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CENTRAL INTELLIGENCE AGENCY  
WASHINGTON 25, D.C.

18 DEC 1961

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MEMORANDUM FOR: The Director, Defense Intelligence Agency  
SUBJECT : MILITARY THOUGHT: "The Theory of Military Art Needs Review", by Colonel-General A. Gastilovich

1. Enclosed is a verbatim translation of an article which appeared in the TOP SECRET Special Collection of Articles of the Journal "Military Thought" ("Voyennaya Mysl") published by the Ministry of Defense, USSR, and distributed down to the level of Army Commander.

2. In the interests of protecting our source, this material should be handled on a need-to-know basis within your office. Requests for extra copies of this report or for utilization of any part of this document in any other form should be addressed to the originating office.

FOR THE DEPUTY DIRECTOR, PLANS:

*Richard Helms*

RICHARD HELMS

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Original: The Director, Defense Intelligence Agency

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COUNTRY : USSR

SUBJECT : MILITARY THOUGHT: "The Theory of Military Art Needs Review", by Colonel-General A. Gastilovich

DATE OF INFO: Early 1960

APPRAISAL OF CONTENT : Documentary

SOURCE : A reliable source (B).

Following is a verbatim translation of an article titled "The Theory of Military Art Needs Review", written by Colonel-General A. Gastilovich.

This article appeared in the 1960 First Issue of a special version of the Soviet military journal Voyennaya Mysl (Military Thought). This journal is published irregularly and is classified TOP SECRET by the Soviets. The First Issue of 1960 was the initial issue of this special collection, and this article by Colonel-General Gastilovich has been a subject of controversy in numerous subsequent articles.

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The Theory of Military Art Needs Review

Colonel-General A. Gastilovich

We all admit that nuclear weapons and missiles change the conditions of war, but having said "a", we are afraid to say "b". Dropping curtsies in the direction of missiles and introducing some minor corrections in the theory of military art, we still hold in practice to the old positions existing at the end of World War II. Past experience, traditions, and habits, taught to us for decades, tenaciously hold us back and prevent the same kind of revolution in military art which nuclear weapons and missiles created in the sphere of armament.

We strive unsuccessfully to squeeze missile/nuclear weapons into the framework of the old habitual postulates of our military doctrines only slightly "modernizing" the latter, and we forget that this doctrine was founded on the basis of using weapons of military combat fundamentally different from contemporary ones and not comparable with them.

Speaking of past world wars in a report to the Session of the Supreme Soviet in January 1960, N.S. Khrushchev noted that they formerly began on the borders of the warring countries, where the troops were concentrated. Concerning contemporary conditions he said:

"Tomorrow, if war starts, military actions will develop differently, since countries will have at their disposal the means of delivering weapons over thousands of kilometers. War will start first of all in the depths of the warring countries, and every single capital, every single large industrial or administrative center, every single strategic area, will be subject to attack not just during the first days, but during the first minutes of the war. In this manner, war will both begin differently, if it is begun, and develop differently."

In another part of his report N.S. Khrushchev said: "I once more emphasize, that we already have so many nuclear weapons -- atomic and thermonuclear, and appropriate missiles for delivery of these weapons to the territory of a possible aggressor, that if some madman should order an attack against our country, 3 or 4 words missing then we would be able to wipe such a country, or countries, completely from the face of the earth."

Defining this thought concretely, Marshal of the Soviet Union R. Ya Malinovskiy, in his speech at the same Session, said: "About

100 such nuclear charges, detonated within a short period of time on an industrially developed country whose territory is approximately 300-500 thousand square kilometers, will be sufficient to convert all of its industrial areas and administrative-political centers into a heap of rubble, and the territory -- into a lifeless desert contaminated with deadly radioactive substances."

It must be clear to everyone that such statements are not made for the sake of rhetoric, but are fully substantiated from the standpoint of the achievement of military technology and of the economic capability of our country.

Under contemporary conditions, the formations of missile troops of the VVK (Supreme High Command), with their unlimited range of action and colossal force of fire strike, have become the primary and decisive form of armed forces. They, rather than any other means of armed conflict "pave the way," if one may use the expression, for all other forms of armed forces, radically changing the strategic situation as a whole and the operational situation in the theaters of military operations.

The efforts of all other forms of the armed forces, which are equipped with nuclear/missile weapons, must be directed toward maximum rapid and effective exploitation of the strikes of missile formations of the VVK. In this connection, the basis for planning operations of each of the types of forces again becomes a question of the use of their own nuclear/missile weapons, and not of the number of divisions, vessels, aircraft, etc.

From these considerations it is already completely apparent that a whole series of established views of our military doctrine must be seriously reexamined, beginning with questions of strategy and operational art and ending with tactics and troop organization.

#### Some Questions of Strategy

Let us examine some questions concerning the initial period of war. Let us imagine NATO without two-three countries which have been taken out of the war by means of a powerful nuclear/missile strike of formations of the VVK or which have even ceased to exist in the first days of the war. This is, after all, a completely realistic perspective; let us remember incidentally, that the area of each such country is significantly less than 300 thousand square kilometers and several tens of large nuclear missiles are sufficient for its destruction. Naturally, such operations by

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VGX missile troops completely change the nature of operations of ground troops, the navy, and aviation.

It would be naive to think that the enemy will be incapable of delivering similar powerful nuclear strikes against the territory of countries of the Socialist Camp and first and foremost against the territory of the Soviet Union. But such strikes will not be able to knock these countries out of the war.

The superiority of the socialist structure with its economic potentialities and political unity of peoples will enable countries of the Socialist Camp to withstand the first nuclear strikes of the enemy. This is further favored by the enormous territory, the inexhaustible human resources, and a relatively great dispersion of industrial and administrative centers. The imperialist bloc does not have such possibilities. For this reason, in preparing the country for the possible launching of war by aggressors, we must first of all utilize the advantages of our socialist system so as not to give the enemy the possibility of recovering after our retaliatory nuclear strike.

Of course we must take into account the consequences of the first powerful enemy nuclear strikes. As it appears to us, they will make themselves felt first of all, by the fact that in the first operation of the initial period of the war, a substantial reinforcement of troops in theaters of military operations cannot be expected by bringing up forces and equipment from the depth of the country.

Under these conditions, it appears absolutely necessary to us to review seriously certain tenets of our military strategy concerning the length of a contemporary war and the number of armed forces participating in it.

The example of the capitalist countries annihilated in the first days of the war will hardly evoke enthusiasm in the remaining countries for its prolongation. We must take into account the enormous moral shock to peoples, not to speak of the huge material losses and the human victims. It is sufficient to compare figures of human losses in previous wars with expected losses during the course of the first days or even the first hours of a contemporary war for the picture to become clear.

The losses of 33 warring countries during the four years of World War I totaled 10 million persons killed and 34 million persons

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mained, i.e., an average of 11 million persons per year. The losses of 72 warring countries during the six years of World War II totaled about 34 million persons killed and 28 million persons maimed, or an average also of about 11 million persons per year. According to the data of a special study by the Office of Civil Defense of the USA conducted in 1955, the losses in the course of several hours from the first aerial attack carried out chiefly by atomic and thermonuclear weapons totaled 15 million persons dead and about 24 million persons sick and wounded, altogether up to 40 million in the USA alone. In addition, about 50 to 60 percent of the country's industry was destroyed. It is well to note that in the above-mentioned study only 53 cities were subjected to the pre-arranged attack and that thermonuclear bombs were dropped on only 11 of these cities. The moral fatigue of peoples, which became evident toward the end of World War I as well as of World War II, is well known. It is easy to imagine how great this fatigue and depression will be after the first nuclear strikes in a future war.

It appears to us that after the first nuclear/missile strikes, the basis for all operations on a strategic scale must be a decisive offensive against the as yet unrecovered enemy; the more quickly and energetically that this is accomplished, the more probable that the enemy will be unable to cope with the disruption brought about by the first attack, and to organize stubborn resistance.

Whoever withstands the first enemy attack must conclude the war rapidly.

At present we already consider it possible for the tempo of operations to be 100 km in a 24-hr. period and the duration of a frontal operation to be 10 to 12 24-hr. periods. If this is so, for how many days are we preparing to wage war to achieve decisive strategic results?

At present there is already a deep-seated contradiction between demands to conduct operations on a large scale, at high tempos, without pauses, and the still extant and accepted position regarding the duration of the initial period of the war, which must continue to the end of full mobilization of forces and the beginning of the receipt of material resources and arms from mobilized industry. This is hardly realistic and apparently one must calculate on a short initial period of the war, which will be the decisive period of the entire war.

There is no need to fear the term "blitzkrieg" just because

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this concept was compromised by the experience of past world wars. Under the conditions of nuclear war only "blitz" operations can promise victory. If victory is not achieved in a short time, then peoples will hardly be able to continue it in a slow, drawn-out fashion, especially the peoples of capitalist countries, who have a lower moral - political potential than countries of the Socialist Camp. He who has withstood the first strikes must and can conclude the war rapidly if he prepares his armed forces properly in peacetime.

Strategic art cannot be replaced by urgent demands on the moral fiber of peoples, and neither can one plan strategy on the basis of fear of calculated risk and the sacrifices connected with it.

The enemies of blitzkrieg habitually argue that our World War II losses of 1/3 of all military industry, half of the steel and coal production, 40 percent of petroleum production and output of electric power, more than half of all the rail lines and several tens of millions of the population in territory occupied by the enemy, not counting combat losses, not only did not bring about cessation of prolonged resistance but even permitted the crushing of the German fascist blitzkrieg plan and subsequently the achievement of a brilliant victory.

They forget the fact that the above-noted losses were spread out over a period of almost two years. They were inflicted only along the line of the front and within its limits; in the zone of interior they were almost non-existent. Human losses at the front and in the rear were not afforded the necessary medical and other aid available to millions of the wounded and sick of the local populace. The inhabitants situated behind the line of the front were physically almost unaware of these losses, since life in the rear continued to flow more or less normally. The picture will be entirely different now.

Under present conditions, the possibility of victory must be assured by readiness, the capacity and capability of concluding the war in the shortest possible time. The theory of a prolonged war is more acceptable at present to the monopolistic circles of the West, since the preparation for such a war costs more and consequently promises the manufacturers of arms greater profits. And in the name of profits they may not even consider the expediency of the theory.

The postulates of our military strategy concerning the size of the armed forces are also still based on the experience of past world wars and arise from the necessity of conducting war with mass,

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multi-million-man armies.

Advocates of multi-million-man armies allude to the experience of all twentieth-century wars, which showed that the growth of the destructive force of weapons in armed combat with an enemy of equal strength never brought about a decrease in the armed forces during war, but rather caused their increase. They forget that this experience is based on entirely different means of armed combat and methods of its conduct. For this reason, analogies cannot be made in this matter.

Under current conditions can operations unfold in the old manner? Can they, having begun with a relatively small number of regular combat-ready troops then continually broaden by dint of the arrival of fully mobilized large units, and finally change into engagements of numerous fronts and of multi-million-man armies? Under current conditions this is, firstly impossible, and secondly, unnecessary. It is impossible because nothing will arrive from the depth of the country in time, and possibly will never arrive. It is unnecessary because after the first nuclear strikes the remaining forces of the enemy in the border zones also cannot be numerous; it is necessary to crush quickly the remains of these forces and to occupy the enemy country and, for this, operations of a completely different nature will be required from those which we are now studying.

At the present time, of the 61 divisions within the composition of the Allied ground troops of the European military bloc, there are 5 American divisions, 4 British divisions, and 8 West German divisions; the remaining divisions: 14 French, 10 Turkish divisions, and other countries - 20 divisions.

The first obliterating strike by missile formations of the VOK can be directed against the enemy in such a manner that only a border strip with a depth of several tens of kilometers (in the interest of the safety of our troops) will remain undestroyed. The taking of this strip will then become the primary mission of the advancing divisions of the first echelon; it must be accomplished also by their wide use of nuclear missiles of tactical and operational designation.

After taking the border zone, the mission confronting the troops will be chiefly the speedy taking over of zones of a greater or lesser degree of destruction and radiation resulting from the massive strike of strategic missiles. Under these conditions, the mobilizational build-up of the enemy or the approach of his large

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operational, or even strategic, reserves can hardly be expected. It is more likely that it will be necessary to overcome the resistance of enemy troops retreating from the border zone.

To exploit the first powerful missile strike it will be completely unnecessary to deploy a large number of divisions, as was done in past wars.

Taking over the border zone and the zones of total destruction and radiation will necessitate special organization and preparation of troops, but will not, at all, necessitate multi-million-man armies. The execution of this type of mission in the European theater of military operations on a front of 600-700 km, for example, is possible with 20-25 divisions, primarily tank, rushing ahead along separate axes and in separate heated battles, pounding the large units and units of the enemy which offer resistance in the above-mentioned zones. Of course, a significant portion of these troops will suffer from enemy nuclear strikes; relatively frequent replacement of entire large units which have sustained heavy losses will be necessary. For this reason there should be 10-15 more reserve divisions behind them; in all 30-40 divisions, well equipped with tactical nuclear weapons, and which will make up the first operational echelon, will be required.

Organizationally, the strike of the first operational echelon in a zone of 600-700 km may be represented by two fronts of 15-20 divisions each, plus a certain number of divisions of airborne forces, (2 or 3 for a front). A front may consist of 2 or 3 armies of 4 or 5 divisions, each acting in a zone of 100 to 200 km, plus a certain number of divisions of the front reserve.

Forces, mobilized in the interior of the country, can arrive gradually in the theater of military operations, probably after the completion of the first operations at the front, and their principal role will consist of occupation of captured territory.

If, after taking over the territory of a country subjected to the first massive nuclear attack, the enemy does not capitulate a similar all-shattering strike may be repeated on the next country.

From the aforementioned, it does not follow of course, that those divisions which will be in action in the first operational echelon of ground troops will be sufficient for the war as a whole. It is apparent that in accordance with the forward movement a significant number of troops which have been designated for carrying out

occupational functions in the occupied territory will be required. A significant number of forces will also be needed in the zone of interior chiefly for various formations such as local antiaircraft defense (IZVO). Therefore, for the conduct of the war a sufficiently large number of ground troops is needed, but their over-all size, designation and nature of use will of course be different than in past wars.

The number of ground troops engaged directly in combat operations may be, as it appears to us, many times smaller than it was in previous wars.

We have outlined a concept for initial operations under European Theater conditions which is convenient for the activities of all arms of troops. To the same degree, with certain corrections for geographical conditions, it can also be applied in other theaters. In this concept, the principal leading role belongs to the operations of the VVK missile formations, but not with the aims which we now have under general review. This is not combat against enemy nuclear weapons, not the weakening of his economic potential, not combat against his reserves, etc., but the full annihilation of the enemy with nuclear warheads of megaton yield over a vast territory with the aim of knocking entire countries out of the war.

Briefly, if there is a possibility for holding out, then there is also a possibility of victory in a short period of time. Moreover, for direct combat operations at the front such numerous ground armed forces as in previous wars will be needed neither in the beginning of the war nor during its course.

#### Certain Questions of Operational Art

It is necessary to examine the current operations of ground troops in close connection with the operations of VVK missile formations. It appears to us that among the ranks of the latter, in addition to formations carrying out the missions of knocking entire countries out of the war, there must be formations designated for activities in the interest of several fronts conducting operations on one strategic axis. Such formations, remaining under the jurisdiction and command of General Headquarters (Stavka), could establish favorable conditions for the development of ground troop operations by means of annihilation of enemy nuclear weapons, his reserves, airfields, transportation centers, depots, and other installations located beyond the range of action of front missile weapons; by their strikes they could also reinforce the fire capability of the fronts in those

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instances when the latter, for one reason or another, found themselves without sufficient nuclear/missile weapons. Strikes in the interests of separate fronts could be carried out either on command of the Stavka (or the command of theater forces) or upon requests of the fronts within the range of prescribed limitations.

At the same time, this V GK missile formation can carry out separate tasks assigned by the Stavka which are not directly connected with the activities of the fronts.

In all instances the V GK operational missile formation must have at its disposal its own long-range means of reconnaissance (aviation, radiotechnical, and others), in order to be able to respond rapidly to a change in the situation and to avoid multi-channel coordinations of reconnaissance tasks.

It appears expedient to us to plan the V GK missile operations as special operations for the destruction of enemy nuclear weapons, for undermining his economic potential, for combat against supply, etc. All this must be a constituent part of two types of missile operations: those operations carried out by the V GK missile troop formations with the aim of complete annihilation of an enemy country and knocking it out of the war, or operations in support of ground troops. Missile operations of the first type usually must precede operations of the second type and, subsequently, are also carried out simultaneously. It is obvious that the nature of the targets under attack will be different in each type of operation.

It is absolutely unnecessary to deploy V GK missile formations, in coordinated action with ground troops, directly in the theater of military activities or close to it. On the contrary, their placement in the zone of interior is even preferable, since this makes the work of enemy intelligence more difficult and negates the need to form a separate antiaircraft defense of these formations; their PVO can be combined with the antiaircraft defense of certain areas of the country.

The execution of V GK missile operations, the possibility of similar strikes by the enemy, the depletion of ground troops with their own organic nuclear/missile means, and the possibility of using high-yield nuclear warheads, not only in the zone of interior, but in engagements and even on the field of battle, demands thorough review of certain postulates of our military doctrine in connection with the operations of ground troops.

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Above all, it is time to repudiate the very concept and expression "strike group" (udarnaya gruppirovka) as antiquated and harmful. Any grouping formed with the personnel and material of ground troops threatens to become a good target for an enemy nuclear strike and to bear extra, unwarranted losses.

In place of the creation of "strike groups" in all types of operations, it is necessary to instill the concept of "concentration of the efforts of nuclear/missile weapons". The activities, after all, of ground troops both in the offensive and in defense must take place over broad zones, approximately the same for large units in offense as in defense. This, incidentally, was recently taken into account by our probable enemies.

The bases of contemporary operations are rapid maneuver and swift attacks by small groupings (of division size), from different directions, not shoulder to shoulder, and making use of their own nuclear strikes. Even these little groupings are dispersed after a successful attack. A strike group in contemporary meaning spells death, since it forms a compact and good target for a high-yield nuclear weapon.

Contemporary offensive and defensive operations must differ from one another by the quantity of nuclear warheads allotted to their implementation and not by the number of divisions. Both in offensive and defensive ground troop operations the primary activities are nuclear strikes, swift maneuver, and short assaults with tanks and personnel. The difference rests in the fact that in offensive operations there must be a strong first echelon which permits swift destruction of the opposing enemy; in a defensive operation it is expedient to have a weaker first echelon and to designate it for holding certain transportation centers, important areas or position sectors behind large natural barriers, with the aim of slowing the tempo of the enemy offensive; defense as a whole should be based on maneuver and strikes with forces located in the zone of interior, even with the loss of territory, in order to win time and concentrate essential nuclear/missile weapons.

It appears to us that under current conditions, it is unnecessary to have second echelons, in the previous meaning of this term, either in defense or in offense. They were always thought of as a potential strike group which could be brought into battle in a new direction. At present it is much more expedient to consider everything located behind the first echelon, which is engaged in battle, as reserve, dispersed over the entire field of

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hostilities and designated as reinforcement for the first echelon during an offensive, but on the defensive - for counterattacks and counterstrikes. To overcome enemy opposition during an offensive, there should not be concentration of troops by bringing in the second echelon, but concentration of nuclear weapons and their means of delivery (nositel). Only when there is an insufficient quantity of these means can a strike be undertaken by several divisions, and then not with a compact striking group, but rather from several directions.

The possibility of enemy use of high-yield nuclear warheads in the field of hostilities obliges even those small groupings, of division size as we mentioned, to operate at a distance of 20 to 40 or more kilometers from each other or, as we frequently point out, to operate in separate directions.

Moreover, the inclination of each advancing large unit to lend assistance to its neighbor, to wheel rapidly if necessary in a new direction for a strike against the enemy rear is a binding principle of coordinated action.

Therefore, the conduct of offensive operations now requires a significantly lesser operational density but a larger number of tank divisions in the first echelon. Divisions located in the zone of interior and moving up -- are not the second echelon but rather, reserves designated as replacements for decimated divisions of the first echelon and for the circumvention of all types of obstacles.

It is necessary to reject decisively the inclination developed in previous wars toward encirclement of separate groupings and the formation of rings around them. This tendency is very viable and has remained with us as an inheritance from the period when there were no other methods for annihilation of the enemy left in the rear of advancing troops. Nowadays, the enemy left in the rear must be destroyed either in meeting engagements by reserve large units and units or if stationary, they must be annihilated with nuclear strikes. The latter, of course, is preferable.

In the training of troops, it is necessary also to reject decisively the cultivation of the principle of break through the enemy's prepared defenses. It is possible, of course, in individual instances when the enemy defense cannot be bypassed or annihilated by nuclear strike. In the main, however, under conditions not involving solid fronts or heated battles, the breakthrough of an enemy prepared defense has ceased to be the primary form of offensive

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actions, but is yielding to meeting engagements and envelopment.

The taking of radioactively contaminated zones created by the enemy acquires great importance. It must be carried out by large units, depending upon the tasks they are fulfilling, the meteorological situation, and the degree of permissible dosage of radiation received during the period of action. Depending upon these conditions, the contaminated zones are taken either by a rapid forward push or by bypassing, or in the final analysis, the troops continue to carry out their mission in the contaminated zone without regard to possible losses. All discussions regarding the creation of passages into contaminated zones, the surmounting of them in helicopters and others are utopian at the present time.

In planning contemporary offensive operations on the scale of a front and armies, it is impossible to proceed from an single "D" (day). In terms of time, operations will flow in different directions, at different tempos and it is more advisable to plan them by calendar days (except, of course, the initial retaliatory missile strike). Moreover, concrete army and large unit tasks can be established for only 1-2 days and for a longer period it is sufficient to indicate the general direction, the nature of the activities and final goal of the operation. More detailed planning is highly problematical, since sharp changes in the situation are unavoidable as a result of enemy nuclear strikes.

The tempos of contemporary operations may be planned, as already mentioned, up to 80 to 100 and more kilometers during a 24-hr. period but it must be kept in mind that, as a result of enemy nuclear strikes on our deep rear, the front will not be able to rely on systematic delivery from the rear of the country. Everything which is essential must already be stored in the theaters in peacetime and such supplies as POL must, to a significant degree, be sought out from war trophies in the course of the advance.

It is also essential to take into account the cumulative physical tension on tank and truck drivers (it will be necessary to have two reliefs for interchange of crew members) and the large number of vehicles which will go out of commission.

Vigorous maneuver and nuclear strikes must become the basis of contemporary defense. He who sits in place, even in prepared positions, will be knocked out by nuclear weapons or bypassed. Only a relatively small part of the forces can hold separate areas or positions with the aim of slowing the tempo of the enemy advance along axes which

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are convenient for him and, consequently, cluster his battle array and operational formation. In this connection an important role in defense is played by broad utilization of obstacles and terrains presenting natural obstructions for slowing the tempo of the enemy advance. However, the fate of modern defense is decided in the final analysis by the maneuver of missiles, chiefly the shifting of their trajectories, and the availability of nuclear warheads, in conjunction with counterattacks and counterblows of the reserves.

It appears to us that under contemporary conditions defense, in the past meaning of this term, can take place only on a tactical scale. Army and front operational defense, deliberately subordinated to the interests of offensive operations in other directions or dictated by a sharp change in the situation in the enemy's favor, will, of course, also have its place. But it must be based on the same methods of operation as in offensive operations, i.e., on heated meeting battles and engagements. For this, the army and front may have a number of large units and a scale of zones of action equal to those of an army and front carrying out offensive operations. The difference will be in the presence of a smaller quantity of nuclear warheads, which will necessitate loss of a part of the forces and territory in order to win time.

Defensive operations of the front and army, differing from offensive operations in aims of action and quantity of nuclear weapons, will resemble the latter in methods of large unit tactical operations.

In defensive operations, certain armies of the front and certain large units of armies, taking advantage of a convenient local situation which has arisen as a result of swift actions or nuclear strikes, will frequently carry out an offensive with limited goals.

In a contemporary operational defense, the formation of defensive zones is not advisable because they do not justify their designation. Any large unit defending itself in place will be annihilated by nuclear strikes of the enemy or simply bypassed. On the operational scale, the term "stable defense" should be relegated to the archives because under modern conditions it can be neither solid nor stable. Slowing the tempo of the advancing enemy by means of defense is based on counterattacks and counterstrikes carried out from different directions, on skilful and swift disengagements from the enemy, and on broad use of barricades and utilization of natural terrain obstacles, until the time a possibility presents itself to destroy the enemy with a nuclear strike.



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In connection with this it is necessary, evidently, to re-examine our views on the nature of so-called counterpreparation (kontrpodgotovka) in defense and on organization of counterstrikes. In these questions we continue to proceed from the concept of the solid and relatively stable front.

It appears to us that a limited quantity of nuclear weapons in the defense will not permit a breakup of the enemy offensive with one or two massive nuclear strikes, especially since he will not form compact groupings for his offensive. Apparently, instead of counterpreparation, it will be necessary to restrict oneself to daily and rapid annihilation of disclosed enemy means of nuclear attack and to individual (to the extent possible) nuclear strikes at various times on the most dangerous of his tank divisions which have broken through. If, however, the availability of nuclear weapons permits the delivery of a massive strike capable of breaking up the enemy offensive completely, then this is already not counterpreparation but going over to the offensive.

It is more expedient to carry out counterstrikes in operational defense, by means of meeting engagements, not with a compact grouping especially created for this purpose and deployed on a definite line, but with several divisions operating simultaneously, though from different directions.

Anti-debarkation defense along the coast by ground troops can also have no defensive zones either on the coast or in the zone of interior. In ports and in vulnerable landing sectors along the coast there can be separate tank subunits and units designated basically for combat against airborne landings and for initial repulsion of debarkations of the enemy in landing-debarkation craft.

The basis of anti-debarkation defense must be the maneuvering activities of large units which move up from the interior of coastal zones and, in meeting engagements, pound the enemy utilizing nuclear weapons.

Of the now generally accepted means of anti-debarkation defense, only the construction of obstacles, both in the water as well as on the land, can achieve much significance.

Enemy amphibious landing operations, while enroute at sea, do not merit expensive and cumbersome operations against them by the navy and long-range aviation. The basis of their annihilation can

be missile strikes in embarkation and debarkation areas; while enroute at sea, it is again more expedient to annihilate landing forces by strikes with missiles having nuclear charges of several megatons. After the discovery of the landing forces at sea, these attacks can be calculated on the basis of their passage of a definite point (area).

Certain Questions of the Development and Organization of the

Types of Armed Forces

The changing of certain strategic and operational points of view is unavoidably bound up in the review of the programs for development and organization of the different types of armed forces. This development must, first of all, evolve only from the needs of the initial period of the war, since a long, drawn-out nuclear/missile struggle is impossible; secondly, it must develop under the banner of the indubitable priority of nuclear/missile troops. In this respect it is expedient to develop primarily missile troops of the VVK, capable of using missiles of megaton yields.

Missile troops of all types -- VVK, operational, and tactical -- must develop in the directions of:

- increasing their firing rate (skorostrelnost); in this respect the introduction of solid missile fuels has decisive significance; missiles must be per se ready projectiles, fully assembled and requiring only the establishment of the flight program;
- perfection and automation of the process of tying in the launching mounts (carriers) to the terrain;
- perfection of missile guidance systems, not subject to jamming;
- perfection of missile carriers capable of changing the launch area quickly; in this respect an important role must be played principally by "air-surface" type missiles on seaplanes (gidrosamolet), missile-carrying submarines, and missile trains (poyezd) (for strategic missiles);
- perfection of the system of centralized command of launching missiles from widely separated command points.

It must be acknowledged directly that in their present state, missiles of tactical and operational designation are still not sufficiently suitable for the missions assigned to them because of their

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low firing rate conditioned by complex preparations for launching, for retargeting and for changing of firing positions.

The ground troops as a whole must develop in a form transportable by air. Perfection and introduction of lighter type tanks (since any armor is penetrable) suitable for transport by air is essential. The great importance which is attached to the ability of ground troops to take ruined and contaminated zones and water barriers requires significant development of engineering troops; however the most important mission of the engineering troops must not be fortification in the existing meaning of this term, i.e., not the construction of positions and of anti-atomic shelters but the rapid preparation of missile launch sites, establishment of obstacles, road construction, and provisions for the surmounting of large water obstacles.

The air forces, it appears to us, have not yet lost their significance to the degree that they should be ignored. Discussion should concern only the change in their role in warfare and, subsequently, a change in their composition and organization.

Long-range aviation, armed with missiles of the "air-ship" class, is (in conjunction with submarines) a good means of combat with mobile carriers of nuclear weapons at sea and one that is difficult to replace. In view of this, it is apparently advisable to include it in the composition of the navy.

Front air forces (VVS) are also needed, though of a type other than those now available. Certainly, front bomber aviation is departing the scene, since its missions can, to a significant degree, be carried out by missiles. Nevertheless, on the field of modern battle and engagements there will be many important small and mobile targets whose annihilation by missiles is still improbable. An aircraft of the fighter-bomber type is needed which, on its own, could find the target and annihilate it; such an aircraft must be capable of great acceleration, permitting it to appear and depart rapidly (this may be achieved with the aid of rocket boosters); at the same time it must be capable of carrying out combat missions at relatively low speeds as well. An aircraft flying at a speed equal to Mach 1-2 (M-2M) is poorly suited to seek out small and mobile targets, even with the use of radar equipment.

Fighter aviation within the composition of the VVS of a front is essential, as a more maneuverable component of the PVO, as long as aviation remains one of the principal carriers of nuclear weapons

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for the enemy and as long as ground antiaircraft missile systems do not possess a sufficient range of destruction.

In addition, the front needs a manifold troop (army) aviation for observation and reconnaissance, including radiation, for liaison, command, and transport. Such aviation must undoubtedly develop as non airfield-based. It may consist of helicopters and other flying machines, for example the type well known in foreign literature under the term "flying saucers" (ground effect machine-turbolet).

The VVS of the front must have a much greater number of reconnaissance aircraft than they have at present.

Finally, greater-capacity transport aviation is needed as a resource of the Supreme High Command.

The VVS of the front (air army) is not designated under modern conditions for the execution of any independent air operations, and is the means for directly coordinated action with combined-arms armies. For this reason, their composition must include several aircraft divisions of fighter-bombers because only the latter are favorable for combat against mobile carriers of nuclear weapons and the advancing reserves of the enemy. In this connection, however, it is inadvisable to distribute the VVS forces of the front for support of definite armies or divisions; it is better to utilize them centrally, under the jurisdiction of the VVS commander.

The Navy. The future at sea belongs to submarines and to missile-carrying seaplanes which are not bound to airfields and which are capable of long-range operations. These, it would appear, should now be developed.

The basic mission of the fleet -- to annihilate carriers of nuclear/missile weapons at sea which as a consequence of their mobility, have greater survival chances. Such carriers will be missile-carrying aircraft and missile-carrying atomic submarines. As a result of their high radar-image contrast and, consequently, their vulnerability aircraft carriers and other surface vessels apparently will soon depart from the scene.

Under contemporary conditions it is hardly possible to imagine large amphibious landing operations of an operational, and even less, of strategic significance. A landing force is always, at some stage of its activity, a compact group or it does not make sense; but this

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condition spells destruction for the landing force. The possibilities are all in favor of its annihilation by nuclear/missile weapons while it is still at its bases or while it is at sea.

Surface vessels of the fleet will not be able to play a significant role in armed conflict. Their utility will probably be limited to coastal areas under heavy FVO cover for execution of support missions. As far as protection of ocean supply transport is concerned, even now they are of little use for carrying out this mission.

Antiaircraft defense of troops and the country, as it appears to us, is on the correct course of development, chiefly of anti-missile resources in the form of the creation of fully automatic systems of antiaircraft missiles.

The age of tube antiaircraft artillery is irrevocably receding into the past and it is only in the antiaircraft defense of troops that small-caliber tube antiaircraft artillery may still have some significance for the protection of small subunits from low-flying aircraft.

The principal antiaircraft defense of troops and the country must be an automatic system of antiaircraft missile installations of various ranges which could cover, not installations, but separate large areas, and could resolve the task of protecting both the troops and the territorial installations of the country (in these areas). Separate antiaircraft defense of troops, except for the self-defense of small subunits mentioned above, appears to us to be an antiquated tradition. Fighter aircraft aviation within the system of antiaircraft defense will also become archaic in the near future. It is needed only until antiaircraft missiles have achieved the necessary technical perfection.

A new type of forces. In addition to existing types of armed forces the necessity has sprung up, in our opinion, for the creation of a new type of force which is not designated for direct conduct of combat operations, but which is extremely important, nonetheless, under conditions of nuclear/missile war. We have in mind troops, possibly called rescue-rehabilitation (spasatelno-vostanovitelnyy), which are designated for operations in the country's interior, in areas subjected to enemy nuclear attack. Their basis should consist of medical service and rehabilitation units and large units.

In contrast to other types of forces, these troops must be

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especially massive, organized according to territorial characteristics and trained without being pulled out of production. We have something similar now in the form of civilian formations of the antiaircraft defense (MPVO). But these formations exist mostly on paper, are not supported from a material-technical standpoint, are semi-voluntary organizations, and are not properly directed by anyone. In addition, organs of the MPVO are concerned with a very large number of problems which, in essence, are the prerogatives of governmental authority, such as communications, supplying the population with food, evacuation, etc.

It appears to us that such very important undertakings as medical assistance to the suffering populace and rehabilitative work, i.e., measures permitting the people to withstand enemy nuclear attack, must be implemented by special troops. Their cadres and necessary equipment must be maintained in peacetime and they must be assured mobilizational buildup under the leadership of organs of military control with the initiation of military activities.

Questions of Control. From the standpoint of the nature of control of operations, the new forms of armed conflict do not introduce any basic changes. As in the past there will be need for intelligence and collation of its information, an appraisal of the situation, a decision, and its transmittal to executors, supervision of execution, influence on the course of events by changing the tasks of subordinate troops, or through the influence of the senior commander's means exerted on the enemy, the informing of the commander and of adjacent units. However, the methods of control and the means by which they are implemented experience significant changes.

The method of direct personal contact in operations is of little value today. It can lead only to a waste of the senior commander's time and promote incorrect decisions based upon impressions of one center of combat operations. This method is admissible now only in combat on a subunit level, but not in operations.

The need to see the field of combat along the decisive direction also has little admissibility now. This need arose from crushing the enemy with masses of troops which were in direct contact with him. This will not usually happen, now.

The most important thing in control is quick reaction to a change in the situation, a rapid tempo of control, and, consequently, the well-known need for its mechanization, automation, and reduction of

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the number of its documents.

Even now wire telegraphy and telephone communications should be added to obsolescent means of control as they will not be able to keep pace with the operating tempo of troops.

Apparently even such an attribute of control as the preparation of large unit and army command posts with all types of shelters (dugouts), by the forces and equipment of engineer troops, is becoming obsolete. The rapid tempos of battles and operations require highly mobile command points using available places of cover (cellars, buildings, tunnels, quarries, etc.).

The recording of meteorological conditions and their prediction become a very important factor in operational planning and in daily control. In this connection, the creation of special meteorological units in all staffs from division to front is absolutely essential.

Until automatic systems permitting rapid and accurate determination of coordinates for missile launchers are worked out, it is essential to have in the staffs of armies and fronts a separate topogeodetic service with subordinate special units to support missile units and large units.

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In this article we have only touched upon some of the most topical questions of military art. In connection with the development of nuclear/missile weapons, the total number of postulates in need of review is undoubtedly much greater. Many of the questions touched upon by us are set forth only by way of posing them and bringing them to the attention of military-theoretical thought. Therefore, the judgements of the author cannot lay claim to exhaustive completeness or infallibility.

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