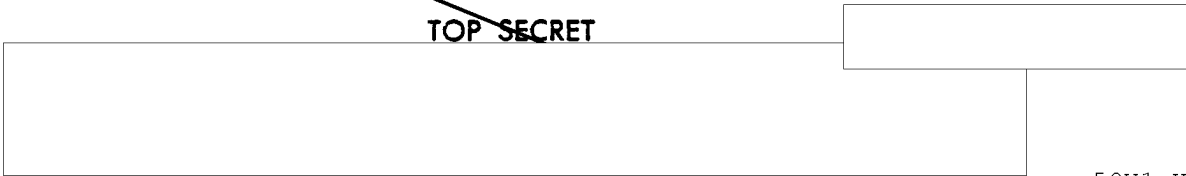


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**CENTRAL INTELLIGENCE AGENCY
WASHINGTON, D.C. 20505**

20 September 1976

MEMORANDUM FOR: The Director of Central Intelligence
FROM : William W. Wells
Deputy Director for Operations
SUBJECT : MILITARY THOUGHT (USSR): Military Science
Work in the Air Defense Forces

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 discusses the need for the introduction of a scientific approach in resolving the problems of increasing the level of combat readiness of the troops. Based on experience in the Moscow Air Defense District, the author asserts that scientific methods must be used in analyzing the results of exercises and other combat training measures, in perfecting the organizational structure of the troops and control organs, and in working out complex problems of troop combat employment, control, cooperation, and support in troop formations. To achieve this goal effective scientific organs must be established and the assistance of officers and generals must be enlisted through an incentives program. This article appeared in Issue No. 3 (88) for 1969.

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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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William W. Wells



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Distribution:

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Intelligence Information Special Report

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COUNTRY USSR

DATE OF INFO. Late 1969

DATE
20 September 1976

SUBJECT

MILITARY THOUGHT (USSR): Military Science Work in the Air Defense Forces

SOURCE Documentary
Summary:

The following report is a translation from Russian of an article which appeared in Issue No. 3 (88) for 1969 of the SECRET USSR Ministry of Defense publication Collection of Articles of the Journal "Military Thought". The author of this article is Colonel V. Bezmyanny. This article discusses the need for the introduction of a scientific approach in resolving the problems of increasing the level of combat readiness of the troops. Based on experience in the Moscow Air Defense District, the author asserts that scientific methods must be used in analyzing the results of exercises and other combat training measures, in perfecting the organizational structure of the troops and control organs, and in working out complex problems of troop combat employment, control, cooperation, and support in troop formations. To achieve this goal effective scientific organs must be established and the assistance of officers and generals must be enlisted through an incentives program.

End of Summary

Comment:

The author was identified with the Moscow Air Defense District in a 1958 Red Star article.

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Military Science Work in the Air Defense Forcesby
Colonel V. Bezymyanny

The problems of further increasing the level of combat readiness of troops raise important requirements for scientific work, the broadening of the scope of research, and the working out of the pressing problems of military theory in greater detail. In a number of cases developments have given rise to the replacement of old ideas and concepts with new ones. The successful solution of these problems may be achieved only by means of thorough analysis and generalization of experience gained from exercises, maneuvers, and combat training and political training.

During the past years a rather large number of different exercises, games, and other measures of operational and combat training have been conducted among the troops. Thus, for example, in the Moscow Air Defense District, 70 different exercises, including three experimental ones, were conducted in 1968 alone. The experimental exercises were on subjects of great importance to the development of military art. In particular, the object of one of them was to examine the problems of controlling an air defense large unit in a complex situation.

However, the results of such exercises are not always utilized in the further development of military theory, in working out specific practical problems of military art, and above all, tactics. This happens because generalization of the experience gained from the exercises usually is done without employing scientific methods, since there are no specialists in the troop formations who possess adequate knowledge in this field. Because of the lack of such specialists, it is difficult to gather sufficient statistical material to expose the tendencies in the development of tactical forms and methods of troop actions, to identify which new phenomena might be widely developed in the future, and which ones are losing their significance.

In the course of the exercises a very great number of interrelated problems are simultaneously resolved, a great number

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of factors are examined in their totality and mutual conditionality with other phenomena. For example, when examining one method of troop actions or another during exercises, the various means of destruction of both sides are taken into consideration, as are possible technical methods of the enemy, as well as his weak and strong points, the positive features of our own troops which must be utilized to the maximum, and the shortcomings which must be compensated for by using other means, tasks that may be assigned to a given means in the course of combat operations (based on its combat capabilities), as well as the conditions which are favorable to the manner in which this means is used. Also taken into account are various defense and support means, the capabilities for employing all combat means (all branch arms) in a timely manner, and the combat morale qualities of personnel. In the troops there exists the constant necessity to search for new ways to increase their combat readiness and combat capabilities, as well as to look for effective forms of comprehensive support for combat operations.

Experience shows that none of these nor many other problems can be resolved unless scientific methods for conducting special research are introduced.

A scientific approach is also required in perfecting the organizational structure of troops and troop control organs. As yet no such scientifically grounded standards exist regarding which organs (services) the headquarters of a district (large unit) should have, or how many people should work in these organs. In a number of instances, decisions regarding such problems are often of a subjective nature. Or let us take such a field as the rational expenditure of money on military construction works, and on troop training and maintenance. The effective solution of such problems is inconceivable without conducting special research and introducing scientific bases for the organization of labor.

A scientifically based answer also is needed for such a problem as, for example, what number of exercises it is desirable to conduct. To this we say that in the district, over the course of a year approximately 70 different exercises were conducted. Is this a lot or a little? If such exercises were conducted in accordance with scientific methods, carefully analyzed, and if substantiated recommendations were worked out for each one of

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them, then obviously there would be no need for so many of them. Calculations show that working out recommendations to increase the effectiveness of troop combat training, and putting them into practice will allow the time for personnel training to be reduced by 25 to 30 percent, and the money and materiel expended in combat training to be saved. The utilization of network planning methods will play an important role in this.

Even until recently, in planning the basic measures for a certain period of time, in the troops of the Moscow Air Defense District it always happened that there was not enough time for proper fulfilment of them. To eliminate this abnormal situation, special research on the network planning of combat readiness was conducted in the district troops over a two-year period. Based on the experience gained, specific recommendations were worked out regarding the branch arms, as a result of which the quality of planning has been much improved. This, in turn, has contributed to raising the level of combat training.

As is known, modern troop formations represent a rather large military organization which includes several large units consisting of various branch arms, armed with complex combat equipment. In such a formation exceptionally complex problems of combat employment of troops, control, cooperation, and comprehensive support must be worked out. Only special research based on scientific methods will make it possible to solve these problems, to evaluate beforehand the consequences of each decision, to reject the inadmissible versions and recommend the most acceptable ones. Of course, there are a number of officers and civilian employees in district directorates who, in one capacity or another, were assigned for military science work. Thus, in the Moscow Air Defense District, there is a military science branch in the operations directorate of the district staff and an officer for inventions and improvement of efficiency in the district combat training department, and there are three persons in the district finance department from the Scientific Organization of Labor (NOT). The table of organization of the district command post has a section dealing with the use of computer equipment. In addition, in the district headquarters there is an electronic computer group (using URAL-2 computers). However, the control of these functions has not been centralized. Such separation of cadres (among the various directorates and services) is not conducive to their effective use for military

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science work.

Experience has shown that entrusting the functions of military science work to the operations directorate of the district staff has not helped increase its effectiveness, either. The fact is that the fundamental changes in the nature and methods of conducting combat operations and the further growth of the importance of a high level of troop combat readiness have expanded the sphere of tasks entrusted to the operations directorate of the district staff. Therefore, it actually is impossible for the latter to be directly involved in military science work, the role and importance of which are constantly growing in the armed forces.

It is known that any project can prosper only when it is handled by specially appointed people. Therefore, a reasonable solution for table of organization problems is one possible way to improve military science work among the troops. We think that in light of the requirements stated in the decree of the Central Committee of the Communist Party of the Soviet Union and the Council of Ministers of the USSR, dated 24 September 1968, entitled "Concerning Measures for Increasing the Effectiveness of the Work of Scientific Organizations and Accelerating the Utilization of Scientific and Technological Achievements in the National Economy", it is desirable to have scientific research centers (NITS) in troop formations. They should be composed of workers (officers and civilian employees) trained in the field of research work and, in a number of cases, in the field of psychology and economics as well. Such centers (NITS) will be able to organize military science work in formations (large units) and also to conduct research in the field of the combat employment of troops, taking into account the experience of mastering and operating new combat equipment and automated control means; and to bring to light and work out methods for performing operational-tactical tasks.

In order to create normal conditions for the functioning of the scientific research center and to prevent its workers from being diverted to work not connected with the center's direct assignment, it apparently is desirable to have the scientific research centers subordinated directly to the commander or the chief of staff of the formation.

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It should be noted that scientific research organs have been established and are functioning in the forces of NATO armies. For example, in the tables of organization of the US Department of Defense in 1965 to 1966 there were over 5,000 specialists and mathematicians, among whom almost 600 were specialists on operations research.

Research conducted directly among the troops has a great economic effect. It allows tasks to be successfully performed with less expenditure of time and materiel, while the cost of maintaining the workers at the scientific research organs is quickly repaid. The conduct of such research work not by individual dilettantes, but by specially trained people, extensively employing mathematical methods and computer equipment, will enable new ways of further increasing the combat readiness of the troops and the effectiveness of the combat employment of armament to be identified and, to a significant degree, will allow materiel and money to be saved.

Considering that the training of research specialists is a matter of great importance to the state, it obviously is desirable to introduce instruction in research work methodology for the students of the military academies. The establishment of scientific research centers in the troops will have a positive effect on the development of military art. Cooperation with the higher military educational institutions and scientific research institutions will be improved, which in turn will bring military science closer to practice.

We can judge the effectiveness of the military science work conducted directly among the troops according to the following examples.

In 1968 generals and officers of the headquarters and troops of the district conducted research on the possibility of reducing the combat readiness periods of large units (units) based on the true approach time of the probable enemy's air attack means to the combat task allocation lines. As a result, a set of measures was worked out and introduced, which allowed the time it takes to bring several units up to a state of combat readiness to be reduced by 50 percent or more. Extensive research work was conducted to find ways and methods to reduce the preparation times of missiles, as a result of which the productivity of

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technical battalions has increased by 200 to 300 percent, which is equivalent to a corresponding increase in the capabilities of the surface-to-air missile troops on the whole. In the district methods for increasing the maneuverability of surface-to-air missile systems were worked out as well; these methods were widely introduced both in the Air Defense Forces of the Country, and in the air defense troops of the other branches of the armed forces. The time it takes to pack up and deploy the systems has been reduced five to six times or more.

The introduction of scientific methods for forecasting the variants of troop combat operations, their possible losses from enemy weapons of mass destruction, the radiation situation, etc., made it possible to reduce the time by more than 100 times and the cost of performing these tasks by 26 times.

In the radiotechnical troops of the district, recommendations have been worked out allowing a 15 percent increase in the effectiveness of district radar coverage at low altitudes.

The effectiveness of the above-mentioned research is obvious, although it was conducted mainly by officers in the course of performing their official duties. Accordingly, the majority of these officers have no appropriate training in the field of research work. There is no doubt that the results of the research would have been considerably better had the work been conducted under the direction of scientific research centers, enlisting the aid of specialists with appropriate training.

The increased creative activity of generals and officers in working out very important problems of military art, in our opinion, should be considered another important direction for improving military science work among the troops. Experience has shown that this mission can be carried out successfully by military science societies and councils of the Scientific Organization of Labor. Thus, the military science society of the district headquarters helps to draw generals and officers into military science work, to widely disseminate military and technical knowledge among them, and to improve creative work in research and the improvement of efficiency. Let us note that the formation of the Scientific Organization of Labor went through a

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number of stages. In the beginning, as it later became clear, there was much that was unnecessary in the organizational structure, forms, and methods of the group's work. Excessive centralization and the great number of conferences were especially impeding. Now all that is superfluous has been eliminated. Military education sections have been created in the directorates of the branch arms (surface-to-air missile troops, aviation, radiotechnical troops), in the operations directorate, communications, organization and mobilization directorate, combat training department, political directorate, and in the staff of the rear. Their leaders, elected by a vote by show of hands, are at the same time members of the Council of the Military Science Society of the staff and directorates of the district. The basic working document of the group is the plan which is drawn up for one year. The following procedure for working out the plan has been established: section leaders jointly with officer-executors select timely topics taking into consideration the combat missions and political training, they establish completion dates, and then work out a section's work plan for one year. These plans are corresponding sections of the general plan of the military science society of the district headquarters.

The most urgent topics worked out by the generals and officers are discussed by the individual sections. As experience has shown, this procedure is the most acceptable one, as the questions worked out in a given branch arm (service) are of interest to all the officers of the section. In addition, this makes it unnecessary to distract from their work officers of other branch arms (services) who may not always be interested in these topics.

This kind of organization of the society's work enables a wide range of generals and officers to more actively participate in military science work. In 1968 alone approximately 200 different topics were worked out in the staff and directorates of the district, including many essays, reports, textbooks, brochures, articles, and others. The most valuable of them have been incorporated into the combat training of the district troops, for example: "Regulations Regarding Combat Work at the Command Post of a Surface-to-Air Missile Regiment", "Firing Manual for Surface-to-Air Missile Troops", "Methods for Planning and Conducting Exercises", "Methods for Carrying Out Takeoffs and Landings of SU-11 Fighter Groups at Altitudes of 150 to 200

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Meters", "Methods of Training Command Post Crews", "Control of Mixed Groupings of Surface-to-Air Missile Troops", "Combat Employment and Control of Long-Range Interception Aviation Missile Systems".

Reports by members of the military science society delivered before the personnel in directorates and when visiting the troops have become a common occurrence. Thus, in 1968 the officers of the operations directorate alone of the district staff delivered various reports before the troops over 80 times.

Experience has shown that scientific research conducted by generals and officers exerts considerable influence on the improvement of the combat readiness and combat capabilities of the district troops, and is helping commanders, political workers, and Party and Komsomol organizations to carry out the tasks of combat and political training.

Besides that, the effectiveness of this form of military science work still does not satisfy the requirements imposed upon military science under modern conditions. A large number of topics are not adequately researched and developed. The main reason for this, in our opinion, is that the generals and officers of large units (units) lack sufficient time for scientific research work. In addition, they lack the necessary personal interest in fulfilling difficult, tedious assignments connected with conducting this work. The fact is that in the system of military science work on the whole there is no orderly system of incentives, as in the inventor's or efficiency expert's profession (which is, incidently, one of the forms of military science work).

The author is remunerated for this work only if it is published in a journal. There is no other incentive for the generals' and officers' creative activity. No pay bonus is provided for officers assigned to the troops who have received an academic degree, as is done in educational and scientific institutions. This does not stimulate the growth of scientific cadres among the troops.

It would be desirable to extend the provision of the decree of the Central Committee of the CPSU and the Council of Ministers of the USSR concerning the payment of monetary bonuses to



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scientists working in industry, also to cover persons having academic degrees who are assigned directly to the troops. These expenditures will undoubtedly be compensated for by a further increase in combat readiness and in the combat capabilities of the troops, as well as by the saving in money and materiel as a result of the introduction of effective scientific development into all areas of the building and training of the Soviet Armed Forces.

Yearly competition for the best military science work should be introduced and legalized in the formations (military districts), and upon their completion special orders should be issued by the commanders announcing the results, as well as commending generals and officers for high-quality scientific works. Along with material incentives, the awarding of generals and officers with diplomas "For Scientific Development" and individual gifts could be quite effective.

The ideological aspect of the military science work carried out among the troops is most vividly manifested in military history work used to educate the personnel in revolutionary and combat traditions in the spirit of devotion to the Communist Party and the Soviet people. Various forms and methods are used in carrying out this work. It might have a much greater impact if some defects in its organization were eliminated.

Thus, not enough attention is being given to researching the development of the air defense forces of the country and their military art during the postwar period, and the combat employment of the air defense troops in local wars, nor to the analysis of important assumptions from the experience of past wars, which remain significant to this day.

Poor use is made of such forms as the conduct of military history conferences. In our opinion, the fact that the keeping of historical log books is an established practice only for large units and units, while there are no chronicles of ongoing events kept in either districts or armies, is a substantial defect. But yet, as a result of technical progress, there is a continuous process of change in armament, combat equipment, and means of control. Problems of operational art and tactics are being examined during many exercises. Important measures are devoted to improving forms and methods of party-political work. In

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districts and armies, patriotic undertakings are being generated. The personnel perform many heroic feats and deeds. New rules of ethics are being worked out which are becoming the standards of a soldier's conduct in battle and in peacetime. Extensive work is being conducted in building and improving defense, and so on.

Time goes by and these important events vanish without a trace, as the documents reflecting them are destroyed. We feel that journals recording the most important events which take place daily in peacetime must be constantly maintained in the districts and armies. The pursuits and feats of those who helped to establish and continually improve the Soviet Armed Forces will be carefully preserved in the memories of the soldiers. It is unfortunate that the military history work, like military science work in general, in the large units of troops is depersonalized. The reason for this is that there are no persons responsible for this work and interested in organizing it, assembling the appropriate materials and documents on the development of military art, the history of units (large units), as well as materials on the heroic deeds of soldiers, and so on. All this important work is being carried out by officers of the operations departments of large units in addition to their regularly assigned duties. Obviously, new forms of historical work must be found based on the fact that the combat traditions of the troops of each branch of the armed forces are an integral part of the traditions of the Soviet Armed Forces, and at the same time also have their own characteristics. Thus, the Air Defense Forces of the Country are required to always be ready to repulse a sudden enemy air attack. This should be the rule not only in time of war, but also in time of peace when the troops are on combat alert. The education of personnel in combat traditions will be fruitful only when it will be carried on constantly and not from time to time.

The successful conduct of military history work is inconceivable without the appropriate literature and textbooks, the supply of which is still insufficient (especially on the development of military art during the postwar period).

For the further improvement of military science work among the troops the proper organization of scientific information is of great importance. "Science moves ahead in proportion to the mass of knowledge it inherited from the preceding generation..."

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(K. Marx and F. Engels. Writings, Vol. 1, page 568). Without the precise organization of scientific information, great effort would be wasted in looking for the necessary materials. Soviet specialists have calculated that 30 percent of the time it takes to do the entire work is spent on this.

The lack of an efficient scientific information service often leads to parallelism in work. At the present time, even the experience acquired in a given formation may not always be known to all the commanders and staffs. This is explained by the fact that the two thematic collections (four pages each) issued in the districts are capable of covering only a few of the problems of combat training. At the same time, it is not always possible to gather and disseminate the many bits of valuable experience. Literature received by the troops -- collections of the works of military academies, military journals, and others -- accumulate in the secret sections of directorates, departments, and services, the majority of which are not authorized to give out classified information. Time passes and all this information is destroyed without leaving a trace.

A system of centralized information has been established within the armed forces with a developed network of branch organs attached to the scientific research institutions and higher educational institutions specializing in engineering, where technical information departments have been established. Unfortunately, among the troops the information in the fields of both technology and military theory is unorganized.

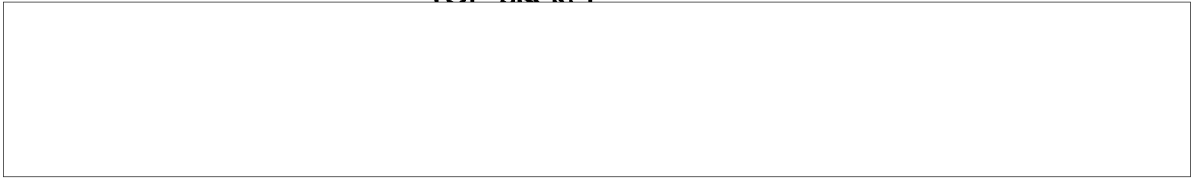
In our opinion, to assist generals and officers in working out effective methods for the combat employment of troops and the operation of complex combat equipment, it is necessary to organize an information service in the staffs of large troop formations. Initially, it may come down to organizing bibliographic work: compiling annotated bulletins of incoming literature, looking for necessary information; compiling reference books, catalogs of publishing houses, lists of books, magazines, collections of annotations; disseminating thematic collections, and so on.

In examining the ways to increase the effectiveness of scientific work in the troops, one should keep in mind that enormous reserves are hidden in this work. They can be put into

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action only by establishing effective scientific organs and enlisting the assistance of as many generals and officers as possible.

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