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CENTRAL INTELLIGENCE AGENCY
WASHINGTON, D.C. 20505

4897

21 December 1973

MEMORANDUM FOR: The Director of Central Intelligence

SUBJECT : MILITARY THOUGHT (USSR): Logistical Support of
a Front Offensive Operation

1. The enclosed Intelligence Information Special Report is part of a series now in preparation based on the SECRET USSR Ministry of Defense publication Collection of Articles of the Journal "Military Thought". This article is a thorough examination of logistical support of large-scale offensive operations in nuclear warfare. The major distinction which the author makes between support of such operations in World War II and in contemporary general warfare is the extensive mechanization of both combat units and rear services elements. He provides specific figures relating to distances, delivery rates by type of carrier, amounts of materiel required by unit type and size, and restoration of damaged communications routes. This article appeared in Issue No. 2 (90) 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.

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for William E. Nelson
Deputy Director for Operations

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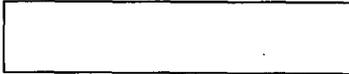
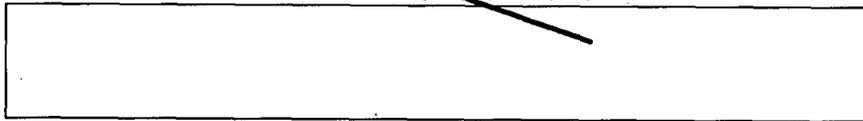
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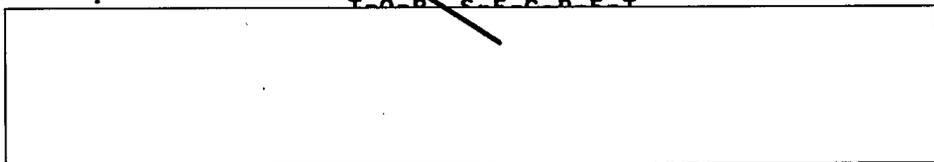
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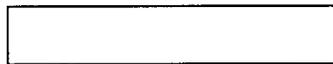
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Intelligence Information Special Report

COUNTRY USSR



DATE OF INFO. Mid-1970

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SUBJECT

MILITARY THOUGHT (USSR): The Coordination of Operational Tasks of Troops in Offensive Operations with the Material-Technical Capabilities of the Rear Services of a Front

SOURCE Documentary

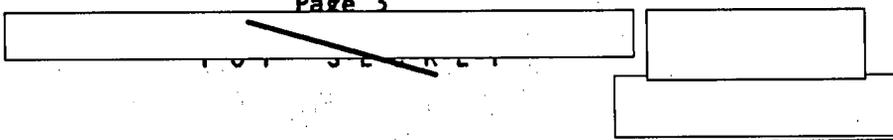
Summary:

The following report is a translation from Russian of an article which appeared in Issue No. 2 (90) for 1970 of the SECRET USSR Ministry of Defense publication Collection of Articles of the Journal "Military Thought". The author of this article is General-Major A. Muzychenko. This article is a thorough examination of logistical support of large-scale offensive operations in nuclear warfare. The major distinction which the author makes between support of such operations in World War II and in contemporary general warfare is the extensive mechanization of both combat units and rear services elements. He provides specific figures relating to distances, delivery rates by type of carrier, amounts of materiel required by unit type and size, and restoration of damaged communications routes.

End of Summary

Comment:

General-Major Muzychenko wrote an article on a rear services exercise in Red Star, 9 August 1968. He also was the author of an article on military economics in Issue 8 for 1971 of Military Thought. 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.



The Coordination of Operational Tasks of Troops in Offensive Operations with the Material-Technical Capabilities of the Rear Services of a Front

by
General-Major A. Muzychenko

A determination of the operational tasks of troops that is not based upon an accurate and thorough assessment of their combat capabilities is unthinkable. Among the various factors upon which their combat capabilities depend is the capability of the rear services to provide them with material-technical support.

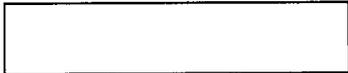
Materiel resources are always limited. Therefore, when an operation is being planned, the existing rear services forces and means are evaluated comprehensively and accurately to ensure that operational tasks conform to actual capabilities.

This article examines those basic problems which must be considered when evaluating the operational capabilities of the rear services to provide troop support during the preparations for a front offensive operation in a brief period of time and during the offensive in great depth.

* * *

Viewed objectively, the success of troop combat actions depends on their material-technical support. This was evident during World War II operations. To a considerable extent, the capabilities of the rear services determined the scope of operations.

Attempts to ignore this maxim always led to undesirable consequences. For example, troop reverses on the Southwestern Front in the spring of 1943 in the Kharkov area were caused primarily by the fact that during the offensive the troops lost contact with their supply bases and thus ran out of munitions and fuel. The bad road conditions that prevailed during the spring were not the only cause for this. ~~At that time the motor transport facilities of the~~



~~At~~ At that time the motor transport facilities of the army and front rear services were not able to supply the troops with all the necessities during an offensive in great depth.

This was due to the relatively shallow depth of our operations in 1943. Our railroads had been severely damaged, a long period of time was required to restore them, and there was little motor transport. The situation was fundamentally altered with the appearance of vehicle supply units: the rear services of tank armies received motor transport regiments, and fronts received automotive brigades.

Combat actions have now grown to be even more dependent on material-technical support, and the necessity of taking the capabilities of the rear services into consideration when the troops are being assigned their operational tasks has become especially urgent. For example, a modern fighter aircraft uses up its fuel supply in less than 1.5 to 2 hours, while tank and motorized rifle units on the march use theirs up in 10 to 12 hours; and if the fuel supply is not promptly replenished, the troops come to a halt. We point out that the march reserve of combat equipment has sharply increased since World War II. One might assume that this would increase the autonomy of troops and facilitate the replenishment of supplies, but this is not the case. The scope of operations and the scale of regroupings have increased to a considerably greater degree than have the march reserves of equipment. For this reason, the problem of promptly replenishing fuel supplies has become more complex.

The situation in regard to the replenishment of munitions is similar. The rate of fire of all types of weapons has increased to the point where the standard unit of fire can be expended within a few hours, and if it is not replenished in the shortest possible time, the troops will be in a grave situation.

On the one hand, the above factors have increased the need for greater rear services mobility, but, on the other hand, they have made necessary the most thorough assessment of the troop support capabilities of the rear services when operational tasks are being assigned and when combat actions are being planned. It is also clear that, as the technical



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level of troop equipment is raised, the capabilities of the rear services must be correspondingly increased so that during operations troops are not limited by material-technical support from exploiting their combat capabilities. However, experience shows that increases in troop combat capabilities often outstrip the capabilities of the rear services. Complete motorization and the availability of missile/nuclear weapons allow an increase in the scope of offensive operations and permit them to be conducted in the entire depth of theaters. Front troops are able to regroup over great distances independently of railroad operations, and this greatly reduces the amount of time needed for the buildup and preparations for operations.

Under these conditions, a realistic evaluation of the capabilities of rear services to provide materiel support for an operation is of even greater importance now than it was in the past; and, of course, it should not be limited to quantitative calculations and should entail an operational assessment of all the rear services forces and means in light of the specific conditions under which the operation is to be conducted. This assessment should be made by the combined-arms staff after it has precisely determined the degree to which the allocated materiel resources ensure the fulfillment of operational tasks in the operation, determined if the rear services complement corresponds to the troop grouping being created for the operation, and determined the capabilities of the rear services to support the troops in tasks throughout the entire depth of the offensive.

The evaluation of the materiel resources allocated for the operation should not be based only on average rates of consumption. For example, it is important that operational calculations for munitions be made not only in terms of the units of supply (units of fire) required, but also in terms of absolute quantities. This is because the composition of the unit of fire is based on the number of weapons. If there are few weapons, then the unit of fire will be small. In this case higher norms are clearly required, since small units of fire based on standard rates of expenditure can result in an inadequate supply of munitions for the fulfillment of combat tasks.

Errors are often committed in determining troop fuel requirements: fuel consumption is estimated in accordance with technical norms with no regard for specific conditions.

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Many years of experience have demonstrated that during regroupings and aggressive actions, depending on the situation, the terrain, weather conditions, and other factors, the consumption of POL may substantially exceed the established norms. For example, when roads are non-existent or impassable, tanks and motor vehicles with high cross-country mobility will burn fuel at two to three times the prescribed norm, as was confirmed during the Dvina exercise.

The organization of the march, the rate of speed of the advance, and other factors, greatly affect fuel consumption. Under normal march conditions (with motor vehicles using the roads and tanks and tracked prime movers using prepared cross-country routes), a tracked vehicle will go 220 to 250 kilometers on one fueling and a motor vehicle will go 300 to 350 kilometers (the corresponding technical norms are 300 to 350 and 500 to 600 kilometers).

The requirements for engineer, chemical, armored, and other types of support are estimated on the basis of the specific tasks to be performed during the operation by the corresponding arms of troops.

When all types of means and materiel support capabilities are being assessed, we cannot ignore probable losses from enemy strikes against rear services installations. Even when supplies are located under cover, these losses may be considerable--up to 20 to 30 percent, and higher. The extent of anticipated losses can be estimated only if the nature of enemy actions is accurately and thoroughly analyzed; moreover, this analysis should be performed not by each individual service separately, but by the combined-arms staffs with the arms of troops and services participating.

When an operation is being planned, it is important to ensure that the composition of the grouping of rear services forces and means corresponds to the troop grouping that is being formed. There are two reasons why this is necessary. First, although the authorized composition of the rear services units of a front is based on average indices, the combat strength of an army or a front may vary considerably. Thus, an army may have from three to six or seven divisions, and a front may have from two to five or six armies or more. It is quite clear that the quantity of forces and means allocated to rear services support should be determined by

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the strength of the army and the front. Second, the rear services forces and means of the front must be correctly distributed among the axes, with priority given to the effective support of the troop grouping on the axis of the front's main strike.

Such are some of the problems involved in the overall calculation of the rear services forces and means.

Along with this calculation, when an operation is being planned, it is also necessary to analyze carefully the specific capabilities of the rear services to prepare for the operation within the prescribed period of time and to provide support for the troops during the fulfillment of their immediate tasks and, especially, during their subsequent ones.

When preparing an operation, it is very important that the rear services have the capability of quickly assembling materiel resources. The amount of time required to do this was almost always one of the basic indices employed in estimating the amount of time required to prepare for an operation (during World War II it took 20 to 30 days, or more, to accomplish this). At present, the time required to prepare a front offensive operation is estimated to be several days. Of course, it is only possible to manage this in such a brief period of time when the theater of military operations is appropriately prepared, when materiel reserves are available, and when the minimum necessary number of rear services units and installations are at hand. Obviously, the rear services forces and means necessary to support the troop groupings located immediately within the theater of military operations will also be assembled. Their strength and degree of preparedness will affect the duration of the preparations for the operation.

The capabilities of the rear services must be evaluated with particular thoroughness when preparing for an operation that involves troop advances over great distances--up to 1,000 kilometers or more. Rear services supporting front troops engaged in an offensive operation are faced with a new and extremely complex problem: that of supplying large troop groupings while simultaneously advancing and deploying to the theater of military operations.

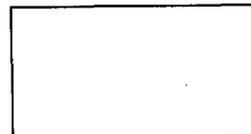
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During World War II, operational regroupings and, to an even greater degree, strategic regroupings were accomplished almost entirely by rail. We know of no instances when front troops regrouped over great distances (1,000 kilometers or more) using their own means. This is quite understandable. Rifle divisions, which constituted the bulk of the forces of a front, could cover only 25 to 30 kilometers a day and consequently were transported over great distances by rail. Rear services units were regrouped and materiel supplies were delivered by rail at the same time as the troops or soon thereafter. Thus, in the recent past, the capabilities for large regroupings of troops and of rear services were essentially identical and largely dependent on rail transport.

Now the picture is different. Front troops are completely motorized and are able to cover 250 kilometers or more in 24 hours by their own means. When the railroads are not operating, this enables the troops to be advanced into the theater of military operations using their own means and then to be committed immediately to the engagement. The engagement will take place only if, within a short period of time, the front and army rear services are able to supply the front area (as a minimum) 200 to 250 thousand tons of varied materiel and are able to advance and deploy.

The difficulty lies in the fact that the front rear services units and installations (as has been observed above) do not yet have the same degree of mobility as the troops. Also, whereas front troop movements no longer depend on the functioning of the railroads, the movement of a front's principal materiel supplies and its rear services units still does. And the capabilities of automotive transport to move front supplies over great distances are still highly limited. When the front troops are moving to the theater of military operations, army and front motor transport is capable of carrying a total of only 20 to 25 thousand tons of materiel, which constitutes no more than 10 percent of a front's requirements for an offensive. The bulk of the various supplies for an advancing front must still be transported by rail. However, this is not easy to do. Approximately 300 trains are required to deliver 200 to 250 thousand tons of freight to a front. Even if two different lines are used and the railroads work reliably, when we take into account the amount of time needed for



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loading operational shipments, 10 to 12 days will be required.

However, if preparations for the operation take place after combat actions have begun, we can hardly expect the railroads to operate reliably. Damage to bridges over large rivers and to large rail junctions will severely diminish the capacity of rail lines. As shown by exercises, rail shipments may be completely cut off for a certain length of time. The Neman exercise (1968) showed that, after the first nuclear strike, through shipments were cut off for 5 to 6 days. This means a sharp drop in the flow of materiel to the front, a fact that must be carefully considered when making calculations in preparation for an operation.

With the introduction of the new organization of the rear services of the ground forces, the capabilities of the front rear services will be considerably higher in the event rail operations are disrupted. But as yet, the problem of moving front supplies is still very acute. When a front moves into a theater of military operations, army and front motor transport will carry up to 40 to 45 thousand tons of materiel, which constitutes a supply for about 3 to 4 days. Taking into account the field mobile reserve, the front will have enough mobile reserves for 7 to 8 days of combat actions. It is quite obvious that this does not suffice for an operation. Therefore, when tasks are being assigned, we must consider exactly how we are to replenish supplies of materiel from reserves previously stockpiled in the theater of military operations and from reserves to be delivered from the interior of the country.

An analysis of many operational exercises clearly demonstrates that reserves of materiel adequate to fully satisfy the requirements of the entire operation must be set up at the front prior to the beginning of an offensive operation (regardless of whether nuclear or conventional means are employed). If the depth of the operation is 600 to 800 kilometers and the rate of advance is 40 to 50 kilometers a day, and even greater if nuclear weapons are employed, the operation may last 12 to 18 days. Allowing for anticipated losses (up to 30 percent), we must reckon on materiel requirements adequate to replenish the expenditures of 20 days on the average.

In addition, it is also necessary to plan to supply the front with enough materiel during the operation so that at

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the end of the operation the mobile reserves held by front troops are within normal limits and the materiel located in front and army depots is enough for 10 to 12 days.

It is important that operational calculations assess and take into consideration the capabilities of rear services to supply units with fuel when the troops are advancing over long distances by their own means. Exercises have shown that a march can proceed at a rate of 200 to 250 kilometers or more per day. It will therefore be necessary to supply the front troops with 12 to 15 thousand tons of fuel a day and to refuel all combat equipment daily. If operations are conducted in a prepared theater of operations where there is an extensive network of fuel depots, troop, army, and front motor transport will be able to cope with this problem. But this will place a strain on motor transport and will require an efficient organization of refueling procedures; and the march plans must allow at least 3 to 4 hours a day for this.

During actions in an unprepared theater of military operations, organic motor transport will not be able to replenish expended fuel supplies if supplies have to be transported over a distance of more than 100 to 150 kilometers. It will be necessary to procure supplementary means: pipelines must be laid in advance; transport aviation must be called upon; additional motor transport must be made available; and other measures must be taken.

When a front offensive is being prepared and operational tasks are being assigned, it is essential to consider the time periods required to concentrate the necessary amount of rear services units and installations and to deploy the rear services. Experience has shown that these time periods considerably exceed those required for the concentration of troop groupings. The reason for this was explained above: the mobility of troops is substantially greater than that of large units and units of the rear services. For example, 5 to 6 days will suffice for the concentration of a strike grouping of front troops even when they have to march a distance of 800 to 1,000 kilometers. A minimum of 10 to 12 days is required even under the most favorable conditions, to regroup the rear services of a front and to set up materiel reserves. This very essential factor must never be ignored when operational calculations are being made.

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This situation exists because until recently army and front rear services had virtually no mobile units or large units capable of moving at the same rate as the troops. The organizational structure approved for the rear services of the ground forces provides for the incorporation of qualitatively new rear services large units and units at the army and front levels: the army base is being made completely mobile; mobile advance bases for fronts and advance hospital bases are being formed; the load-carrying capacity of front motor transport is being increased by a factor of approximately 1.5; and rear services communications units are being substantially strengthened. The Neman rear services operational exercise showed that the new types of mobile large units and units of the rear services of an army and a front possess the same degree of mobility and controllability as do the troops. This will enable rear services large units and units to advance toward the theater of military operations right behind the troops; and it will mean that before the beginning of the operation the deployed army rear services and the first echelon of the front rear services would have mobile rear services large units and units which can advance to the theater of military operations by their own means right behind the troops.

We will further examine the basic problems of the rear services which must be considered without fail during the planning of an operation. We stress that the capabilities of the rear services are a very important factor when determining the depth of an operation. Moreover, it can be asserted with full justification that the materiel resources of the front and the capabilities of the rear services constitute one of the most important indices used in operational calculations to determine the depth of troop tasks in an offensive operation. Take, for example, the capabilities of the rear services for transporting materiel. They involve the efforts of the transportation system and the conditions under which the rear services work in the operation. Rail transport is still the most powerful means. However, we must take into account its vulnerability: if in the past war the principal difficulty consisted primarily of the speed with which rail lines were restored, then no less difficult today is the problem also of their viability.

Thanks to the fact that the railroad troops now have more technical equipment, rail lines can be repaired considerably faster. During an offensive up to 40 to 45

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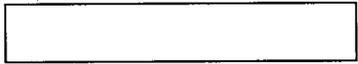
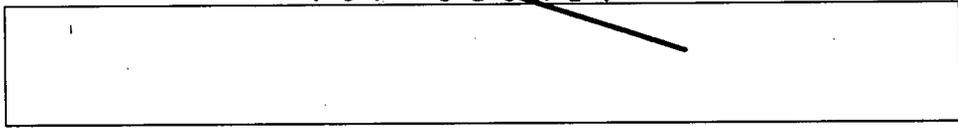
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kilometers of track can be repaired in 24 hours. Allowing for the time required to assemble railroad troops in the zone of the front offensive, one or two rail lines can be repaired to a depth of 200 to 300 kilometers. This, however, is not adequate, since the depth of operations and the pace of offensives have increased; and in comparison to World War II operations, the distance separating front troops from their supply bases has increased.

Training exercises have demonstrated that during an offensive operation throughout the depths of the theater, troops become separated from railroad supply bases by as much as 400 to 500 kilometers or more. Moreover, the enemy will endeavor to disrupt railroad operations in order to impede the flow of supplies to the troops. During an operation, railroad shipments, even those at the front level, will constitute no more than 10 to 15 percent of the total amount of the supplies shipped.

Motor transport will constitute the principal means of delivery during an offensive. Existing organic army and front motor transport will maintain the flow of materiel to the troops when they are separated by no more than 250 to 300 kilometers from their railroad supply bases (army-level deliveries are made at approximately 100 kilometers and front-level deliveries are made at 150 to 200 kilometers); army and front motor transport will be able to make the trip in a 24-hour period. If the troops are more than 300 kilometers away from the railroad supply bases, the capabilities of motor transport to deliver supplies will be reduced.

An especially serious situation arises when there are extensive destruction and solid zones of contamination along the transportation routes. In that case, transport aircraft will be needed to supply the troops in the front strike grouping, since they will be situated deep in the area of operations at a great distance from the supply bases. While it is true that at present the capabilities of aircraft are limited when compared to those of motor and rail transport facilities, this is somewhat compensated for by their speed, maneuverability, and ability to deliver cargo to any area. Even during the last war there often were occasions when only air transport was able to deliver weapons, equipment, and food supplies.



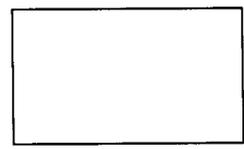
Field pipelines (which can be laid at a rate of 50 to 60 kilometers a day) will be an effective means of supplying the front troops with fuel during an offensive. A 150-millimeter pipeline can deliver up to 2000 tons of fuel a day. However, such a pipeline will not become fully productive until the tenth or twelfth day of the operation since part of the fuel will be required to fill up the sections that have been laid.

When an operation is being planned, the amount of work necessary to provide water crossings in the rear area of the front should be carefully estimated. The difficulty here consists entirely of the fact that rear services road units have a limited quantity of pontoon equipment and are mainly able to build low-water-level floating bridges; and this requires considerably more time than the laying of floating bridges. This factor is of considerable importance when front engineer troops are being coordinated with road repair troops. It stems from the necessity of holding the floating bridges in the rear until the road units have finished building the low-water-level floating bridges.

It is not a simple matter for rear services to make provisions for aircraft rebasing during an offensive being conducted at a great depth. Calculations show that front aviation requires 2 or 3 new airfields daily; and an airfield-engineer battalion requires 2 or 3 days to prepare one. The total capability of the rear services of an air army (in preparing airfields during an operation and allowing for time lost in relocating units) is no more than one airfield a day. This does not ensure aircraft rebasing. In the European Theater of Military Operations a possible alternative solution, other than the capture of enemy airfields, is to use superhighways as runways. These and other similar problems must be provided for in the operation plan.

These are the basic points that should be considered when developing and coordinating the operational tasks of troops and the capabilities of the rear services.

In what document are they presented? In exercises, the plan for rear services troop support is usually attached to the operation plan. However, the former does not always contain concise and accurate basic data specifying how the operational tasks correspond to the capabilities of the rear



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services. The rear services support plan describes the manner in which materiel and rear services units are to be employed. Moreover, as a rule, data on the various services are scattered throughout different documents. For example, information on munitions is contained in formulations of the rocket-artillery armament service; calculations for delivering materiel and supplying the troops with fuel and food are in papers of the rear services staff; views on the technical maintenance of armored and vehicle-tractor equipment are in the documents of the corresponding services, etc. The combined-arms staff has the task of accurately organizing and coordinating the work of the rear services staff with that of all the independent services. If this is not done, the over-all operational evaluation of the capabilities of the rear services to provide troop support during an operation will be incomplete. Though there will undoubtedly be numerous different attachments to the operational plan, there is no consolidated document available which will furnish a comprehensive picture of how the operation itself is to be supported.

For this reason we believe that the basic data pertaining to the support of troops by the rear services during an operation should be included in the operational section of the operation plan. This data would pertain to the following: the amount of materiel allocated to the operation and the materiel reserves that are to be established by the beginning of the operation; the munitions and fuel expenditures established for the troop missions; the average daily amount of materiel to be delivered while the initial and subsequent front missions are being carried out, and the level of reserves that are to be on hand at the end of the operation; the estimated number of medical casualties and the capabilities of rendering medical aid and treatment to the wounded; the anticipated amount of combat equipment that will be put out of action, and what equipment must be repaired during the operation; and the principal measures that are to be taken to maintain the viability of the lines of communication, and to provide cover for materiel reserves, rear services units, and front and army installations.

In conclusion, it would not be out of place to state that the capabilities of the rear services are an extremely important component of the overall combat capabilities of front troops in the preparation and conduct of an offensive

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operation carried out at a great depth. When planning an operation, the combined-arms staff must take them into consideration and evaluate them as meticulously and scrupulously as they do the combat capabilities of the troops.

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