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30 JAN 1962

MEMORANDUM FOR: The Director of Central Intelligence

SUBJECT : MILITARY THOUGHT: "The Air Forces in the New Stage of Development of the Soviet Armed Forces", by Lt.-Gen. of Aviation S. Sinyakov and Maj.-Gen. of Aviation M. Kozhevnikov

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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30 JUN 1992

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Original: The Director of Central Intelligence

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COUNTRY : USSR

SUBJECT **MILITARY THOUGHT: "The Air Forces in the New Stage of Development of the Soviet Armed Forces", by Lt.-Gen. of Aviation S. Sinyakov and Maj.-Gen. of Aviation M. Kozhevnikov**

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The Air Forces in the New Stage of Development
of the Soviet Armed Forces

by

Lt.-Gen. of Aviation S. Sinyakov

and

Maj.-Gen. of Aviation M. Kozhevnikov

The well-known postulate of F. Engels on the direct dependence of the armament, composition, and organization of troops, and their tactics and strategy, on the degree of development of industry, finds brilliant confirmation in our Soviet reality. The uninterrupted and stormy growth of socialist economics and the realization of technological progress in all branches of the peoples' economy, especially in heavy industry, has made it possible to supply the Soviet Army with the new nuclear/missile weapon, which has radically changed the quality of all the types of our armed forces, including the air forces (VVS).

The introduction of the nuclear/missile weapon was accompanied by a process of formation of new opinions regarding the preparation for and conduct of modern operations and of war as a whole. The nuclear weapon has changed the role and place of every type of armed forces and arm of troops in armed combat, in an operation and a battle, by advancing to first place a new, more powerful type of armed forces - the missile troops - to whom belongs the basic role of disorganizing the enemy rear, his economy, and system of governmental control, and also, of destroying the enemy's long-range means of attack.


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At the same time, it is quite obvious that no single type of armed forces is in a position, if isolated from the other types of forces, to perform successfully the combat missions assigned to it. The achievement of victory in a future war will be possible only with the united efforts of all types of armed forces and with their coordinated operations on land, in the air, and on water. The interdependence of all types of armed forces and arms of troops will increase significantly in a future war, since, with the employment of missiles and aircraft, war will reach all corners of the globe, the distance between the rear and front will disappear in fact and the losses in military equipment and personnel will increase many fold as compared with the last war. Continual mutual assistance and cooperation will be required between all types of armed forces in fulfilment of combat tasks, as well as in materiel-technical and medical support.

The air forces, owing to the availability in their composition of various types and kinds of aircraft, are capable of fulfilling diverse combat tasks, and because of their high mobility they are very closely bound to all types of armed forces in combat operations.

In fact, missile troops equipped exclusively with powerful combat means can at any time of the day and irrespective of weather conditions penetrate the air space of the enemy relatively freely and strike all of his stationary and low-mobility targets on land and water. But these troops urgently need to have aerial reconnaissance information on the targets of operations and on the results of their strikes.

The ground troops, despite their increased fire-power and penetrating ability, require the assistance of other types of armed forces, particularly aviation. The VVS, jointly with missile troops, can successfully strike the approaching enemy reserves and disrupt his communications. Military aviation participates directly in the combat and in the operations of ground troops by supporting and covering them in cooperation with other

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arms of troops. For the ground troops and for all other types of armed forces, reconnaissance aviation is and will be for the immediate future the only means of ensuring the receipt of reliable information on the activities and intentions of the enemy in the depth of his rear and on all close approaches to the front, just as military transport aviation is and will be the most mobile means of transporting troops and cargo.

The troops of PVO of the Country are interested in the neutralization and destruction of enemy means of aerial attack, especially of his missiles of all systems while still at their places of concentration and at their bases. It is quite obvious that only missiles and aircraft can neutralize and destroy enemy means of aerial attack at the locations of their concentration and bases. Fighter aviation and guided antiaircraft missiles of fronts, by delivering strikes against an aerial enemy in flight into the depth of the country, cooperate significantly with the troops of the PVO of the Country in the fulfilment of the important task assigned to them of covering the territory of the country from air strikes.

The navy, using submarines and missile-carrying surface vessels, can operate successfully against the enemy's ocean and sea communications only in close cooperation with reconnaissance and missile-carrying aviation. Effective combat with enemy aircraft carriers and missile-carrying vessels, just as with constantly maneuvering objectives, is possible in modern conditions only by aircraft armed with missiles of the "air-to-vessel" class.

It is quite likely that the enemy fleet, having received the signal of combat alert during the threatening period, will leave its stationary bases and will proceed to the vast sea and ocean spaces. Because of this, it will be practically impossible to catch military vessels at their bases through the launching of the first strike with the "surface-to-surface" (zemlya-zemlya) class of missiles. From



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this it becomes quite clear that destruction of enemy aircraft carriers and missile-carrying vessels will have to be carried out by the forces and weapons of missile-carrying aviation and submarines.

Consequently, the air forces as a type of armed forces must be separate and complete, because in a future war they will have to perform tasks in cooperation not only with one type of armed forces but concurrently with all of them. Therefore it is impossible to agree with the opinion of Colonel-General A. Gastilovich, regarding the expediency of transferring the long-range aviation to the navy, which was expressed in the article "The Theory of Military Art Needs Review".¹

In examining the problems of combat use of our VVS, and also in determining its role and place in modern operations and in warfare as a whole, it is advisable to proceed from the need to secure close cooperation between all types of armed forces, without which it is impossible to achieve success in modern armed combat.

It is known that the air forces, owing to the transfer of a number of their combat missions to the missile troops, have lost their monopolistic position in the destruction of many enemy objectives, especially those located on other continents. In this connection, the VVS sphere of operations in the intercontinental field has narrowed, but in theaters of military operations and in front troop operations it has significantly widened.

In the present article it will be advisable to examine certain already partially determined trends and directions in the combat use of the various types of aviation in modern operations. It is necessary to do this because the appearance of missile troops has generated many varied interpretations of combat use of aviation in modern operations and in warfare as a whole.

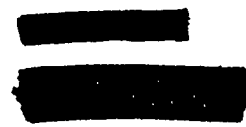
1. Special Collection of Articles of the Journal "Military Thought", First Edition, 1960, page 6.

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In order to understand more correctly the peculiarities of combat use of VVS under the new conditions, we will begin with an examination of the qualitative changes which have occurred recently in aviation and of the combat characteristics of VVS, which derive from the nature of the various types and arms of aviation.

In the air forces, as in the other types of armed forces, the nuclear/missile weapon is becoming the basic type of weapon of strategic, long-range, and front bombers and is gradually being assimilated by fighter-bombers and fighter-interceptors. Data on the quantity and combat capabilities of aircraft - the carriers of nuclear bombs and missiles of the "air-to-surface" and "air-to-air" classes - are the basis for all calculations in answering the question of the combat complement and the structure of combat formations of aircraft, getting them to the targets of operations, evaluating VVS combat capabilities, and organizing control of them. Missiles of the "air-to-surface" class, which can be launched from strategic aircraft located at a distance of up to 600 kms from the target, ensure the destruction of specific objectives from long distances without the need for aircraft to penetrate the enemy PVO zone. As a matter of fact, the mother aircraft (samolet-nositel) becomes a missile-carrying aircraft (samolet-raketonosets) and the commonly used term "bomber" will obviously disappear with time from our military lexicon and will be replaced with the term "missile-carrier". The appearance of the aircraft-missile carrier -- this is the most important qualitative change that has taken place in the VVS -- has permitted a reduction in the combat complement of aviation operational formations (obyedineniye) and large units (soyedineniye) and, at the same time, even more effective execution of combat tasks. The determining factor is no longer the quantity of airplanes carrying out a strike on a target, as it was in the recent past, but their quality; for example, their capability to carry nuclear weapons and, under conditions of a strong enemy PVO, to locate moving targets quickly and to destroy them.

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In fighter aviation the guided-missile weapon of the "air-to-air" class is acquiring increasing significance, and is becoming the main type of weapon of modern fighters. This weapon permits the destruction of aerial targets in all weather conditions at distances of 3 to 5 times greater than the fire range of existing modern aircraft cannon and ensures the interception and destruction of aerial targets on approaching courses and from the forward semicircle (s peredney polusfery). The guided-missile weapon and the supersonic fighter flight speed of 2,000-2,500 kms/hr ensure the destruction of enemy cruise missiles, aircraft, helicopters, and aerial balloons.

Military-transport aviation is being equipped with new heavy freight capacity and with faster aircraft and helicopters capable of transporting troops and freight not only within the limits of one front and one theater of military operations but also between different theaters of military operations.

In the very near future, major qualitative changes will occur in reconnaissance aviation. This process will acquire an ever larger scope by its being equipped with new manned and pilotless cruise reconnaissance vehicles (bespilotnyy krylatyy razvedchik), and also with night-vision apparatus and automatic transmission of reconnaissance information from the aircraft to the screens of the appropriate command posts.

The increased speed, flight altitude and other features of our aircraft as carriers of nuclear weapons, and also the improved capabilities of active and passive PVO means, are connected with the successful mastery of all types of jet engines (turboprop, turbojet, ramjet, rocket). In comparison with conventional aircraft, they possess much greater thrust with lighter weight, and they impart to an aircraft, whether with liquid or solid fuel, exceptionally great speed which has not as yet been fully exploited, and in addition they have unlimited altitude. The appearance of aircraft with atomic engines will ensure the possibility of flights of unlimited distance.



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Electronics are far from being the least element influencing the basic qualitative changes in our VVS. Radioelectronic apparatus has made it possible to achieve more effective guidance of manned and pilotless means of attack and defense than was possible previously. In manned equipment, electronics has brought about the realization of complete or partial automation, without which the flight of aircraft (including bombers) would have been inconceivable with a crew at modern supersonic speeds. Radioelectronic apparatus permits control from the ground or from the mother aircraft of pilotless cruise missile flights.

The further development of aviation weapons will permit us, in the next few years, to have ballistic missiles of the "air-to-surface" class along with cruise missiles, within the armament inventory of supersonic strategic and long-range bombers.

At the present time the question of the need for creating rocket aircraft has become acute. In a future war, rocket aircraft, combining the combat characteristics of missiles and aircraft, and piloted by a human, will play a highly important role in space (kosmos) combat and in the destruction of the most important objectives on distant continents. The creation of rocket aircraft is a most immediate and completely practicable task in the development and construction of our air forces. There is no doubt that rocket aircraft, as an absolutely new and longer range weapon of the VVS, will find broad application in a future intercontinental war.

These are the qualitative changes taking place in our air forces and representative aspects of future development in military aviation.

Let us examine those combat characteristics of the VVS which are inherent to them alone and which retain their importance in the new phase of the development of the armed forces. Among these combat characteristics should be listed:


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-the high mobility and capability of the VVS to perform rapid maneuver with piloted means on operational and strategic axes and in theaters of military operations;

-the capability of carrying out independent search for and preliminary reconnaissance of targets assigned for destruction and of annihilating them either when they are on the move or when stationary;

-the ability to retarget more rapidly than other means, while airborne, against new targets which suddenly appear or against targets whose locations have changed;

-the capability to observe the enemy's operations from the air, to discover his intentions, and to transmit the reconnaissance information immediately to the command posts of all types of armed forces;

-the capability to support an airborne troop landing and to provide rapid air transport for troops and freight for any distance.

Mobility to one degree or another is also characteristic of other types of armed forces, but in the VVS it is notable for the fact that military aviation is capable, by maneuvering rapidly with piloted combat equipment, to ensure its immediate entry into combat. This should be emphasized particularly because under conditions of great destruction of railroad and automobile communication lines, relatively speedy reinforcement of separate fronts and active theaters of military operations with forces and weapons from other axes will be possible only by combat aviation, if we do not consider implementation of maneuver by fire of ballistic missiles of operational-strategic designation. Within 2 to 5 hours after receiving the order and notification of combat alert, aviation large units and units of the VVS can (depending on the types of aircraft) take off and carry out the assigned combat task in the direction or in the theater of military operations indicated to

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them. If, in this event, the aircraft are in a situation of "ground alert" (dezhurstvo na aerodrome) the time will be decreased to 15 to 25 minutes. It is absolutely clear that no other type of troops will be able in such a short time to maneuver even within a single theater of military operations.

A remarkable combat characteristic which only aviation possesses is the ability to combine independent search by aircraft crews for the assigned targets and the destruction of them by nuclear and conventional weapons.

In reality, we all recognize that a future war will have a highly maneuverable and destructive character. The troops, in order to escape enemy nuclear activity, will constantly strive to change location. The troops operating in the first strategic echelon will require more frequent reinforcement and the uninterrupted delivery of materiel means (ammunition, fuel, food) from the rear areas. All this, in the final analysis, will result in a stream of freight trains, numerous vehicle columns, and flights of transport aircraft and helicopters from the rear area to the front. If it were to be calculated, one could confirm the fact that a group of U.S. armies in the Western theater of military operations can have up to 45 percent of its installations mobile. It can be expected that during combat operations at least half of the enemy armed forces will be in a constantly mobile status. Combat against such mobile objectives can be carried out principally by aviation and partially by missile troops. In this event, missiles of the "surface-to-surface" class require the precise coordinates of each target, and with moving objectives, as is known, they change constantly. Therefore missiles can destroy mobile targets only on the basis of previously calculated coordinates, in narrow defiles, at road crossings, and also at loading and unloading places. All moving objectives can be most reliably destroyed, only by piloted aircraft, whose crews need only information as to the area in which moving enemy troops and equipment have been detected.


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The ability to see the enemy from the air and to observe his activities in both the deep and close areas of the rear -- this is a characteristic peculiar to aviation. It is difficult to overestimate it, if we consider that without reconnaissance information, which is obtained with the aid of aviation, it would be impossible to carry out modern operations.

As concerns airborne troop landings and the rapid transport of troops and freight for any distance, irrespective of the availability and condition of roads, aviation still remains the only means for performance of such tasks. The need for military-transport aircraft and helicopters is continually increasing in all types of armed forces, but under conditions of mass use of nuclear/missile weapons, aircraft and helicopters will in many instances be the only means to provide for the maneuverability of the troops and for timely materiel-technical supply to them.

On the basis of a brief analysis of the qualitative aspects and the combat characteristics of our VVS, it is possible to determine their combat tasks in warfare.

In the not too distant past, air forces, as is known, were responsible for three basic tasks:


- the disruption of the military-economic potential of the enemy;
- the struggle for supremacy in the air;
- cooperation with the ground troops and the navy in the successful conduct of operations.

In the past war all of these missions were successfully fulfilled by the Soviet air forces. This is especially apparent, for example, in the fulfilment of the second and third tasks by them.

As is known, in the middle of the summer of 1943 our aviation wrested the initiative from the hands of the enemy in heated combat and, after winning the

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battles for the Kuban and at Kursk, firmly secured supremacy in the air. By uninterrupted support and cover of the ground troops, our aviation actively cooperated in the destruction of the armed forces of Fascist Germany. The VVS activities against rail-road networks, military-industrial targets, airfields, and groupings of troops, transformed aviation during the course of the war into a factor of strategic significance. Even after the war and right up to the appearance of missile troops, the VVS were actually the strategic means of combat and were the main striking force capable of subjecting the deep enemy rear to destructive nuclear action.

After the appearance of missiles of strategic and operational-tactical designation, the situation changed radically. Missiles, possessing the capability to reach any distant target strongly defended by enemy PVO means, will be able to fulfil the most important strategic missions. They will be used primarily along the main axes, where the most important large and stationary enemy objectives are located, well-screened by anti-aircraft guided missiles. Despite this, one cannot overlook the fact that the enemy has many important mobile objectives, and that there are areas which are not screened by an effective PVO. Naturally, it is expedient to use long-range and strategic bombers in these directions.

Therefore, the first task - disruption and reduction of the military-economic potential of the enemy - which was previously the responsibility of the VVS, has now passed in significant degree to the missile forces. The very contents of this task have changed. It has assumed a more decisive character and consists now of the mass and rapid destruction and annihilation of the most important targets of the enemy's rear. In fulfilment of this broadened task, the air forces, in the new conditions, take an active part by concentrating their efforts on the destruction of targets mainly in directions not well covered by PVO means.



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The second mission - the fight for air supremacy - as one of the most important missions previously assigned to the VVS, has lost its earlier significance due to the appearance of missile troops. But in its place there has appeared a new, even more complicated task - the struggle against enemy nuclear/missile means of attack, which, in its significance to warfare, acquires paramount importance. Its significance flows from the colossal increased destructive might of nuclear/missile weapons. In a future war a stubborn, bitter struggle will develop between the warring sides for nuclear superiority and for more effective exploitation and use of nuclear weapons for more rapid achievement of strategic goals. Both sides will vigorously seek to locate the antagonist's nuclear/missile weapons and to destroy them immediately. It can be confidently stated that whoever resolves this task faster will win the battle and, consequently, the war. For this, it is necessary to have in constant readiness, not only missile troops, but also military aircraft and means of aerial reconnaissance that are capable, at the start of the war, to survey all corners of the globe that are enveloped by war, and later to carry on constant observation of the enemy on land and water.

In this connection, the task of the struggle with the enemy's nuclear/missile means of attack becomes the primary one for our missile troops. The air forces will take a most active part in its fulfilment.

The third most important task of the VVS - cooperation with the ground troops and the navy in their operations - remains fully intact under the new conditions. Military aviation takes part in cover and support of troops from the air, in the battle with the enemy's means of nuclear/missile attack and his reserves, in support of airborne troop landings, and in air transport of troops and freight.

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The fourth task of the VVS - combat against enemy transport operations via his ocean, sea, land, and air communication routes. Under the new conditions of waging war, this task will undoubtedly assume an operational-strategic scope.

The fifth task of the VVS - aerial reconnaissance. This VVS task is becoming, in its operational-strategic significance, no less important than all the other tasks. Therefore it seems expedient to us to raise aerial reconnaissance to the category of the independent and most important tasks of the air forces.

These are the combat tasks which must be fulfilled by the air forces in modern warfare with consideration for the existing capabilities of aircraft and the immediate prospects for receipt of new aircraft equipment into the armament. The many-sided nature of VVS tasks resulting from the new conditions also pre-determines the need for long-range, front, and military-transport aviation within its composition.

Let's examine the apparent and already partially determined new trends and directions in the combat use of various types and kinds of aviation under conditions of wide use of missile weapons in the conduct of operations by the ground troops in the initial period of a war.

The experience of a number of aviation exercises carried out jointly with the troops of PVO of the Country indicates that the VVS's first massive strike against the enemy in the beginning of a war can be executed immediately following the first missile salvo, but that aerial reconnaissance must start fulfilling its assigned tasks simultaneously with the initiation of the first launch of missiles. The subsequent activities of long-range and strategic bombers, and cruise missiles with nuclear warheads, will similarly be carried on between the missile salvos (strikes). Such a sequence of operations of the missile troops and of the VVS creates for the VVS two quite new situations, one of a positive, the second of a negative, nature.

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Missile troops, simultaneously with the destruction of assigned enemy targets by nuclear warheads, inevitably destroy and annihilate the forces and weapons of his anti-aircraft defense and thereby disrupt the only control system for enemy anti-aircraft missiles and fighter-interceptors. This assists the long-range and strategic bombers to overcome enemy PVO.

But in this connection, during the course of a missile strike, the necessity arises to transit air space heavily contaminated with radioactive fallout. Therefore, the probability of air-crews entering a zone of radioactive contamination significantly increases at night and with adverse weather conditions, during daylight, when visual determination of the limits of the radioactive cloud is almost impossible.

These two circumstances strongly emphasize the need for continuous coordination between the respective headquarters of the missile troops and of the air forces. It must be expressed primarily in the assignment of targets of the operations, in the assignment of a time schedule for the missile strike and for mother aircraft, and in the determination of altitudes for the burst of nuclear charges. In practice it is possible to coordinate missile and aviation operations against enemy targets in the same area if they are plotted on a single board which reflects the combat capabilities of the missiles and aircraft being used.

For the air forces, even under the new conditions, the basic method of operations in the initial period of a war will be the execution of powerful massive strikes, with subsequent transition to operations by small groups on a broad front following the missile strikes.

The form of operational employment of the VVS under conditions of the initial period of a war remains the air operation, i.e., massive strikes with its entire strength. In its content, the air operation will have a somewhat different nature than previously. In the first place, it will be carried out under conditions

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of wide use of missiles; because of this, its duration will be sharply reduced and the immediate task can be fulfilled by the initial massive strikes, as the experience of training exercises indicates. In the second place, the air operation will be carried out by the entire or the major portion of the forces of long-range aviation, with the participation of front aviation. In such an operation the decision regarding the fulfilment of assigned tasks will ordinarily be made by the Commander-in-Chief of the VVS. In the third place, the targets and areas of operations of the VVS in an air operation will be determined by a higher command, depending upon the operations of the missile troops.

One of the main conditions for fulfilment of tasks by long-range and strategic bombers, as regards the destruction of targets in the enemy rear areas, is their successful overcoming of enemy PVO means. Wide use of low flight altitudes by bombers, and the use of passive and active jamming (pomekh), are highly effective. It was determined during training exercises that the percentage of aircraft attacked by enemy fighters in daylight at high altitudes was 5 or 6 times greater than at lower altitudes and at night it was quite insignificant. Destruction of aircraft by guided antiaircraft missiles during low altitude flights is limited by the combat characteristics of the anti-aircraft missiles. Thus, absolutely clear-cut determination was made of the direction of the use of existing long-range and strategic bombers against targets located in theaters of military operations - at night and at low altitudes. Low altitudes are becoming the basic operational altitudes for long-range and front aviation.

The training exercises carried out this year confirm the assumption that during the execution of the first retaliatory strike, a single echelon operational formation of long-range aviation forces and the overcoming of the pre-frontal zone on a broad front are the basic form of operational maneuver.

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These are some of the new tendencies and trends in the combat use of the VVS in conditions of the wide utilization of missile troops during the initial period of a war.

Let us examine definite directions in air operations when fulfilling tasks in cooperation with the ground troops in their operations.

It is known, that of all the types of aviation, front aviation plays the main role in the operations of the ground troops; during the recent past it has undergone major qualitative and quantitative changes which have resulted in a significant impact on the nature of the tasks performed by front aviation. For example, with the appearance of nuclear weapons, the main content of the air struggle with the enemy's means of attack changed from the destruction of enemy aircraft in general to the destruction principally of the aircraft carrying nuclear weapons and missiles and also of assembly bases and nuclear weapons storage areas; in the air support of troops-it has become the destruction of atomic artillery, various missile equipment, and of highly mobile, constantly maneuvering enemy reserves.

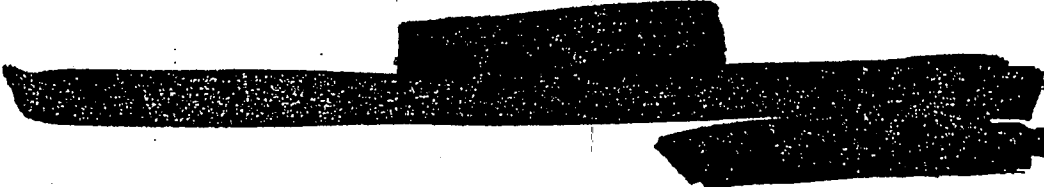
There was a particularly sharp change in these tasks due to the appearance of missiles of various designations in the armament of troops; as a result, front bombers and fighters began to execute their basic missions in conjunction with the missile troops and to concede to missile troops the main role in the use of nuclear weapons against stationary surface targets and against aerial targets.

By dint of these circumstances, front aviation, having conceded the main role to missiles, began to have only a part in the performance of a number of tasks - in the struggle with the means of aerial and missile attack, in the screening of troops and installations of the rear area of the front, and in the struggle with the enemy's reserves. The special province of front aviation operations remains air support of troops and the conduct of aerial reconnaissance.


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It is essential to state a number of new situations in the combat use of front aviation in ground troop operations. The struggle with enemy means of aerial and missile attack is now planned on a frontal scale, since the missile troops of the front take an active part in it in addition to aviation. Upon aviation falls the principal responsibility of destroying newly detected enemy means of aerial attack, i.e., those targets which are on the move and which will not be destroyed by missiles. The performance of this task by aviation will be resolved by the method of calling up aircraft from a position of "ground alert" or "airborne alert".


In screening of troops and installations of the rear areas of a front, new conditions have also been created which permit more effective resolution of this problem. The more important installations of the front are screened by anti-aircraft missiles. However, troop, army, and front anti-aircraft guided missiles are still able to destroy only the aerial targets located at insignificant distances from the missile positions; these means cannot destroy enemy missile mother aircraft at the limits from which they drop their missiles of the "air-to-surface" class. Fighter-interceptors, with their high maneuverability, are capable of meeting the aerial enemy and destroying him with guided weapons while he is still on distant approaches to the line of the front and to the installations being screened.

Taking into consideration the combat characteristics of anti-aircraft guided missiles and of fighter aircraft, it is advisable to organize cooperation between them along the following lines.

First, zones of operations in area and altitude must be delineated between guided missiles and fighters. In doing so, it is desirable to assign to fighters a zone of combat operations ahead of the front line to the depth of possible interception within the radius

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of operation of a pair of fighters, i.e., beyond the range limits of anti-aircraft missiles (ZUR). When operating in the same area with ZUR, it is advisable to assign low altitudes to fighters wherever guided missiles are still limited in their operations.

Secondly, it is necessary to distribute targets of operations between fighters and anti-aircraft guided missiles. Fighter-interceptors must destroy principally mother aircraft, cruise missiles, fighter-bombers, military transport aircraft, helicopters and aerial balloons, anti-aircraft guided missiles, cruise (krylataya) missiles and pilotless missiles (samolet-snaryad), and also all the other manned and pilotless means that manage to break through the covering screen of fighters into the air space of the front.

Thirdly, it is necessary to set up demarcation of areas of operations between the air large units that cover the troops and those that cover installations in the rear area of the front. Taking into account that under the new conditions a front air army may have no more than two fighter divisions, it is advisable to assign one division or a major part of its forces to cover the front tank army which is operating ahead and out of contact, and the second division - to cover the other troops of the front and the installations in the rear areas. Further, it is advisable to set up demarcation of operational areas between the fighter divisions.

In air support of ground troop operations, the need to use aircraft against mobile targets becomes especially clear, since they do not all have precise coordinates, and the majority of them do not produce a clearly defined radar contrast.

In this connection, it has been deemed expedient to carry out air support of combined-arms armies by a centralized method of allocating to armies, in


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accordance with the decision of the front troop commander, a definite number of flights (vylet) of fighter-bombers with nuclear bombs, without making the fighter-bomber subunits and units subordinate to the army. Support of the tank army that is operating separately from the main forces of the front is best accomplished by allocating designated aviation units of bomber and fighter-bomber aviation for this. The basic type of fighter-bomber and bomber operations in the air support of troops will be the method of operations on request.

From the above-mentioned facts it is possible to conclude that the basic method of operation for all types of aviation in the execution of combat missions under the new conditions is the method of operations with subunits and small groups of airplanes called up for air support from the command, or forward, control post from a condition of ground or air alert. Along with this, front aviation will participate in the execution of massive nuclear strikes against missile, air, and other enemy means of attack, not on the scale of an air army, as it was before the appearance of missiles, but on the scale of a front. This means that in modern conditions the massive strike becomes a front function.

A number of new postulates have also arisen in the conduct of aerial reconnaissance. The establishment of the reconnaissance mission has become an integral part of the operational decision. By its nature, aerial reconnaissance simultaneously fulfills, it would seem, two missions. The first and main one - the detection of enemy missile and nuclear means of attack, with the aim of ensuring direct effect on them by the missile, aviation, and artillery forces. The second mission - the continuous observation of all of the enemy's forces and weapons with the aim of planning combat operations for the following 24-hour period, day or night.

Such are the new concepts and characteristics which have been determined recently in training exercises which were carried out by the air forces, both independently and jointly with the ground troops.

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