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The Influence of Nuclear Weapons on the Principles of the Offensive Operations of a Front

by

General of the Army V. Kurasov

The rapid development of the socialist economy and of Soviet science and technology testify more eloquently than any words that our nation is successfully creating the material-technical foundation for Communism and at the same time is increasing its defensive capability.

The Soviet Armed Forces, while undergoing reduction in numbers, are being equipped more and more with nuclear weapons and other means of modern military technology. A new type of armed force has been created--missile troops of strategic designation. The equipping of all types of armed forces with nuclear weapons in quantity that will ensure their mass use in operations immeasurably increases their combat capabilities. All this introduces radical changes in our views on the nature of modern warfare and the methods of waging it.

History offers many examples of how the development of armament and technology has given rise to great changes in views on warfare and in military art, but the revolution in the field which is occurring at the present time, mainly on account of the development of nuclear weapons and the possibility of their mass use, cannot be compared with the changes of the past. The radical modern changes in views on warfare and in military art have the nature of a headlong gallop, a break with the gradual development of military art, which signifies the elimination of a number of old tenets and their replacement by new ones.

By their own combat capabilities, nuclear, and especially nuclear/missile, weapons under conditions of their mass use are the principle

means of armed combat, and have a decisive influence on the course of operation of all types of armed forces. Moreover, these weapons have altered the combat capabilities of even identical types of armed forces. One cannot now, for example, imagine the nature of offensive operations of a front and the means of conducting them without an analysis of the possible influence on them of strikes of nuclear weapons of strategic designation and various types of armed forces participating in these operations. Thus, during and as a result of strikes by nuclear weapons of strategic designation, as we can well imagine, nuclear superiority over the enemy can be won, his economic power can be undermined, and the destruction of the strategic groupings of his ground troops, air forces, and navy can be attained.

It remains to be said that such nuclear strikes will as a rule be inflicted on enemy objectives located in the strategic depth. Therefore, despite the views stated in the article by Colonel-General A. I. Gastilovich,[1] the destruction of enemy objectives in his tactical and operational zones is the goal of the offensive troops of a front and above all of their nuclear weapons, and not the target for nuclear strikes of strategic designation. Of course, one cannot completely exclude cases where such strikes of strategic designation may be delivered against enemy objectives in his operational depth. However, these cases will not be typical, owing to the fact that such use of strategic nuclear weapons contradicts their designation and does not completely exploit all of their combat capabilities.

Success of these powerful strategic nuclear strikes, especially if they precede the beginning of an offensive operation of a front, will undoubtedly ensure favorable conditions for the conduct of the operation with a comparatively small expenditure of nuclear weapons of the front. Under other conditions, when nuclear weapons of strategic designation are not employed in the area of the offensive of a front, the successful attainment of the goal of the offensive will require the use of a greater number of the nuclear weapons of the front.

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[1] Special Collection of Articles of the Journal "Military Thought", First Issue, 1960.

Not too long ago during our command-staff exercises, the front, having a limited amount of nuclear ammunition, was able to deliver nuclear strikes only against the most important, individual targets and objectives of the enemy, while a substantial portion of other targets and objectives continued to be destroyed by conventional weapons. And if it is recalled that practically the only carrier of nuclear weapons at that time was aircraft, which often did not reach the target, then one can even more fully understand the insufficient effectiveness of nuclear strikes of that period. In connection with the limited use of nuclear weapons in offensive operations of a front, the possibility of simultaneous destruction of enemy groupings and objectives in the entire depth of their operational formation was precluded during our exercises at that time. Therefore, the troop offensive, as in the past, was carried out through the successive overcoming of enemy resistance, during which the enemy had the opportunity to maneuver his forces and weapons from the rear and the flanks for the creation of strike groupings.

Thus, nuclear weapons under conditions of limited use still had not introduced decisive changes in the structure and conduct of offensive operations of the front.

Only now, with the mass employment of these weapons in operations with the use of various delivery vehicles, mainly missiles, is it possible to deliver surprise nuclear strikes against a significant number of enemy objectives and achieve their rapid and complete destruction. Without exaggerating, it can be assumed that with the successful mass use of nuclear weapons in an offensive operation of the front, not less than 60 percent of the entire opposing enemy grouping will be destroyed with these weapons. This is why nuclear, and especially nuclear/missile, weapons have now become decisive in the destruction of the enemy and above all in the attainment of nuclear superiority over him. The attainment of such superiority will significantly quicken the destruction of enemy groupings, while in the absence of this superiority the enemy will always have an opportunity to disrupt our offensive through the mass use of his nuclear weapons.

Only now in connection with the development of nuclear, and principally nuclear/missile, weapons, and also in connection with the possibility of their mass use, are radical changes in the structure and conduct of offensive and other operations taking place.

Let us examine several more specific instances of the influence of nuclear weapons on some of the principles of offensive operations of the front in the initial period of a war.

The goals of an offensive operation of a front, as is generally known, determine its concept and scope. Such goals, as in the past, are: the destruction of the basic enemy groupings, the swift development of the offensive, the seizure of his territory and specific operational-strategic objectives. However, the essence and nature of these goals have changed considerably. While, in the past the basis of the enemy's grouping of troops consisted of his infantry and tank large units, now nuclear weapons, as the principle and decisive means of combat, have become the basis.

Studying the development of nuclear weapons of operational-tactical designation in the armies of the probable enemy and above all in the US Army, we come across a great number of types of nuclear weapons, of TNT equivalents and of delivery aircraft. Quite recently, up to 10 types of aerial atomic bombs with 19 various TNT equivalents (from 2 to 300 kilotons) could have been noted in the US Army. Seventeen different types of delivery aircraft supported the use of these bombs.

At the present time the arsenal of nuclear/missile weapons of operational-tactical designation in the US Army consists of only five types of guided missiles and free rockets: "Honest John", "Little John", "Lacrosse", "Corporal", and "Redstone" with nine different TNT equivalents (from 1 to 3800 kilotons), and two types of cruise missiles: "Matador" and "Regulus" with five TNT equivalents (from 1 to 100 kilotons).

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Furthermore, it should be noted that the probable enemy has at his disposal artillery pieces with calibers of 203 and 208 /sic - 280/ mm with nuclear shells (from 1 to 45 kilotons).

As is evident from the aforementioned data, the most modern and powerful nuclear/missile weapons in the armies of the probable enemy have not yet become his principle and decisive means of combat. It looks more as if the enemy's aviation still fulfills this role, in spite of its increased vulnerability to antiaircraft missiles. This should be kept in mind However, this situation requires further study.

As regards the possible number of enemy infantry and tank large units in his troop grouping, able to resist the front, considerable changes have also taken place here. Comparatively recently, under conditions of limited use of nuclear weapons, it was considered that in a front offensive area with a width of 300-400 kilometers, and basing the average operational density of troops at 15 kilometers per division, the enemy could have up to 20-27 infantry and tank divisions. Because of the mass use of nuclear weapons, these divisions can now successfully advance and conduct combat operations in areas with a width of up to 30 kilometers, and such an enemy grouping will undoubtedly be smaller. For example, in a front offensive area with a width of 400 kilometers, it will have in all only 13 to 15 infantry and tank divisions. Such a quantitative reduction of groupings is a direct consequence of the unusually increased fire power and troop maneuverability, and also of the requirement for their maximum protection from destruction by nuclear weapons.

Together with this, the dispersal of enemy groupings in area has grown even more Now it is impossible to imagine compact groupings with a continuous front of even one or two enemy divisions, to say nothing of several of his armies, since such groupings would immediately be subjected to nuclear strikes and destroyed.

Under modern conditions, not armies, but often individual enemy divisions, not creating a continuous front, will conduct an engagement in a particular area, while others of his divisions on the flanks and

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in the rear of this area execute a maneuver with the aim of a swift penetration ahead. Hence, the enemy grouping will not only be smaller with regard to its force and composition, but also more widely dispersed in area.

Finally, mention should be made of the great influence which the mass use of enemy nuclear weapons has on the nature of his troop operations, accelerating them significantly. The offensive operations of the probable enemy during his training exercises acquire a deeper and more dynamic nature. The enemy has recourse less often to the solution of tasks by shifting to the defensive, and even the latter has begun to have a different, more aggressive, and maneuverable nature.

Thus, the modern enemy grouping has become not only smaller in relation to its force, and more widely dispersed in area, but also more aggressive and maneuverable with regard to the methods of the execution of operational tasks.

Regarding the operational-strategic enemy objectives which may be the goal of a front offensive operation, it should be emphasized that under conditions of mass use of nuclear weapons, their destruction, seizure, and retention will no longer create difficulties as in the past and will not require as large forces as were used for this during the past war.

A true conception of the probable enemy, a careful study of his strong and weak points, and also their skilful exploitation during the preparation and conduct of an offensive operation, will ensure his rapid and most complete destruction.

The forces and weapons needed for the conduct of a front offensive operation determine the success of the operation to a large extent. As is well known, the basis for the determination of such forces and weapons was always the demand for the creation of the appropriate superiority over the enemy. The stronger and more aggressive the enemy was, the more forces and weapons were

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required for his destruction, and consequently, the more significant was their superiority over the enemy, and as long as superiority of forces was not attained, the front offensive operation often did not begin. This was true in the past and, incidentally, quite recently under conditions of limited use of nuclear weapons.

Now that the possibility of the mass use of nuclear weapons has become a reality, the relative strength as a result of powerful nuclear strikes of the offensive side can rapidly and sharply change in its favor even at the very beginning of the operation.

Since, as a result of such powerful nuclear strikes, the front can destroy not less than 60 percent of all enemy forces and weapons at the beginning of the operation, then the general superiority of his forces and weapons over the enemy can become significant, and on the axis of the main strike, even great. However, this can occur only if the offensive troops themselves have not already suffered enemy nuclear strikes. Therefore, under modern conditions, the necessary superiority of forces and weapons over the enemy will as a rule not be attained prior to the beginning of the offensive operation, as it was previously through the concentration and deployment of these forces on appropriate axes, but at the beginning and in the course of the offensive operation as a result of the infliction of powerful nuclear strikes on the enemy.

Thus, under conditions of the mass use of nuclear weapons, the front offensive operation can be successfully conducted even with equality in the relative strength of forces and weapons.

The influence of nuclear weapons affects not only the quantity of forces and weapons of the front and their relative strength, but also the combat composition of a front. The most important place in this combat makeup is now occupied by nuclear weapons, and principally by missile troops. An estimate of other forces and weapons included in the combat composition of the front depends on a correct and accurately grounded estimate of the necessary quantity of these weapons.

For an estimate of the nuclear weapons needed for the entire offensive operation of a front, it should be taken into account that for a reliable destruction of all selected targets and objectives, it seems to us that we must allot from 4 to 6 nuclear weapons of appropriate TNT equivalents against every large unit and operational-strategic objective of the enemy, or 1 or 2 nuclear weapons of high yield (100-500 kilotons). Such an estimate will permit even if only approximately, the determination both of the overall number of nuclear weapons needed for the operation and of their types and level of yield. In its turn the estimate of the nuclear weapons of a front depends on what tasks will be carried out in behalf of the front by nuclear weapons of strategic designation.

The strength and composition of the motorized rifle and tank troops of a front are determined in accordance with the combat potentialities of the nuclear weapons of the front, the operational density of the enemy grouping, and the tasks of these troops in the operation.

In view of this, the front grouping cannot be permitted to have a lower operational density of troops than the enemy. Let us suppose that the front grouping of troops has an operational density of troops equal to 20 kilometers per division. Then a front offensive area having a width of 300 kilometers must have no fewer than 15 divisions in its composition. Furthermore, additional forces and weapons should be provided, to allow for possible losses of our troops in the course of the offensive operation and for the appearance in the area of the front offensive of fresh enemy troops or of enemy troops who have escaped destruction. In the case of limited use of nuclear weapons, the estimate of the forces and weapons of a front must include appropriate adjustments for an increase in the number of motorized rifle and tank large units.

The tasks of the motorized rifle and tank troops in a front offensive operation are also determined by these conditions. While, under conditions of the mass use of nuclear weapons, the basic task of these troops is the completion of enemy destruction upon whom nuclear strikes have been inflicted, in the case of the limited use of these

weapons the motorized rifle and tank troops of the front will fulfill the basic task of destroying the enemy grouping.

The destruction and neutralization of the enemy in his tactical and operational zones may require reinforcement of the front with artillery, which at the beginning of the offensive and especially in the operational rear, will unquestionably render great benefit to the offensive troops in overcoming the centers of enemy resistance which have survived nuclear strikes

Taking into consideration the increased role in an offensive operation of a front of airborne troops who are capable of seizing the most important areas in the enemy's operational rear more quickly than other troops, their forces in the effective strength for combat of the front should be especially accurately determined, starting with the tasks that can be assigned to them. Furthermore, one should keep in mind that in a modern offensive operation of a front, which is conducted against a considerably greater depth, airborne landings on a tactical and operational scale may have a place in the combat makeup of the front.

Large units and units of engineer troop reinforcement may enter into the combat composition of the front when the front's own (shtatnyy) engineer resources are not able to support a maneuver of troops or the rapid rate of their advance, especially during a crossing in force of water barriers or during operations in zones of radioactive contamination.

The strength and composition of the aviation of a front are also determined in accordance with the tasks which will be assigned to it. Such missions in a front offensive operation may be: the conduct of reconnaissance, the destruction of mobile and small-sized objectives in the tactical and operational zones, and the support of the attacking troops of the front during the course of the operation.

It is particularly important in the combat composition of the front to have units of antiaircraft-missile troops, fighter aviation

and antiaircraft artillery in sufficient number to provide reliable air cover for the launching areas of missile large units and units, for airfields with delivery aircraft for nuclear weapons, for command posts, for basic troop groupings, especially in the areas of their concentration, and for the most important installations in the rear area of the front.

The selection of the axis of the main strike is the most important fundamental offensive operation which in essence determines the concept and methods of conducting the operation. However, some authors of articles (Comrades Baskakov and Zavyalov), in their review of the principles of our military art, have expressed the view that under modern conditions the established opinions about the axis of the main strike are obsolete and may lead to the creation of concentrated strike groupings of troops, which would offer a highly profitable target for enemy nuclear strikes, and thus do injury to our military art. In connection with this, they propose either to abolish this most important principle of military art or to replace it with the principle of concentrating the basic efforts on the destruction of the nuclear weapons and the main troop grouping of the enemy or with the definition of the principle tasks of the operation, to the fulfillment of which the basic efforts of the weapons of nuclear attack and of the troops must be directed.[1] But are not such conclusions and proposals too hasty, and will they not inflict damage on our military art?

It has long been known that one cannot be strong everywhere in an offensive. Any such tendency has always led to the dispersal of forces and weapons, to strikes against the enemy with widespread fingers.

If this was fallacious before, then under present conditions of the mass use of nuclear weapons, such strikes are even more inadmissable, since they may lead not only to the dispersal of the

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[1] Special Collection of Articles of the Journal "Military Thought", First Issue, 1960.

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troops but above all to the dispersal of nuclear weapons in various directions often of secondary importance. Of the several axes along which the troops of a front are advancing, one always will be decisive, i. e., the axis of the main strike, which usually involves the entire depth of the front offensive operation. Therefore, not only are strategic and operational-tactical factors to be considered, but also the possible influence of political, economic, and physical-geographical conditions on the course of the offensive operation. The axis of the main strike determines the concept of the offensive operation, the tasks of the front troops, and above all of nuclear weapons, and also the methods of fulfilling these tasks.

As for the proposed principle of concentrating the basic efforts on the destruction of the nuclear weapons and the main grouping of the enemy, these are nothing less than the most important tasks of the offensive troops, but they can be accomplished only when the areas of the location of the nuclear weapons and of the troop groupings of the enemy have been precisely determined. However, these tasks still cannot determine the concept of the front offensive operation and the methods of conducting it, since far from all the areas of location of the nuclear weapons and groupings of the enemy will be known to us prior to the beginning of the operation.

The same thing can also be stated regarding the main tasks of the operation, which have been proposed to replace the concept of the axis of the main strike since these tasks can likewise be assigned to the troops only after the establishment of the coordinates of the appropriate enemy targets and objectives. Thus, neither the principle of concentrating the basic efforts on the destruction of the nuclear weapons and the main grouping of the enemy, nor the main tasks of the operation, can abolish or replace the axis of the main strike.

One can likewise hardly agree with the view that the selection of the axis of the main strike leads to the creation of concentrated assault groupings of troops, which would offer a highly advantageous target for mass nuclear strikes. Is it not a fact that the

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axis of the main strike is not a line but a zone of terrain within the borders of which the troops advance? Why then cannot this offensive zone, with its width, ensure the necessary dispersal of troop groupings and the most effective use of their firing, striking, and maneuvering capabilities?

Such a dispersal of troops is now necessary as one of the most important conditions for ensuring the success of the offensive, and not only on the axis of the main strike but also on other axes. At the present time concentrated strike groupings of offensive troops will not be created on these axes. Very likely, on the axis of the main strike, as distinguished from other axes, a more powerful troop grouping will attack, but in a wide zone, thus ensuring the necessary dispersal and maneuver, while on the other axes of the advance the troops will be of less strength and not in such wide zones.

Prior to the mass use of nuclear weapons, the main strike was as a rule launched on the axis most likely to ensure the successful breakthrough of the enemy defense and the destruction of his basic grouping. Therefore the axis of the main strike almost always ran through weak sectors of the enemy's defense and took the attacking troops to the flank and rear of his strong grouping. It should be recalled that this was conditioned by the complexity of the destruction and neutralization of the enemy's defense system in its strong sectors and by the difficulty of penetrating this defense.

But now, under conditions where the mass use of nuclear weapons favors the rapid and most nearly complete destruction of an enemy of any strength, it is advisable to launch the main strike on the axis which will ensure the rapid advance of the troops and the seizure of the operational-strategic objectives of the enemy.

In accordance with the goal of the front offensive operation, in addition to the axis of the main strike, the axes of other strikes are also determined. It should be emphasized that at the present time the destruction of the enemy and the success of the troop advance on the axis of the main strike depend on the success of these other strikes to a greater degree than was true in the past. As soon as there occurs any confusion or even worse, any failure, in the advance of the troops

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on the other axes, then the flanks of the troops attacking on the axis of the main strike are immediately exposed, the possibility of their isolation is increased, and favorable conditions are created for the enemy to destroy this grouping of the attacking troops. 50X1-HUM

Therefore the troops attacking on the other axes must have a sufficiently high penetrating ability and capabilities for maneuver, thus ensuring their swift advance. In other words, these troops must have at their disposal nuclear weapons and the appropriate reserves to the extent necessary.

The determination of the immediate and subsequent tasks of the front was always the most important part of the concept of the offensive operation and of the commander's decision. The distribution of front troop efforts for the fulfillment of successively resolved tasks takes place as a result of the fact that with one, even with the most powerful strike, it has been impossible to destroy the entire enemy grouping and to attain the final goal of the front offensive operation. But perhaps now, under conditions of the mass use of nuclear weapons and the increased combat capabilities of the armed forces, the final goal of the front offensive operation can be attained with the delivery of one powerful strike against the enemy grouping. However, an analysis of the combat capabilities of the enemy and of our modern armed forces does not allow us to give a positive reply to this question.

Even now not one, but several strikes against the enemy grouping, and also considerable effort and great stress on the part of the attacking troops, are required for the attainment of the final goal of the front offensive operation. In other words, even under modern conditions, the goal of the front offensive operation can be attained only as a result of the fulfillment of the immediate and subsequent tasks of the front. But now these tasks, principally under the influence of nuclear weapons, have increased in depth and have been abbreviated in the time needed for their fulfillment. Furthermore, with the availability of long-range missiles and of delivery aircraft for nuclear weapons, the fulfillment of a subsequent

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front task can be begun at the same time as the destruction of the 50X1-HUM
enemy and his tactical and closest operational depth, i. e., during the time that the front troops are fulfilling their immediate task.

Proceeding from the above, the immediate task of the front in a modern offensive operation must be understood to be the rapid and decisive destruction of the enemy grouping, and above all of his nuclear weapons, the swift advance of the troops, and the seizure of important objectives or areas to a depth of 300 to 400 kilometers, i. e., to the depth of approximately the entire front offensive operation in the last war. Taking account of the increased rate of advance of troops, the modern front can fulfill this task during 3 to 4 calendar days.

The subsequent task of the front will be to complete the destruction of the strategic enemy reserves by means of a swift advance of the troops and to capture the objectives and areas whose seizure will accomplish the final goal of the front offensive operation.

As is evident, the greatest importance is attached to the fulfillment of the immediate task of the front, in the course of which the destruction of the enemy's basic forces takes place and in essence the fate of the front offensive operation is decided. Therefore, the largest portion of all the forces of the front, and above all nuclear weapons, must be employed for the fulfillment of precisely this task.

However, under the conditions of the mass use of nuclear weapons by the enemy, and in connection with the increased role of his strategic reserves, the importance of the subsequent mission of the front has been increased, for the fulfillment of which the front will often have to be reinforced with the appropriate quantity of nuclear ammunition and with fresh large units of troops.

The methods of conducting an offensive operation of a front under the influence of the mass use of nuclear weapons has also undergone significant changes.

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Soviet military art has always striven to find a method of conducting offensive operations which would lead to the quickest and most complete destruction of the enemy and to the attainment of the final goal of the operation. In the search for such methods, Soviet military-scientific thought, as is generally known, even in 1935 worked out the theory of combat in depth, which consisted in essence of simultaneous attack against the enemy to the entire depth of his combat formation. However, the firing, striking, and maneuvering capabilities of the troops of that time could not ensure the practical implementation of this theory. Nor was this problem resolved in World War II operations. Only now, in connection with the rapid growth of firing, striking, and maneuvering capabilities of the armed forces have conditions appeared for the practical solution of the problem of the simultaneous destruction of the enemy to the entire depth of his operational formation.

It is a fact that modern nuclear, and especially nuclear/missile, weapons can be successfully employed for the delivery of sudden, long-range, and crushing strikes against the enemy to the entire depth of his operational formation, and even against his strategic reserves.

The development of airborne forces and military-transport aviation, now as never before, ensures the dropping and combat operations of front troops not only in the immediate but also in the deep rear area of the enemy on the most important axes and in the decisive areas.

The increased mobility of ground troops, ensuring their advance at a speed of 100 kilometers and more, permits them to gain the enemy's operational-strategic rear quickly.

More than was true in the past, modern aviation ensures effective support and cover for troop combat operations to the entire depth of their offensive.

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Thus, the increased firing, striking, and maneuvering capabilities of modern armed forces fully ensure the conduct of a front offensive operation in greater depth and completely resolve the problem of simultaneous destruction of the enemy grouping to the

entire depth of its operational formation. Any other method of conducting a modern offensive operation which results in the consecutive, methodical advance of troops, is a step backward. It fails to exploit all the firing, striking, and maneuvering capabilities of modern troops, and permits the enemy to maneuver with ease in his operational rear and to create groupings for the launching of strikes against the attacking troops. The simultaneous destruction of the enemy can be accomplished through the annihilation and prolonged neutralization of his groupings and objectives on the axis of the main strike and on other axes, in the tactical and operational zones, at least to the depth of the immediate task of the front. The main role in the simultaneous destruction of the enemy grouping in the entire depth of its formation is carried out by the missile troops both of the front and of strategic designation.

Missile troops, in coordination with aviation, employing nuclear and chemical ammunition, destroy and neutralize enemy nuclear weapons at bases, depots, launching sites, and airfields, as well as his troop groupings and control centers. The missile troops, as a rule, deliver the most powerful nuclear strike at the beginning of the offensive. In the course of an offensive operation, the missile troops deliver nuclear strikes against newly discovered enemy targets and objectives opposing the attacking troops.

Chemical weapons are also employed, mainly against objectives which were not subjected to nuclear strikes, in order to ensure the most complete destruction of the enemy and to preclude the possibility of his counteraction and maneuver.

However, the transformation of nuclear strikes into the final destruction of the enemy, together with the seizure of his territory, requires the immediate carrying out of airborne landings and the swift advance of motorized rifle and tank troops in coordination with aviation.

Airborne forces quickly occupy the most important areas on the axis of the main and of other strikes of the attacking groupings in

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coordination with the missile troops and front aviation; they complete the destruction of the enemy in these areas and prevent the approach of his fresh large units from the rear and from unattacked sectors, thus ensuring the swift advance of the troops into the operational depth of the enemy. With this goal, tactical airborne landings can be employed by armies at a depth of 100 to 200 kilometers from the enemy's line of defense, while operational airborne forces of a front can conduct combat operations at a depth of 200 to 400 kilometers and more. The basic conditions which ensure the success of airborne forces operations are the suddenness and rapidity of the landings, and also the aggressiveness and resoluteness of the operations during the execution of the combat tasks. However, for the reinforcement of operational airborne forces it will sometimes be necessary to increase their forces through the transfer by air of motorized rifle units and large units.

The motorized rifle and tank troops of a front, in coordination with missile troops, aviation, and airborne forces, by skilfull maneuvering and by not becoming engaged in protracted fighting with the enemy, can quickly overrun his tactical and operational zones, swiftly reach the area of the combat operations of the tactical and operational airborne forces, accomplish the immediate task of the front, and continuously develop the offensive to the accomplishment of the goal of the front operation. Artillery, and above all rocket artillery, destroys and neutralizes the enemy's nuclear installations, his weapons, and his personnel. In the course of the offensive, the artillery destroys and neutralizes newly discovered targets, objectives, and revived centers of enemy resistance.

The speed of the troop advance, especially on the axis of the main strike, must be not less than 100 kilometers per calendar day.

Aviation, in coordination with the missile, airborne, and ground troops of the front, destroys and neutralizes enemy nuclear weapons and troops, against whom missile strikes and artillery fire may not be sufficiently effective. It also supports and covers the attacking troops, destroying newly discovered (mainly mobile and small-sized) objectives and also enemy air targets.

It is obvious that such a method of conducting an offensive operation of a front in which all the combat capabilities of the attacking troops are used to the maximum, significantly hastens the destruction of the enemy and the attainment of the goal of the operation. However, it should be emphasized that this method of conducting an offensive can be successfully carried out only with the mass use of nuclear weapons, and even then only when the enemy troop groupings and objectives marked for destruction, are well reconnoitered and their coordinates precisely determined. Therefore, the method of the simultaneous destruction of the enemy to the entire depth of his operational formation can be used most often at the beginning of an offensive operation. Under other conditions, when the enemy groupings and objectives are insufficiently reconnoitered, and when the launching of a simultaneous strike against them to their entire depth does not appear possible, the front offensive will be conducted by means of the successive destruction of enemy groupings and objectives in accordance with their discovery and the precise determination of their coordinates. Such a method of conducting an offensive naturally cannot ensure the most complete utilization of all the firing, striking, and maneuvering capabilities of the attacking troops and it permits the enemy to maneuver in his depth with the aim of delaying and disrupting our offensive. Most commonly, the goal of the offensive front operation will be attained as a result of a combination of the methods of simultaneous and successive destruction of the enemy, with the first of these methods having the decisive role.

It should be emphasized that these methods of conducting an offensive front operation may be successfully employed for the implementation of any concept of the operation.

The grouping of troops in the offensive operations of the front consists not only of their operational makeup but also must provide for various procedures of the large units and units--marching, approach march, and combat. At present one cannot conceive of a front grouping solely in terms of the formation of the individual armies of which it is composed, without those formations of large units and units which, properly speaking, accomplish the operation.

A troop grouping of a front and of armies, depending upon their tasks, can be varied, but must always and to the greatest extent possible, ensure the successful execution of these tasks. While the immediate task of the front is carried out through the launching of a simultaneous strike against the enemy in the entire depth of his operational formation, the front troops must strive to execute this task in one grouping. As a rule, in such a grouping the front troops will be formed into one echelon, following which the necessary reserves must be provided. It is impossible that in the course of the execution of the immediate task of the front, the situation will require changes in the grouping of the troops, but in this there should be no large-scale regroupings of troops.

The rapid and complete destruction of the enemy to the entire depth of the immediate task of a front must ensure to the grouping of troops a continuous and swift advance right up to the execution of the subsequent task.

When the immediate task of a front is to be carried out through the delivery of successive strikes against the enemy, and his complete destruction requires more prolonged and intensive combat, the most advisable grouping of a front may be formation into two echelons. In this case the second echelon of the front is usually committed to battle at the beginning of the execution of the subsequent task of the front.

The most important place in the modern grouping of a front is held by missile troops and delivery aircraft for nuclear weapons. Therefore the creation of a front grouping must begin with the determination of the siting areas for missile large units and units, and also for the airfields of delivery aircraft, and only after this can the assembly and departure areas of other front troops be laid out. Nothing must reveal the siting areas of missile troops or the airfields of nuclear delivery aircraft.

The departure areas of airborne troops must be occupied immediately before the beginning of airborne operations.

As regards tank and motorized rifle large units, in the interest of achieving concealment of the offensive, they can pass through their departure areas without stopping, or else occupy them for the minimum time necessary for the deployment of artillery in firing positions, the inspection of equipment, and the refueling of tanks and vehicles.

The security of a front troop grouping from enemy nuclear strikes, as is generally known, is largely ensured by its dispersal. However, even in a dispersed state, troops must not be located for a prolonged time in the same areas. In this connection, now to a greater degree than previously, emergency areas, firing positions, and airfields must be provided, and also the arrangements for the concealed movement of the troops must be more carefully worked out. At the same time, the importance of counterintelligence in the areas of troop disposition, especially of missile troops, and on the routes of their movement has increased.

But skill consists not only of the creation of the most advantageous grouping of troops in a departure position, even though this is very important, but also of maintaining its advantages during the course of the entire offensive, taking into consideration that an enemy employing nuclear weapons can at any moment suddenly introduce large, unfavorable changes in the front troop grouping if appropriate measures are not taken by our side. The continuous maintenance of a favorable grouping of the attacking troops can be achieved through the timely delivery of sudden and crushing nuclear strikes against the enemy, thus exerting great influence on the course of the offensive, and also through the skilful maneuvering of the attacking troops. But such means of maintaining an advantageous situation and the superiority of our grouping will provide the necessary effect only if the command and staff of the front, in their planning and direction of the offensive operation, prudently determine the most favorable grouping of troops not only in the departure position but also during the crucial moments of the offensive, and also toward the end of the first and each of the subsequent days of operation.

Let us examine the problem of the influence of nuclear weapons on the scope and nature of the offensive operations of a front.

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The width of a front offensive zone. It is known that under conditions of the mass use of nuclear weapons, the number of large units of ground troops in the composition of a front is reduced and their operational density considerably diminishes. In connection with this, the width of the front offensive zone now will ordinarily be determined by the established operational density of the troops, which in its turn will depend on the amount of nuclear ammunition alloted to the front. Under conditions of the mass use of nuclear weapons, this density will scarcely be higher than 20 kilometers per division. With such an operational density of the troops of a front, an offensive zone 300 km wide, e. g., may have 15 division, besides the necessary reserves. But if there are 20 divisions in the composition of a front, then for the same operational density of troops the width of the zone of its offensive will be 400 kilometers.

Thus, depending on the quantity of nuclear weapons alloted for the operation, the number of divisions in the composition of a front and the established operational density of troops, the width of a front offensive zone may now vary within the limits of 300 to 600 kilometers. A further increase in the width of a front offensive zone may cause considerable complications in the control of the troops. In determining the width of a front offensive zone, the relative strength of forces and weapons should not be forgotten and, even more, the enemy should not be permitted an overall superiority of them. Together with this, it is necessary to take into consideration that in the development of an offensive the front zone will widen, and toward the end of the operation its width may have grown approximately one and one-half times.

The depth of a front offensive operation is usually determined by the goal of the operation and by those installations and areas which are to be taken. Under the conditions of the mass use of nuclear weapons, including those of strategic designation, an offensive operation of a front in the initial period of a war can be carried out to a depth up to 800 kilometers and more, since at this depth the enemy's groupings and his most important installations can be destroyed as a result of nuclear strikes. Under conditions where a front does not have at its disposal the capability of delivering mass

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nuclear strikes at such a distance the depth of its offensive operations will, of course, be less.

The rates of advance of the troops can be varied and they depend upon the extent of destruction of the enemy and also on the preparation of the attacking troops for rapid negotiation of natural and artificial obstacles and obstructions in the terrain. Under conditions of the mass use of nuclear weapons and the increased mobility of troops, their advance at a rate of 100 kilometers and more in a calendar day is quite possible. However, in order to realize such rates of advance of the troops, it is necessary to inflict such destruction on the enemy that he would be deprived of the capability of offering serious resistance to the attacking troops or of creating radioactive contamination of the terrain in the zones of the offensive. Under other conditions, chiefly with a lesser degree of enemy destruction, the rates of advance of the front troops naturally cannot be as high.

The duration of offensive operations of a front at the highest indices of their scope may reach 8 to 10 calendar days. With lower indices of scope of the offensive operations of a front, their duration will be considerably greater.

Thus, under the influence of the mass use of nuclear weapons and the increased mobility of troops, not only have the indices of the scope of the offensive operations of a front changed, but also their nature. Now the troop advance, as a rule, will be carried out in wide zones, on separate and disconnected axes, by the method of simultaneous and successive destruction of the enemy. The advance of the troops will develop at high rates in order to penetrate swiftly and rapidly into the operational-strategic rear of the enemy. However, on account of the perfectly natural tendency of the enemy, by extensive use of nuclear weapons, to accomplish his tasks also by means of an advance, the most frequent type of combat operation of troops in modern offensive operations will be the meeting battle and meeting engagement.

The high degree of maneuver in a modern offensive operation almost completely precludes the penetration of the enemy's defenses in its past meaning, since his defenses will not have the continuous

fronts and the high density which they formerly had.

While, up to now, this article has discussed the overall influence of nuclear weapons on the principles of offensive operations of a front, we would now like to emphasize its special characteristics, the radioactive contamination of the terrain. It should always be taken into consideration that troop personnel operating on terrain contaminated by radioactive substances can be disabled as a result of radiation sickness.

It is known that this casualty factor is most insidious, since it does not have any apparent external symptoms and can be detected only with dosimetric instruments. The greatest radioactive contamination of the terrain endangers troop operations, and occurs with nuclear surface bursts. Radioactive contamination of the terrain in areas of nuclear air bursts and in the path of movement of a radioactive cloud is considerably less and is less dangerous to troop operations.

It also should be kept in mind that the fallout of radioactive dust, and consequently, the level of radiation on the contaminated terrain, will vary. As regards the duration of radioactive contamination, if at ground zero it is lethal for a considerable period of time, the levels of radiation in the path of the cloud gradually diminish and cease to be lethal.

It is obvious that as a rule nuclear surface bursts will be employed against troops and installations located in the operational depth under favorable operational and meteorological conditions. Wherever these conditions are favorable for the attacking troops of a front, they naturally preclude the possibility of enemy nuclear surface bursts and, conversely, wherever the front troops, because of operational and meteorological conditions, cannot employ nuclear surface bursts, they will be advantageous for the enemy. Hence, it can be assumed that during the course of an operation up to 25 percent of all nuclear warheads of both sides can be employed with surface bursts.

Let us suppose that in the zone of the immediate task of a front, equal to 120,000 square kilometers, both sides, for the fulfillment of their combat tasks, use up to 200 different nuclear warheads, or half the total supply allotted to the operation, of which 25 percent, or 50 nuclear warheads, involve surface bursts. If, for example, 25 nuclear warheads have a yield of 10 kilotons and each of the remaining 25 of 100 kilotons, then in the general area of radioactive-contaminated terrain, equal to approximately 60,000 square kilometers, almost 9,000 square kilometers of terrain will be contaminated with dangerous levels of radiation from 50 roentgens and higher. Furthermore, it should be taken into account that with the mass use of nuclear warheads overlapping of the zones of radioactive-contaminated terrain and the creation of dangerous levels of radiation will inevitably occur, where the single bursts would not have been dangerous.

Even from this estimate the great significance of the casualty factor which arises as a result of the radioactive contamination of the terrain, and its influence on the course of the operation, are evident. However, it should be taken into consideration that the data of this estimate are more likely too low than too high, since in reality in the zone of the immediate task of a front both sides can employ more nuclear warheads with surface bursts and with a more powerful charge. Furthermore, in the present estimate no account has been taken of the fact that the zones of radioactive contamination can be especially designed to follow water and other natural boundaries, and to cross the axis of the troop offensive with the task of delaying the enemy or stopping his offensive. It should be kept in mind that the zones of radioactive contamination are not distributed uniformly throughout the whole of the zone of the front offensive, but as a rule will be created on the axis of the main and other strikes and will reach the greatest extent and the most dangerous levels of radiation there. In short, radioactive contamination of terrain has become a most important factor of operational-strategic significance. Without constant prognosis of the radiation situation, continuous study of it and reconnaissance of the probable zones and strips of radioactive contamination, and also without the prudent adoption of measures for the immediate withdrawal of troops from these zones

and strips or for their rapid crossing, the success of offensive operations cannot be guaranteed. With this aim, a chart of the radiation situation must be kept constantly in all staffs, especially in the operational staffs. The commanders of troops and the commanding officers of large units and units are obliged to know the radiation situation at all times and to take account of it in their decisions, orders, and operations.

Neglect of these requirements in a combat situation, or insufficient attention to them, may lead to unnecessary mass troop loss and to a deceleration of the rates of their advance.

The withdrawal of troops from the zones of radioactive contamination prior to the beginning of the operation may take place along the shortest axes on the initiative of the commanding officers of large units immediately after the detection of contamination, but crossing through such zones and strips during the course of an offensive operation, as a rule, will be carried out only on the decision of the commander of the front troops or with his sanction in order not to upset the plan of the operation.

The methods of crossing through these zones are determined by the axes, the dimension, and levels of radiation. If these zones do not completely intersect the axis of the troop advance and are not too extensive, then the most advisable method of crossing through them may be a detour not requiring a great deal of time.

When the zones and strips of radioactive contamination intersect the axes of the troop advance, and bypassing them does not appear possible, crossing through such zones and strips must be carried out by forcing them along routes with the lowest levels of radiation. Under conditions where high levels of radiation exist on all probable routes across the zone of contamination, it is advisable that the forward movement of troops be postponed until some abatement of these levels, but with the impossiblity of doing this, they immediately force the zone with tanks. Crossing through zones of radioactive

contamination must be carried out at increased speeds, with increased distances between vehicles, subunits and units and with the best use of means of individual protection.

In isolated cases, depending on the situation, continuous zones of radioactive contamination can be crossed by small units of troops in helicopters.

Furthermore, one cannot but consider the necessity for complete medical processing of the personnel of units and large units, and also the decontamination of their armament, equipment, and transport immediately after the troop crossing of zones and strips of radioactive contamination. Even with the thorough preparation of troops, medical processing and decontamination will require considerable time, but as is known, an offensive penetration, especially under modern conditions, cannot tolerate any interruption. Therefore, the problem of the continuity of the offensive under modern conditions acquires especially important significance. Its solution depends mainly on the ability of the troops to cross the zones and strips of radioactive contamination rapidly and without great losses. Furthermore, for a more complete solution of this problem, it is necessary to envisage the swift maneuver of reserves from the rear to bypass the zones and strips of radioactive contamination and subsequently to emerge on the axis of the main and other strikes, frequently in conjunction with the dropping of forward units on these axes.

The views stated in this article are an attempt to examine briefly the influence which is exerted by the mass use of nuclear weapons (having due regard for other qualitative changes of troops) on some of the principles of modern offensive operations of a front.

In a short article, naturally, not all the principles of offensive operations could be examined. Therefore, such important questions as the influence of nuclear weapons on the support of front troops and on coordination, control, etc., were not touched on in this article.

It should also be taken into consideration that further development of nuclear weapons will without doubt reinforce the firing, striking, and maneuvering capabilities of troops, and consequently, will bring about appropriate changes in the principles of modern offensive operations of a front.

A correct understanding of the influence of nuclear weapons on the principles of modern offensive operations of a front is undoubtedly necessary for the successful practical work of generals and officers regarding the preparation and conduct of these operations.

In the development of military-scientific thought in this and other directions of the growth of the military art, and also in the realm of the structure of the armed forces, we must not only remember but also persistently carry out, the orders of the Minister of Defense of the USSR, Marshal of the Soviet Union R. Ya. Malinovskiy to the effect that "at the present time, when our Armed Forces are at a critical stage of development, further thorough working out of military doctrine, of the theory of the military art, and of other questions of a military nature has acquired special significance. We must clearly realize that without marked improvement in military-theoretical work, practical errors in the building up of the Armed Forces are possible."[1]

[1] The All-Army Conference of Secretaries of Primary Party Organizations, Military Publishing House, 1960, page 20.