MEMORANDUM FOR: The Director of Central Intelligence

SUBJECT: MILITARY THOUGHT (USSR): Combat Operations in Mountainous Terrain

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 characterizes mountain operations and relevant exercises conducted in the Transcaucasus Military District. It attempts to explain the effect of nuclear weapons on such operations. The author asserts that troops in his military district have special training in collaboration with airborne units and in mountain-climbing. Some increases in artillery allocation are recommended. This article appeared in Issue No. 3 (88) for 1969.

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

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MILITARY THOUGHT (USSR): Problems in Achieving High Rates of Advance in a Mountainous Theater of Military Operations

SOURCE: Documentary.

Summary:

The following report is a translation from Russian of an article which appeared in Issue No. 3 (88) for 1969 of the SECRET USSR Ministry of Defense publication Collection of Articles of the Journal "Military Thought". The author of this article is Colonel-General S. Kurkotkin. This article characterizes mountain operations and relevant exercises conducted in the Transcaucasus Military District. It attempts to explain the effect of nuclear weapons on such operations. The author asserts that troons in his military district have special training in collaboration with airborne units and in mountain-climbing. Some increases in artillery allocation are recommended.

Comment:

Col.-Gen. Kurkotkin became Commander of the Red Banner Transcausasus MD in 1967, Commander-in-Chief of the Group of Soviet Forces in Germany in 1971, and Deputy Minister of Defense, Chief of Rear Services of the Armed Forces, in 1972. He has written many articles about the interdependence of the Soviet economy and the military; the significance of CEMA for military power; and the need for the reorganization of rear services and war reserves. His more recent articles appeared in Starshina Serzhant, No. 5, 1972; Sovetsky Voln, No. 19, 1972; and Tyt i Snabzhenie, No. 10, 1972.

Military Thought has been published by the USSR Ministry of Defense in three versions in the past -- TOP SECRET, SECRET, and RESTRICTED. There is no information as to whether or not the TOP SECRET version continues to be published. The SECRET version is published three times annually and is distributed down to the level of division commander.
Problems in Achieving High Rates of Advance
In a Mountainous Theater of Military Operations
by
Colonel-General S. Kurkotchkin

Even though there is a great limitation on the maneuver of troops in a mountainous theater of military operations, high rates of advance are necessary to forestall a defending enemy in mounting efforts, and to deprive him of the opportunity of organizing resistance along favorable lines in depth. Otherwise, he will be able to hold key positions for a long period of time with comparatively small forces, and the attacking force will face the necessity of successively breaking through (gnawing through) one defensive position after another.

Unquestionably nuclear weapons are the decisive means of breaking through enemy defenses. However, one must not disregard the fact that these weapons are a two-edged sword: to the same degree that they clear a path for the attacking troops, they aid the defending troops to block it. Therefore, one must seek the creation of superiority over the enemy not only in the effectiveness of the use of nuclear weapons but also in the methods of actions of troops, that is, relying on the existing military-technical base (which at the present time is roughly equal to that of the enemy), one must find those methods of using our forces and means that most fully correspond to actual conditions and that make it possible to outstrip the enemy in speeds of maneuver. Speaking of the necessity of achieving high rates of advance, one must have in mind, first of all, their relative magnitude, expressing the degree of superiority over the enemy in the ability to maneuver in general and in each specific situation. Under present-day conditions one must consider as the minimum criterion of rate one which permits the timely exploitation of the results of one's own nuclear strikes or--and this amounts to the same thing--the forestalling of the corresponding enemy countermaneuver.

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However, not relative but completely specific magnitudes are required for operational planning. For this, first of all, there is required consideration of: all the typical criteria of the last war, the capabilities of new combat means, conditions in the theater of military operations, and the experience of exercises during recent years. In evaluating this experience, extreme care must be exercised to scrupulously eliminate all subjective impositions, which, as a rule, reflect the views of those who worked out the aims of the exercises and directed them. After reviewing all the pros and cons, we came to the conclusion that the rates of advance in the mountains can reach 25 to 30 kilometers in 24 hours during a non-nuclear period of operations and 35 to 40 kilometers in 24 hours in a nuclear period.

In present-day operations, the constant maintenance of high rates of advance requires, as never before, the delivery of powerful simultaneous strikes throughout the entire depth of the enemy defense. In the mountains the need for such strikes is most obvious. During combat actions along individual, low-capacity axes that can be crossed with comparative ease, frontal clashes of the sides often occur. This eventually leads to a dying down of the advance. Therefore, in the mountains, where there are more than enough favorable defense lines, methods of operations that eliminate the necessity of gnawing through each successive enemy defensive position are required.

Simultaneous destruction, breaking into the defense, and exploitation of success to a substantial depth can be achieved if, immediately after massed nuclear strikes, operational and tactical airborne forces are landed in the enemy rear. This compels the enemy to disperse his efforts, imposes what is actually a new combat front on him, and makes it possible to break up his groupings by delivering strikes from various directions and to defeat them in detail. As a matter of fact, simultaneous strikes throughout the entire depth of the enemy tactical order of battle may be a combination of massed nuclear strikes with an offensive from the air aimed at the seizure of the most important areas and key points of the mountain terrain in the enemy rear that are part of the overall system of defense.
However, since the troops do not yet have a sufficient quantity of means to airlift considerable forces to the enemy rear, the attack from the front continues to be important, although its nature is being somewhat changed. In this connection, the speed of the breakthrough, on which to a large degree the rate of the advance as a whole depends, acquires special importance, particularly during the non-nuclear period of an operation, when the troops spend a considerable portion of their time and efforts in breaching prepared lines of defense.

Until the introduction of nuclear weapons, the high-speed breakthrough of the defense was always considered the number one problem. The most prominent military theorists were concerned with its solution. However, they did not succeed in fully solving this problem, since the quantity of means available were not adequate to close the gap between fire capabilities and movement capabilities. This gap still exists, but it has been substantially reduced. Very frequently, the enemy has virtually no time available for the taking of countermeasures—the fire strike is followed immediately by an attack made by the main mass of forces and means comprising the attacking echelons. Subsequent searching at reducing this gap must, in our opinion, be carried out in the direction of increasing as much as possible the independence of the attacking echelons.

Under present conditions attacking echelons can achieve a high degree of independence by the inclusion of tank units. The experience of the troops of the Red Banner Transcaucasus Military District demonstrates that when the driver-mechanics are well-trained, tank units and subunits display high battlefield mobility even in mountainous terrain. This is substantially increased by the appearance of infantry combat vehicles and by the continually expanding use of helicopters over the battlefield. If these forces are closely coordinated during the breakthrough, the attack can be swiftly transferred into the depth, accomplishing a substantial portion of the tasks from the march.

High rates of advance depend on the width of the area of the breakthrough and the density of forces and means that are concentrated there. It is our opinion that when nuclear weapons are not being used, the minimum width of the area of the breakthrough is that which exposes the entire enemy order of battle to a single attack and consequently makes it
Impossible for the enemy to close the created breach before the attacking forces succeed in mounting an attack. Depending on the stability of the enemy defense system, the groupings, and the density of forces and means, the width of the breakthrough areas of divisions, for example, may fluctuate within the limits of from three to four kilometers.

If terrain conditions permit, one must consider as the most favorable an attack delivered by adjacent flanks of two divisions; this makes it possible to create the maximum densities of forces and means and to break through the defense of the enemy on a front of up to eight kilometers. In this case, the efforts of the two divisions are not simply added together—the power of a combined attack in a single breakthrough area will be considerably higher. This is because the stability of the defense is more quickly reduced by a unified simultaneous attack in one area than by the delivery of attacks on the same front, but on noncontiguous axes.

In order to achieve a rapid breakthrough it is advisable to combine the attacks of troops from the front with simultaneous actions of part of the forces on the flanks and to the immediate rear of the enemy (that is, flank detachments and special detachments and also tactical airborne landing forces, which, in the future, will be supplemented by airborne assault detachments). This immeasurably increases the strength and effectiveness of the overall attack, since it expands the front of action, which will lead to a dispersion of enemy efforts and will compel the enemy to repel attacks from directions from which he doesn't expect an attack. The actions of these forces must paralyze the entire system of defense, especially in the area of passes and mountain passages, so that the enemy is given no opportunity to destroy them.

High speeds of breakthrough and advance, on the whole, depend on the ability of the troops to promptly exploit the results of nuclear strikes on the enemy, which, in turn, is determined by their ability to sharply reduce the gap in time between the delivery of the nuclear strikes and the movement of the troops out into the area of destruction, which under conditions of mountain terrain is of considerable magnitude. As has already been pointed out above, the most radical method of accomplishing this is by
making extensive use of tactical and operational airborne landing forces, landed after the nuclear strikes. However, if their actions are limited to merely holding the area of the breach, it is doubtful that they will substantially contribute to an overall increase in the rates of the advance. Consequently, in order to have direct impact on the course of the breakthrough of the operational defense, the airborne landing forces must be given more active tasks—to aid the troops attacking from the front to rout the opposing groupings by delivering meeting attacks. As was demonstrated by the Dnepr maneuvers and by exercises conducted in our military district, it is advisable, in a number of instances, to carry out airborne landings at a depth of 120 - 150 kilometers from the front line and in several areas.

The timely exploitation of the results of nuclear strikes against the enemy is not limited to the use of airborne landing forces. The activities of the advance detachments assume great importance. Instructive in this respect is the experience gained from exercises conducted in the Red Banner Transcausasus Military District, in which, as a rule, the offensive following the initial nuclear strikes (especially in the areas of mountain defiles) was conducted by the advance detachments without deployment of the main forces of the divisions. The latter retained their freedom to maneuver on those axes where one could show success. In those instances where the actions of the advance detachments from the march were unsuccessful, the main forces moved into battle, using flanking and enveloping movements and only delivering attacks from the front with a portion of their forces.

The actions of advance detachments become particularly effective if tank units are assigned to them. Without becoming engaged in battle, they rush into the depth of the enemy defense and forestall the maneuver of his reserves, seizing key points in the mountain terrain and important portions of defensive positions prepared in depth and retaining them until the arrival of the main forces.

The flanking detachments play a large role in ensuring high rates of advance and, even though their maneuvering is very time-consuming because of the existence of many areas of adverse terrain, the results of their actions
unquestionably affect the rates of advance if they are dispatched in time and to a considerable depth.

In the struggle to achieve high rates of advance, allowance must be made for one unique characteristic of mountain terrain: in the mountains, to a greater degree than anywhere else, within a comparatively limited space, relatively accessible areas alternate with areas that are relatively difficult of access. Under these conditions, the task of the troops when they reach accessible areas is to take maximum advantage of favorable conditions and develop high rates of advance in order to compensate for the unavoidable reduction of rates that occurs in areas that are difficult of access.

It is also extremely important that commanders and staffs foresee measures to exploit success even before they reach the accessible areas. First of all, they must destroy the enemy reserves that are moving forward for the delivery of counterstrikes and counterattacks on terrain permitting extensive maneuvering of forces and means. At the same time, our own reserves must be committed to battle, and highly mobile advance detachments, which are capable of engaging in extended actions while separated from the main forces of the large units, must be sent forward. The timely transition to the pursuit of the enemy so as to prevent his retreat and occupation of favorable defense lines in the rear assumes great importance, and so does the skillful alternation of operation in battle formations, approach march formations, and march formations.

In order to maintain the necessary rates of advance in terrain areas that are difficult of access, it is advisable to deliver a synchronized attack upon the enemy forces that are defending areas of mountain defiles long before our main forces reach those areas. The aggressiveness of the airborne landing forces and the swift actions of the flanking detachments and their component (or independently acting) groups for reconnaissance and destruction of nuclear land mines make it possible to seize passes and other defiles while they are still undamaged.

The skillful use of nuclear weapons is of great importance to the maintenance of high rates of advance. We have in mind the correct appraisal of the special features of the mountain terrain in order to eliminate any
possibility of creating devastated areas and barriers at passes (in ravines and canyons), which would be a serious obstacle in the path of advancing troops. As a rule, in these areas it is advisable to deliver individual nuclear strikes with low-yield warheads and to execute bursts at high altitude and so that ground zero is located away from areas subject to the danger of destruction. Ground bursts are advisable to execute only when it is necessary to isolate the enemy reserves from the most important areas for an extended period of time and on axes on which an offensive would have no operational importance or would not be carried out altogether.

In areas of mountain defiles, the actions taken by fighter-bomber aircraft to ensure timely and reliable neutralizing of small targets sheltered in the folds of the mountain terrain assume special importance. Aviation becomes, perhaps, the only means capable of supporting the actions of airborne landing forces and flanking detachments in the enemy rear, especially when it is not possible to use nuclear weapons. We believe that it is possible to give the unit commanders the right to call in aircraft to the battlefield during an offensive in mountainous terrain. This would enable them to accomplish their fire tasks more effectively.

The correct choice of the axes of attacks is one of the conditions for the achievement of high rates of advance. Most often attacks should be delivered on the most accessible axes, where all arms of troops can be advantageously employed. However, the actions of the main forces of attack groupings deployed on the most accessible axes quite frequently may be neutralized (blocked) by the main forces of the enemy. For this reason, in the mountains, particularly during a non-nuclear period of operation, the absolute size of forces and means on any given axes is not as important as the degree of superiority in them over the enemy on each of the axes. In view of this, it is occasionally necessary to take action where the quantity of forces and means deployed, although relatively small, is adequate to ensure overwhelming superiority over the enemy, his rout in a short time, and swift movement out into the depth.

For developing an advance at high rates in an operation which begins with the use of conventional means of
destruction, the delivery of strikes on a limited number of axes in conjunction with extensive feinting actions on other axes has great importance. This makes it possible to mislead the enemy as to the intentions of the troops of the front (which is very important in the mountains, where the probable axes of actions are known to the enemy in advance) and provides the groupings operating on those axes with a great amount of operational-tactical independence and the capability to carry out their assigned tasks at a rapid rate and without pauses.

In carrying out combat actions in depth, it is also necessary to avoid having forces and means dispersed among all the accessible axes. They must be carefully appraised from the standpoint of accomplishing the main task and the prospects for development of combat actions. The danger of the dispersal of forces and means is caused not only by the peculiarities of the terrain but also by the deliberate actions of the enemy. For example, this is what happened to the advancing 23rd Tank Division of the German Fascist troops during the Nalchik operation in October 1942. Units of our 37th Army, retreating into the numerous ravines of the Skullstyye Mountains, drew after them units of the 23rd Tank Division. As a result, the enemy attack grouping was gradually broken down into separate, isolated groups, lost its striking power, and was forced to halt.

In order not to decrease the rate of advance, it is necessary to ascertain those enemy defense lines whose breaching will destroy his defense as a whole. Having selected the decisive axis in advance, it is advisable, right at the start, to determine which groupings of our troops should advance toward each line. In determining the necessary densities, one should proceed from the maximum quantities required to break through the most fortified enemy positions on each axis. The shifting forces during the course of an operation for the purpose of developing an advance at high rates must not be excluded.

Thus, during a war game conducted in our military district in 1967, the decision was made to transfer the main forces of the 53rd Army to the main axis. This was caused by the fact that the large units operating on that axis had lost their combat effectiveness and it did not seem possible that they could reestablish it in a short time. At the same time, a continuation of the offensive of the troops of the
53rd Army on the former axis, under the situation that had developed, could by now have no decisive influence on the overall course of the operation. The transfer of efforts to a newly opened, in-depth and more important axis enabled the front to develop an offensive without decreasing the rates.

When nuclear weapons are not employed, the troops will attempt to surround the enemy considerably more often. In this connection, the problem of how to win out the surrounded enemy in the shortest possible time arises. It becomes particularly acute in the mountains, where even small encircled enemy forces are in a position to hold areas of defiles and repel attacks by superior forces for an extended period of time. This can plug up the most important road axes for a long time and deprive the main forces of the operational formations of their opportunity for maneuver and conditions for the exploitation of achieved success at a rapid rate.

In order to prevent this, at the same time as the encircling maneuver, it is very important to deliver attacks aimed at destroying the enemy, cutting him off from advantageous lines, and forcing him away from road axes, so that he will have no opportunity to consolidate in the encircled area or to organize an all-round defense. At the same time that encircling actions are begun, it is recommended that flanking detachments and advance detachments be sent out and airborne landing forces landed to seize passes and other mountain passages and also areas of terrain and positions in which the surrounded enemy could consolidate.

To a considerable extent, high rates of advance during an offensive operation are achieved by the sustained conduct of combat actions. One of the most important conditions for the development of an operation without pauses is the delivery of attacks from the march, not only at the beginning of the operation but during all stages of it, so as to give the enemy no opportunity to take countermeasures or to stabilize his front of defense. During operations of the last war, sustained action and the consequently high rates of advance to a large extent were achieved by having large forces conduct combat actions not only by day but also by night. Under present-day conditions, since the troops are equipped with means of illuminating the battlefield and night vision devices, the...
night should be used not only for accomplishing auxiliary and intermediate tasks but also the main tasks of the operation.

To achieve a sustained advance during an operation that has begun with the use of conventional weapons, it is of exceptional importance that the greater part of the rocket troops and aviation be ready to quickly deliver the first nuclear strike. Thus, during the exercise Vesenniy a high degree of readiness of the means of destruction (up to 75 percent) was achieved by centralized planning of the first nuclear strike and by relocation of the front and army missile brigades. The planning was done with the calculation that the highest readiness (100 percent) would be at the beginning and during the most tense moments of the operation (during the breakthrough of the main defense lines of the enemy, during the threat of a counterattack, etc.).

It should be noted, however, that the employment of nuclear weapons by itself will not necessarily result in an increase in the rates of advance, especially in the mountains. To accelerate the progress of the troops, it is necessary to make extensive use of those methods which permit the most swift and thorough exploitation of the results of their nuclear strikes and the maximum possible diminution of the consequences of enemy nuclear strikes. Only in this case will the rates of advance increase from 25-30 to 35-40 kilometers in 24 hours. Further increase of them will be a rare exception, because the limited accessibility of areas located away from road axes, the possession by the enemy of a number of defense lines echeloned in depth, and the abundance of bottlenecks, localize the attack, limit the front for its action to the width of accessible areas, and allow the defenders, even with the suffering of considerable losses, to hold key positions with relative small forces for an extended period of time.

Under conditions when the threat of delivery of a nuclear strike is clear, it is advisable to step up to the maximum possible degree the combat actions of the large units of the first echelon to enable them to come into the closest possible contact with the enemy and to have the moving troops of the second echelons and the reserves move more quickly through mountain pass areas and other defiles that could be the first-priority targets of nuclear strikes.
The transition to the use of nuclear weapons will bring abrupt changes in the methods of carrying out combat actions, which to a considerable degree will be determined by the degree of destruction of both sides. Under these conditions, the achievement of a sustained advance depends on how quickly combat effectiveness will be restored.

It is customary to consider that composite detachments will be called upon to play a large role. However, in our opinion, the hopes placed upon them are very exaggerated. The problems of sustaining an advance cannot be solved by composite detachments, since their formation requires considerably more time than we now foresee in our estimates. Moreover, we have given almost no consideration to consequences of the psychological and morale effects on personnel of enemy nuclear strikes. This factor lends itself poorly to prediction and precise calculation in view of its dependence on the influence of a multiplicity of different elements of a situation which does not come into being until after the strikes of the enemy. At the same time, we agree that in certain situations composite detachments will turn out to be the only means of continuing an offensive against the even more weakened enemy forces. Under these conditions, in order to ensure the overcoming of the defense at a rapid rate, fronts, armies, and even large units, must have constantly ready and designated in advance, forces and means capable of quickly replacing large units and units of the first echelons which have lost their combat effectiveness.

A no less important problem, closely related to the achievement of high rates of advance, is the skillful use of troops under conditions of radioactive contamination. At the present time the entire question often comes down to one particular--the crossing of contaminated zones. We believe that the actions of troops under conditions of radioactive contamination involve a more intricate complex of combat efforts. This becomes particularly apparent in the mountains, where the possibilities of bypassing contaminated zones are extremely limited and the main forces of large units and even of formations are confronted with the necessity not only of crossing but also of conducting combat actions under conditions of radioactive contamination of the terrain. Therefore, planning an operation and its rates of advance, it is necessary to anticipate the radiation situation by areas and by stages of combat actions and to
work out a concept with all its indicators that considers the effect of the radiation situation on the entire course of the operation. This makes it possible to evaluate accurately the variants of employing forces and means and to select the methods of actions that best meet the situation. Incidentally, the latter can be changed, but the efforts of the troops should continue to be directed toward the carrying out of the previously assigned combat tasks. For example, the withdrawal of troops from a contaminated zone must not be merely a departure from a dangerous area but, primarily, the beginning of a maneuver to transfer efforts to a new axis or the selection of another method of actions that best meets the existing situation.

Therefore, regardless of whether the troops are directly within contaminated zones or in close proximity to them, or whether they are to cross them by air or on the ground, bypass them, or wait until the levels of radiation decrease, the basic concept must remain the continuation of the offensive and fulfillment of the tasks without decreasing the rates of advance, and not the leading of the troops to safe areas, which, incidentally, will not be so easy to find under the conditions of a nuclear war.

The possibilities for bypassing contaminated zones are extremely limited in the mountains. Bypassing the zones requires traversing considerable distances and returning troops and equipment along march routes in the opposite direction, which, with a poorly developed road network, entails enormous difficulties and losses of time. As a rule, to wait for a decrease in the levels of radiation is out of the question, since, in this case, the entire organization of the battle loses its meaning, deadlines for carrying out tasks are mixed up, systems of coordination break down, and a serious threat arises of troops being destroyed by subsequent enemy nuclear strikes.

To develop the offensive without reducing the rates, the need will arise most often for the troops to cross zones of destruction and radioactive contamination in order to exploit in time the results of their nuclear strikes. For this purpose, it is essential that at least a part of the forces be lifted across the zone by air to seize mountain defiles located on advantageous lines and to delay the approach of enemy reserves. Because of this, the main forces of the large units can carry out a large number of
tasks from the march, and units of the second echelons can be transported by air to the lines from which they will be committed to battle. All this will help to increase the rates of advance.

High rates of advance are achieved not only by a straight increase in the offensive capabilities of our troops, but also by actions aimed at decreasing the maneuver and combat capabilities of the enemy. To do this, it is necessary to deliver strikes on his routes of communication and directly on his reserves. While this task is carried out with comparative ease under the conditions of a nuclear war, during an operation employing conventional weapons it becomes a complex problem requiring efforts of arms of troops and special troops, coordinated in time and place.

In our opinion, the main means for accomplishing this task will be the front air force. Operational and tactical airborne landing forces, flanking detachments, and special sabotage groups may be extensively used to delay the advance of enemy reserves. Destroying or holding areas of mountain defiles, they are in a position to delay the advance of enemy reserves for many hours or even days and, by doing so, to wreck his operational concept. In the event the enemy should succeed in getting his reserves to the battlefield, to maintain our high rates of advance, it is very important to deprive them of the opportunity of carrying out their attack functions and to force them into passive actions (for example, into the defense of unprepared lines), that is, to engage them in battle prematurely.

The most decisive method of routing the enemy, ensuring development of the advance at an undiminished rate, is a meeting attack following a massed nuclear strike. It is advisable to prepare it under cover of the units operating forward, from behind their flanks, and to aim for a considerable depth so that it falls on not a part of the enemy forces but on the entire counterattack grouping. It is very important to seize the moment when the enemy has exhausted his striking power and to attack him before he succeeds in consolidating his position and organizing his fire plan.

The enemy desire to occupy and hold intermediate defensive lines with forces of approaching reserves or retreating units must be frustrated by strikes of nuclear
means and aircraft and by preemptive actions of advance and flanking detachments and operational and tactical airborne landing forces, aimed at seizing and holding the most important sectors on these lines. The actions of these forces and means will be especially effective if tank regiments, reinforced by motorized rifle subunits and antitank artillery, are designated as the advance detachments of the divisions.

The achievement of high rates of advance depends on the timing of the commitment of the reserves of the front to battle. It must be done at the turning points of the operation, after the large units of the first echelon, having carried out their assigned tasks, create the conditions for wide-scale maneuvering actions. Otherwise, the advance and deployment of the reserves will take place under restricted conditions for maneuver, which will force them to assume responsibility for a portion of the tasks of the first echelon, and the attack will lose its force and will not obtain rapid development into the depth.

The commitment of the second echelons and reserves to battle during an operation being carried out without the use of nuclear weapons is one of the most important moments, causing a decisive turning point in the course of the battle and determining its further development, because the reserves--the single most powerful means in the hands of the command--are capable of changing the course of the combat actions in the desired direction.

Considering this, the front reserves should be positioned and moved forward at somewhat lesser distances behind the large units of the first echelon than under conditions when nuclear weapons are employed. They must not be separated from the troops of the first echelon by distances greater than can be covered in one night. However, at the same time, they must not be brought excessively close to the forward edge of the battle area, since in the mountains the only routes and road junctions for maneuvering may be in the rear, and the large units of the reserves, denied the possibility of maneuver toward the flanks, will be forced to deliver frontal attacks on a narrow front. The degree of dispersal of the second echelons and the reserves are to be dispersed should be determined in each specific case, based upon the nature of the tasks being carried out and the effect of the terrain on...
the maneuver possibilities both of our troops and of the enemy.

The rates of advance of offensive operations to a large extent depend on the degree of protection of the routes of communication. In the mountains, where there are many bottlenecks and vulnerable targets, the necessity of protective measures becomes especially acute. Their accomplishment becomes one of the most important problems which the front leadership has to constantly solve.

The struggle on the routes of communication can become extremely intense because the enemy has the possibilities of employing diverse forces and means simultaneously and operating from directions from which his attacks are not expected. To repel the enemy attacks, the front is required to enlist a variety of forces and means capable of carrying out tasks of diverse nature under difficult conditions. Considering this, we believe that the problem of protecting the routes of communication cannot be solved in isolation from the overall problems of guarding the rear. The organization of the struggle with the enemy situated in the rear of our troops cannot be limited to the carrying out of individual, partial measures. It must become the permanent function of an organizationally officially constituted service, responsible for guarding the rear in general and the routes of communication in particular.

Enemy nuclear and aircraft strikes constitute the greatest threat to routes of communication and to the troops advancing along them. Therefore, reliable cover from the air for routes of communication is one of the most important conditions of protection. It must be accomplished both within the overall air defense system of the front and by the assignment of special antiaircraft missile and artillery units. For example, during exercises conducted by us, special antiaircraft missile units were assigned to cover the routes of communication in the vicinity of mountain defiles along the axis of the main attack of the front. In addition, fighter aircraft were assigned to continuous duty, particularly in those areas not covered by antiaircraft missile units. Moreover, the means of the Air Defense of the Country were assigned a substantial portion of the tasks, particularly during the first operation. The antiaircraft defense of the routes of communication were also reinforced by the organic means of the divisions and the regiments.

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Special tasks are given to the forces and means assigned to the traffic control service on routes of communication, which must not be confined to traffic control and must accomplish active tasks in the struggle with enemy forces in the areas adjacent to road axes. It is desirable that it possess highly mobile forces and means, making it possible to perform duty along the routes.

Of great importance for the protection of routes of communication is the timely consolidation of pass areas, road junctions, and commanding heights adjoining routes, seized in the course of the operation. The presence of permanent garrisons in these areas substantially strengthens the system of defense against airborne landings in the rear and safeguards the viability of the routes of communication. Uninterrupted movement along these routes also depends to a large extent on: the preparation of tactical routes between them, the presence of bypasses in the areas of mountain defiles; the capability of the troops for more extensive use of dirt roads and country roads; and also the camouflaging and skillful dispersal.

All arms of troops are used in carrying out combat actions in the mountains. However, the effectiveness of their employment depends to a large extent on the suitability of their organizational structure to the peculiarities of actions conducted in mountainous areas. Bodies of troops should contain units and subunits, capable of accomplishing specific tasks independently while separated from the main forces for an extended period of time. The existing organizational structure of the motorized rifle division (established for the southern areas), with appropriate training of its subunits and units, meets this requirement on the whole. For example, in our military district for a number of years already, some subunits have been trained for actions as part of airborne landing forces. In addition, one company in each battalion is instructed in mountain climbing.

As the experience of our exercises has shown, the division needs considerable strengthening of its artillery to increase its combat independence. We believe that it should have as a minimum an artillery regiment consisting of three battalions and, in the motorized rifle regiments, a howitzer battalion. It is advisable to include a 120-mm
mortar battery in the motorized rifle battalions and 82-mm mortar platoons in the motorized rifle companies.

A very important condition for increasing fighting power of large units and units operating in the mountains is the inclusion in their composition of: combat and transport vehicles with high cross-country capability, self-propelled guns and mortars which are air-transportable, and also helicopters equipped with systems of missile, gun, and other armaments. Extensive use of flying vehicles (letatelnyy apparaty) as combat means will make it possible to make the offensive from the air one of the most important forms of actions in the modern battle and operation.

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The methods of achieving high rates of advance are not limited only to those set forth here. Only individual problems arising primarily from the specific nature of a mountainous theater of military operations have been discussed in the article. A number of the proposals that we have made require further research and actual testing during operational and combat training.

The author believes that he has accomplished the task he set himself if he has succeeded in attracting the attention of the readers of this journal to the problems touched upon and given them a basis for fruitful discussion.