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MEMORANDUM FOR: The Director of Central Intelligence

FROM : William W. Wells
Deputy Director for Operations

SUBJECT : MILITARY THOUGHT (USSR): Certain Questions of the Development of Soviet Military Art from 1953-1960

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 summarizes the main trends in the development of Soviet military art in the 1950's, which saw the introduction of nuclear weapons into all of the armed forces branches and the continued improvement of combat equipment. The Strategic Rocket Forces were established in this period and the other branches underwent considerable changes, for example, the appearance of air defense troops in the Ground Forces, which necessitated major revisions in both strategic and tactical military theory. The concept of the strategic offensive had to be adapted to combat with nuclear weapons, while defense was not yet recognized as a legitimate strategic action. At the operational-tactical level, the depth of a front offensive and the rate of advance were increased, and the front was given more independence in the employment of its allocated nuclear warheads. Defense at this level became more mobile and aggressive with the emphasis on nuclear weapons and the development of a counterattack. This article appeared in Issue No. 1 (77) for 1966.

2. Because the source of this report is extremely sensitive, this document should be handled on a strict need-to-know basis within recipient agencies. For ease of reference, reports from this publication have been assigned

William W. Wells

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SUBJECT

MILITARY THOUGHT (USSR): Certain Questions of the Development of Soviet Military Art from 1953-1960

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Summary:

The following report is a translation from Russian of an article which appeared in Issue No. 1 (77) for 1966 of the SECRET USSR Ministry of Defense publication Collection of Articles of the Journal "Military Thought". The authors of this article are General-Leytenant K. Kolganov, General-Leytenant S. Lototskiy, and Colonel L. Vnotchenko. This article summarizes the main trends in the development of Soviet military art in the 1950's, which saw the introduction of nuclear weapons into all of the armed forces branches and the continued improvement of combat equipment. The Strategic Rocket Forces were established in this period and the other branches underwent considerable changes, for example, the appearance of air defense troops in the Ground Forces, which necessitated major revisions in both strategic and tactical military theory. The concept of the strategic offensive had to be adapted to combat with nuclear weapons, while defense was not yet recognized as a legitimate strategic action. At the operational-tactical level, the depth of a front offensive and the rate of advance were increased, and the front was given more independence in the employment of its allocated nuclear warheads. Defense at this level became more mobile and aggressive with the emphasis on nuclear weapons and the development of a counterattack. End of Summary

[redacted] Comment:

General-Leytenant Konstantin Stepanovich Kolganov was identified in 1965 as 1st Deputy Chief of the Frunze Military Academy. General-Leytenant Semen Sergeyevich Lototskiy also was associated with the Frunze Military Academy as Chief of the Department of History of War and Military Art.

[redacted]

Certain Questions of the Development of Soviet Military Art from 1953 to 1960*

by
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General-Leytenant S. Lototskiy
Colonel L. Vnotchenko

A new period in the development of the Soviet Armed Forces and military art began at the end of 1953. This period, which lasted until 1960, when the present military doctrine was formulated, is characterized by a fundamental reorganization in all spheres of building the military establishment. During this period nuclear weapons and missiles of various types and purposes were introduced into all branches of the armed forces, radioelectronics were rapidly developed and rocket forces were established and quickly developed.

The appearance of essentially new means of armed combat decisively influenced the building of the armed forces and Soviet military art. It became necessary to revise our views on the nature of a future war, especially its initial period, as well as views on the methods of organizing, preparing and conducting the operation and the battle. It also was necessary to properly evaluate the importance of various means of combat, and on this basis to develop the branches of the armed forces and branch arms in a coordinated manner and to work out a theory of military art stemming from the new conditions for conducting combat actions with the employment of weapons of mass destruction.

The purpose of this article is to deal with certain questions of the development of the Soviet Armed Forces and military art during the given period.

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* Questions of the development of Soviet military art for the period 1946-1953 are dealt with in the Collection of Articles of the Journal "Military Thought", No. 1, 1965 (not available).

The development of the means of armed combat. Nuclear weapons were first introduced into our Armed Forces in the form of aerial atomic bombs and then of aerial hydrogen bombs, and somewhat later as nuclear warheads for various types of missiles and torpedoes.

Ever since they were first developed, nuclear weapons have been quite properly regarded as the main means for destroying the enemy because they have enormous destructive power and by their nature exert multiple effects. At first, bomber aviation was their only carrier. Recently (since the mid-1950's), however, missiles of various types and purposes have become the means for delivering nuclear warheads to target.

Having missiles put into service considerably raised the capabilities of the troops not only to destroy the enemy over the entire depth of his operational disposition, but also to deliver strikes against his installations in the deep rear. Since 1956 missile hardware has been intensively developed and put into service with all branches of the armed forces and branch arms. Strategic, operational-tactical and tactical missiles have come into being.

The development of artillery armament during this period took the form of producing new models of guns, mortars, and rocket launchers, as well as of modernizing the existing systems. In 1956 experimental models of guns (310-mm) and mortars (420-mm), capable of firing nuclear ammunition, began to be put into service with the army. However, these means of destruction were unwieldy, expensive and not fully adaptable to actions on a battlefield under present-day conditions. Therefore, in place of these weapons, tactical missile systems with a range of fire of from 10 to 32-45 kilometers and armed with nuclear warheads of three, ten, and 20 kilotons were designed and put into service in the late 1950's. Antitank means also were developed. The introduction of new models of artillery armament and the modernization of existing ones considerably enhanced the combat capabilities of artillery. The maneuverability and mobility of artillery also were increased.

Tank hardware also was improved during the period under examination. Its improvement proceeded along the lines of increasing the power and effectiveness of its fire, improving its maneuverability, strengthening the armor, equipping it with a system for antinuclear protection and equipment for negotiating water obstacles along the river bottoms, and increasing its range. A number of new models of tank hardware also were produced.

Further improvement of combat equipment was carried out in the special troops: in the engineer, communications, chemical, motor transport and road troops.

In the Air Forces, obsolete piston-engine aircraft continued to be replaced by modern jet aircraft, including supersonic long-range bomber aircraft. The replacement of piston engines with jet engines enabled aircraft to break the sound barrier, to achieve a flight speed of 2,000 kilometers per hour and more, and to raise the ceiling to 20,000 meters and higher. The cannon and machinegun aircraft weapons were replaced by the "air-to-air" and "air-to-surface" missiles. Missile-carrying aircraft capable of delivering missile/nuclear strikes from long range without entering the enemy's air defense zone, were introduced on an ever widening scale.

The improvement of the airborne troops, together with the development of military transport aviation capable of carrying not only personnel and cargo, but also heavy combat equipment, has increased the capabilities for employing tactical and operational airborne landing forces.

The qualitative development of aviation, means of surface-to-air armament, and radiotechnical means permitted the capabilities of the air defense troops of the Ground Forces to be continuously increased. Radical changes also occurred in the armament of the Air Defense Forces of the Country. They received stationary and mobile surface-to-air missile systems, which have begun to ensure the destruction of all of the main types of modern aircraft and cruise missiles.

The placing in service of supersonic jet fighters equipped with air-to-air missiles and onboard radars has considerably increased the capabilities for intercepting and destroying enemy aircraft and cruise missiles.

Before 1955 the Navy had been developing predominantly in the direction of the construction of surface ships. The establishment of a submarine fleet, and the arming of ships and naval aviation with missiles had not yet been given proper attention at that time. However, since 1955 submarines and naval aviation have become the Navy's main branch arms. The Navy began to receive into service nuclear weapons, more improved ships, aircraft, and coastal and antiaircraft artillery. The construction of surface ships and nuclear submarines, armed with missiles, proceeded with great speed. Coastal, ship-launched and air-launched guided missiles were put into service with the Navy. Naval aviation began to receive the newest

jet aircraft. All this made it possible to considerably increase the Navy's power.

The equipping of all branches of the armed forces with nuclear weapons, missiles, and other modern means of combat has decisively influenced the organization of the troops.

Principal changes in the organization of the Soviet Armed Forces. The intensive development and enormous combat capabilities of strategic missiles occasioned the establishment of a new branch of the armed forces -- the Strategic Rocket Forces, which constitute the main military might of the country. Included in these forces are formations and large units armed with intercontinental and ballistic missiles. The purpose of the Strategic Rocket Forces is to accomplish the main tasks of destroying the nuclear means of attack of the aggressor and the major vitally important installations in his deep rear, and also of routing the main groupings of his armed forces.

During the period under consideration, the Ground Forces were developed as one of the main branches of the Armed Forces, capable of carrying out armed combat both with and without the employment of nuclear weapons. The Ground Forces underwent radical reorganization owing to the receipt into service of operational-tactical and tactical missiles with nuclear warheads, which are included in the front and army formations (missile brigades), and motorized rifle large units and tank large units (missile battalions). This served to immeasurably increase the role of rocket troops and considerably decrease the role of artillery since missiles with nuclear warheads had become a decisive means of destruction. A new branch arm -- air defense troops, whose main weapons were surface-to-air guided missiles, appeared in the Ground Forces. All of this considerably increased the combat might of the Ground Forces.

Until the mid-1950's a combined-arms army was organizationally made up of three rifle corps, which comprised nine divisions. However, divisions had changed considerably by that time, having become fully motorized and mechanized. The quantity of weapons, tanks, motor transport and other combat equipment in them had increased. As a result, a combined-arms army of three-corps strength was found to be too unwieldy, insufficiently maneuverable, and difficult to control. In addition, a combined-arms army of corps composition had a multilevel system of control, which slowed down the passage of orders, combat instructions, and reports, and this, in turn, negatively affected troop control. In connection with this, the organization of the combined-arms army needed further improvement.

A more desirable organizational structure for a combined-arms army, without the corps level, was found as a result of experimental exercises. At first the army consisted of rifle and mechanized divisions, but since 1956 it has consisted of motorized rifle divisions and tank divisions, which are immediately subordinate to the army commander (Table 1).

Although a combined-arms army with three to five motorized rifle divisions and one to two tank divisions has decreased in numerical strength by one third, in its armament it is in no way inferior either to a combined-arms army of the 1954 period or to a mechanized army. And, in a number of features, it compares favorably with the latter. In view of this, mechanized armies were abolished and in their place were established tank armies, which have greater maneuverability and power of penetration, and are less vulnerable to the effects of nuclear weapons than a combined-arms army.

The role and relative importance of the airborne troops also grew. They even came to be entrusted with carrying out independent operational tasks in the deep rear of the enemy, where they were considerably separated from the main grouping of front troops.

The development of air defense troops proceeded along the lines of introducing surface-to-air guided missiles into the ground forces. This made it possible to provide the troops with area cover in contrast to the previous practice of covering points primarily. Along with this, effectiveness in hitting air targets has increased sharply. To a great extent this was promoted by the widespread use of radioelectronics and the automation of the processes of controlling air defense means.

The exceptional importance of the tasks which must be carried out by the Air Defense Forces of the Country has necessitated qualitative changes not only in their combat means, but also in the organizational structure of the troops, which, in turn, has led to the increased role and relative importance of this branch of the Armed Forces. Towards the end of the period being discussed, the Air Defense Forces of the Country consisted of formations, large units, and units of surface-to-air missile troops, fighter aviation and radiotechnical troops, as well as special troops equipped with modern weapons and combat equipment.

In the mid-1950's the Air Forces were one of the leading branches of the Armed Forces. This resulted from the appearance of nuclear weapons, whose main carrier was aviation. The relative significance of aviation has grown in comparison with the end of the Great Patriotic War. The combat

capabilities of aviation have increased considerably with the appearance of nuclear weapons and new performance characteristics of aircraft. These capabilities have come to be defined not so much by the availability of aircraft, as by the number of nuclear weapons and the capability of the aircraft to employ them successfully. This, combined with the equipping of the Ground Forces with nuclear weapons, has made it possible to somewhat reduce the strength of the air army. At the same time, the sharp reduction in aviation, which was carried out at that time, was not the result of an objective necessity, but rather resulted from a subjective factor.

Owing to the high flight and technical specifications of aircraft and new missile weapons of the air-to-air and air-to-surface types, the combat capabilities of front aviation have increased considerably and it has become capable, with the expenditure of lesser efforts, of striking the enemy more reliably and decisively over the entire depth of his operational disposition and of destroying targets deep in his rear area. All this made it possible to further reduce the strength of the air army, as a result of which, by the end of the period under examination, it had begun to have as few as six fighter, fighter-bomber and bomber divisions (770-800 aircraft), one to two cruise missile regiments, and two reconnaissance aviation regiments. Thus, the decisive importance of missile weapons notwithstanding, the Air Forces were left with the important tasks of supporting the Ground Forces and covering them against enemy air attacks.

The Navy was developed by setting up fleet strike forces, naval forces to protect the coast and our own lines of communication, specialized ship forces for antisubmarine and air defense, landing ships, and also other surface ships designed to carry out special tasks.

At the same time, it should be emphasized that, regardless of the appearance of a new branch of the Armed Forces -- the Strategic Rocket Forces, which came to have the leading role in accomplishing the main strategic tasks of a war, and regardless of the sharply increased role of the Air Defense Forces of the Country and the appearance of new branch arms in the branches of the armed forces, the most important principle of Soviet military art-- that victory in war is achieved by the combined efforts of all branches of the armed forces and branch arms -- did not lose its importance and remained unchanged.

The development of Soviet military art. The process of developing the theory of military art is inseparably linked with the improvement of the means of armed combat. The appearance of nuclear weapons, the capability of employing chemical and biological weapons in a war, and the improvement

of the means for delivering these weapons to target have caused a revolution in military affairs and produced radical changes in the views on the nature of conducting a modern war, operations, and battle.

The theory of the strategic offensive underwent especially great changes during the period being discussed. In the beginning of the 1950's, when there were few nuclear weapons, the leading role in accomplishing the tasks of a strategic offensive pertained, as previously, to the Ground Forces. Other branches of the armed forces were used to assist them. A strategic offensive had to ensure the rout of the enemy's main forces in the theater of military operations, contribute to the seizure of vitally important areas and lead to a radical change, to our advantage, in the military-political and strategic situation. These goals were meant to be achieved by means of a series of strategic operations.

Thus, concerning the employment of nuclear weapons, when they were first introduced into service with the troops, full weight was not given to their decisive role in achieving victory, and in theoretical matters, in many cases views based on the experience of the last war were predominant. It is quite obvious that the capabilities of nuclear weapons could be fully exploited only by the widespread introduction into the troops of new means for delivering these weapons to targets of destruction.

The establishment of a new branch of the Armed Forces -- the Strategic Rocket Forces -- fundamentally influenced the change in the methods of waging war. In the strategic operations of the last war, the main target was the ground forces and aviation of the enemy, and the depth of action was determined by the combat capabilities of the then-existing branch arms. However, with the establishment of the Strategic Rocket Forces and the equipping of the Ground Forces with operational-tactical missiles, it became possible to quickly achieve decisive results to the entire depth of a theater of military operations and even beyond its limits. As a result, the strategic offensive which was such a decisive type of strategic action during the last war, has changed its former content owing to the advent of the rocket forces, and these have brought about strategic actions of a fundamentally new type -- missile/nuclear strikes against targets throughout the territory of the enemy.

The main task of strategic offensive operations in land theaters became that of destroying the enemy's means of nuclear attack and his remaining troop groupings. To fulfil these tasks, the Ground Forces had their own powerful means of destruction (operational-tactical and tactical rocket troops), while front aviation had a considerable number of delivery

aircraft for nuclear weapons, the results of whose actions enabled tank and motorized rifle groupings to complete the rout of the enemy and seize his key installations in the operational rear. A new thing for the Ground Forces was the fact that they were to fully exploit in their actions the results of strikes of the Strategic Rocket Forces.

The mass employment of nuclear and thermonuclear warheads, which can be delivered in minimal time to designated targets by employing missiles, allows decisive results to be obtained in any region of the world in the very first minutes and hours of a war. This means that an initial missile/nuclear strike of enormous yield can determine the final outcome of a war.

The possibility that the aggressor will launch a surprise attack employing nuclear weapons on a mass scale is a real threat, and requires that the armed forces constantly be in a high state of combat readiness. Only then will they be able to fulfil the tasks of disrupting the enemy's attack and of routing him completely. All this has confronted the theory and practice of military art with a number of totally new problems.

Toward the end of the period under consideration, it was believed with good reason that the initial nuclear strike of the Strategic Rocket Forces and long range aviation, in which the rocket troops of first-echelon fronts will participate, will be the beginning of combat actions. This strike also will be of paramount decisive importance to the outcome of a war. In connection with this, all matters of organizing and conducting an offensive have been planned and worked out as they apply to the conditions of the initial period of a war.

Views on conducting a strategic defense also have undergone radical changes. New means of armed combat have given rise to great opportunities for simultaneously destroying the enemy's groupings and his economic and political centers to a great depth. When nuclear weapons first began to appear, the strategic defense was recognized as one of two basic types of strategic actions, but subsequently the views as to its role and place in armed combat have undergone radical reexamination.

Toward the end of the 1950's, in connection with the rapid development of means of mass destruction, the prevailing theoretical opinion was that a defense on a strategic scale would be wrong. Recognizing strategic defense as one of the types of strategic actions would have meant recognizing defensive strategy on the whole, which, in essence, might lead to a repetition of the mistakes of the last war.

It was also felt that military actions in naval theaters would be on a considerably greater scale than during the Great Patriotic War. Equipping the Navy with new combat means has opened up greater possibilities for successfully conducting armed combat in vast sea and ocean theaters with an enemy possessing naval power. Actions in naval theaters became classed as independent types of strategic actions.

Thus, the theory of strategy underwent considerable changes. Toward the end of the period under consideration our theory came to settle on the following types of strategic actions: missile/nuclear strikes, military actions in ground theaters, air defense of the country, and military actions in naval theaters.

Of course, in addition to the increase in the fire and striking power of the Soviet Armed Forces, the operational-tactical views of our probable enemies, as well as the organization, armament, and technical equipping of their troops, have affected the development of the theory of the offensive operation and battle.

First it was necessary to work out matters of the employment of nuclear weapons and their effect on the nature of the operation and the battle. The publication in 1954 of the Manual on the Specific Features of the Conduct of Operations Under Conditions of the Employment of Nuclear Weapons (Front-Army) and the Manual on the Specific Features of the Combat Actions of Troops Under Conditions of the Employment of Nuclear Weapons (Corps-Battalion) played an important role in the theoretical generalization of these matters. These manuals pointed out that nuclear weapons are the main means which ensure the destruction and neutralization of the enemy, and also defined the general characteristics of the conduct of combat actions under conditions in which they are employed.

At the beginning of the period under examination it was recognized that nuclear weapons are the means of the Supreme High Command and only upon its order can the front receive up to 30 nuclear warheads for the conduct of an offensive operation. But despite such a limited number of nuclear warheads, these weapons were overestimated. It was believed that almost all tasks in an operation and battle would be accomplished by nuclear means. Therefore, the depth of a front offensive operation was defined as being up to 1,000 kilometers with a rate of advance of 80 to 100 kilometers a day. It was specified that the main strike was to be delivered only against the most powerful groupings of the enemy and, accordingly, it was recognized that an artillery density of 50 to 60 guns per kilometer of the front would be sufficient. It was recommended that an

offensive be carried out only from the march by moving units and subunits along axes in columns with intervals of no less than two to 2.5 kilometers between them.

Although these views reflected natural trends in changing the methods of conducting an offensive, there were still not enough means available to fully implement them. Based on this, in 1955 it was recognized as advisable to specify the maximum depth of a front offensive operation as 500 to 600 kilometers. The main attack was to be delivered not only against the strong, but also against weak point in the enemy's defense in order to move out against the flanks and rear areas of his main grouping. The artillery density was increased to 100 to 130 guns per kilometer of front. It was also planned to carry out an offensive from close contact with the enemy and on a continuous front.

At the end of the 1950's it was recognized that it would be desirable to issue up to 200 to 285 nuclear warheads for a front offensive operation and to employ these weapons at the decision of the commanders of the front and armies, and in the case of tactical missiles -- even at the decision of the commanders of large units, thus providing our formations and large units with a great deal of independence in conducting combat actions.

As we have already mentioned, beginning in 1956, with the introduction into service of various types of missiles, the role of aviation decreased. Thus, in 1956, in command-staff exercises, a front was issued up to 44 nuclear warheads, including 20 aerial bombs, 12 missiles and 12 artillery shells and mortar rounds. In 1957-58 the front began to be allocated 200-285 nuclear warheads with missiles comprising 55 percent of them. In the exercises of 1959, missiles comprised 70 percent of them. Missiles came to occupy the predominant position relative to other means of delivery, as a result of which the capabilities for conducting an offensive were increased considerably.

The rapid growth in the operational capabilities of front and army formations, and also the changes in the nature of the enemy's defense, occasioned an increase in the scope of operations. The width of the offensive zone of army and front formations underwent very significant changes, since a compact disposition of troops could lead to unjustified losses. It was stipulated in the 1954 Manual that the width of the breakthrough sector of rifle corps could range from 10 to 15 kilometers, and that of a combined-arms army from 20 to 30 kilometers (when the width of the offensive zone ranged from 50 to 100 kilometers). Based on these norms, a front having, for example, three armies in the first echelon,

could break through on two to three axes where the total width of the breakthrough sectors was 60 to 90 kilometers with an offensive zone up to 200 kilometers wide.

Later, the width of the offensive zone of large units and formations was increased even more. In the 1959 Field Service Regulations it was pointed out that a division operating on the main axis, when breaking through a prepared defense, receives the combat task of routing the enemy in a zone of six to twelve kilometers. Based on this norm, an army made up of five to seven divisions could have an offensive zone up to 50 to 80 kilometers wide, while a front made up of three to four armies could have a zone 250 to 300 kilometers wide. Toward the end of the period under consideration the width of the offensive zone was increased to 400 to 500 kilometers or more for a front, and to 100 kilometers for an army. Such an offensive zone of a front (army) provided fully (with due regard for antinuclear protection) for the deployment of forces and means in a departure position and also ensured favorable conditions for maneuvering the second echelon and committing it to the engagement.

The depth of a front and army operation also underwent great changes. While in 1955 the depth of a front offensive operation was planned within the limits of 500 to 600 kilometers, in exercises in 1957-1959 front operations reached depths of 700 to 800 kilometers or more. The depth of an army operation rose from 150 to 200 kilometers in 1954 to 200 to 250 kilometers or more in 1960. Thus, the depth of front and army operations increased from one and a half to two times in comparison with the immediate postwar period and from two and a half to three times compared with the 1944-1945 operations of the last war.

These changes resulted from the greatly increased combat capabilities of our front and army formations, primarily to destroy the enemy with nuclear warheads to the entire operational depth, and also from the increased depth and width of the defensive disposition of the troops of the armies of our probable enemies.

The rate of advance, which is one of the most important indications of the scope of an operation, rose during the course of the period being discussed from 30 to 40 kilometers per day to 70 to 80 kilometers a day or more, i.e., it was approximately doubled. The increase in rates of advance was due to the equipping of troops with nuclear weapons, as well as to their full motorization and mechanization, which immeasurably increased the penetration capability and maneuverability of troop large units and formations.

The duration of an offensive operation was shortened considerably. The increase in the depth of front and army operations with the simultaneous increase in rates of advance made it possible to achieve the objective of an operation in shorter periods of time. Because of this, during the period under consideration, the duration of a front operation was reduced from 10 to 15 days to nine to ten days, and the duration of an army operation from five to seven to four to five days.

The operational disposition of troops of a front and army also underwent considerable changes. These changes were due to the appearance of missile units and large units as components of an army and front, to the need to disperse troops, and also to the deep grouping of enemy forces in the defense.

In connection with working out the questions of conducting operations under the conditions of the initial period of a war, since 1957 a great deal of attention has been devoted to determining the operational disposition of an army and front that would ensure the delivery of a very powerful initial strike and the rapid development of the operation to the depth. For this purpose, in the first operational echelon groupings of tank troops have been set up which are capable of rapidly shifting combat actions to the operational depth. At the same time, powerful second echelons have been allocated for the purpose of building up efforts when an offensive is being developed.

As a result of the sharply increased mobility, maneuverability, and penetration capability of troops, mobile groups of the front and army, set up according to the experience of the Great Patriotic War, have lost their importance in an operational disposition. In our operational disposition, the following came into being: large front and army reserves of branch arms and special troops, special front and army artillery groups consisting of missile units and large units and of nuclear artillery and mortars, and also large units and units intended for use as the airborne landing forces of the army and front.

At this time rocket troops became the main element of the operational disposition. In addition, the complement of air defense means was strengthened by surface-to-air missile units.

The depth of the operational disposition of troops was increased, which is obvious from the following indices: in 1952 the depth of disposition of the troops of an army (consisting of nine divisions) was set at 20 to 30 kilometers and in 1958-1959 it was increased to 60 to 80

kilometers. When this was done, the strength of an army was reduced to five to seven divisions. The overall depth of the operational disposition of the troops of a front approached 300 kilometers.

The employment of weapons of mass destruction and the increase in troop mobility sharply increased the importance of maneuvering actions in an operation. Continuous fronts, which were one of the characteristic features of an operation in the last war, disappeared. Toward the end of the 1950's, in contrast to the immediate postwar period, an offensive was carried out not as a methodical breakthrough of continuous defensive zones which were echeloned in depth, but rather, from the outset, it had become clearly mobile in nature. The widespread employment of nuclear weapons and the growth of the enemy's power and depth of destruction were responsible for the emergence of qualitatively new features in an offensive operation and battle; that is, troop actions are conducted in dispersed dispositions and on separate axes. Large and unwieldy groupings of troops and linear disposition have irrevocably become a thing of the past.

With the appearance of nuclear weapons, the tasks of tank large units and formations have expanded. While nuclear weapons have remained the main means for developing success, they have begun to be included in the first echelon with the task of breaking through the enemy's defense. In the 1954 Manual it was pointed out that the role of mechanized and tank large units in a breakthrough of a defense has increased, and that they, as a rule, will be used in the first echelon. In command-staff exercises in 1956 and later, tank armies and divisions on the main axes, as a rule, formed a part of the first operational echelon of the front and army. Their employment under the conditions of the initial period of a war, when there are no continuous fronts, will undoubtedly produce maximal effect. As a result of this, the indices of the scope of operations have steadily increased. Initially, it was planned that a tank army would advance in a 40 to 50 kilometer zone at a rate of 50 to 60 kilometers per day to a depth of 500 to 600 kilometers. Toward the end of the 1950's these indices grew. An operation was planned to a depth of 500 to 700 kilometers with an average rate of 70 to 80 kilometers per day or more. Subsequently, a tank army came to have, as a rule, a deeper task (up to 1,000 kilometers or more) with a rate of advance of up to 100 kilometers per day. Groupings of tank troops firmly occupied a leading place relative to other branch arms in the battle and the operation.

When operations were being prepared and planned, great importance came to be attached to seeking ways of decreasing the time for preparation, of simplifying the combat documents which had to be processed, and of

achieving secrecy. For example, according to exercise experience, an army offensive operation came to be prepared in five to eight days, that is, the preparation time was decreased one and a half times as compared to the period from 1946 to 1953.

With the receipt of means of mass destruction into service, the matters of organizing cooperation required still greater attention than previously. The foremost important aspect of cooperation was coordinating the procedure and methods for employing nuclear weapons and other means of destruction, with the actions of the attacking troops. In order to fully exploit the results of nuclear strikes, it was very important to organize cooperation between the units and large units employing nuclear weapons and the troops operating on this axis. It was necessary to precisely allocate the tasks of destroying and neutralizing the enemy with nuclear and chemical weapons and with aviation and artillery.

The increased range of matters requiring coordination complicated the organization of cooperation. In order to maximally decrease the time for organizing and maintaining cooperation during the course of an operation and battle under conditions of a rapidly changing situation, it has become necessary to decisively raise the efficiency of commanders and staffs in their work, to simplify documentation, and to carry out widespread introduction of mechanization and automation into the processes of controlling troops and combat means.

The development of means of armed combat required also that old types of operational and combat support be improved and that new types be worked out. Such types of support as protection against weapons of mass destruction and radioelectronic countermeasures appeared. In matters of conducting reconnaissance, the timely collection of information about the grouping of nuclear means of the opposing enemy in order to quickly destroy them acquired primary importance. In connection with this, reconnaissance of the enemy's radiotechnical means came to have special importance.

Radical changes in the air defense means of the troops sharply raised the effectiveness of air defense, and at the same time considerably complicated its organization. Air defense was confronted with new and important tasks in combating the enemy's unmanned means of attack. In recent years air defense has begun more and more to exceed the confines of operational (combat) support, and since the end of the period under examination it has become a type of combat actions.

One of the most pressing problems in the postwar period was the improvement of troop control methods. The organization of control posts acquired great importance in providing stable and continuous command over troops. Beginning in 1953, this question was given serious attention, since the methods worked out on the basis of practices of the last war, when command was exercised from an observation post, could not ensure reliable control under present-day conditions.

Toward the end of the 1950's it was considered most desirable to exercise troop control from a command post in an offensive. When necessary, a forward command post was set up in an offensive, and an alternate command post was set up in a defense. In addition to this, the rear control post retained its importance. To provide more stable control when assigning combat tasks for an operation or battle, we reestablished the procedure of designating one of the large unit (unit) commanders, in addition to the table of organization deputies, as a deputy formation commander (commander).

The improvement of troop control methods also proceeded along the lines of decreasing the number and length of combat documents, with the main emphasis being placed on working out graphic documents, introducing means of mechanization and minor automation, and also further improving means of communications and radar.

Considerable changes occurred in the views on methods of concentrating attack groupings, on occupying a departure position for an offensive and on the methods of attacking a defending enemy.

The forms of conducting offensive operations came to be distinguished by great diversity. Considered to be most typical were an operation in which one or several deep frontal attacks were delivered, and an enveloping operation. Most effort went to developing the first form of conducting an operation. This type enabled troops to exploit nuclear strikes effectively, to carry on an offensive at high rates of speed and to a great depth, and thereby deprive the enemy of the opportunity of closing breaches made in the defense. It was planned that before the attack of tanks and infantry began, nuclear strikes were to be delivered against the most important installations of the enemy, and then, as in the past, a brief and powerful artillery and aviation preparation was to be carried out.

When nuclear strikes are delivered against the enemy in the first zone, the troops that are in close contact with him must be in shelters, while the troops that are moving out of concentration areas for an attack

from the march must be located three to five kilometers away from the forward edge of the battle area. During the approach to the forward edge, the latter must be deployed in approach march and battle formations.

At the same time it was also considered that under favorable conditions, troops might negotiate a defense in approach march formation as well. All of these possible variants reflected the basic trend -- of negotiating the tactical depth of the enemy's defense in the shortest possible time, and if possible, without having the infantry dismount from armored personnel carriers. In the period under examination, as has already been stated above, it became typical for units and large units to advance along separate axes with gaps between them and to attack the defending enemy from the march. In order to rapidly negotiate the tactical depth of a defense, tactical airborne landing forces came to be widely employed.

Completing the rout of the enemy in the tactical zone of defense created favorable conditions for the rapid development of an offensive in the operational depth. For this purpose the enemy operational reserves that were moving up were routed by nuclear and chemical weapons and aviation, and the second echelon was committed from the march and, as a rule, on the boundary between the large units of the first echelon or from behind the flank of the main grouping of the army.

The success of the commitment of the second echelon to an engagement was predetermined by the skilful employment of nuclear weapons and other means of destruction, by reliable air defense, as well as by timely preparation of the routes of the movement forward and by covering the flanks with the aggressive actions of troops of the first echelon and adjacent forces. In so doing, tank large units and formations, as before, played a leading role in developing the offensive operation in the operational depth.

A new problem, which was worked out at this time, was that of negotiating zones with high levels of radiation. The radiation situation became a key element of the operational and tactical situation.

Considerable attention during the period being discussed was devoted to working out matters concerning the assault crossing of rivers. In the last war, operations, as a rule, were completed by the assault crossing of rivers and the seizure and holding of bridgeheads on the opposite shore. With the employment of nuclear weapons it became necessary to carry out the successive assault crossing of a series of water obstacles from the march

and to develop an offensive on the opposite shore without any pauses whatsoever.

The disappearance of a linear outline of the front line and actions on individual axes with deep penetration into the enemy disposition have sharply increased the role of the meeting engagement and battle.

Under the conditions of a nuclear war, night actions of ground forces have acquired immeasurably greater importance than previously. Therefore, in the period under examination special attention was given to night actions, based on the fact that night or conditions of limited visibility make it possible to sharply decrease the vulnerability of attack groupings, better ensure surprise, and to conduct an offensive more effectively.

Only some of the subjects depicting the development of an offensive operation have been set forth above, and they are indicative of how complex and multifaceted has become the work that commanders and staffs must carry out when organizing and conducting combat actions. The need to accomplish a large number of matters in short periods of time under conditions of the wide-scale maneuvering of forces and means and a sharply and rapidly changing situation has immeasurably increased the role of commanders and staffs in troop control.

The appearance of weapons of mass destruction also required radical revision of the theoretical views on the disposition of a defense and the methods of conducting it. In the period under examination, as previously, the defense was considered a forced type of troop combat action. This being the case, it was felt that defensive operations could be conducted on an army scale and only in exceptional cases on a front scale.

Nuclear weapons affected the nature of a defensive operation and battle first of all in that they contributed to an increased aggressiveness of the defense, increased the capabilities of the troops for disrupting the enemy's offensive, made it possible to quickly and sharply change the balance of forces, and provided more favorable conditions for routing the attacking enemy.

From 1953 through 1960, two stages can be distinguished in the development of the theory of defense. In the first stage, the principles worked out from the experience of the last war formed the basis of the views on the theory of defense, with due regard for the special features resulting from the employment of nuclear weapons. However, the general principles for organizing the defense which existed even before the

appearance of weapons of mass destruction, retained their importance all the same. The only changes made consisted in increasing the width of the zone of defense of large units and formations and the depth of the tactical and operational zones. However, the basic scheme for the organization of a defense, with the presence of clearly defined zones, positions, and the basic elements of the operational disposition (battle formation), remained as before. The tasks of defense during this period were accomplished as in the last war, by holding zones of defense prepared on a continuous front, and by the counterattack of the troops based on these zones, with nuclear weapons essentially relegated to a supporting role.

In the second stage it was recognized as desirable for the basis of defense to consist of the employment of missile/nuclear weapons and the wide scale maneuvering actions of troops from the depth, thereby giving the defensive operation and battle great fluidity. Along with this, it was assumed that under conditions of a defense, troops will have a limited number of nuclear warheads. Therefore, it was planned that they would be used only against the most important targets of the hostile grouping and only at the most crucial stages of the defensive engagement.

Under conditions of the massed employment of nuclear weapons and of an enemy offensive over wide zones and on separate axes, it was considered desirable to set up the defense in large unit (formation) zones which were wider than those in the past and with the troops more deeply echeloned. A defensive engagement (battle) consisted mainly of highly mobile combat actions. The tenacious holding of defensive areas came to have secondary importance and was implemented by a smaller part of the forces. All of this resulted in further changes in the basic indices of a defensive operation and battle, which is apparent from Table 2.

In connection with the change in the nature and principles of the disposition of a defense at the beginning of the 1960's the defense ceased being divided into tactical and operational depths (zones). The division of the defense of an army into two zones did not promote the establishment of a diversified grouping of forces and means, nor the concealment of the main forces, nor the elimination of a routine pattern in the engineer preparation of the terrain.

The elements of the battle disposition and operational disposition of the troops also underwent changes. Rocket troops occupied the leading place as the main element of the operational disposition of formations and of the battle formations of large units. The depth at which surface-to-air means were positioned came to conform to the depth of the operational

disposition of the troops, for which reason two to three antiaircraft artillery groupings were set up in an army. During this period only the front had surface-to-air missiles. At the beginning of the 1960's, as armies received surface-to-air missiles, antiaircraft artillery groups ceased being set up in them, and antiaircraft artillery came to be employed for the direct cover of the troops.

The aggressiveness of the defense during the period being discussed came to be reflected in the very concept of the operation and the battle, which planned not only on repulsing enemy strikes but also on thwarting his intentions and on creating conditions for his final defeat. Before weapons of mass destruction appeared, defense had the task of holding out under the enemy's strikes and of repulsing his attack. However, the appearance of missile/nuclear weapons made it possible to assign more decisive objectives to the defense. Because of this, the aggressiveness of the defense came to manifest itself in the form of destroying the most important installations of the enemy with nuclear and chemical weapons, aviation, and artillery, starting at the distant approaches, and of conducting well-timed counterpreparation, counterattacks, and counterthrusts.

During this period, as previously, the most important measure for disrupting and repulsing the enemy's attack was considered to be the carrying out of a counterpreparation, which included nuclear strikes and strikes with conventional fire means against the main enemy grouping which had been prepared for an offensive.

Before the appearance of nuclear weapons, a counterattack was conducted, as a rule, with limited objectives. However, during the period being discussed it had the task of decisively routing enemy groupings which had penetrated the defense, and following this, under favorable conditions, having all the army's forces go over to the offensive. In so doing, it was planned that the objectives of the counterattack would be achieved by a rapid offensive of ground forces from the march immediately following the nuclear strikes.

In the period 1953 to 1960, and on the basis of the rapid development of the means of armed combat, which marks the beginning of the revolution in military affairs, there took place in the Soviet Armed Forces a continuous improvement in armament, in organizational forms, and in the methods of conducting combat actions.

The general direction in the development of the Soviet Armed Forces and the practical measures taken at that time are the result of the

prodigious organizational work of the Central Committee of the CPSU in the sphere of building the military establishment. The most important decisions on restructuring the Armed Forces were made by the Central Committee on the basis of a Marxist-Leninist analysis of the nature of a future war, and, stemming from this, on the scientifically based fundamental changes in the ways of developing the army, aviation and the navy.

Combat means and combat equipment are being developed continuously. This unavoidably results in the further development of military art, in new changes in the nature of the battle and of operations, and also in the methods of the combat and operational employment of the branch arms and of the branches of the armed forces.

As a result of this, a great and vital task confronts the officer personnel of our army and navy -- of continuing to seek those methods and forms of conducting combat actions which will ensure the fullest utilization of the capabilities of new weapons and the achievement in the shortest possible time of a decisive victory over the enemy with the lowest possible losses.

Table 1

Composition of an army organized with and without corps

	Army organized with corps	Army organized without corps	
	1954	1955	1956-1959
Composition of an army	rifle corps - 3 including: rifle divisions - 6 mechanized divisions - 3	rifle divisions - 3 mechanized divisions - 2	motorized rifle divisions - up to 5 tank divisions - up to 2
Personnel	approx. 158,000	90,000	approx. 100,000
Guns and Mortars	2,808	1,593	2,106
Antiaircraft artillery guns	855	480	765
Tanks and self-propelled guns	2,100	1,433	1,832

Table 2

Changes in the width and depth of the zones of defense of a corps, army, and front in the period from 1953 to 1960

Years	Width of the zone of defense in kms			Depth of the defense in kms		
	corps	army	front	corps	army	front
1953	16-24	50-70	250-300	15-20	45-60	200-250
1954	25-40	50-100	300-350	30-35	60-100	250-300
1958	--	up to 80	300-350	--	up to 70	250-300
1960	--	100 and more	350-400 and more	--	100 and more	300-400