point is that at this time, artillery is one of the main means of carrying out operational as well as tactical fire tasks. This is especially typical of a formation such as an army, which does not have aviation in its complement. The experience of exercises has shown that while reinforcing the divisions with artillery, a certain amount of the artillery has to remain in direct subordination to the army commander. The fire of this latter artillery may be used to augment division artillery fire on decisive axes and to destroy enemy tactical nuclear means, artillery and other important targets in support of fulfilling the main army task. The availability of artillery in direct subordination to the army commander considerably facilitates artillery support in committing the

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second echelon to the engagement, as well as repulsing the counterattacks and counterstrikes of large enemy forces.

At the outbreak of nuclear war, when the army commander can use the rocket large units and units to carry out the tasks that arise, the artillery remaining under his direct subordination can be resubordinated to the divisions.

The use of artillery when breaking through enemy defensive lines is exceptionally complex under modern conditions. To effect a breakthrough without using nuclear weapons requires concentrating a considerable amount of artillery on the axis of the main strike. Research has shown that when the duration of preparatory fire is no more than one hour, the average density of artillery in breaking through prepared enemy defenses must be a minimum of 65 to 70 guns per kilometer of breakthrough sector.

The requirement for this artillery density is explained by the fact that modern enemy defenses are highly saturated with tanks, antitank guided missiles, armored transports, and other armored fire means. His artillery also is self-propelled and armored.

A front currently does not have available the number of guns which would ensure the creation of the necessary densities in the breakthrough sectors. The tank armies, which do not have army artillery in their complement, experience particularly great difficulties. For example, in the DNEPR exercise the tank army reinforced by divisional artillery could develop a density of 55 guns per kilometer of front only in a six-kilometers sector, where only six tank battalions could actually attack.

The fundamental solution to this problem should be sought in improving the qualitative and increasing the quantitative composition of artillery. Success in conducting combat actions without using nuclear weapons may be counted on only in the event that our artillery is not only not inferior but, on the contrary, superior to enemy artillery, which was corroborated by the entire course of the past war.

In some of the exercises, attempts were made to compensate for artillery deficiency by increasing the duration of preparatory fire. Actually, the necessary neutralization of enemy defenses may be achieved in this way. But this also has its drawbacks. Lowering the density of artillery while simultaneously increasing the duration of preparatory fire sharply reduces artillery firepower per unit of time. The enemy can maneuver freely and move his tanks, self-propelled artillery, and other armored means out from under the bombardment, hence creating the conditions for transferring his reserves to the threatened axis. It also should be

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taken into consideration that in this case the danger that the concentrated artillery will be destroyed by nuclear strikes increases as long as the threat of nuclear attack exists.

In the past war many preparatory fire tasks were carried out by direct fire. With thorough reconnaissance of the enemy fire means it is desirable to use this type of fire even now, assigning tanks, antitank artillery and antitank guided missiles to conduct it. This allows freeing at least part of the artillery located in indirect fire positions to destroy the enemy in the depth. The average density of direct fire means under modern conditions may be 10 to 15 guns per kilometer of front.

An important reserve for improving artillery fire performance is to make full use of the maximum permissible rate of fire of guns and mortars. Under modern conditions the preparatory fire chart should be structured so that artillery has no break in firing (as sometimes happened in the past war), with the exception of the time spent switching fire or on unforeseen clarification of tasks. When long-range artillery fire is switched to the depth of defenses, the remaining artillery and mortars must strike the enemy on the forward edge. Such a powerful means as the BM-21 rocket, artillery battalions, which are capable of carrying out not one, but two or three fire strikes in an hour, should be used more productively. Their fire is particularly effective against strongpoints and the concentration areas of second-echelon troops and reserves. In the DNEPR exercise, the artillery supporting the offensive of an armored regiment with field firing demonstrated an exceptionally high rate of fire: during preparatory and supporting fire lasting 42 minutes, the average expenditure of shells was up to one unit of fire. High accuracy of fire was noted as well.

In some exercises the artillery of the second echelons and the reserves of the divisions, army and even the front, was assigned to preparatory and supporting fire. Such a decision, in our view, was completely valid. This artillery may be brought to the fire position in a short time--in a few hours--and, after completing the fire tasks, quickly returned to its large units. It is desirable to use artillery compactly, which facilitates its control and return to its units after completing the tasks.

As to the artillery of the front second echelon, assigning it involves a number of serious difficulties. According to the experience of exercises, when the breakthrough of the defenses was being organized, the distance of the front second-echelon army from the enemy averaged 200 to 250 kilometers. Therefore, in order for its artillery to participate in preparatory fire, the artillery actually has to be relocated in one day

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together with the troops of the first echelon. At least this much time is required to reestablish the artillery.

In conclusion, we would like to dwell on the use of artillery to combat enemy nuclear means and artillery, especially artillery having nuclear ammunition. This task is one of the most important, not only for artillery, but for all the means of destruction of the front, armies, and divisions. Theoretically, opinions have been formed on this matter, and they require that all artillery be assigned to destroy enemy nuclear means of attack and artillery. The principal organizers of combat are the division commander and the chief of artillery. However, in practice they frequently allocate special "duty" artillery subunits for this purpose, the main argument for this being the speed of opening fire. In our opinion, such a solution cannot be desirable, since the responsibility of the commanders of artillery groups and units for destroying the nuclear means of attack and artillery is thereby reduced. Furthermore, separate subunits actually are not able to fulfil this task.

Calculations show that enemy self-propelled artillery, which is capable of quickly abandoning occupied positions and moving out from under bombardment, must be destroyed by powerful artillery strikes in a short space of time. This requires concentrating the fire of a minimum of an artillery battalion against an enemy battery. An important factor also is the conduct of continuous reconnaissance of the enemy batteries so that artillery strikes are not repeated against an unoccupied area. Only the chief of division artillery and the officer commanding the artillery group or regiment, who have enough artillery and reconnaissance means at their disposal, are able to meet these requirements.

Of course the army and front, as well as the division, are concerned with destroying the nuclear means and artillery of the enemy. Therefore, the main task of these echelons, in our opinion, involves coordinating the use of all the available means and allocating specific tasks to the executors.

