MEMORANDUM FOR: The Director of Central Intelligence

SUBJECT: MILITARY THOUGHT (USSR): Combat Employment of Front Aviation in a Front Offensive Operation

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 examines new theories concerning the combat employment of front aviation in an attempt to clear up inaccuracies on the part of other authors. The purpose of front aviation, according to the author, is joint combat actions with front troops. Aviation participation is required for reconnaissance, destruction of small and moving targets, combat against enemy aircraft, and various airborne support functions. The air support tasks of front aviation may be directly or indirectly connected with the actions of a front or its subordinate elements, but must be carried out in full cooperation with them. This article appeared in Issue No. 1 (71) for 1964.

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

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The following report is a translation from Russian of an article which appeared in Issue No. 1 (71) for 1964 of the SECRET USSR Ministry of Defense publication Collection of Articles of the Journal "Military Thought". The author of this article is General-Mayor of Aviation M. Kozhevnikov. This article examines new theories concerning the combat employment of front aviation in an attempt to clear up inaccuracies on the part of other authors. The purpose of front aviation, according to the author, is joint combat actions with front troops. Aviation participation is required for reconnaissance, destruction of small and moving targets, combat against enemy aircraft, and various airborne support functions. The air support tasks of front aviation may be directly or indirectly connected with the actions of a front or its subordinate elements, but must be carried out in full cooperation with them.

End of Summary

Comment:

The first article to which it refers was written by A. Kurykin and D. Kremlyakov. The author, more recently identified as a General-Mayor of Aviation (Reserve), contributed another article, entitled "Actions by the Air Forces at the Beginning of a War Without the Use of Nuclear Weapons" to Issue No. 2 (78) for 1966.
Combat Employment of Front Aviation in a Front Offensive Operation

by

General-Mayor of Aviation M. Kozhevnikov

A number of articles in the Collection of the Journal "Military Thought" have raised the issue of the role and purpose of front aviation, the combat tasks assigned to aviation during offensive operations, the methods of fulfilling these tasks, the ways of implementing cooperation between aviation and the troops, and the methods of controlling aviation. A considerable number of the theories presented are correct and do correspond to modern views and the qualitative change in aviation. However, in our view, there are some inaccuracies concerning a number of important problems of the combat employment of aviation in operations, particularly its purpose and the combat tasks it fulfills, as well as cooperation with the ground forces.

One opinion exists according to which all actions by front aviation are viewed as air support for the ground forces, and air support is not considered the main task of front aviation. Its main task is to combat missile/nuclear weapons. As for air support, under the new conditions this task has supposedly lost its importance and has been broken down into separate specific tasks. Some authors also propose to attach front aviation in the form of individual large units and units to combined-arms armies and tank armies, and to subordinate fighter aviation to the chief of front air defense. In the article "The Problem of the Air Defense of Troops in a Front Offensive Operation"* the authors, believing that front aviation must operate in the rear area of a front, in general assign it a secondary role in repelling enemy air strikes.

In connection with the above we believe that it is advisable, based on the experience of theoretical research and exercises which have been conducted, to return to these problems and examine some new theories concerning the combat employment of front aviation in offensive operations of front troops.

*Collection of Articles of the Journal "Military Thought", No. 2 (63) for 1962.
First of all, we will examine the purpose of front aviation. Recently front aviation, which includes various types of aircraft, has considerably improved its combat characteristics, and is now the most highly maneuverable means of all the combat means included in front formations. In fact, units and subunits of an air army are able to arrive above a battlefield from their airfields within 15 to 20 minutes after the army is called; they arrive from their airborne alert zone within three to five minutes. Airborne aircraft can be retargeted to any enemy ground targets located not only within the zone of a given front, but also in the zone of an adjacent front. Only aerial reconnaissance aircraft are able to penetrate enemy territory and observe his actions. But, does this mean that all actions by aviation must be regarded as air support for the ground forces? No, it does not. Aviation is not a support element but a powerful means in the hands of the front troop commander for acting against the air and ground enemy. Therefore, it is incorrect to regard as air support any and all actions by aviation during an operation of front troops.

Front aviation has in service SU-7B, MIG-21P and YAK-28 supersonic aircraft, powerful armament in the form of air-to-air and air-to-ground missiles, and nuclear bombs. In addition to this, it also has powerful conventional weapons. For example, the SU-7B aircraft carries 64 rockets for destroying ground targets, and can employ antitank bombs which pierce armor up to 200 millimeters thick. Front MIG-21 fighters are capable of intercepting and shooting down enemy aircraft on the distant approaches to the troops and rear installations of the front being covered. Fighter-bombers and bombers independently locate and immediately destroy enemy missile/nuclear means, moving troop columns, control posts, and other small targets. Aviation is the only means of moving troops by air and of dropping landing forces into the enemy rear. Then, how can aviation be included among the support means for the ground forces? In our view, this statement is fundamentally incorrect.

The actions of modern front aviation must be considered an indispensable component of the efforts of all the branches of the armed forces, principally the ground forces, in armed combat in the theaters of military operations. The operational formations of front aviation -- air armies -- are a part of the front. Hence, the purpose of front aviation -- joint combat actions with the troops of fronts and with naval forces on coastal axes.

By joint actions we mean actions by ground forces and aviation coordinated with respect to time, place, and targets, and directed toward the achievement of the final goal of the offensive operation in a short
period of time and with the fewest losses. The question may then arise: why do front troops with their ever increasing combat capabilities nevertheless require the broad participation of aviation in modern offensive operations? We will attempt to answer this question.

First of all, the threat of enemy use of nuclear weapons, the increasing mobility of troops and, in connection with this, the rapid and abrupt changes in the ground and air situation, demand that continuous observation of the enemy be carried out from the air over the entire depth of the enemy's deployment. Without this it is impossible to make effective use of missile/nuclear weapons and to carry out offensive operations by a front at high rates of advance. The significance of aerial reconnaissance increases even more when the depth of a front offensive operation coincides with the depth of the theater of military operations. In such a situation aviation becomes the main and most effective means of reconnoitering troops, missile launch sites, airfields, control posts, nuclear weapons assembly bases, and the lines of communication of the enemy.

The ability to see the enemy from the air and observe his actions in the immediate and deep rear is the exclusive property of aviation. This is difficult to overestimate if we consider that without the reconnaissance data provided by aviation, it would be practically impossible to use operational-tactical missiles against the most important point targets or to predict the course of developing events. Therefore, the front command is placing new demands on the reconnaissance aviation of an air army: it must be strong enough to carry out its tasks efficiently. It is well known that one of the serious errors committed on the eve of the last war was a certain underestimation of the development of reconnaissance aviation. At the start of the war, it comprised a total of 6.3 percent of the aircraft in the entire front aviation, and 85 percent of these were obsolete aircraft. The poor combat characteristics of reconnaissance aircraft and the enormous losses suffered in aircraft inventory (94 percent of the reconnaissance aircraft were lost in the first two days of the war) resulted in a situation in which the fronts were left basically without air reconnaissance. This was one of the reasons why the combined-arms command had no knowledge of the ground situation and made decisions without taking into consideration the real actions of the enemy.

Secondly, the proportion of small, mobile enemy ground installations on the field of battle and in the operational depth has increased significantly; and new means of combat have led to the necessity of the dispersed deployment of troops and their rapid and broad-scale maneuvering. An analysis of NATO troop exercises shows that in the course of offensive
actions, up to 80 to 85 percent of an enemy grouping opposing a front consists of mobile installations and targets, of which, as a rule, more than half are continuously in motion. This is something new in the nature of actions of the potential enemy. The destruction of a large number of mobile (moving) installations and targets on the field of battle and beyond it for the most part requires the use of highly maneuverable means capable of independently locating given targets and destroying them immediately. One such highly maneuverable means is, first of all, fighter-bomber aircraft which are sufficiently effective in destroying small mobile targets from low altitudes and with complex maneuvers, using cannon fire, missiles, and bombs with conventional or even nuclear warheads. It is sufficient to say that from four to six SU-7B aircraft with conventional weapons are required to destroy such small targets as, for example, Honest John and Corporal batteries.

We could say all of the above is correct, but the front, as well as aviation, now has powerful missile weapons which can destroy targets at a depth of more than 500 kilometers. Yes, this is true, but we must remember that operational-tactical missiles are only able to destroy targets on coordinates which have been calculated in advance. These targets can include all fixed targets (bridges, railroad junctions, airfields, fuel and ammunition depots) and area targets. Small moving targets such as, for example, troop columns, missile launch sites, moving reserves and rocket troops can only be destroyed when they cross road intersections, bridges, defiles, i.e., places for which the coordinates have been fixed in advance. The time spent in fixing target coordinates using photography is so great (up to 1.5 hours), that a mobile target can move so far in that amount of time that it is senseless to employ missiles against it. It is true that new methods of fixing target coordinates using the tactical bombing system (the system is installed in MIG-15 and IL-28 aircraft) are presently being employed at exercises. Experience has shown that 12 to 15 minutes are required to obtain target coordinates accurate up to 120 meters. This also applies to conditions of nuclear war. But, unfortunately, this system has its shortcomings: the reconnaissance target must be located within the zone of operation of the system; and the locations of targets can be determined only when both direct line of sight to the target and the indispensable overflight of an aircraft above the target are possible. For this reason, the above method for fixing target coordinates cannot be considered as the basic method for wartime conditions. Therefore, aviation today, and in the immediate future, will remain the only continuously operating means of destroying mobile targets in the zone of operations of front troops.
Thirdly, the role of aviation as an effective means of combating an air enemy, particularly his reconnaissance aircraft, delivery aircraft for cruise missiles and nuclear bombs, military transport aircraft and helicopters has significantly increased rather than decreased. In the Western European Theater of Military Operations, especially its central part, is now located a strong aviation grouping which numbers more than 3,200 combat and reconnaissance aircraft of which 30 to 40 percent are delivery aircraft for nuclear bombs. In addition to this, the probable enemy has a rather strong fleet of carrier-based aircraft -- more than 1,300 combat aircraft of which up to 50 percent are delivery vehicles for nuclear bombs. These delivery aircraft, operating from carrier deployment areas, have sufficient range to destroy ground targets located in the zone of operations of front troops on coastal and adjacent axes. This means that, in carrying out the tasks of providing air cover for front installations, front fighters will have to engage that part of carrier-based aircraft which appears in the zone of operations of front troops.

It also is known that the United States Air Force intends to have up to 2,000 reconnaissance, transport and auxiliary aircraft and helicopters within a field army in the European Theater of Military Operations.

All of this means that, in combination with surface-to-air missiles and long range aviation, front aviation which is in close contact with the aviation of the probable enemy must carry out fierce combat in the initial period of a war. The main burden of this combat lies on fighter aircraft since their characteristics enable them to fly to enemy territory and destroy hostile delivery aircraft for nuclear weapons in the air on the distant approaches, and also to locate and destroy reconnaissance and military transport aircraft and helicopters.

Fourthly, aviation is irreplaceable in airborne landings, in supporting a troop movement, and in delivering ammunition and other materiel to the troops. The extensive utilization of nuclear weapons by the opposing sides will lead to large areas of destruction and serious radioactive contamination of the terrain, limiting or totally depriving the troops of the possibility of moving over the ground. It will be necessary to move troops by air to areas that have been hit by nuclear strikes in order to capture and hold these areas, airfields, ports, and road junctions, and to rout individual garrisons and render assistance to the population. For example, it is known that in 1945 in the war with Japan our airborne and air-landed landing forces in the territory of what was known as Manchuria played an exceptionally positive role in the capture of
a number of cities, airfields, road junctions, and entire areas. It is quite obvious that in a future war the successful accomplishment of a number of tasks in an offensive operation will be inconceivable without strong military transport aviation included as a part of the air armies of fronts.

In our opinion, each front air army must contain front military transport aviation consisting of units of light military transport aircraft and helicopters. These means can ensure the landing of tactical landing forces, the movement of engineer-technical personnel and personnel from rear facilities to new base airfields immediately behind the advancing troops, the delivery of ammunition, the necessary amount of fuel, and rations to the troops, the evacuation of wounded, etc. The volume of tasks of military transport aircraft has increased sharply under the new conditions.

The need to establish front military transport aviation without counting on the attachment of military transport aircraft from the Supreme High Command to fulfill the needs of the front is also occasioned by the sharp growth in importance of the time factor in conducting front operations. This is, in brief, what we wanted to say concerning the role of front aviation in a modern war. We have repeated some well-known theories, but this was necessary. Unfortunately, some combined-arms generals and officers still retain a different view of the purpose of front aviation.

Let us now examine the tasks of front aviation. In our view correct determination and formulation of the tasks assigned to front aviation has fundamental importance, since this will have a great influence on its effective employment as well as on the methods of operation of each type of aircraft, the relative proportion of each within an air army, methods of providing control, and the direction of further development. The tasks are based on the function of front aviation, the new nature of the conduct of a battle and operation, the qualitative and quantitative composition of an air army, and the tasks which are being accomplished by the troops of a front.

It is known that the chief method of conducting a modern offensive operation will be the delivery of nuclear strikes and the rapid advance of tank and motorized rifle divisions after the strikes. Of course, nuclear weapons will be used by order of the commander of front troops for the accomplishment of the basic tasks of an offensive operation, that is, for the destruction of enemy nuclear attack means, the destruction of his major
ground and air groupings, and the disruption of control and the functioning
of the rear. As far as nuclear weapons located directly within armies and
divisions are concerned, they will be used by the commanders of the
respective armies and divisions. The decision of the division commander
must be approved by the army commander.

In our opinion, nuclear weapons located in the air army of a front
must be used according to the same principle. The nuclear warheads
assigned to front bomber aviation and to front cruise missile units must be
employed according to the plan of the front, while the nuclear warheads
used by fighter-bombers should be employed by decision of the commanders of
the air army and the combined-arms (tank) army within the limitations
imposed on them by the commander of the troops of the front. This is
necessary in the interests of rapidly routing enemy troops located in front
of the advancing troops of a combined-arms army or tank army.

In connection with this solution to the problem of the use of nuclear
weapons, an air army is faced with two groups of tasks in support of an
action by the troops of a front. The first group is carried out by aviation
in the interests of the entire front and involves combating enemy
missile/nuclear means, aircraft, and reserves, providing cover for troops
and rear installations of the front and conducting aerial reconnaissance.
The second group of tasks are those fulfilled in the interests of advancing
combined-arms armies and tank armies. These tasks include supporting the
troops and escorting tank large units as well as supporting tactical
airborne landings.

But there are also other tasks assigned to an air army which are not
directly connected with the actions of front troops. These include:
supporting the flight of long range aviation and military transport
aviation across a hostile forward air defense zone into the deep rear of
the enemy; destroying amphibious landing forces on their approach and when
landing on our coast; and disrupting the closest sea lines of communication
of the enemy, if the air army of the front is operating on a coastal axis.
In our view, these tasks comprise a separate group of tasks.

Thus, under the new conditions of the situation the air army of a
front must fulfill tasks in support of the entire front, in support of
combined-arms armies and tank armies, and in support of an action by long
range aviation and military transport aviation.

To which group of tasks should preference be given, and where should
the main efforts of aviation be concentrated in an offensive operation by
Above we stated that the main purpose of front aviation is to conduct joint actions with front troops. Therefore, in our opinion, its main efforts during an operation by front troops should be directed at covering troops and rear installations of the front, at supporting combined-arms and tank formations (large units), and at conducting aerial reconnaissance.

No one doubts that covering troops and conducting aerial reconnaissance are the most important tasks of an air army. Forces of operational-tactical missile troops, bomber aviation and cruise missile troops will combat missile/nuclear means, enemy aviation on airfields, and reserves located beyond the range of fighter-bomber aviation according to the plan of the front. By decision of the Supreme High Command, large units of long range aviation can also operate in support of a front offensive operation on separate important axes to combat enemy aviation and reserves. Obviously, all of these tasks will be accomplished during the first and subsequent massed attacks carried out by the front.

In the course of an offensive by the troops of a front, combating enemy reserves can prove to be the sole responsibility of front bomber and long range aviation, while combating enemy missile/nuclear weapons will be part of the task of providing air support for the troops and will be carried out by fighter-bomber aviation and, under favorable conditions, by fighter aviation.

Air support, as one of the basic if not principal tasks of an air army, has a direct effect on the success of an offensive by combined-arms and tank formations and large units. In providing such support aviation destroys missiles, fire positions, and approaching enemy reserves which are impeding the successful advance of the troops.

In situations where the ground forces are maneuvering to support combined-arms armies and tank armies, we believe that, rather than dividing aviation among the armies and divisions, it would be better to concentrate it in the hands of the commander of the air army, assigning a certain number of fighter-bomber sorties for support of the armies on the days of the operation. This will ensure that the efforts of fighter-bombers are immediately switched to support that combined-arms army or tank army which is having great success in a situation or is in particular need of support. Where the air army of a front contains one fighter-bomber division based at six or seven airfields, there can be 20 to 30 groups (of two, four, and six aircraft each) in constant readiness for take-off. This number of
fighter-bomber groups will ensure the support of two or more combined-arms armies and tank armies simultaneously. The targets of actions by fighter-bombers will be those located on the field of battle and in the immediate operational depth. In many situations actions by aviation will take place immediately ahead of the advancing troops of the armies.

In carrying out the task of supporting combined-arms and tank formations and large units, fighter-bomber aviation during daylight hours can limit, and in many cases prevent, all movement by troops along roads by means of continuous air action against them. As the experience of exercises has demonstrated, the actions of pairs of SU-7B aircraft crews, or a single crew, are effective at low altitudes on certain sections of roads.

As for tasks supporting the flight of long range aviation and military transport aviation across an enemy forward air defense zone, they will be carried out periodically by order of the Supreme High Command which is transmitted to the air army via the Commander-in-Chief of the Air Forces and the Front troop commander.

In our opinion, such are the tasks assigned to an air army during a front offensive operation.

From the above it becomes perfectly clear that, regardless of the contention of some authors, air support has not lost its importance. Moreover, under the new conditions its importance has increased immeasurably. We can state that without air support for the troops of combined-arms armies and tank armies it would be difficult, and in many cases practically impossible, to conduct an offensive under conditions of a nuclear war.

Finally, we will examine the third problem concerning the organization and implementation of cooperation between aviation and troops, as well as methods of controlling an air army.

*Collection of Articles of the Journal "Military Thought", No. 2 (63) for 1962.
Missiles and aircraft are the delivery vehicles for nuclear weapons. The use of such a powerful means of destruction is a factor which necessitates the comprehensive organization and implementation of precise and continuous cooperation among aviation, rocket troops, and combined-arms (tank) formations and large units. The use of nuclear weapons requires strict matching of the time and type of burst not only when missiles and aircraft are operating simultaneously in one area, but also when they are operating along different axes. Nuclear weapons will be employed by the rocket troops and aviation chiefly in the interests of the entire front to fulfill tasks of combating the missile/nuclear means, aircraft, and reserves of the enemy. In connection with this, the time and type of burst should be coordinated first of all between aviation and rocket troops.

Aviation cannot operate without knowing where nuclear strikes will be delivered by missiles. For purposes of flight safety, the flight crew must not fail to take into consideration the shock wave and radioactive contamination of the airspace resulting from a burst of the nuclear warheads of missiles. The location of the flight trajectories of missiles in the air must also be precisely known. Due to the nature of the tasks being accomplished, fighter-bombers normally operate at low altitudes, bombers at low and maximum altitudes, fighters at all possible altitudes, and reconnaissance aircraft at various altitudes depending on the weather. Cruise missiles have a flat flight trajectory at low altitudes. On the ascending and descending legs of their trajectory ballistic missiles intersect the airspace in which aircraft operate. To avoid a collision of the missiles and aircraft, it is necessary to coordinate the time at which aircraft fly through dangerous zones of airspace. The front troop commander and his staff organize cooperation between rocket troops and aviation through the commander of the rocket troops and the commander of the air army, respectively. Unfortunately, at some exercises this problem is not given proper attention.

A second no less important factor necessitating continuous cooperation are actions in the same airspace by fighter aviation and surface-to-air missile units, the two most aggressive means of front air defense.

Surface-to-air missiles can effectively destroy air targets within their maximum range which, although it extends beyond the front line (towards the enemy), is considerably limited in extent, so that they effectively destroy only those air targets which pass directly over the troops being covered or on the closest approaches to them, that is, in many cases after the line at which delivery aircraft release their cruise missiles. Fighters, which are highly maneuverable and have a considerable
radius of operation, are capable of intercepting an air enemy still on the approaches to the front line. Therefore, it is advisable that delimitation of zones of operation and distribution of targets during actions in a single zone form the basis for the implementation of cooperation between missiles and fighters.

Areas beyond the limit of the maximum range of surface-to-air missiles should be assigned for the independent action of fighters; in certain cases a zone of operations, for example on the flank of the front, should be assigned. The varied combat characteristics of fighter aviation and missiles justify this separation of the zones of operations, as does the necessity of shooting down a hostile aircraft carrying a cruise missile or nuclear bomb before the release line. Otherwise, when shot down the delivery aircraft with its nuclear bomb could inflict losses on our troops when it falls into our troop deployment area (by self-destruction of the nuclear warhead).

The cooperation of fighters and surface-to-air guided missiles is possible in a single zone (cooperation on targets and altitudes of operation). But this will depend to a great extent on specific conditions, the composition of the fighter aviation forces, and on the number of surface-to-air missile units in the front.

The cooperation of aviation with combined-arms armies and tank armies operating along the main axis of the troops of a front must be implemented through operations groups located in these armies and through representatives from the air army. As the experience of many exercises shows, the representation of aviation in the troops plays an extremely important role and enables continuous cooperation between aviation and the troops to be maintained.

The continuous presence of the operations group of the air army at the command post of the combined-arms (tank) army, and the availability of radio communications between the command post of the air army and airborne fighter-bombers assure constant contact between aviation and advancing formations. The chief of the operations group of the air army is always informed of all decisions made by the army commander with whom he is cooperating, refines the tasks of aviation with the army commander in a timely manner and transmits them to the executors, continuously informs the staff of the combined-arms army or tank army concerning the actions of the air army in the zones of operations of adjacent armies, and constantly reports to the air army on all changes in the ground situation taking place within the offensive zone of the given combined-arms army.
The operations group should be responsible for ensuring cooperation between fighter aircraft and surface-to-air guided missiles through the chief of the air defense of the army. If the air army contains two fighter aviation divisions, there should also be representatives of fighter aviation at the command post of the chief of air defense of the tank army and combined-arms army operating along the main axis. These representatives may be the deputy division commander with a small group of officers and mobile communications means (in helicopters or motor vehicles). The presence of representatives of a fighter division at the command post of the chief of air defense of a combined-arms (tank) army of a front is required because of the need to solve problems of joint actions by fighters and surface-to-air missile subunits in a single zone.

Successful cooperation with the troops is achieved by carrying out a whole series of other measures. These include: correct evaluation by the combined-arms commanders of the forces and combat capabilities of their aviation; timely assignment of aviation tasks; and continuous exchange of information between the command and staffs of cooperating operational formations and large units concerning the location and tasks of troops, aviation, and missile units and large units.

Thus, all the basic tasks assigned to an air army during a front offensive operation must be accomplished in full cooperation with the troops of the front. Without this condition, the air army of the front cannot realize all its combat characteristics. Control of aviation must be strictly centralized and must be exercised through the commander of the air army. The strict centralization of control ensures the timely transfer of the efforts of part or all of the aviation forces to the necessary axis, specifically to those targets posing a threat to front troops at a given moment; this is very important under conditions of a rapidly changing ground situation.

These are, in our opinion, some of the new theories on the combat employment of front aviation in offensive operations of fronts.