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CENTRAL INTELLIGENCE AGENCY  
WASHINGTON, D.C. 20505

16 February 1979

MEMORANDUM FOR: The Director of Central Intelligence  
FROM : John N. McMahon  
Deputy Director for Operations  
SUBJECT : WARSAW PACT JOURNAL: The Organization of Cooperation  
Between Air Defense Troops of the Ground Forces  
and Fighter Aviation

1. The enclosed Intelligence Information Special Report is part of a series now in preparation based on articles from a SECRET Soviet publication called Information Collection of the Headquarters and the Technical Committee of the Combined Armed Forces. This useful and informative article discusses the general aspects of cooperation between ground air defense units and fighter aircraft, in the light of whether they have separate zones of action or take action in the same zone. The author focuses on the complexities of the latter, discussing the control posts and groups for coordination, the problems of control and flight safety, the role and functioning of organic colocated ground and air control organs, and the transmission of data and orders down to the individual gunner. This journal is published by Warsaw Pact Headquarters in Moscow, and it consists of articles by Warsaw Pact officers. This article appeared in Issue No. 12, which was published in 1976.

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 the [redacted] Codeword [redacted]

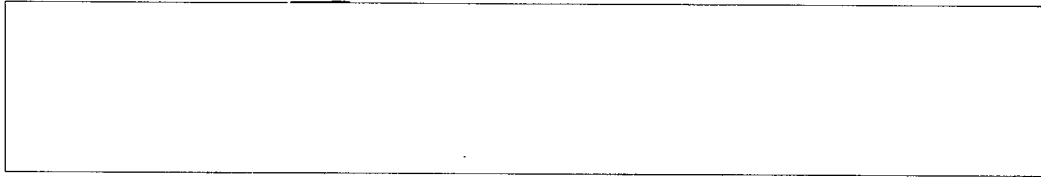
John N. McMahon

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## Intelligence Information Special Report

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COUNTRY USSR/WARSAW PACT

DATE OF  
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16 February 1979

SUBJECT

WARSAW PACT JOURNAL: The Organization of Cooperation Between Air Defense Troops of the Ground Forces and Fighter Aviation

SOURCE Documentary

### Summary:

The following report is a translation from Russian of an article from a ~~SECRET~~ Soviet publication called Information Collection of the Headquarters and the Technical Committee of the Combined Armed Forces. This journal is published by Warsaw Pact Headquarters in Moscow, and it consists of articles by Warsaw Pact officers. This article was written by General-Major of Artillery V. Mitronin. This useful and informative article discusses the general aspects of cooperation between ground air defense units and fighter aircraft, in the light of whether they have separate zones of action or take action in the same zone. The author focuses on the complexities of having them operate within the same zone, where they are to be coordinated with respect to altitudes, axes, control lines, times, and targets. Also discussed are the control posts and groups set up to coordinate these actions, the problems of control, flight safety considerations, the role and functioning of organic colocated ground and air control organs at army and divisional levels, and the transmission of data and orders down to the individual gunner. This article appeared in Issue No. 12, which was published in 1976.

End of Summary

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The Organization of Cooperation Between Air Defense Troops  
of the Ground Forces and Fighter Aviation

by

General-Mayor of Artillery V. MITRONIN  
Deputy Chief of the Air Defense and Air Forces  
Directorate of the Staff of the Combined Armed Forces

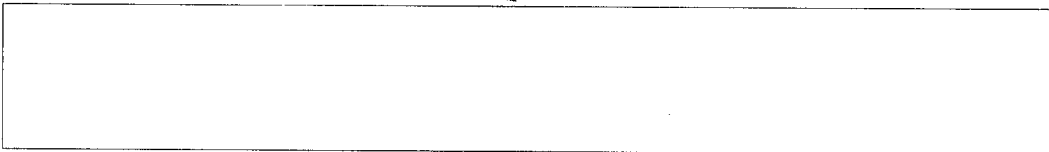
In recent years new surface-to-air missile and artillery systems, modern reconnaissance means, and automated systems of control have been added to the armament of the air defense troops of the ground forces of the armies of the Warsaw Pact member-states. These have significantly improved the combat capabilities of air defense large units, units, and subunits in covering troops and rear services installations against enemy air strikes. Of course, these capabilities will be fully exploited only when the control of air defense forces is organized, continuous, and firm; and when the actions of all the branch arms engaged in destroying the air enemy are coordinated.

In order to more successfully accomplish the tasks that are common to air defense troops and fighter aviation, cooperation must ensure that maximum losses are inflicted on the air enemy on the approaches to the troops and installations being covered, that the combat capabilities of each of the cooperating means are exploited to the fullest, and also that the safety of the flights of our own aircraft within the combat actions zones of surface-to-air missile (antiaircraft artillery) units is guaranteed.

As is known, cooperation is based on the decisions of the troop commander. The chief of the air defense troops of a front together with the commander of the air army determine the methods and procedure for cooperation based on the tasks which confront the air defense troops and fighter aviation and on their combat strength and capabilities. These methods and procedure are set forth in the air defense plan which is approved by the front troop commander and passed on to the troops through combat instructions. In resolving matters involving methods of

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cooperation, the procedure for using air defense troops and fighter aviation is ultimately determined by whether they have [separate] combat actions zones or have the same (common) zone.

The combat actions zone of surface-to-air missile units is taken to mean that space whose boundaries are the farthest limits of the missile launching zone and the combat actions zone of fighter aviation is taken to mean all the remaining airspace within whose limits its combat actions are feasible.

Cooperation by zones is quite simple from the viewpoint of its organization. In this case, the problem of ensuring the safety of the flights of fighter aviation does not arise: fighter aviation operates in an independent zone, and flies through the zone of the surface-to-air missile units in compliance with a prescribed procedure. In addition, when conducting actions in different zones, fighter aviation and surface-to-air missile units have an increased responsibility to fulfill combat tasks and control is exercised over the process of cooperation.

At the same time, this method of organization also has several shortcomings: it only provides for dispersal of the forces and precludes the possibility of concentrating the efforts of fighter aviation and surface-to-air missile units against grouped air targets; it makes it difficult to determine the limits of the kill zones of surface-to-air missile units due to the frequent relocation of their combat formations and the temporary loss of the combat effectiveness of individual battalions (batteries) during combat.

Cooperation within the same zone provides for allocating the efforts of fighter aviation and surface-to-air missile units with regard to altitudes, axes, control lines, time, and targets.

In the first instance, the ranges of altitudes for unrestricted actions by each of the cooperating means are established. In the process, the upper flight echelons are preferably assigned to the fighter aircraft.

When allocating efforts by axes, areas (sectors) are assigned to the cooperating means within which they can operate without restrictions throughout the entire range of altitudes.

Combat actions are organized according to control lines when situational conditions permit surface-to-air missile large units (units)

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and fighter aviation to be used sequentially.

The allocation of efforts with respect to time involves the sequential alternation of the combat actions of the air defense troops and fighter aviation; and with respect to targets, it involves selective assignment of these to the cooperating means.

The altitudes, axes (areas, sectors), control lines, and times for the actions of the forces and means of the air defense and fighter aviation are designated prior to or immediately during the repelling of enemy air strikes.

In planning cooperation within the same zone there can be different combinations of the above-listed variants. It should be noted that this method of cooperation enables us to concentrate and intensify the efforts of fighter aviation and surface-to-air missile means by maneuvering them.

At the same time, cooperation within the same zone demands more precise organization of the combat work of command post crews at all levels and the availability of reliable means of control and identification; otherwise, the firing capability of the surface-to-air missile units might be restricted due to the danger of hitting our own aircraft.

Thus we see that each of the methods of cooperation indicated has its pros and cons.

In the planning of cooperation for an entire operation, the employment of both methods is as a rule provided for, taking into account the possible nature of the air enemy's actions against the troops and rear installations of the front and the state and positioning of the surface-to-air missile large units (units) and fighter aviation.

The experience of exercises shows that it is easier to organize cooperation by zones to repel the initial massed strike, i.e., when the battle formations of the surface-to-air missile large units have not been changed. It is apparent that this method of cooperation will also be effective in those instances when the air defense troops of the ground forces are covering limitedly mobile installations of the front (rear services bases, and second echelons and reserves in their concentration areas, etc.).

In organizing the cooperation of fighter aviation with the anti-aircraft artillery and air defense means of motorized rifle (tank)

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regiments, it is essential to bear in mind that the battle formations of these units and subunits are usually positioned inside the combat actions zones of the surface-to-air missile troops. In the cases when fighter aviation and surface-to-air missile units are cooperating in the same zone, as a rule aviation is granted unrestricted right of entry even into the firing zones of the antiaircraft artillery which is firing on targets not under attack by our fighters.

Actions by fighter aviation in the firing zones of the air defense subunits of the motorized rifle (tank) regiments are inadvisable, since these air defense means frequently do not have identification systems and, as a result, cannot fully guarantee the safety of the flights of our aircraft. Consequently, in our view it is advisable, for fighters flying over the battle formations of combined-arms units which have in service highly effective modern air defense means in rather high densities, to assign to them a range of altitudes which would exceed the upper limit of the kill zone of the surface-to-air missile troops. In the majority of cases, corridors are established in order to ensure the safety of the flights of our aircraft. However, it must be kept in mind that the enemy may discover and exploit the corridors to his own advantage. Therefore, it is desirable to have several such corridors and have them reliably covered by air defense units and subunits with identification means and well-organized control.

The organization of cooperation begins in the planning stage of an operation. But, since it is difficult to foresee beforehand all the variations in combat actions which might come about while repelling enemy air strikes, the need might arise during combat actions, and depending on the turn of events, to refine or change the previously planned procedure for cooperation. This can be most fully accomplished when there is continuous and firm control over the cooperating forces from a single center (control post).

As the experience of exercises indicates, given the constant improvement of the combat equipment of air defense and air forces troops and the mobile nature of combat actions, it is difficult to ensure reliable cooperation when using a variety of non-T/O&E air control organs which are set up for temporary joint work at air defense command posts. Therefore, the Combined Armed Forces have begun to change over to a new system of control for front and army aviation based on T/O&E combat control centers (groups) that are collocated with the corresponding command posts of combined-arms formations and large units. This significantly improves the organization of cooperation between aviation and the forces and means of

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the ground troops, including field air defense, and more dependably ensures the safety of the flights of our aircraft.

Colocation of air defense command posts with aviation control posts is done in fronts, armies, divisions, and surface-to-air missile units. Thus, to resolve matters of cooperation, a combat control center for fighter aviation (TsBU IA), usually headed by the deputy commander of the air army, is set up at the air defense command post of the front. The chief of the air defense troops of the front, together with the chief of the combat control center for fighter aviation, specifies: the procedure for cooperation; the signals for fighter aviation and front air defense means when they conduct combat actions within the same zone; the airborne alert zones for fighter aviation; and the flight corridors for our aviation with the prescribed flight altitudes within them. These and the other more precisely determined data which are needed to organize cooperation are transmitted to the collocated control organs of the combined-arms army, the air defense forces and means subordinate to the front, and the fighter aviation control posts.

During combat actions, the chief of the front air defense troops allocates the efforts of fighter aviation and front air defense means for the purposes of repelling enemy air strikes, and likewise assigns combat tasks to the front anti-aircraft units. The control of the fighter aviation large units (units) is a function of the combat control center for fighter aviation.

It is necessary to bear in mind that the salient features of the development of modern front operations have a substantial effect on the capability of controlling air defense forces and means and on their cooperation with fighter aviation. It is especially difficult to resolve these matters during an offensive. At such a time, depending on the rate of advance of the ground troops, there will be changes in the numerical proportion of air defense forces that are set up in launching (firing) positions to those that are making a relocation behind the advancing troops. This being the case, the faster the rate of advance, the larger the number of air defense troops and means in motion.

The capabilities of fighter aviation to cover troops during an offensive operation likewise change and depend on how efficiently they can rebase to the airfields abandoned by the enemy. Therefore, even before the front accomplishes its immediate task, a gap can form between the air defense troops of the first echelon and the fighter aviation bases. Obviously, in this case the principal method will be cooperation by zones,

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since fighter aviation will have to conduct combat actions behind the air defense troops of the first echelon.

During the repelling of massed strikes, when the combat capabilities of the air defense troops are insufficient to bring fire to bear on all targets, it is advisable to organize cooperation within the same zone, allocating efforts according to altitudes.

As was already noted, during combat part of the air defense troops may not be able to engage in destroying the air enemy because they are relocating, lack missiles (ammunition), their equipment is defective, or for other reasons. In this case, it is advisable to lower the altitudes for the unrestricted use of fighter aviation in the actions zones of these units to 3,000 meters.

Thus, during the offensive combat actions of ground troops it is obvious that difficult tasks will arise when organizing cooperation between air defense troops and fighter aviation. Therefore, in order to accomplish them, firm and continuous control is needed which will ensure the timely transmission of combat tasks to the cooperating troops based on the ground and air situation that develops. Obviously, controlling the cooperating forces and means of the front's air defense from a colocated command post will greatly contribute to this.

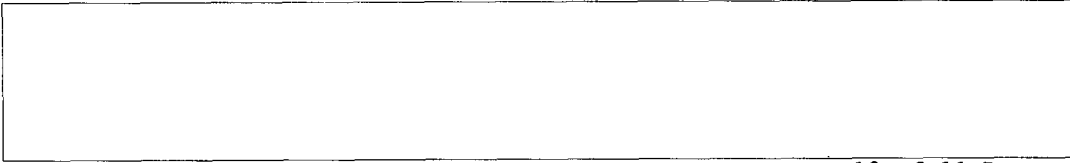
An air army combat control center (TsBU VA) is set up to maintain the cooperation of aviation with a combined-arms army and its air defense forces and means, to control the airborne front and army aviation, and to direct the air movement of all types and branches of aviation within its zone of responsibility. As a rule, it consists of a cooperation group and a combat control post. The cooperation group and the chief of the combat control center are located with the commander of the combined-arms army. The combat control post, headed by a deputy chief of the air army combat control center, is located at the command post of the chief of the air defense troops of the army.

The chief of the air defense troops in conjunction with the chief of the air army combat control center formulates the procedure for cooperation between the air defense troops of the army and fighter aviation when they are in action in the same zone, coordinates the procedure for the flight of fighters through our combat actions zones, and handles cooperation during the repelling of enemy air strikes within the army's area.

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The air army combat control center is composed of two to three guidance and target designation posts (PNTs) and a combat control group (GBU).

The guidance and target designation posts are, as a rule, colocated with the command posts of the surface-to-air missile large units (units). They possess the capability of guiding fighter crews to enemy planes, of maintaining cooperation with the surface-to-air missile large units (units), and of guiding aviation against ground targets.

Achieving cooperation within the same zone, especially in a complicated air situation, as was previously stated, demands especially reliable control of both fighter aviation and surface-to-air missile units. In our view, the commander of the surface-to-air missile unit in control of its firing and the officer guiding fighter aviation must be at the same display unit (plotting board); otherwise mistakes are possible in assessing the air situation and in making decisions concerning joint combat actions within the same zone.

The combat crews of the command posts of surface-to-air missile large units (units) and of the guidance and target designation posts must be coordinated to the utmost in their joint work, which can be achieved through systematic practical exercises with actual aircraft flights. It is advisable to have these control posts develop their coordination in combat work during special military district (army) air defense exercises as well as during all exercises which involve surface-to-air missile large units (units).

To the command posts of the first-echelon motorized rifle (tank) divisions there come, as a rule, combat control groups whose function is to implement cooperation between aviation and the motorized rifle divisions (tank divisions), and also to request and guide aircraft against ground targets. An officer is detailed from the combat control group to a division's air defense control post to resolve matters concerning cooperation between the air defense means of the division and aviation.

The essence of cooperation at this level primarily comes down to ensuring the safety of the flights of our aviation by having the chief of the combat control group inform the air defense chief of the motorized rifle (tank) division about the flight times, routes, and altitudes of our aircraft, including fighter aircraft.

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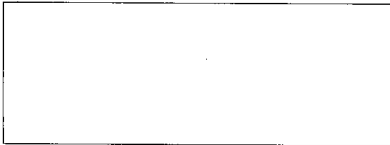
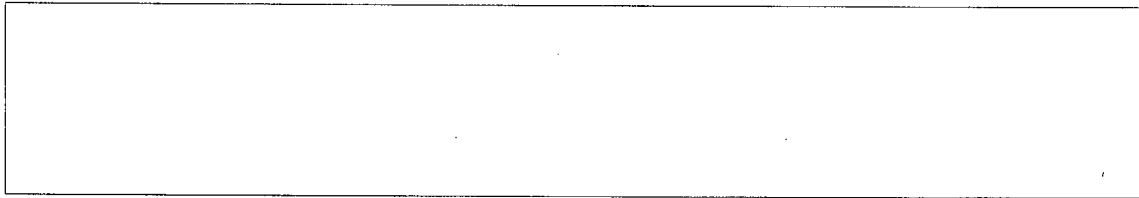
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The air defense chief of the division, having received this information, transmits it to the commander of the surface-to-air missile (antiaircraft artillery) unit and air defense chiefs of the regiments, and the latter, in turn, assign tasks to the commanders of the antiaircraft subunits and the antiaircraft gunners.

Cooperation between division air defense means and front aviation was worked out along such lines at the DRUZHBA-76 [Friendship-76] exercise. For this purpose, the combat control group was colocated with the division command post. Cooperation was achieved through the mutual exchange of information between the air defense chief and the aviation representative about the location of the battle formations of the air defense means and about the actions of our own aircraft as to place and time.

Experience indicates that the transmittal of this information from the division down to and including the antiaircraft gunner without any automated means of control requires a relatively long time. This was also confirmed by the DRUZHBA-76 exercise, where it took 10 to 15 minutes for the air defense chief of the division to transmit the data on the actions of our aircraft to the antiaircraft means because they were transmitted according to a code table. Therefore, in our view there could arise the need to have representatives from the combat control group with some of the motorized rifle (tank) regiments which are located on an axis with intense friendly air traffic. This would allow us to shorten the time it takes to transmit information.

These, in our opinion, are several aspects of the organization of cooperation between the air defense troops of the Ground Forces and fighter aviation which will be of some aid in the more detailed study of this matter during the training of allied troops for combined actions.



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