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CENTRAL INTELLIGENCE AGENCY
WASHINGTON, D.C. 20505

20 March 1974

MEMORANDUM FOR: The Director of Central Intelligence

SUBJECT : MILITARY THOUGHT (USSR): Movement of a Combined Arms Army over a Long Distance

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 is by the Commander of the Volga Military District. He summarizes the experience of exercises held to study the movement of a Soviet combined-arms army over distances up to two thousand kilometers. These movements were conducted by the army under its own power or by combining civil transport with organic means. An example describes troop movement at night over a period of five days through an area up to 850 kilometers deep and 180 kilometers wide. Problems of unit separation, convoy control, estimates of movement rates, communications, flatcar loading, and phasing of road and rail movements are cited. This article appeared in Issue No. 1 (89) for 1970.

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.

William E. Nelson
Deputy Director for Operations

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Intelligence Information Special Report

COUNTRY USSR

DATE OF Early 1970
INFO.

[Redacted Box]

DATE 20 Mar 1974

SUBJECT

MILITARY THOUGHT (USSR): Movement of a
Combined Arms Army over a Sizable Distance
(According to the Experience of Exercises)

SOURCE Documentary

Summary:

The following report is a translation from Russian of an article which appeared in Issue No. 1 (89) for 1970 of the SECRET USSR Ministry of Defense publication Collection of Articles of the Journal "Military Thought". The author of this article is Guards General-Leytenant Yu. Naumenko. This article is by the Commander of the Volga Military District. He summarizes the experience of exercises held to study the movement of a Soviet combined-arms army over distances up to two thousand kilometers. These movements were conducted by the army under its own power or by combining civil transport with organic means. An example describes troop movement at night over a period of five days through an area up to 850 kilometers deep and 180 kilometers wide. Problems of unit separation, convoy control, estimates of movement rates, communications, flatcar loading and phasing of road and rail movements are cited.

End of Summary

[Redacted Box] Comment:

General-Leytenant Yuriy A. Naumenko became Commander of the Volga Military District in 1971. Previously, he was Deputy Commander of the Leningrad Military District for Combat Training. Military Thought has been published by the USSR Ministry of Defense in three versions in the past -- TOP SECRET, SECRET, and RESTRICTED. There is no information as to whether or not the TOP SECRET version continues to be published. The SECRET version is published three times annually and is distributed down to the level of division commander.

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Movement of a Combined-Arms Army over a Sizable Distance
(According to the Experience of Exercises)

by
Guards General-Leytenant Yu. Naumenko

The movement of a combined-arms army over a sizable distance with a transition from the combined method of moving troops to a march under their own power has become a very complex undertaking, since it involves a very large volume of specific tasks.

Considerable experience in this regard has been acquired in training exercises conducted with army troops over the past five to seven years. The experience acquired ranges generally within the limits of moving a large unit up to moving a formation over a distance of more than 2,000 kilometers.*

Therefore the results of analyzing training exercises are not only useful within the program of exchanging experience but can also serve as the key to solving certain problems that arise in moving combined-arms armies. Let us consider the practical experience of exercises.

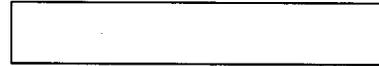
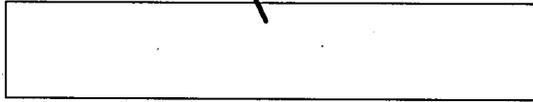
In general, we can consider that exercises have confirmed, for sizable distances (more than 2,000 kilometers), the march capabilities of large units and units of all arms and special troops in a combined-arms army and have verified the technical and maneuver capabilities of the latest models of armament and of a considerable quantity of vehicle-tractor equipment (including that obtained from the national economy to fully equip the troops). The exercises have also

* During the exercises, the troops completed movements by march and by the combined method (under their own power, and by rail, air, and sea transport), over level and mountainous terrain, through sectors with obstacles (including large rivers), and under conditions of full or only partial use of radio means. The organization of the movement proceeded simultaneously with the conversion of the troops from peacetime to wartime status.

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provided experience in organizing the movement of troops by rail (the total number of trips comprised 175 rail echelons with an average daily loading rate of thirty-three echelons), and in conducting party-political work, which has proved to be one of the decisive factors in successful fulfilment of assigned tasks.

The movement of troops in a number of exercises took place under circumstances requiring that specific measures be taken immediately to prepare to thwart possible aggression. There was therefore a very discernible effort by the command to fully exploit the situation which had developed in order to attain high rates of movement and, as a result, at certain particularly tense moments the march had the characteristics of a "charge", with everything subordinated to the task of gaining time regardless of anything else.

In connection with this, it became necessary to conduct march echelons compactly (in order to gain time). Meanwhile, in order to observe the regulations on dispersed movement of troops, it would have been necessary to have a distance of not less than 5 kilometers between battalions (including missile and artillery battalions) and 5 to 10 kilometers between regiments. This would have led to march echelons with a depth of 100 to 230 kilometers instead of 60 to 100 kilometers (as required by the circumstances of the situation).

✓ The compact conduct of columns and march echelons made it possible to overcome many difficulties in organizing the movement of a combined-arms army. For example, irrational use of time allotted to the march, especially with movements at maximum speeds, was eliminated (the expenditure of time on closing and extending columns was considerably reduced). In addition, difficulties were eliminated in the deployment of march echelons at long halts, and at daytime rest stops with the presence of natural obstacles. Moreover, the time lost would have been greatly reduced if large units could have been committed to combat from the march, troop control would have been improved with the use of only messenger means of communications, and the capabilities for material-technical support would have been increased by || sharply reducing the burden of bringing up supplies.

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Along with this, it became possible to group the loading and unloading stations more efficiently and to exclude the movement of tracked equipment prior to the start of loading, in accordance with the scheme of concentration area--waiting area--railroad station. Finally, there was an increase in the pace of loading, especially of bulky equipment, thanks to advance dismantling of part of the equipment at or near the stations. Conditions also emerged for reacting more efficiently to changes in the mobile component of echelons, particularly echelons brought in over and above the set plan from the reserve.

Let us dwell in detail on some characteristic details of the exercises which allow us to make generalized conclusions in regard to the planning, organization, and implementation of movement over a sizable distance.

We shall note, first of all, that the directive for deploying troops and bringing them to full combat readiness often arrived unexpectedly, for example, on the day on which the army field command, the staffs of the divisions, and special units returned from an army command-staff exercise.

On one occasion such a directive arrived at a time when an appreciable number of subunits, of the large units which were located at their deployment points, were busy at training installations located from 50 to 60 kilometers from the deployment points, and while some antiaircraft subunits were even outside the district. The young drivers had not completed the military driver training program. A number of units were being rearmed with new equipment. A significant portion of the motor vehicle transport of the army was away helping with the harvest.

Despite the complexity and the fact that it was being coped with on such a scale for the first time, the overall expansion of the large units and units to wartime strength proceeded in an organized manner, thanks to the measures which had been taken.

The planning of the movement of the entire army was done simultaneously with the expansion of the troops and their conversion to full combat readiness. It was intended to complete the movement in five days to a depth of 700 to 850 kilometers in a zone 150 to 180 kilometers wide, with

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five march routes allotted in this zone. It was projected to cover the distance in three stages of 250 to 300 kilometers each, at a speed of 20 to 25 kilometers per hour.

With eleven railroad stations available, the average number of rail echelons that could be loaded was estimated at 29 to 33, and their average daily speed at 400 to 450 kilometers. For transporting the tracked equipment of the army, 331 trailers (including 28 in reserve) and 79 rail echelons were allotted.

The movement of troops under their own power was planned to take place only at night, with no use permitted of radio transmitters, open channels of communications, or even speech secrecy devices. All orders and reports had to be enciphered or transmitted by messenger means of communications.

The main characteristic of the planning and organization of the combined movement of the army was that they were done concurrently with the measures for bringing the troops to full combat readiness. This required a sharp delimitation of functional responsibilities within the commands of the large units and the army, and the selection of more economical work methods within the staffs. The absence of certain command officers--because of being on temporary duty assignments, in the hospital, on leave, etc.--had a definite effect on staff working methods.

As experience shows, only through the advance preparation of a work plan in each staff, department (section), and service is it possible to cope with the growing number of varied jobs (control of the mobilization expansion of units returning from training installations; planning for movement by the combined method; allocation of units; delivery of material means; etc.). It is appropriate to remark in this regard that much was contributed to the field command of the army by verifying, on the day before, the readiness of the departments to operate under analogous conditions. During the verification, questions were refined and coordinated concerning who should do what and when, in order to bring the troops to various states of combat readiness and to plan and organize the movement; what operations groups were to be created and where they were to be sent; how command posts had to be staffed and operated;

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etc. This was then formulated as various plans, with charts reflecting different variants of working with a reduced staff and compressed time periods. On this basis, various model documents were issued: reference manuals with the sequence of tasks, notebooks of orders, etc. Recommendations which had been worked out were tested in an army command-staff exercise conducted by the commander of the district immediately before the start of the exercise.

Experience also showed that while the troops were being brought to full combat readiness, small and large staffs were diverted by non-priority information containing unnecessary detail. In particular, there were a great many queries being made at the same time by operational, mobilization, and rear organs concerning the same matters; this led to taking officers away at the most critical moments from participation in the direct organization of the movement and also introduced elements of disorganization into the intense rhythm of work which had built up. This showed that if the entire information system is not regulated as to volume and time limits, it will be impossible to attain the required operating efficiency if there is a reduced number of staff officers.

Another characteristic of the planning and organization of the movement was that an operations group from the military district, headed by the district commander, participated directly in them and on the spot, which aided in the rapid resolution of many problems.

In addition to the operations groups, the staff of the district detailed monitoring groups (for the process of fully manning and equipping, and of the delivery of equipment and material means which were not carried along on the march, and for the transportation of troops by rail) and an information group which, upon departure of the field command of the army from its permanent location, made use of the stationary communications centers to collect and collate information.

Such direct participation by the staff of the district permitted many problems of the movement to be clarified efficiently through the General Staff, including the deployment of troops in their final concentration areas. All of this confirmed once again that the more complicated

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the problem and the more efficiently it must be resolved, the more necessary it is to have direct contacts between responsible officers authorized to make immediate decisions.

Finally, a characteristic feature was that the movement was organized without the use of a plan of movement. This showed once again that it is impossible to rely on advance planning alone. We must be at full readiness to organize movements in wartime with the working out of plans from beginning to end.

For the first time, many particular problems of the movement of an army over a sizable distance have been resolved in a new way.

At first glance, regrouping an army within five days over a distance of 700 to 800 kilometers is a routine, though complex, matter. Marching was done at night, the duration of darkness in July being only about six hours. At the same time, the army could not have a march formation of less than two echelons: in the first--two motorized rifle divisions and an antiaircraft missile brigade, and in the second--two tank divisions and the army units. It was impossible to have two march echelons in progress at the same time with a gap of 50 to 100 kilometers between them, since there were not enough hours of darkness to complete the movement of the second march echelon. It was therefore necessary to have a gap of twenty-four hours between march echelons. However, this meant that each echelon had to complete its march in not more than three stages.

This circumstance demanded that the depth of each marching echelon be the depth best suited to allow a minimum loss of time in extending and closing columns. It has been calculated that at regulation distances, the last troop unit of a marching echelon could cross the line of departure only at six or seven o'clock in the morning, i.e., the full depth of the columns would go beyond the limits of the framework for completion of a night march. In doing this, we strove to follow the principle: the first stages of a march must be longer and the final one shorter, so that the forces can enter the final concentration area without being discovered and, upon arrival, do all that is needed to restore combat readiness.

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This made it necessary to plan for first stages of 250 to 300 kilometers and allot ten to twelve hours for the movement, allowing for the fact that the first march echelon would include a trailer column having a slightly lower average speed. In order to stay within this time limit, it was necessary to follow the course of reducing the depth of the columns.

As shown by experience, the most acceptable distances may be considered 3 kilometers for regiments and not less than one kilometer for battalions. In this case, the columns do not lose their flexibility, maneuverability, or capability to move smoothly.*

The distances must be somewhat different in a trailer column; between tank battalions moving on trailers, it is advisable to have a distance of about 3 kilometers. This makes it possible to reduce the depth of the columns from 230 to 115 kilometers.

Speaking of the need for movement in more compact columns, we would like to note the shortcomings which occurred in individual units during the march.

Some columns moved irregularly, "accordion style" as they say, not infrequently in a solid column, leading to the disruption of the movement timetables, to partial or full elimination of some halts, and to abrupt unplanned increases or decreases in the rate of speed. This occurred because some commanders were not able to conduct their columns correctly.

The planning of rates of speed by the sections between the control lines in the staffs of the regiments and

* Thus, a distance of one kilometer between battalions (there are thirty-one vehicles per battalion) and up to 3 kilometers between regiments, makes it possible to bring them to a halt in good time without creating a "bottleneck" on the roads, to complete detours around sectors which are difficult to traverse, and to increase the distances between vehicles in a battalion column (by thirty to thirty-five meters in two to three minutes) upon threat of air attack or while negotiating obstacles.

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divisions often failed to coincide with actual capabilities, because capabilities were not taken into account in the documents (instructions, orders). Some of the executing personnel were frequently unaware of what speed to maintain in what section. Accordingly, in a number of units the commanders strove to bring their columns up to the control line at varying speed, involuntarily disorganizing the smooth timetable of the columns coming up behind them. The reduction in speed when passing through cities was not always taken into account when calculations were made, and there were errors in estimating the influence of severely rugged terrain on speed of movement.

A negative effect was also exerted by decentralization in the planning of short halts (on the order of twenty to thirty minutes) at the large unit level. This led to confusion in determining halting places and to different columns "crawling all over each other" during halts.

Irregularity of movement was also caused by unplanned stops for investigating road accidents. In some columns, drivers were at times unaware of the reason for this or that stop and began, either too soon or too late, to service their vehicles. After a short stop, such as at a railroad crossing, personnel were many times not informed when movement was to resume. Therefore, in such columns, the vehicles got under way with a great lengthening of time spent.

In addition, drivers called up from the reserves proved unprepared for driving in troop columns, even though their individual training was good.

Analysis of shortcomings shows also that it was between three and five o'clock in the morning that the timetable was most often disrupted and the largest number of road accidents occurred because of the overfatigue of drivers.

In order to eliminate these shortcomings, it is necessary to provide, through the staffs, an estimate of possible rates of speed for each section; and in the regiments, commanders should give their subordinates specific tasks (by sections) for the rates of speed to be

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maintained. It is advisable to plan at the division level the places for short halts.

Without belittling the role of stationary traffic control posts, we believe that it is necessary to take a more succinct and reasoned approach to the system of controlling the movement of columns. There must be mobile commanders' (officers') posts accompanying each column (The officers must have specific authority and loudspeakers with which to issue orders without stopping the columns.).

The timetable was also disrupted by mistakes in estimating possible speeds of movement. It is no simple matter to correctly estimate the influence of terrain on speed of movement, especially rugged or mountainous terrain--and to do it by sections. As analysis showed, many officers made significant errors in estimating possible speeds of movement in complex sections. It is therefore desirable that along the routes on published topographical maps the possible speeds of movement be indicated by sections (just as distances between populated points are shown). In doing so, it is advisable to base the figures on columns composed of vehicles of one of the most common makes (for example, ZIL-157) and to have conversion factors for columns comprising other types of vehicles.

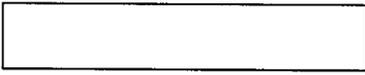
An important feature in planning the movement of troops in a number of exercises was the originality used in organizing rail shipments.

Thus, in one of the recent exercises, the shipment of a large number of tanks by rail was accomplished for the first time. The two loading areas included eleven railroad stations, providing for a loading rate of up to thirty-three echelons in twenty-four hours.

In order to plan rail shipment economically and efficiently, all calculations (by echelon) were made with the consideration of maintaining the organizational structure of the transported subunits. However, the rolling stock which was actually provided, introduced substantial adjustments, mainly because of the difference in type of echelons, but also because of the substitution of six-axle

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flatcars for two-axle and four-axle flatcars,* which required an additional ten rail echelons. In other words, there was a lack of rolling stock for the equipment of almost half a division (Twenty to twenty-seven echelons are required to transport the tracked equipment of a division.). If it is taken into account that while this shipping was in progress equipment also began to come back from repair, the full complexity of the situation will become clear.

The timetable for loading and moving echelons was threatened, as was material support for the shipments. It is true that we succeeded in coping with all of the difficulties, but the lesson must not be lost. We must keep in mind that it is advisable to use standard trains in planning and implementing urgent and large shipments at great speed with transloading from one gauge to another. This will make it possible to increase the efficiency of reaction to all changes in a situation and to simplify all of the shipping.

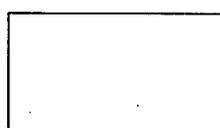
On the basis of experience, we offer the variants of standard rolling stock (trains), indicated in the table.

Rational Variants of Standard Trains Used for the Movement of a Combined-Arms Army over a Sizable Distance

Units being Transported	Stock of Standard Trains (Railroad Cars)				
	Number of Flatcars		Number of Cars		
	per Train		for per-	for	for
	four-axle	two-axle	sonnel	galleys	cargo
Tank units	18	2	2	1	1
Motorized rifle regiments and engineer units . .	18	2	3	1	1
Artillery units	6	26	6	1	2

Note: When six-axle flatcars are available, it is sufficient to have eleven six-axle flatcars instead of eighteen four-axle flatcars (for tanks).

* It is inefficient to ship engineer and artillery equipment on six-axle flatcars. For shipping tanks, the substitution makes no difference.



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In planning what to earmark for operational purposes, it is advisable to compile all calculations in standard trains of appropriate gauge.

Actual practice has confirmed the correctness of the conclusion that it is advisable to carry on the loading of units and large units successively, the divisions of the first march echelon on the first day and part of the second, and then the divisions of the second march echelon.

During organization of the shipping, crucial problems arose in providing for communications among the operations groups assigned to the rail center from regiments, divisions, and armies. Opportunities must therefore be found to set up in advance (during peacetime) a communications system for linking the operations groups at railroad stations with each other and with units located in concentration areas.

Having set forth some of our experience in planning the movement of a combined-arms army, let us move on to consider some of the problems connected with its implementation.

A very important role in carrying out the tasks of the movement is played by the operations groups, those which remain in the departure area and those which proceed to the final area as quickly as possible after the beginning of the march (In the departure area, the group may be headed by the deputy chief of staff of the combined-arms army and, in the final area, by the first deputy commander of the army; it is advisable that these groups include officers of the field command and of the commands of the divisions and regiments).

A combined command post (the forward command post and part of the command post) set up in the area of the first daytime rest stop may be designated as the command center of the army. An operations group headed by the commander of the district is responsible for the coordination of all actions and the resolution of problems which arise.

What is most characteristic of the movement phase if it is temporarily held up?

Above all, dynamism. For example, in one of the exercises, hardly more than twenty-four hours were allotted

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for the march and concentration of two march echelons (with the second march echelon being located 800 kilometers from the final concentration area).

Considering these time limits, it was decided to march both day and night and to have a one-hour halt every four hours or more to provide for the refueling and checking of the technical condition of the vehicles (Each large unit had, in addition, one long halt lasting four hours.).

The experience of moving showed that the standards adopted justified themselves. The average march speeds for vehicle columns, as specified by the regulations, are entirely realistic. However, these standards will be truly realistic and practical only when commanders learn to conduct columns at the maximum speeds achievable under given road conditions. We must resolutely combat loss of time due to reduced rates of speed on good stretches of road. In our view, this is one of the possible ways of increasing the pace of movement.

Another line of activity that has proved its value is the taking of measures to insure that POL supplies are not only transported with units but are made directly available to vehicles (trailers).

Many became convinced of the necessity and importance of this requirement during an 800-kilometer forced march when the time for resting and for refueling and servicing vehicles was reduced to the limit.

Experience also shows that a vehicle column may cover on the order of 400 to 500 kilometers in twenty-four hours.

Exercises have also confirmed the conclusion that it is advisable to centralize the use of the battalion of heavy vehicles intended for the transport of tracked equipment, and it is necessary to designate a separate shorter route for its movement. We must strive here to "make it easier" for such a column, to give it the least possible depth. A well-planned system of internal communications is required for the control of such a column.

Another urgent problem that arose during the movement was the passage of trailers under viaducts, the low height

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(3.5 to 4.2 meters) of which prevented the movement of bulky engineer equipment, antiaircraft missile means, and launchers for operational-tactical missiles. It is therefore necessary, in planning a march, to make a detailed evaluation of the terrain from a road standpoint and to reconnoiter detour routes (for five to six hours). All of this requires particular care in determining the maximum limits that can be covered by a trailer column in twenty-four hours.

The following complication, which may be met with in the future, also became apparent in actual practice. At one of the exercises, the equipment transported on trailers included infantry combat vehicles (BMP). A problem arose as to how to transport the ninety-three crews of these vehicles, i.e., 744 men. (There is an analogous situation for tank crews also.) The army has no special reserve transport for such purposes. The needed quantity of vehicles was obtained through overloading divisional supplies (thanks mainly to the fact that the transport received from the civilian economy on the eve of the exercise proved capable of carrying somewhat greater supplies).

Therefore, in planning a march in which infantry combat vehicles and tanks are to be shipped on trailers, it is necessary to reinforce motorized rifle divisions with additional motor transport. For this purpose it is advisable to have special subunits and to deploy them with the battalion of heavy vehicles when an alert is declared, maintaining the principle that the outfit to which the battalion of heavy vehicles is attached is reinforced with the motor vehicle subunit.

Experience of the combined movement of a combined-arms army at increasing speed has shown that it has become urgently necessary to revise the standards of advance for rail echelons.

A rate of advance of up to 450 kilometers in twenty-four hours, under conditions in which there are no combat actions in progress, will not always be able to satisfy the requirements of an army during a movement.

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In our opinion, even within those difficult time limits which often occur in the second stage of a march when moving under one's own power, the timetable for the high-intensity movement of echelons could be sustained at greater density. Since the units moving by various methods must arrive in the new area at approximately the same time, it is imperative that we increase efficiency in directing rail shipments and that we find ways to save time in order to raise the daily speeds of movement of the echelons.

It is impossible, in planning the movement of an army over a sizable distance, not to take into account the mutual negative effect exerted on each other by the rates of rail movement and the rates of marches made under one's own power. The essence of this is that the more intensive the rail movement, the fewer time intervals will remain in which columns moving under their own power can cross railroad crossings. Thus, during the march, troops crossed rail lines 204 times (on four march routes) at crossings with neither viaducts nor overpasses. It is not difficult to imagine how many times the columns made unplanned stops, how many times the established rhythm of movement was disrupted. Indeed, columns passed through one point uninterruptedly for six to eight hours, during which time the crossings were closed tens of times. This was particularly noticeable when individual rail crossings opened and closed every fifteen to twenty-five minutes. In trying to detour around a large city, troops unwittingly took routes with many such railroad crossings. Consequently, it was necessary to have not only a reserve of time for negotiating such rail crossings but also a more extensive network of routes leading to the concentration area.*

Hence, a series of measures must be carried out to complete the equipping of the theater of military

* Under favorable circumstances, it is advisable to allot three to four routes per division, beginning 80 to 100 kilometers from the concentration area, and to plan for two to three routes per regiment, beginning 40 to 50 kilometers from the designated area.

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operations, so that troops can advance at a fast pace and according to plan.

These measures may include: development and improvement (straightening) of the road network, creation of detours around small cities built in the old style (full of narrow streets and sharp turns), construction of detours providing for the unhindered crossing of railroad tracks outside large cities, etc. In addition, a network of refueling and repair points and field landing strips for helicopters and liaison aircraft should be set up and it is advisable also that communications means be set up and deployed in advance, including in the probable deployment areas of the command posts of formations and large units and along routes of possible movement of troops.

During the exercises, very serious attention was given to security and to the carrying out of deception measures at all stages of movements. The most varied methods of surprise and deception were used, taking into account the developing military-political situation; movement was conducted sometimes within the context of rear exercises and sometimes within the context of large radio exercises, and in many instances it was "local" in character--accompanied by lively activity of stationary communications centers, by the transfer of troops from area to area, etc.

The scale of the measures taken at one of these exercises, for example, may be judged from the following figures. During an eight-day radio exercise (within the context of which a number of problems of movement were resolved), about 9,000 messages were processed, comprising 1,092,000 words; i.e., from 580 to 1,229 messages were transmitted and received every twenty-four hours.

The necessity for the strictest observation of security had a pronounced effect on work methods, at times limited to the utmost the circle of individuals brought into the planning, and made it necessary to find ways for the rapid setting of tasks with the least possible use of communications means.

Taking this into account, it is advisable in the practical training of staffs in exercises to introduce

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specific situational elements which would direct them toward developing methods of working without a full personnel complement and within reduced time limits.

Having completed full concentration in the designated areas and assuming operational subordination to the appropriate command, large units and units of the combined-arms army proceeded to the quartering of personnel. However, a deliberate abrupt change in the training situation was then made, and the troops of the armies received the new task to complete a march under their own power; the main organizational complication of the march lay in the fact that the specific combat task was not assigned until one hour before the troops began to cross the line of departure.

A number of orders received the previous day were revised. The difficulties were further compounded by the fact that the grouping of troops at the departure position was extremely unfavorable with regard to the newly assigned task; many of the routes intersected each other. For the first time, troops of the armies had to advance along mountain roads crossing heights up to 600 to 800 meters. In doing so, the most difficult stretches were covered at night in fog. There was no time to organize advance reconnaissance of the routes by the traffic control service of the army. Even subunits of regiments, divisions, and brigades were often dispersed within the departure area. The troops of the first march echelon had to be brought to full combat readiness within a maximum of one hour.

Many organizational problems were clarified only after the large units were already enroute to the line of departure, some even after they were on the march. In this, commanders were given a broad allowance of initiative of action in resolving major, key problems.

The army completed the march under its own power in two march echelons ready to enter into battle. In the first march echelon there were two motorized rifle divisions, and in the second, two tank divisions. The movement was carried out in the course of a move forward. Each large unit received three routes for the march. The time interval

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between the start of the movement of the first and the second march echelons was within the limits of six hours.

What special features were observed in the structure of the march formation? The special features stemmed from the nature of the assigned tasks: to enter into battle from the march at any minute, even before entering the final area of operations.

Upon the entry of the troops into their designated areas, it became particularly important to provide for the independence of the operations of the regiments by axes and by depth and, subsequently, the allocation of units by objectives and tasks.

Taking into account the complexity of the situation and its spasmodic changes, as well as of the volume of tasks accomplished by the forces of motorized rifle units in cities, it was decided to have motorized rifle regiments in the first echelon of divisions, and, in the second echelon, to have a tank regiment and a separate tank battalion // earmarked to accomplish suddenly-arising tasks during the joining of battle from the march and to deliver a decisive strike from the depth.

At the head of the columns of the main forces came the tanks, with the fire means of the units distributed between battalions. The detailing of seizure groups was planned for actions in cities. During the march, movement support detachments, antitank reserves, and mobile obstacle construction detachments were established. All of the rear subunits of the regiments moved as an independent column behind the main forces.

The units and large units crossed the line of departure in good time and concentrated in the designated area, having fulfilled the assigned task.

From the experience of moving a combined-arms army over a sizable distance, it is possible to draw the following conclusions.

All of the large units and units received the opportunity for full mobilization and for being brought to full combat readiness under difficult conditions. In doing

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so, several shortcomings were revealed, and their elimination made possible an improvement in the mobilization work.

For the first time, the troops of an army completed a combined movement over a distance greater than 1,000 to 1,200 kilometers, and, in doing so, they retained their combat readiness and capability to fulfil combat tasks.

The first stage of the march confirmed the provisions of the regulations in respect to planning the distance to be covered in twenty-four hours as 200 to 250 kilometers or more at an average nighttime speed of 25 to 30 kilometers for vehicle columns. During the next stage, the troops completed a forced march and showed that, if the situation demands and the road conditions permit, the distance to be covered by vehicle columns in twenty-four hours may be planned at 400 to 500 kilometers at an average speed of 30 to 40 kilometers per hour.

On the whole, the system of training troops to complete marches under their own power justified itself. Despite the limited time for organizing the march and the lack of experience in negotiating mountainous terrain under difficult conditions, the troops coped with their assigned missions in the allotted time.

However, the majority of the exercises showed that the drivers of tracked vehicles and tanks do not have adequate experience in driving their vehicles on hard-surfaced roads; attention must be devoted to this, having developed specific methods for their training.

Another conclusion is also suggested from the experience of movement in the mountains: in officer training, attention must be focused not only on studying the special features of actions of units, along the seacoast, for example, or in negotiating large rivers, or in wooded and marshy terrain, but also on the special features of organizing combat actions in mountainous terrain.

The experience of the exercises makes it possible to draw the conclusion that it has become necessary for the formations to contain air mobile units and subunits which would be able to accomplish a number of tasks for the sudden

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seizure of vital military and administrative-political centers before the approach of the troops on the ground. For this, it is advisable either to establish special troop subunits or to substantially strengthen the formations with helicopters. In this connection, attention should be given to the further improvement of helicopters, particularly to providing the capability for conducting infantry weapon fire from them and for protecting them against destruction by infantry weapons from the ground.

The exercises showed that, on the whole, the organizational structure of the armored regiments (bronepolk), and also the tactical-technical capabilities of the infantry combat vehicles, justified themselves.

The exercises also confirmed the necessity for further improvement of a number of models of antiaircraft missile equipment, engineer equipment, and armored equipment, in order that their capabilities may be better "joined" to the dynamic nature of modern troop movements, with consideration of the condition of the road network in the Western Theater of Military Operations.

Finally, it became clear in the exercises that we have not yet completed the task of providing for successful cooperation between our troops and the formations and large units of friendly armies. In our opinion, it is advisable to set up an organ of the formations located in the adjacent-to-the-border zone on Soviet territory for strengthening and supporting cooperation with the troops of the Warsaw Pact member states.

This must be implemented not only through working out specific operational tasks at exercises and war games, but also through the study of the organizational structure of the troops and the conduct of combined exercises with the use of operations groups. The command personnel of districts adjacent to the border should be called upon more often to participate in combined exercises as field umpires, in order for them to study the experience of cooperation in actual practice and to become better acquainted with the theater of military operations.

The course of the exercises acutely demonstrated the need for an army to have three identical communications

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centers (for the forward command post, the command post, and the rear command post). Relying on the movement of communications means between the command post and the forward command post for the purpose of strengthening the latter leads to a sharp lowering of the stability of communications.

Many shortcomings were exposed in material-technical support also, despite the fact that the rear of the army was able to cope with a considerable volume of tasks for material support (at one of the latest exercises alone, more than 30,000 tons of cargo were processed). This work was greatly affected by the absence of: repair organs; depots of military-technical equipment, armored equipment, clothing and equipment, and medical supplies; and a general-purpose army hospital. These rear subunits and institutions are extremely necessary to an army for accomplishing particular operational tasks.

The most important factor promoting achievement of success in movements proved to be concrete party-political work conducted by commanders and political organs at all levels and by Party and Komsomol organizations. It assured the high political activeness of every soldier, non-commissioned officer, and officer, and developed in them a feeling of responsibility for fulfilling their military duty. From this it follows that the most serious attention must continue to be devoted to the daily ideological-political and military education of personnel. Life has clearly demonstrated how important it is to maintain our ideological armament pure and combat ready.

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