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CENTRAL INTELLIGENCE AGENCY
WASHINGTON, D.C. 20505

1 July 1974

MEMORANDUM FOR: The Director of Central Intelligence

SUBJECT : MILITARY THOUGHT (USSR): The Protection of Rear Services from Nuclear Attack During an Offensive

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 measures for protecting troops from weapons of mass destruction in a front offensive operation and stresses the need for timely forecasting of the results of the use of nuclear weapons. One of the weak areas noted is the slow collection of information on the parameters of nuclear bursts; it is foreseen that the future introduction of the Raskunchak special system for obtaining a fix on the parameters of nuclear bursts will aid in the resolution of this problem. The author also recommends that the methods for transmitting basic forecast data be improved by arranging for centralized notification over a special network. This article appeared in Issue No. 2 (87) for 1969.

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 [redacted]

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Deputy Director for Operations

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Intelligence Information Special Report

COUNTRY USSR

DATE OF INFO. Mid-1969

DATE 1 July 1974

SUBJECT

MILITARY THOUGHT (USSR): Protection of Rear Area Troops and Installations from Weapons of Mass Destruction During an Offensive Operation

SOURCE Documentary

Summary:

The following report is a translation from Russian of an article which appeared in Issue No. 2 (87) for 1969 of the SECRET USSR Ministry of Defense publication Collection of Articles of the Journal 'Military Thought". The author of this article is General-Mayor M. Kiryan, Doctor of Military Sciences, Professor. This article discusses measures for protecting troops from weapons of mass destruction in a front offensive operation and stresses the need for timely forecasting of the results of the use of nuclear weapons. One of the weak areas noted is the slow collection of information on the parameters of nuclear bursts; it is foreseen that the future introduction of the Baskunchak special system for obtaining a fix on the parameters of nuclear bursts will aid in the resolution of this problem. The author also recommends that the methods for transmitting basic forecast data be improved by arranging for centralized notification over a special network. End of Summary

Comment:

General-Mayor M. Kiryan wrote an article about planning offensive operations, Voyenno-Istoricheskiy Zhurnal, No. 11, 1973; and "Weapons of Mass Destruction in the Aggressors' Plans" and "Flamethrowers and Protection from Them", Military Thought, the RESTRICTED version, Issue No. 12 for 1971 and No. 3 for 1963, respectively. The author is head of a department at the Frunze Military Academy. The SECRET version of Military Thought was published three times annually and was distributed down to the level of division commander. It reportedly ceased publication at the end of 1970.

Protection of Rear Area Troops and Installations from Weapons of Mass Destruction During an Offensive Operation

by

General-Mayor M. Kiryan, Doctor of Military Sciences, Professor

The main precepts determining the sequence for the planning and implementation of measures to protect troops from weapons of mass destruction, are given in the appropriate manuals and instructions. These precepts are repeatedly subjected to verification in experimental troop exercises, in special research war games, in the educational process of higher military-educational institutions, and in the work of scientific-research institutes. Verification has also been carried on in the Academy i/n M. V. Frunze. This research has shown that the well-known basic precepts on protecting troops by and large satisfy the demands of modern combat and operations. At the same time, certain features of the implementation of the precepts have become apparent, and we would like to dwell on them in the present article.

Above all, timely forecasting of the results of the use of nuclear weapons. As is known, in solving this problem it is necessary to estimate the results directly in the areas of the bursts and, at the same time, to predict the overall situation which will have developed in the front zone as a result of enemy nuclear strikes. The first task will be performed by the chiefs of chemical and engineer troops, the second by the staff of the front.

In order to receive the results of the forecast of the enemy use of weapons of mass destruction without delay, the operations directorate will take measures for the rapid collection of information on the parameters of the nuclear bursts. This information must obviously be accumulated at the headquarters of the chief of air defense troops of the front. With the existing number of radar stations, however, the air defense troops can scarcely cope with this task on a timely basis. This is also borne out by the experience of training exercises. Thus, in the DNEPR exercise, it took nine to ten hours to get a radar fix and to transmit and consolidate the data on the parameters of nuclear bursts during a massive strike. At present, this time period can be shortened only by additional reinforcements of air defense troops of a front with PRV-10, P-12, and P-35 radar sets, which are capable of determining the parameters of nuclear bursts. With the introduction into the troops of the Baskunchak special system for

obtaining a fix on the parameters of nuclear bursts, the resolution of this problem will become considerably easier. It will actually become possible to shorten the time for receiving and processing data to two to three hours.

Meteorological data, including the direction and speed of the average wind, is also necessary for forecasting a situation. These data reach the meteorological service of the front from the large units and units which have meteorological stations and means for conducting high-altitude soundings of the atmosphere. Information on the average wind is transmitted to the troops and the rear area four to eight times a day, which completely satisfies their needs.

The analytical evaluation station, which is available to the chief of chemical troops of the front, consolidates the results of the forecast of radioactive and chemical contamination, performs calculations to produce the most expedient methods of troop actions under the radioactive and chemical conditions which have developed, and prepares recommendations for organizing protection from radioactive and toxic substances. The data which come into the analytical evaluation station serve as the basic data for computing the destructive effect of the shockwave and light radiation. In order to obtain the full range of information characterizing the situation in an area of nuclear bursts, it is recommended that the analytical evaluation station also be given the task of forecasting the zones of destruction, obstacles, fires, and floods. To accomplish this, it is advisable to supplement it with the appropriate specialists. The receipt and processing of data on nuclear bursts may be accelerated if the analytical evaluation station is located together with the aforementioned Baskunchak system. In the future it will clearly be advantageous to organize them as a single entity.

As is known, after the chiefs of chemical and engineer troops have received information on the parameters of nuclear bursts and on the meteorological situation, they will make a complete forecast of the zones (areas) of destruction, radioactive contamination, fires, and floods, and report the results to the operations directorate. At the same time, it is also desirable to report information on the forecast of chemical and bacteriological contamination, this information being derived from the preliminary data obtained on the nature of the toxic substances and bacteriological means. The chief of the medical service of the front also participates in the preparation of this information.

The forecast data make it possible to prepare an approximation of the expected losses and the degree of contamination of personnel, weapons,

equipment, and materiel, as well as of the nature and extent of work needed to eliminate the aftereffects of enemy use of weapons of mass destruction. It must be kept in mind, however, that with present methods of forecasting, a great deal of time is expended in obtaining the basic data. The answer to this situation must be sought not so much in increasing the number of radar stations on certain axes as in improving the methods for transmitting information. The fact is that even today the forecast data are transmitted predominantly via the control network, which is already so greatly overloaded. In our view, the time has come to arrange for centralized notification over a special network.

At the same time that the situation is being forecast, the commander and staff of the front organize radiation, chemical, bacteriological, and engineer reconnaissance. To conduct this reconnaissance, forces and means are used from all the arms of troops, including special troops. In distributing assignments among them, it must be taken into account that the front means must organize radiation and chemical observation at front control posts; and reconnaissance of the deployment areas of rocket troops and second echelons (reserves), and the routes along which the front bases will advance. Since these tasks are carried out continuously, it is necessary to allocate forces and means in advance for their fulfilment.

Under conditions of wide use of the weapons of mass destruction, special importance is acquired by aerial reconnaissance, which is given the responsibility, first of all, for the tasks of uncovering sectors of the terrain with high levels of radiation, finding the axes with the lowest levels of contamination, and checking air space and the terrain in support of the transport and landing of airborne forces and troops being transferred by air.

Of particular complexity is the reconnaissance of enemy nuclear-mine barriers, the lines and locations of which must be uncovered before the start of the offensive. The fulfilment of this task must, accordingly, be entrusted not only to aerial reconnaissance but also to agent and special reconnaissance, radio reconnaissance, reconnaissance subunits and units of the different arms of troops and of special troops, and groups of long-range reconnaissance, as well as reconnaissance directly in the areas near the national border and by border troops.

In organizing reconnaissance, we must not fail to take into account that, given the modern means of moving troops and the extent of their technical equipment, chemical, radioactive and engineer reconnaissance can be carried out at vehicle speeds of 15 to 20 kilometers per hour during the day and 10 to 15 kilometers per hour at night. In order not to delay the

advance of troops, it is advisable to send out the reconnaissance organs before the main forces begin their advance, or to conduct reconnaissance on each route with the two groups advancing in leapfrog fashion.

The reconnaissance data, like the forecasts, are fed into the analytical evaluation stations of the front and the armies. There they are consolidated, after which they are plotted on the operations directorate map which also shows the results of the use of weapons of mass destruction. On the basis of this information, the commander and staff of the front refine their estimates of the situation, obtained from forecasting results, and organize the notification of troops regarding the various types of danger which require the timely implementation of necessary protective measures.

As is known, notification in the front staff itself is centralized, coming from the front command post over the air enemy warning networks, and is repeated over all channels of communication. The front staff in turn informs subordinate troops of possible contamination in their deployment areas, and of zones of contamination, destruction, fires, and floods discovered in the areas of their advance (areas of operations). Such information is particularly important when there are surface bursts, since it makes possible the timely withdrawal of troops from areas which are threatened with radioactive contamination or the effects of other destructive factors.

Research has shown that it is advisable to transmit warning signals over the same communications channels and means, depending on their degree of importance, in a sequence, for example, such as the following: ballistic missiles, aircraft, chemical and bacteriological contamination, and locations and parameters of nuclear bursts. Greater attention must be given to perfecting the methods of notification. In particular, it is desirable to make maximum use of the air warning system, which has its air defense posts in all units, large units, and rear area installations. It seems to us that the general principles on which warning is organized can remain as before: the sequence of warning is established by the troop commander; the direct organizer of these activities is the chief of staff of the front; the system is organized in advance, before the start of the operation; the transmission of warning signals is handled by specific organs (individuals) in a previously established sequence; warning is carried out in a centralized and autonomous manner.

A well-organized warning system will allow the commander and staff of the front to take, on a timely basis, such operational-tactical defensive measures as the dispersal of rear area troops and installations and the

change of deployment areas, and to use those methods in troop actions which will assure a high level of protection in the specific situation which has developed.

The dispersal of rear area troops and installations under conditions in which nuclear weapons are used is one of the important conditions for their reliable protection and, consequently, for the successful conduct of the operation as well. Thus, in determining the degree of troop dispersal during the preparation and course of an offensive operation, it is necessary, for example, to proceed from the fact that the enemy may use munitions with large yields, including megaton, against the second echelons (reserves) of the front and the armies. It is not impossible that the targets of such strikes may be entire large units, and it is therefore advisable that they be separated from each other by not less than 10 to 15 kilometers, depending on the radius of destruction of the megaton charges. We must also seek ways for more equal distribution of troops and rear area installations in the zone of the offensive. One of the ways of solving this problem is to locate at greater depth the waiting areas of large units and other elements of the operational disposition of the front and armies, particularly of second echelons and reserves and of army and forward front bases, etc.

The dispersal areas of large units are determined in peacetime. However, since they may be contaminated after the first enemy strike, others will have to be found. From the point of view of protection from weapons of mass destruction, it is most advisable to select dispersal areas along the routes of advance of large units where there are forested tracts, ravines, and gullies which can be adapted for personnel cover, the deployment of control posts, and the camouflage of troops.

Calculations have shown that in order to assure freedom of maneuver, the bypassing of areas with high levels of contamination, and the necessary dispersal of troops of the second echelon of an army, it is desirable to designate a zone 200 to 250 kilometers wide. The distance between adjacent routes must be such as to exclude the possibility of columns being destroyed simultaneously by a nuclear munition of medium yield. It is advisable that units and subunits of chemical and engineer troops designated to carry out tasks of protection from weapons of mass destruction be shifted within the columns of combined-arms large units and units, and that the same be done with road security detachments.

The degree to which troops and rear area installations can be protected can be considerably increased by timely changes in troop deployment areas before and during an operation. For this reason,

alternate areas and the routes to them must be prepared. It must be kept in mind, however, that success in changing deployment areas depends on the scale on which it is done. It is clearly impossible to count on success when all the troops of an army change deployment areas at the same time, since this will hardly remain unnoticed by the enemy. At the same time, individual large units can change their areas of deployment without being noticed by the enemy if the move is carefully prepared. In all events, an appearance of troop activity must be achieved in the abandoned areas.

The degree to which troops can be protected depends also on the correct choice of methods for their operations on contaminated terrain, since it will not always be possible to bypass areas of contamination. For the most part, troops will negotiate zones (areas of contamination) along axes with the lowest levels of contamination. Tank units will primarily be used for this, since they can move out from the march into the designated areas beyond the danger zones and can capture bridgeheads and sectors on uncontaminated terrain. Part of the forces, mainly those which are the least protected, may be moved by air. Obviously, this method will also find wide application for transferring control posts and special units.

There may also be occasions during an offensive when troops will be obliged to wait for a drop in radiation levels. In making his decision, the troop commander must weigh all aspects of the situation, both positive and negative. As is known, with the passage of time, the level of radiation drops substantially: in 4 to 6 hours, it drops 12 to 15 percent from the original level. In addition, the presence of troops in the same place for any length of time exposes them to the danger of nuclear and chemical strikes and of air strikes with conventional weapons. In such cases, if a halt appears unavoidable, the commander and his staff must take all measures for dispersing and camouflaging their troops and for strengthening their air defense.

If areas with high radiation levels can be discovered beforehand, then the advance of troops must be calculated so that they will approach the areas after the radiation has fallen to safe levels. It is advisable to assign to the first echelons those large units which have received the least radiation while carrying out previous tasks. This requires continuous monitoring of the degree of radiation to which troops are subjected. If the average exposure approaches one hundred roentgens, the commander of the operational formation must personally make the decision as to their use.

As calculations have shown, it may be advantageous in many cases, especially when contamination zones are formed very near large units of the

first echelon, to commit second echelons of divisions and possibly also of armies. Radiation levels will fall somewhat while the second echelons are advancing, which will make it possible to advance the first echelons behind them without exposing them again to the danger of radiation. Of course, rear area units will negotiate zones in those cases when they come under radioactive fallout while moving forward. As a rule, they should wait until the radiation levels drop to acceptable standards. A slight delay will scarcely exert a decisive effect on the development of an offensive operation.

A very complex problem is the overcoming of nuclear obstacle barriers, especially those which are set up on water lines. This major problem requires independent research. Calculations have shown, for example, that the explosion of nuclear munitions near large water obstacles leads to destruction of crossings on a wide front, which creates the danger of massing troops along the river. In addition to direct hits, radioactive spray falling on troops will cause serious damage and will require full personal cleansing of personnel.

During the development of an offensive in the enemy operational depth, a very important method of protection from weapons of mass destruction consists of a rapid advance by tank groupings of the front, their crossing of the contamination zone from the march, and their capture of the areas with the lowest radiation levels, into which motorized rifle large units and other units will then advance. Obviously, it is not advisable to designate long halts during the advance of an army of the front second echelon across areas which have been contaminated by radioactive substances. Wherever possible, control posts should be moved outside the zones with high contamination levels. In order to avoid being exposed to radiation again, commandant posts and traffic control posts must be set up for shorter periods of time than under normal conditions. In addition we must make use of logarithm-type fixed posts created with technical means, road signs and we must make broader use of mobile posts which can be moved by helicopter and of ground means which are easily protected.

The degree to which troops can be protected increases significantly, of course, when engineer preparations are used and the protective features of the local terrain exploited. However, the possibilities for equipping shelters during an offensive operation will be very limited. Therefore, the skilful exploitation of defensive terrain features becomes of paramount importance. For example, calculations show that ravines, gullies, and hollows which are perpendicular to the axis of propagation of a shockwave will reduce its pressure by a factor of about 2 to 3, while the radius of the zone within which personnel and equipment are destroyed will be reduced

by an average factor of 1.5 from what it would be on flat terrain. At the same time, it must be taken into account that ravines and valleys which are parallel to the axis of propagation of a shockwave may in many cases increase its effect.

The destructive effects of nuclear bursts are considerably less in wooded areas. The skilful exploitation of forests can increase the degree of protection for troops by approximately 50 to 60 percent. However, it must be kept in mind that nuclear bursts can cause fires and obstacles in forests, exerting a negative effect on troop actions. In addition, forests are conducive to the stagnation of vapors from toxic substances and bacteriological aerosols, making it necessary to conduct chemical and bacteriological reconnaissance before they can be occupied by troops. When deploying troops in forests, it is best to place them along forest lanes and roads and around clearings so that they can be quickly brought to safe places in case of fire.

The correct organization and timely implementation of measures for protecting troops and rear area objectives from weapons of mass destruction will increase their viability but will not rule out their destruction by nuclear, chemical, and bacteriological weapons. Therefore, an important factor in achieving success in an offensive will be the rapid elimination of the aftereffects of the enemy use of weapons of mass destruction, in order to restore the combat effectiveness of troops subjected to strikes, to render aid to stricken personnel, and to assist in evacuation activities in the centers of nuclear bursts. This is attained by conducting a whole series of operational-tactical and special measures, designed mainly to restore disrupted control, to evaluate the level of combat effectiveness of large units and units, and to carry out priority activity for assistance (self-help) to troops and for partial treatment to slightly injured personnel to bring them back into action; as well as by taking organizational measures for the creation of combat-effective subunits and units or security detachments and organs, the restoration of routes of advance for troops, and the refinement of combat tasks.

If control has been disrupted, it is of paramount importance to restore communications and control posts which are out of action. If this is impossible, then control will be transferred to surviving posts. In this case, the front staff must be prepared to assume control of large units if the army control posts are put out of action. In our opinion, however, it is not always advisable to transfer the command of front troops to the commander and staff of one of the armies, since they do not have the forces and means to assure completely firm and stable control. The front control post must be restored as quickly as possible, at the same time

assigning generals and officers with control means to it from the reserve of the Supreme High Command.

At the same time that communications and control are being restored, maximum efforts must be directed toward establishing the status of the combat effectiveness of rear area troops and installations and the extent of losses; and, depending on the status of combat effectiveness and the extent of losses, maximum efforts must likewise be directed toward determining the time, forces, and means needed to eliminate the aftereffects of the enemy use of weapons of mass destruction. Besides self-help and mutual assistance for personnel, the restoration of the combat effectiveness of large units and units is conducted by reinforcing subunits and units from the reserves and second echelons. If it is impossible to do this, then there will be a reorganization of these large units for the purpose of creating composite elements. The tasks for the re-formed units and composite detachments will be refined or drawn up anew. In our opinion, when organizing composite detachments, the following principles should be used as a guide: as a rule, they should be formed on the basis of a unit (large unit) which has lost its combat effectiveness; they should be created only if there are significant losses in forces and means (over 60 percent), making it impossible for a large unit (unit) to carry out its combat task; and the ranking commander and staff should be in charge of creating composite detachments.

Special measures for eliminating the aftereffects of the use of weapons of mass destruction should provide for specialized assistance for personnel and combat equipment subjected to a heavy attack. These measures should comprise mainly full special treatment which includes personal cleansing, radioactive decontamination, chemical decontamination, and the disinfection of weapons, combat equipment, protective means, and clothing. In calculating the forces and means necessary to carry out special measures, the determining factor is personnel losses.

In eliminating the aftereffects of the enemy use of weapons of mass destruction, great importance must be given to special treatment for troops. It may be partial or complete. Research has confirmed the conclusions that it is advisable to conduct partial treatment during short halts in the course of combat actions. However, when troops are directly subjected to fallout from a radioactive cloud or when there is chemical contamination, partial treatment must be given immediately in order to avoid large losses. Full special treatment in large units of the first echelon can be rendered only if a large unit has lost its combat effectiveness as a result of nuclear and chemical strikes and is withdrawn into the reserve for restoration.

The varied nature of centers of destruction compels the command and staffs to commandeer a great many diverse types of units and subunits for work in eliminating aftereffects. Since no such specialized units have as yet been formed, troops which are basically combat troops will have to be used for this purpose. The procedure for using these troops must be provided for in advance, i.e., when the operation is still in the planning stage.

With bacterial contamination, the principal measures of isolation and restriction are observation and quarantine. Observation is set up by order of large unit commanders and quarantine by order of the front troop commander and army commanders. In order to keep contamination from spreading, observation and quarantine procedures are put into effect by appropriate orders.

During the course of an entire offensive operation, a significant number of front large units may need to be quarantined, but it will scarcely be possible to withdraw them from combat for an extended period. The solution to this situation must be sought in the establishment of mobile quarantine, in which large units which are quarantined will continue to conduct combat actions while avoiding contact with other large units.

These are some of the characteristics of measures for protecting troops from weapons of mass destruction in a front offensive operation. Consideration of these factors, and the timely implementation of necessary measures, will make it possible to considerably weaken the effectiveness of enemy nuclear, chemical, and bacteriological strikes on rear area troops and installations, preserve the combat effectiveness of these troops and installations, and assure their fulfilment of assigned tasks.