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The Need for Self-Propelled Artillery

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In recent years as a result of more in-depth and detailed research into the nature of ground forces operations in a future war, the judgment has become more and more clear that the role of artillery will be rather important in it. Nevertheless, the experience of operational training shows that the necessary attention is not given to matters of the organization of the combat employment of artillery in an operation, and of control of its fire and maneuvering. In the planning of an operation, these matters are often limited to the distribution of artillery among divisions and to the indication of the general tasks for it. Detailed calculations of the need for artillery and ammunition are either not made at all or are done superficially. These matters have not been sufficiently aired in scientific research works. The phrase "combat employment of artillery is organized in divisions" has already become a cliche, as though the solution of these problems had been taken away from the staffs of the formations.

Meanwhile, in operations conducted without the employment of nuclear weapons, it will be impossible to limit the activity of artillery to only a tactical framework; its firepower has operational significance, and staffs of the armies will have to study the organization of the employment of artillery.

Even in operations employing nuclear weapons the role of artillery is not diminished, inasmuch as employment of nuclear weapons can be limited not so much by the ratio of the quantity of nuclear warheads to the quantity of enemy targets, as by the limit of the safe distance of one's own troops from the ground zeros of nuclear bursts.

Calculations show that tactical nuclear weapons, artillery, tanks and antitank means of the enemy will be left undestroyed even when nuclear warheads of a low or very low yield are employed in front of attacking tanks and motorized infantry. The task of destroying these targets falls mainly to artillery.

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In our view, the judgment is groundless that a large quantity of tanks in our divisions can be substituted for a considerable portion of artillery. In their purpose and armament, tanks are not adaptable to conducting all types of fire necessary for destroying enemy targets varying in nature and location. This is completely obvious, if we take into consideration not only their present-day armament (rifled guns) but also their future armament.

It is also necessary to note that the considerable degree of equipping of the ground forces with tanks brought on the rapid development of antitank means, with which subunits, units and large units of probable enemies are equipped in great quantity. This circumstance presents a serious problem to our tank troops in overcoming the antitank defense of the enemy, in the solution of which artillery will play a substantial role.

In our opinion, the main element in the development of artillery is increasing its maneuverability and firepower.

Equipping the artillery with new means of towing and a number of new models of guns considerably increased its march capabilities and its capability for cross-country movement. However, the mobility of large units and units grew to an even greater degree, which led again to a disparity between the maneuverability of artillery and the troops being supported by it.

Since its entire personnel complement is unprotected by armor, towed artillery is inferior to tank and motorized rifle units in its capability to withstand nuclear strikes and fire from conventional weapons of the enemy and to negotiate areas of radioactive contamination. The insufficient maneuverability of towed artillery will also affect the effectiveness of fire support of the troops, since, most often, it must move cross country, over terrain subjected to nuclear strikes, and must negotiate areas of radioactive contamination and destruction, while requirements for speed in deployment and opening fire will be immeasurably higher. And, improvement in the means of towing artillery alone will not solve the problems of increasing the maneuverability of artillery.

Analysis of the conditions of combat actions of artillery in the modern battle and operation obviously leads to the conclusion that it is necessary to develop self-propelled artillery and substitute it for towed artillery, first of all, in the tank troops. 50X1-HUM

The development of self-propelled artillery is not a new matter for us. The necessity of equipping our troops with such artillery became apparent in the very first days of the war with Fascist Germany. This was caused by the maneuvering nature of combat actions, by the necessity of combating enemy tanks and self-propelled artillery, and also by the organization of fire support, at first, for armored and mechanized large units and units only, and later, for rifle large units and units. The overall ratio of self-propelled guns to tanks in individual offensive operations in 1944-1945 was approximately 1:1.

At present, self-propelled artillery occupies a firm place with the troops of our probable enemies, displacing towed artillery -- which is obsolete for modern war -- not only in armored but also in motorized infantry large units. In the US Army alone more than ten models of self-propelled guns and mortars, developed in the past decade, can be counted, the newest of which have nuclear ammunition, can float, and are air-transportable. We have some models of self-propelled guns, remaining from the time of the Great Patriotic War, which are still in service.

In speaking of the necessity of equipping our ground forces with self-propelled artillery in place of towed artillery, we certainly do not have in mind a return to the self-propelled guns of the last war.

Under the conditions of modern operations self-propelled artillery of the old type is unsuitable even as guns for the close support of tanks and motorized infantry. The employment of nuclear weapons, and the development of antitank guided missiles and tank armament, are redefining the role of artillery in combating enemy tanks. This task for artillery providing close support for tanks and motorized infantry will no longer be a main task. Becoming the main tasks for artillery are combating enemy tactical nuclear means, combating antitank means, and combating artillery and mortars, that is, combating targets which, in general, are protected, and for the destruction of which not so much flat trajectory fire as high trajectory fire and extensive maneuvering are required.

A fundamental solution to this problem can be achieved by the development of a new type of self-propelled artillery, adapted for conducting all types of fire, to ensure the destruction of any enemy targets which are left for artillery. In other words, it is necessary to make the bulk of the artillery self-propelled, equipped with armor and preserving its characteristic combat features. Obviously, in so doing it is necessary to resolve questions about the proportions of gun, howitzer and mortar weapons, about a more suitable caliber for artillery at various

troop organizational levels, and also about the possibility of putting on the self-propelled gun a unit of fire of about the same size as for those existing at present. Equipping the control and reconnaissance organs of artillery with armored and highly mobile control posts also is an absolute necessity.

The conversion of artillery to self-propelled chassis significantly increases its capabilities for fire support of the troops under the complex conditions of the modern battle and operation.

The firepower of artillery can be immeasurably increased by the introduction of nuclear ammunition for several types of guns. Judging by a number of statements in our press, there exists a rather widespread opinion that equipping troops with small nuclear weapons can be achieved by way of developing short-range tactical missiles. It appears to us that this is not the only way, and, above all, it is not the best way, since there are rather considerable limits to the accuracy of fire of missiles, which require increasing the yield of the nuclear warhead, and consequently the magnitude of the safe distance for one's own troops from the ground zeros of the nuclear bursts, in order to achieve a specified result.

For this same reason, and also because of their low rate of fire, the employment of missiles with conventional warheads has little effectiveness, which substantially limits their employment under various battle conditions.

The advantage of artillery in rate of fire, accuracy of fire and speed of opening fire is indisputable. With the obtaining of nuclear ammunition, artillery becomes something like a multi-purpose means for destroying targets of the most diverse nature within the tactical depth of the enemy; along with the delivery of nuclear strikes, it can conduct really effective fire with chemical and conventional ammunition, and when necessary -- destroy armored mobile and stationary targets with the direct fire of armor-piercing (shaped-charge) shells.

In this way, self-propelled artillery will become an even more effective means of fire support of the troops in the battle and the operation, both with and without the employment of nuclear weapons.

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