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CENTRAL INTELLIGENCE AGENCY
WASHINGTON, D.C. 20505

4 March 1977

MEMORANDUM FOR: The Director of Central Intelligence

FROM : William W. Wells
Deputy Director for Operations

SUBJECT : USSR GENERAL STAFF ACADEMY LECTURES: Rear Services Support of an Army and a Front in an Offensive Operation

1. The enclosed Intelligence Information Special Report is part of a series now in preparation based on a collection of seven lectures, classified SECRET, prepared by the General Staff Academy for publication by the First Directorate (Operations) of the General Staff of the Armed Forces of the USSR in October 1969. This lecture deals with the organization of the rear services to provide timely and continuous support to front and army combat operations. The author discusses materiel, technical and medical support procedures and capabilities, and the organization of control in addition to the composition of rear services elements. The lecture was prepared in February 1969. The Russian-language version was disseminated as FIRDB-312/00046-76.

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.

HR70-14

William W. Wells

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* Russian Version see 312/00046-76

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Intelligence Information Special Report

COUNTRY USSR

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SUBJECT

GENERAL STAFF ACADEMY LECTURES: Organization of Rear Services Support of Troops of an Army and a Front in an Offensive Operation

SOURCE Documentary

Summary:

The following report is a translation from Russian of a lecture, classified SECRET, prepared by General-Mayor A. S. Skovoroda for presentation at the General Staff Academy of the Armed Forces of the USSR. This lecture deals with the organization of the ground forces rear services to provide timely and continuous support to front and army combat operations. The rear services are tasked with establishing, maintaining and delivering materiel reserves through a system of depots and mobile bases, maintaining roads and transportation, repairing damaged equipment, and providing medical care and sanitary measures. The author discusses various support procedures and capabilities, advance preparation and readiness, and the organization of control in addition to the composition of rear services units.

End of Summary

[redacted] Comment:

The Russian-language version of this lecture was disseminated as FIRDB-312/00046-76.

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M I L I T A R Y

ORDERS OF LENIN AND SUVOROV

ACADEMY OF THE GENERAL STAFF

OF THE

ARMED FORCES OF THE USSR

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APPROVED

Chief of the Academy of the General Staff

General of the Army S. P. Ivanov

18 February 1969

General-Mayor A. S. SKOVORODA

ORGANIZATION OF REAR SERVICES SUPPORT OF TROOPS OF AN ARMY AND A FRONT IN AN OFFENSIVE OPERATION

LECTURE

MOSCOW - 1969

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I N T R O D U C T I O N

The success of troop combat actions in modern operations depends to an ever greater extent on timely and uninterrupted rear services support to them. This is manifested first of all in the increasing volume of materiel being expended, and also in the need to provide the troops with new types of supplies -- missiles, nuclear warheads, missile propellant, radioelectronic and other complex equipment.

The troops must not experience interruptions in materiel supply, or in timely and complete medical and technical support, since this directly affects their combat readiness and capabilities for conducting aggressive combat actions under the complex conditions of nuclear war. A proper decision for the organization and conduct of an operation cannot be made now without a thorough analysis of the status of the rear services and their actual capabilities for supporting the troops with all they require.

V. I. Lenin, in analyzing the nature of war, wrote: "The best army, the people most committed to the cause of revolution, will be immediately annihilated by the enemy if they are not sufficiently armed, supplied with food and trained." V. I. Lenin believed that "to wage war as it should be waged requires a strong, organized rear."*

These instructions of V. I. Lenin are directly related to the modern operational rear services of the Armed Forces.

The aim of this lecture is to set forth the fundamental principles of the organization of rear services support of the troops of an army and front in an offensive operation.

The following matters are examined in the lecture:

1. The possible composition, tasks and organization of army and front rear services.
2. Materiel support of army and front troops and the organization of materiel delivery.
3. Technical support in an offensive operation of an army and front.
4. Organization of medical support.
5. Control of the army and front rear services.

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* V. I. Lenin, Collected Works, Edition 4, Vol. 27, page 54.

1. THE POSSIBLE COMPOSITION, TASKS AND ORGANIZATION OF ARMY AND FRONT REAR SERVICES IN AN OFFENSIVE OPERATION

Rear services support of an operation includes a body of measures for organizing the rear services, preparing and utilizing the lines of transportation and transport, and for materiel, technical, airfield engineer, medical, veterinary and other types of troop support and servicing.

In a front offensive operation, rear services support is carried out by the forces and means of the tactical, army and front rear services.

In composition and organizational structure the tactical and army rear services are completely mobile and have reserves of the basic types of materiel: divisions -- for three or four days, and an army -- for two days of aggressive combat actions.

The front rear services are the core of the materiel-technical base for supporting the troops to the entire depth of a front offensive operation. They are composed of rear services units and facilities for various purposes, which are capable of fulfilling their tasks under complex situational conditions.

The army and front rear services are tasked with:

-- the support of troops with all types of materiel, timely establishment and maintenance of prescribed reserves of materiel and uninterrupted delivery of them to the troops;

-- the preparation and maintenance of stable operation of the lines of transportation and transport, by organizing the road traffic control service on the main roads of the front;

-- the collection, evacuation and repair of damaged combat equipment and weapons;

-- the rendering of medical assistance and the treatment of the wounded and sick; implementation of antiepidemic and sanitary-hygiene measures in the offensive zone of the front;

-- the organization of protection, security and defense of rear services installations and maintenance of order in the rear zone of the front.

The rear services of an army and front in addition are tasked with veterinary and quarantine support of the troops, and also with the

exploitation of local resources and captured equipment.

The composition of the rear services is not constant. It depends on the composition of the troops and the tasks of the front, the state of the theater of military operations and the volume of prospective rear services support tasks. The front rear services usually include:

-- mobile missile technical bases and other units to support the rocket troops;

-- front bases with depots for all types of supplies and servicing units;

-- railroad, road, motor transport and pipeline large units and units;

-- military transportation organs;

-- hospital bases, separate medical detachments and other special medical units and facilities;

-- repair and recovery units and facilities of the branch arms and services;

-- field organs of the military trade organization, the State Bank, and the military post office;

-- rear security large units and units.

The total number of rear services units and facilities making up the composition of the front rear services can be as high as 500 to 600 or more entities (100 to 120 thousand men and 50 to 60 thousand motor vehicles and other equipment). A possible composition of army rear services is shown in the table (Attachment 1). The army rear services may be composed of 40 to 50 rear services units and facilities, including a mobile missile technical base, a mobile army base with depots for all the basic types of supplies and a servicing company; four to five motor transport battalions (or a motor transport regiment) with a total cargo capacity of up to 5,000 tons; two road traffic control battalions; 10 to 12 separate medical detachments -- two per division; an army sanitary-antiepidemic detachment; an army medical reinforcement detachment, and a medical motor transport company capable of evacuating 1,000 wounded and sick in one trip; a tank recovery battalion and a motor vehicle recovery company; a mobile field bakery; a rear engineer company and a rear communications company; and, field organs of the military trade organization and military post office. In all in the army rear services there may be up to 5,500 personnel and about 2,000 motor vehicles and tracked vehicles.

The organizational structure of the rear services of a combined-arms army is shown in the diagram (Attachment 2).

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To reinforce the army rear services, chemical defense subunits, separate tank repair battalions, and separate repair and rehabilitation battalions, and when necessary other units and facilities as well, may be attached from the front rear services composition. However, the army rear services must not be overburdened by attaching to it a large number of rear services units and facilities from the front, since this has an adverse effect on their mobility and maneuverability.

The high combat readiness of the troops in peacetime and the possibility of the sudden onset of war require that the tactical, army and front rear services be in constant readiness for immediate and comprehensive support of combat actions with their available forces and means. In principle, the combat readiness of the rear services must correspond to the combat readiness of the troops being supported. Because of this, the preparation of the rear services must be undertaken in advance, still in peacetime.

The following have to be the basis of this preparation:

-- maintaining the tactical rear services and a certain minimum of army-level and front-level rear services units and facilities in constant combat readiness;

-- establishing materiel reserves at amounts meeting the full requirements of the troops in an operation; concealing and dispersing these reserves;

-- preparing lines of transportation and all types of transport to operate under conditions of nuclear war;

-- preparing military hospitals and state medical treatment facilities to receive wounded and sick in the first days of combat actions;

-- ensuring rapid mobilization expansion of the army and front rear services.

As calculations and the experience of exercises have shown, reliable rear services support of troops at the beginning of a war requires having the tactical rear services fully expanded in peacetime, the army rear services 45 to 50 percent expanded and the front rear services 30 to 40 percent expanded, not counting the stationary depots of materiel reserves. To support the rocket troops, all the forces and means of rear services support must be in full readiness in peacetime. The remainder of the operational rear services must be maintained in cadre status or in that status which will ensure rapid expansion and buildup of the efforts of the rear services in the first days of the operation. That being the case, the expansion of the army rear services up to full strength must be completed, as a rule, prior to the beginning of an operation, but not later than the

initial days of combat actions. In all cases an attempt should be made to complete mobilization expansion of the operational rear services prior to the initial enemy nuclear strike.

To facilitate the work of the rear services at the beginning of a war, while still in peacetime the measures to move the reserves of materiel out of large depots and bases must be carefully planned, and steps must be taken to ensure that equipment is taken out of stand-by storage quickly, that loading and unloading operations are mechanized and their front broadened, and also steps taken to maintain the access roads to the depots in good repair and adapt them for night operation.

The rear services are brought to the various levels of readiness at the same time as the troops, according to plans worked out in advance.

The organization of the front (army) rear services in an operation, and the grouping of their forces and means, must correspond to the operational situation which has developed and the decision of the commander for the operation. It must be conducive to creating the most favorable conditions for uninterrupted operation of all elements of the operational rear services, particularly transport for delivery of supplies, and the medical and repair facilities.

The front and army rear services are deployed and carry out their work in the rear zone of the front and in the offensive zone of the army, respectively.

In a departure position for an offensive the depth of the rear zone of a front may be as much as 300 to 400 kilometers, and during an operation -- 800 to 900 kilometers and more. This depends on the operational disposition and tasks of the troops, the nature of the theater of military operations, the level of development of the lines of transportation and the time required to restore them.

A possible variant of the organization of the front rear services in an offensive operation is shown in the diagram (Attachment 3).

It is evident from the diagram that the forces and means of the front rear services are deployed on the main axes of troop actions, echeloned within the depth of the rear zone. In this instance, the main efforts of the rear services are concentrated on the main axis to support the main grouping of front troops.

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Deep in the rear zone of the front on the main supply lines there are deployed one or two rear front bases, which contain up to 60 to 70 percent of the front materiel reserves, receive materiel arriving from the center, and replenish the materiel reserves of the forward front bases, and also those of the second-echelon troops and troop reserves of the front.

The forward front bases are deployed 100 to 120 kilometers from the line of the first-echelon troops in the railhead sections of the railroads or on the ground near the main motor roads of the front. They are intended for the support of the armies, and they contain materiel reserves for three to four days of combat actions.

To bring materiel reserves closer to the advancing troops, each base may allocate two branches -- but usually one branch -- to the zone of the armies to be supported.

Depending on the rate of advance of the troops, the branches of the forward front base are deployed every two to three days, 30 to 40 kilometers from the mobile army bases or 70 to 80 kilometers from the front line, with one or two days' materiel reserves for the troops being supported.

The forward front bases may be relocated two or three times during the operation, and the rear bases -- once toward the end of the operation.

The mobility of the forward front bases assumes especially great importance in present-day operations. This problem is resolved by equipping them more fully with motor transport having large cargo capacity and good cross-country performance, and by introducing a lighter container for fuel and high-performance means of mechanizing loading and unloading operations.

The front missile technical units must be positioned and relocated in accordance with the grouping of rocket troops. Usually the front mobile missile technical bases are deployed by the beginning of the operation, 30 to 50 kilometers from the siting areas of the missile brigades, and are relocated behind the advancing troops by leapfrogging every 150 to 200 kilometers.

The front missile propellant depots are positioned in the areas of the front bases; their mobile branches, which are to support the mobile missile technical bases, are positioned 50 to 70 kilometers from them.

The special units for the delivery of missiles and missile propellant are situated close to the unloading stations, materiel support airfields, missile propellant depots and their branches.

The hospital bases of the front are deployed in a departure position 50 to 70 kilometers from the front line to receive wounded in the first days of the operation; after that they are moved forward along the main axes of advance of the troops in readiness to deploy in areas of massive casualties.

The relocation of rear services units and facilities must be preceded by thorough reconnaissance of the new areas and routes, which is organized by the staff of the rear and the chiefs of the services.

This procedure for positioning and relocating the main rear services units and facilities of the front ensures that materiel reserves are dispersed in 10 to 12 areas and brought close to the armies in time during an operation, and also makes it possible for the rear services forces and means to carry out an extensive maneuver to any axis of troop actions.

In present-day, highly mobile operations the army rear services are deployed and operate, as a rule, from short halts, separated no more than 100 to 120 kilometers from the advancing troops. For this reason the mobile army base should be in a departure position 40 to 60 kilometers from the front line, and the army mobile missile-technical base -- 30 to 40 kilometers from the siting areas of the missile brigade. The separate medical detachments attached to the divisions are positioned right in the battle formations of the troops, 10 to 15 kilometers from the forward edge. Reserve separate medical detachments must be in constant readiness to move out quickly with both first-echelon and second-echelon divisions to eliminate the aftereffects of enemy nuclear strikes. Therefore they have to be positioned at least 20 to 25 kilometers from the forward line of troops.

The army sanitary-antiepidemic detachment is positioned in an area from which it can best conduct sanitary-epidemiological and bacteriological reconnaissance in the zone of army actions (usually not far from the area of the rear control post).

The separate medical motor transport company is positioned on the axis of the actions of the main grouping of troops. At the beginning of the operation the company sends medical motor transport subunits out to the separate medical-sanitary battalions and separate medical detachments to

evacuate the wounded and sick directly to front hospitals or to local medical treatment facilities.

Army recovery units (separate tank recovery battalion and separate motor vehicle-tractor equipment recovery company), as a rule are moved forward to the operating zones of the first-echelon divisions with the task of accelerating the evacuation of damaged combat equipment to army damaged motor vehicle collection points.

The field mechanized bakery usually is positioned in the area of the mobile army base, near the rations depot.

The rear engineer company is positioned in accordance with the tasks it is assigned for sheltering rear services installations.

The organization of the army rear services is shown in the diagram (Attachment 4).

Army rear services units and facilities are relocated during the operation in accordance with the specific situation which has developed and the rate of advance of the troops. Thus, if an offensive is developed with a high rate of advance, the mobile army bases should be relocated daily, but when the rate of advance of the troops is 40 to 50 kilometers per day, they should be relocated once every two days. To support divisions operating on a separate axis, a branch of the mobile army base may be deployed. It should be taken into consideration that frequent relocation of rear services units is undesirable, since this entails reducing their performance capabilities.

The army missile technical base is relocated to allow for the advance of the missile battalions of the division and the army missile brigade, without permitting interruptions in the delivery of missiles to them.

The army rear services may be relocated to new areas both in full complement and piecemeal.

The preparation and efficient utilization of the lines of transportation occupy a special place in the work of the rear services in an operation. In principle, to support operational movements and supply shipments, all types of transportation have to be used at the front level: railroad, water, ground and air. In the rear zone of the front there have to be a minimum of two or three axial railroad lines and two or three lateral railroad lines, with the axial lines having a total traffic

capacity of 60 to 70 paired trains per day. During an operation, depending on the availability of railroad troops, it is possible to restore one or two railroad lines with a total traffic capacity of 20 to 30 paired trains per day. The rate of restoration of the railroad sections without tunnels using the forces of two railroad brigades is 40 to 50 kilometers per day.

Two or three regulating stations are designated for a front on the railroad network, and one or two alternate regulating stations are prepared for it.

Unloading stations, which as a rule are selected near the areas in which the depots and bases are located, are designated for the large units and formations of the front. Each division and mobile army base may be allocated two or three unloading stations.

Maximum utilization of rail transportation to deliver materiel requires providing for the organization of shipments via isolated sections of the railroads (150 to 200 kilometers in length) with the setting up of temporary transshipment areas at barrier points.

Regulating ports are designated on the waterways in the front zone, and unloading ports or supply landing stages are designated for the armies.

All these military transportation organs are supposed to receive arriving military trains (transports), allocate and consign them among the bases and depots, and also to evacuate cargoes into the interior of the country.

For the movement of troops and the delivery of materiel by motor transport and for evacuation, a motor road network is prepared in the front zone; this network includes main and auxiliary axial roads, and also lateral and access roads.

The network of front motor roads has to connect:

-- the front bases with their branches and mobile army bases;

-- the unloading stations (ports, materiel support airfields) with the areas in which the missile technical units are positioned, and the latter with the siting areas of the missile large units and units;

-- the main and auxiliary roads of the front with the disposition areas of the army bases of the air army and depots of the aviation technical large units, with the front hospital bases, and with other front-level rear services large units and units.

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Each road traffic control brigade of the front is assigned a zone in which it prepares one or two main motor roads and one or two auxiliary motor roads from the front bases to the mobile army bases, and also several lateral roads. This means, as a rule, that there must be one main road and one auxiliary road for each army of the first echelon. Usually a total of three or four main roads and three or four auxiliary roads, and the same number of lateral roads, are prepared and maintained in the front zone. The traffic capacity of the front motor roads is: main roads -- 4,000 to 6,000 vehicles each per day, auxiliary roads -- 2,000 to 4,000 vehicles each per day.

The road traffic control units of the road traffic control brigade are assigned road traffic control areas, which in turn are divided into the road traffic control sectors of the subunits.

The organization of the road traffic control service in the zone of a road traffic control brigade is shown in the diagram (Attachment 5). Its task is to ensure regulation of traffic, conduct of continuous radiation and chemical reconnaissance and reporting on it to the troops moving along the roads, and also dispatch control of the motor transport columns. In addition, on the main motor roads, shelters are prepared for personnel and servicing points are set up for teams and subunits moving separately. On the auxiliary roads the minimum necessary amount of this work is carried out.

The restoration of roads and bridges in the zone of the road traffic control brigade is performed by the road construction and bridge units assigned to the brigade or attached to it as reinforcement.

All of the work of the front road troops is carried out in close cooperation with the engineer troops. The roads and bridges restored by the engineer troops in the rear zone of the front must be utilized to the maximum for the passage of rear services units and facilities, the delivery of materiel, and the evacuation of wounded.

At the beginning of a war, when there will be a limited number of road troops in a front, local civilian road organizations will have to be enlisted extensively in accordance with a previously agreed plan to maintain the motor roads.

In the offensive zone of a combined-arms army the road units prepare axial and lateral army motor roads, which connect the mobile army bases and army mobile missile technical bases with the disposition areas of the

division depots and with the siting areas of the missile units. One motor road, as a rule, is prepared for each division of the first echelon of the army. On these roads, the road traffic control service is organized, and road and bridge restoration work is carried out in an amount ensuring transport passage on them during the offensive. Army motor roads are prepared for a traffic capacity of 1,000 to 2,000 vehicles each per day, depending on the volume of traffic.

When relocating mobile army bases and army mobile missile technical bases during an operation via unprepared roads, the road traffic control subunits can move ahead of them, reconnoiter and restore the routes, and organize the traffic control service.

In present-day operations extensive use is made of air transport to deliver materiel and evacuate the wounded. For this purpose, in the areas of the front bases and front missile technical bases, the forces and means of the air army and front rear services are used to set up materiel support airfields or take-off and landing strips, and also to set up hospitals to receive the wounded.

The steady work of the army and front rear services largely depends on the organization of the protection, security and defense of its major installations.

The basic measures to protect the rear services are similar to the measures to protect the troops. They are implemented by the forces and means of the rear services units and facilities themselves, and also by rear engineer and chemical subunits.

The rear services units and facilities, with materiel reserves, have to be positioned in a dispersed manner, at a distance from the probable targets of an enemy nuclear strike, and using the protective features of the terrain to the maximum.

In all cases an attempt should be made to prepare shelters for the personnel, medical facilities, missiles and nuclear warheads, missile propellant, fuel, and ammunition. But this requires having high-performance earth-moving equipment in the rear engineer units. Thus, in the NEMAN exercise, the main army depots of materiel reserves without transport were dug into the ground in five or six hours, and those with transport -- in a period two or three times longer.

To eliminate the aftereffects of enemy nuclear weapons employment against army rear services installations, special detachments may be formed from rear services units and facilities; the attached subunits of chemical troops, reserve separate medical detachments, a sanitary-antiepidemic detachment and a medical motor transport company also may be allocated.

The covering of front and army rear services installations against air strikes is provided for in the overall front air defense system.

The security and defense of major front lines of transportation and especially important rear services installations (front regulating stations, front mobile missile technical bases, missile propellant depots, transshipment areas and bases), and also combat with enemy sabotage groups and the maintenance of order in the rear zone of the front, are carried out by special rear security troops and, in addition, by combat units allocated by order of the front commander.

The immediate security and defense of rear services units and facilities is carried out by their own forces and means.

2. MATERIEL SUPPORT OF ARMY AND FRONT TROOPS AND THE ORGANIZATION OF MATERIEL DELIVERY

Materiel support of the troops is one of the main tasks of the army and front rear services. It is carried out for the purposes of maintaining the constant combat readiness of the troops and their capabilities to carry out active combat actions.

The increased scope of an operation, the increase in the amount of combat equipment with the troops and more intensive use of this equipment cause increased requirements for materiel.

Thus, according to the experience of exercises, to support a present-day offensive operation of a front, there may be required more than 500 thousand tons of various materiel, including: about 120-150 thousand tons of ammunition (30 percent), 250 to 300 thousand tons of fuel (50 to 60 percent), 20 to 30 thousand tons of rations (five to six percent), and 80 to 100 thousand tons of other kinds of supplies (15 to 20 percent).

In supply accounting units, the total front requirement may comprise: artillery and mortar ammunition -- 5.5 to 6 units of fire, tank ammunition

-- 7.5 to 8 units of fire, antiaircraft artillery ammunition -- 9 to 11 units of fire, small arms ammunition -- 4 to 4.5 units of fire, and aviation ammunition -- 20 to 25 units of fire; motor vehicle gasoline -- 8 to 9 fuelings, diesel fuel and B-70 aviation gasoline -- 12 to 14 fuelings, aviation fuel -- 20 to 25 fuelings; rations - 30 to 35 daily rations.

The total materiel requirement is made up of:

-- the expenditure when preparing an operation and during an operation;

-- the reserves required to have at the end of the operation (in a front -- 60 to 70 percent, in an army -- 100 percent of established norms for the beginning of an operation);

-- the materiel reserve to replenish possible combat losses (25 to 30 percent of front reserves).

For a combined-arms army this requirement may be about 50 thousand tons, including: ammunition -- 23 thousand tons (46 percent); fuel -- 23 thousand tons (46 percent) and other kinds of supplies -- four thousand tons (eight percent).

A detailed calculation of the army materiel requirement for an operation is shown in the table (Attachment 6), from which it is evident that to support an army operation it is necessary to have: artillery and mortar ammunition -- 4.3 units of fire, tank ammunition -- 5.5 units of fire, antiaircraft artillery ammunition -- 6.5 units of fire, small arms ammunition -- 2.5 units of fire; motor vehicle gasoline -- 4.6 fuelings, diesel fuel -- 7.4 fuelings, B-70 aviation gasoline -- 5.5 fuelings.

The materiel expenditure in an operation depends on its nature, the rate of advance of the troops, the scales on which weapons of mass destruction are employed, and other factors. Thus, for example, the expenditure of artillery and mortar ammunition in the first day of combat actions of the army without the employment of nuclear weapons may be 1.0 to 1.5 units of fire, but with the employment of nuclear weapons -- a total of only 0.5 to 0.6 unit of fire.

The average daily ammunition expenditure also will be different: without the employment of nuclear weapons -- 0.5 to 0.6 unit of fire per day, with the employment of nuclear weapons -- 0.4 to 0.45 unit of fire, and when pursuing the enemy in the operational depth -- 0.25 to 0.35 unit of fire.

To determine the fuel expenditure during an operation the following are taken into account: the depth of the operation, the degree of maneuvering of the combat equipment and motor transport, terrain conditions, the time of year, the state of the weather and roads, change in the combat composition, and vehicle range on one fueling. The following basic data are assumed for calculations in the Western Theater of Military Operations:

Designation of indices	For tanks	For motor vehicles
Depth of operation (D_o)	Depends on task assigned	
Coefficients		
Maneuvering (C_m)	1.6-2.0	1.2-1.5
Conditions of movement (C_{cm})	1.1-1.2	1.2-1.5
Changes in combat composition (C_{ccc})	0.75-0.8	0.85-0.9
Vehicle range on one fueling, in kilometers (R_v)	200-250	500

Fuel expenditure in fuelings is determined separately for each type of fuel according to the formula

$$F = \frac{D_o C_m C_{cm} C_{ccc}}{R_v} .$$

When the rate of advance of the troops is 80 to 100 kilometers per day, the average daily fuel expenditure may be: motor vehicle gasoline -- 0.35 to 0.45 fueling, diesel fuel -- 0.6 to 0.8 fueling. When the rate of advance is lower (40 to 50 kilometers per day), the average daily fuel expenditure is decreased and will be: motor vehicle gasoline -- 0.2 to

0.25 fueling, diesel fuel and B-70 aviation gasoline -- 0.4 to 0.5 fueling.

Materiel support of operations at the beginning of a war is carried out using those reserves which are established in peacetime with the troops, and at the bases and depots of the armies, military districts and groups of forces. The amounts of these reserves must fully support the troops when moving forward and conducting initial operations to their entire depth. It is considered, for example, that at the beginning of an operation, within a front there must be reserves for a minimum of 20 days of combat actions, including: in divisions -- for three to five days, in mobile army bases -- for two days, in forward front bases -- for three to four days and in rear front bases -- for ten days.

The echeloning of materiel reserves in a combined-arms army is shown in the table (Attachment 7). When preparing for an operation, increased materiel reserves, especially artillery ammunition, mortar rounds, and fuel may be established in the divisions. This is achieved by efficient stowage of ammunition on the prime movers of the artillery pieces, building up the sides of the truck bodies, and also by mounting additional fuel tanks on tanks and transport vehicles.

The possibility of putting part of the army reserves out on the ground is not ruled out; this most often may occur when operations are carried out without the employment of nuclear weapons (supplementary reserves of ammunition at fire positions for the conduct of preparatory fire).

Rapid and abrupt changes in the operational and rear situation in present-day operations require great flexibility in the materiel support system and extensive moving of the materiel. The expended mobile reserves with the troops and at mobile army bases must be replenished daily by delivery from front depots and bases. For this reason, during an operation a front brings its reserves forward to the armies every two to three days, moving forward and deploying branches of the forward front bases at a distance of up to 80 kilometers from the forward line of troops. From these branches the armies can deliver the materiel by their own transport or receive it directly in the areas of the mobile army bases, to which this materiel is delivered by front transport.

The basic principle of the organization of delivery at all levels is the responsibility of the higher level for timely delivery of materiel to the troops, regardless of what or whose transport is allocated for this purpose. In other words, the deputy front commander for the rear organizes and bears full responsibility for the delivery of materiel to the armies

and large units subordinate to the front, and the deputy army commander for the rear -- for the delivery to large units and units subordinate to the army.

Timely delivery under the conditions of a present-day operation may be achieved only through the integrated use of all types of transport (rail, water, motor, air and pipeline).

As evident from the diagram (Attachment 8), the delivery of materiel in the front rear is mainly carried out:

-- from the rear front bases to the forward front bases: by rail transport -- 70 to 80 percent of the total volume, by motor transport -- 10 to 15 percent, by pipeline -- up to 10 percent, and by air -- five percent;

-- from the forward front bases to their branches and to the mobile army bases: by motor transport -- 80 to 85 percent, by pipeline -- 10 percent, and by air -- five percent.

The total volume of delivery in a front for an operation, depending on the composition and strength level of the front, may be 300 to 350 thousand tons, or an average of 25 to 30 thousand tons per day.

Since up to one-third of the total materiel expenditure is by troops located in the depth of the rear zone of the front (aviation, reserves, air defense units, rear services organs) and therefore receiving materiel reserves directly from the rear base by their own transport, the average daily volume of delivery to armies of the first echelon is 18 to 20 thousand tons. On the basis of this volume, the necessary composition and capabilities of various types of transport have to be calculated. In so doing, it must be taken into account that the distance of delivery by motor transport when the immediate task of the front is being carried out, may reach 250 to 300 kilometers, and when the subsequent task is being carried out -- 500 to 600 kilometers. The daily run of motor transport in the Western Theater of Military Operations may be: tactical -- up to 150 kilometers, army -- up to 200 kilometers, front -- up to 250 kilometers, with one driver per truck. *

In order to cope with such a volume of delivery, it is necessary to:

-- precisely plan the work of all types of transport, with maximum utilization of the capabilities of the different levels of the rear services;

-- bring the supply bases closer to the advancing troops in a timely manner, reducing the number of transshipments at the intermediate levels;

-- make maximum use of stationary and field mainline pipelines, river

transport and sea transport;

-- carry out the movement of materiel flexibly, and deliver the basic types of supplies to the troops first;

-- when possible bring the army and front motor transport units up to full strength with a second set of drivers to increase the daily motor transport run up to 500 to 600 kilometers, and increase the rate of delivery;

-- skilfully use materiel reserves and motor transport captured from the enemy during the offensive, to support the front troops.

The daily volume of materiel delivery in an army may be from two and one half to five thousand tons, depending on the nature of the combat actions, and the composition and strength level of the troops.

Possible variants of the organization of delivery in an army offensive operation are shown in the diagram (Attachment 9). The essence of these variants is the following:

-- the front delivers materiel by its own transport to the mobile army base, and the armies -- to the divisions;

-- the front delivers materiel reserves for the army to unloading stations, branches of the forward front bases, or mobile front bases, to cargo transfer areas and by pipelines, and the army delivers the reserves by its own transport to the mobile army bases or directly to the troops;

-- the divisions which make up the army can deliver the materiel by their own transport directly from stationary depots, unloading stations, mobile army bases, from the branches of the forward front bases, from the cargo transfer areas and from the airfields (airstrips) to which materiel reserves are delivered by transport aviation.

It is important in any delivery variant, that the expended materiel reserves be replenished daily up to the established norms, and that division and army motor transport not be separated from the advancing troops by more than one day.

The delivery of missiles, nuclear warheads and missile propellant is carried out by special types of transport, and also by aircraft and helicopters in accordance with the accepted supply system.

The planning of materiel delivery in an operation is done by the staff of the rear of the front (army) jointly with the military transportation service and the supply services.

3. TECHNICAL SUPPORT IN AN OFFENSIVE OPERATION OF AN ARMY AND A FRONT

The role of technical support in present-day operations has grown considerably. This is explained by the high level of equipping of the troops with various kinds of complicated combat equipment and the increased losses of it in nuclear war.

The experience of exercises and scientific research have shown that average daily losses during an army offensive operation may reach: missile launchers and artillery -- two to three percent; tanks -- 12 to 15 percent, armored personnel carriers -- six to eight percent and motor vehicles -- five to six percent of listed strength.

The average daily losses of combat equipment on a front scale will be somewhat lower.

Of the total amount of damaged equipment, there may be required: running repair -- for 40 to 50 percent, medium repair -- for 20 to 25 percent, and major repair -- for 10 to 15 percent; irreparable losses comprise 20 to 25 percent.

During an operation the organic repair units of the troops and rear services of the front are able to fully repair the combat equipment requiring running repair, and 30 to 40 percent of the tanks and 20 to 25 percent of the armored personnel carriers and motor vehicles requiring medium repair. The major repair capabilities of the front repair means are extremely low (no more than 10 percent), therefore it is necessary to use local repair facilities extensively and remove equipment to factories in the rear of the country.

The basic principle of the organization of repair and utilization of front repair and recovery means is that they move forward quickly into the areas of the greatest accumulation of damaged equipment and rehabilitate it on the spot. Usually these means are utilized centrally, but they can be attached to the armies when the rate of advance of the troops is relatively low.

As a rule the front repair units deploy for work at the damaged vehicle collection points of the armies or front. The main method of work is unit replacement, i.e., replacement of separate assemblies and parts: the combat equipment requiring the least expenditure of resources and time

to put it back into operation is rehabilitated first.

An army does not have its own repair means, and if they are not attached from the front, the technical support services of the army (especially the armored service and the motor vehicle-tractor service) collect and evacuate damaged equipment at the damaged vehicle collection points, supply the troops with spare parts and assemblies and organize the transfer of equipment to the front repair organs.

The recovery units of the army are used centrally, as a rule. They are moved forward behind the first-echelon divisions in the army offensive zone, and collect and evacuate damaged equipment to army or front collection points.

When the evacuation distance is 10 to 15 kilometers, the separate tank recovery battalion and separate motor vehicle-tractor equipment recovery company may evacuate 85 to 95 tanks and 330 to 350 items of motor vehicle-tractor equipment in a day (together with the recovery means of the troops).

During an operation when the rate of advance is high, the separate recovery subunits of the army should be attached to the first-echelon large units to evacuate damaged equipment to division collection points.

The front repair battalions attached to an army organize their work at the army damaged vehicle collection points or are attached by companies to the large units to repair equipment right at their collection points.

4. ORGANIZATION OF MEDICAL SUPPORT

Medical support includes organizing and carrying out medical treatment-evacuation, sanitary-hygiene and antiepidemic measures. It is directly involved in maintaining the high combat effectiveness of the troops and with eliminating the aftereffects of enemy employment of weapons of mass destruction.

The organization of medical support in present-day operations is based on the principle of having the medical facilities as close as possible to the areas of massive casualties, that is, having medical treatment-evacuation measures carried out on the spot, in the zones of action of the fronts and armies.

For this purpose the front hospital bases (their branches) are deployed in a departure position on the main axes of advance of the troops, 50 to 70 kilometers from the forward edge. During an operation the unengaged hospital bases or their branches are moved forward successively behind the troops on the offensive, in readiness to deploy in the areas of the greatest casualties. In so doing the distance for evacuating the wounded by land must in all instances not exceed 100 to 150 kilometers.

The rendering of specialized assistance and the medical treatment of the wounded are done in the front rear services, where all the hospitals and main medical evacuation means are concentrated for this purpose. In the army and tactical rear services, qualified medical assistance is given (primarily according to vital signs), for which the separate medical-sanitary battalions of the divisions and the separate medical detachments are used. Possessing high mobility, these units can move right behind the troops and immediately move up to the centers of massive casualties to assist the casualties.

When organizing medical support it is necessary first to proceed from the possible number of casualties and their structure. As calculations and the experience of exercises have shown, casualties in a front operation under conditions of nuclear war may be 30 to 35 percent of the numerical strength. By types of weapons, these casualties are distributed approximately as follows:

-- from nuclear weapons -- 11 percent;
-- from small arms -- 26 percent;
-- from residual radiation -- 12 percent;
-- from chemical weapons -- 17 percent;
-- from bacteriological weapons -- 5 percent;
-- from sickness -- 5 percent.

Among the casualties from nuclear weapons, up to 80 to 85 percent may have combined injuries (contusions, burns and radiation sickness).

The greatest simultaneous number of wounded should be expected from the initial enemy nuclear strike (25 to 30 percent of the total casualties).

Based on the anticipated casualties, the composition of the hospital bases is determined prior to, and according to the tasks of, an operation. Depending on the composition of the front, it may require about 120 to 130 thousand hospital beds, 40 to 50 thousand of them by the time the operation begins. The hospitals have to be multipurpose, capable of treating wounded

who have combined injuries.

It does not always appear possible to produce that number of beds by the onset of an operation. Therefore the military hospitals existing in peacetime have to be prepared in advance to operate with a 150 to 200 percent overload, reserves of medical equipment have to be established and personnel prepared for rapid full mobilization and deployment of field hospitals, and local medical treatment facilities have to be used extensively as well.

In view of the repeated overloading of hospital bases at the beginning of an operation, it becomes especially important to make the fullest use of the medical-sanitary battalions of the divisions and the separate medical detachments to give qualified medical assistance. Every medical-sanitary battalion and separate medical detachment can receive and provide medical assistance to 500 wounded, and they can evacuate in one trip: a medical-sanitary battalion -- 80 men, a separate medical detachment -- 160 men.

They are deployed in the offensive zones of the divisions, and relocated forward successively, leapfrog fashion. The full cycle of work of a separate medical detachment and of a medical-sanitary battalion in one place takes approximately two days.

Wounded are evacuated from the medical-sanitary battalions of the divisions and from the separate medical detachments to the front hospital bases by the medical motor transport means of the army and the front. To evacuate wounded and sick requiring priority rendering of qualified and specialized medical assistance, aircraft and helicopters of military medical aviation and transport aviation are assigned.

For operations on coastal axes, medical support is organized to allow for the possible evacuation of wounded by sea transport and the rendering of assistance in receiving wounded from the fleet at the front hospital bases.

5. CONTROL OF THE ARMY AND FRONT REAR SERVICES

Control of the rear services is an integral part of troop control and is exercised by the army (front) commander personally, or through the staff and his deputy for the rear.

The commander of an army (front) bears full responsibility for the rear services support of the troops. When making a decision on an operation, he issues instructions on the rear services support of the troops, in which he specifies:

-- rear services tasks in preparing for and during an operation;
-- the main axes on which to deploy the army (front) bases and concentrate rear services efforts;
-- the time period for establishing reserves of materiel, their amounts, and expenditure norms;
-- the strength of military transport aviation to deliver materiel by air and evacuate the wounded;
-- the main measures and additionally allocated forces for protection, defense, and security of the rear;
-- the periods for attaining readiness of the rear services;
-- the location of the rear control post.

The control of the rear services must be continuous, firm, and flexible, and ensure the most effective use of the available forces and means of the rear services in accordance with the concept of the operation being carried out and with changes in the situation.

This is achieved through the coordinated work of the army (front) staff, the chiefs of the branch arms, services and rear services organs.

The army (front) staff, in a timely manner, transmits the orders and instructions of the commander regarding matters of rear services support to the deputy commander for the rear and to the chiefs of the branch arms and services, informs them regarding changes in the troop composition and in the operational situation, organizes continuous communications for controlling the rear services, allocates the necessary forces and means for protection, security and defense of the rear, and also ensures cooperation with the services which are not subordinate to the deputy commander for the rear, and monitors the work of the rear services.

The deputy commander for the rear has to report, either personally or through the staff of the rear, to the chief of staff of the army (front) regarding the supply situation of the troops, the status of the lines of transportation and transport means, and changes in the rear situation, and has to coordinate the most important orders on rear services support of the troops with him. He directly organizes the rear services of the army (front) and is responsible for the delivery of materiel and the support of troops by subordinate services. The chiefs of the branch arms, special troops and services are responsible for providing the troops with missiles,

ammunition, technical and other special types of equipment. They inform the deputy commander for the rear about the supply situation of the troops in respect to their types of supplies, submit requests for all types of transport for delivery and evacuation, participate in the working out of the directive on the rear services and in the planning of rear services support (especially in respect to matters of positioning and relocating rear services units and facilities, delivery of materiel, and protection, security and defense of rear services installations).

The instructions of the deputy front (army) commander for the rear on matters of organizing the rear services and delivering materiel are binding on all the chiefs of the branch arms, special troops and services, and also on the commanders of the armies (large units).

On the basis of the instructions of the army (front) commander on rear services support of the troops in an operation, and the directive of the higher level on the rear services, the deputy commander for the rear adopts a decision on the organization of rear services support, in which he determines:

-- the concept of the organization of the rear services (on which axes and in which areas, for support of which groupings of the army or front, and in what composition to deploy the army and front bases, hospital bases and other large units, units and facilities; and the way in which they are to be moved during the operation);

-- the procedure for establishing and echeloning materiel reserves when preparing for and during the operation;

-- the tasks to deliver materiel by all types of transport, to restore and maintain the lines of transportation of the front (army), the tasks of materiel support of the troops by subordinate services, and the tasks of medical and veterinary support;

-- the reserve of rear services forces and means and the procedure for their use in the operation;

-- the tasks to protect the rear from weapons of mass destruction, and to provide defense and security;

-- the organization of the control of the front (army) rear services and of the communications.

The staff of the army (front) rear, on the basis of the instructions of the commander and the decision of his deputy for the rear works out the order (directive) on the rear services and the plan of rear services support of the troops.

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The order (directive) on the rear services comprises the basic documents on control of the rear services. Their substance may be different and depend on the specific situation. Usually the tasks of rear services support of the troops are assigned in them: the time and location for deployment of the main rear services large units, units and facilities are decided, as is the procedure for relocating them during an operation; the axes and time periods for preparing and restoring rail and motor roads, the amounts and the time periods for establishing reserves of the basic types of materiel with the troops and at bases, materiel expenditure norms by the tasks of the operation and by large units (formations), and the sequence and procedure for delivery of materiel are indicated; measures for technical and medical support and protection of the rear are determined; the time period for attaining readiness of the rear services, the time and place for deployment of the rear control post, and the axis for relocating it are indicated. The order (directive) on rear services is signed by the army (front) commander, the chief of staff and the deputy commander for the rear.

Rear services support tasks also may be transmitted to the troops through orders on the rear services signed by the deputy commander for the rear and the chief of staff of the rear. Major orders are coordinated with the chief of staff of the army (front).

The plan of rear services support of the army (front) troops in an operation is a component part of the plan of the operation. In it is determined by what forces and means and how the rear services support of the troops will be carried out, that is, the procedure and methods for fulfilling the tasks assigned to the rear services. The measures for fulfilling the immediate task are worked out in the most detail. The plan is worked out on a map and an explanatory memorandum is attached regarding the main divisions of work of the rear services (calculations as to materiel support and delivery, casualties and the allocation of hospital beds, protection, etc.). The plan is approved by the army (front) commander.

The chiefs of the branch arms, special troops and services work out the support plans for their own services.

Control of the rear services while preparing for and during an operation is carried out from the rear control post, which, depending on the situation, is set up: in a front -- 25 to 30 kilometers from the command post, and in an army -- 10 to 15 kilometers from the command post. Alternate areas for the rear control post are designated in addition to the

main area.

During an operation the rear control post is relocated to new areas with the permission of the commander, as a rule by echelon, so as not to disrupt the control of the rear services.

The rear control post must have reliable communications with the army (front) staff, with the higher level of the rear services, with the rear services organs of the troops and the main rear services large units, units and facilities. To produce calculations on materiel support of the troops, restoration of lines of transportation, delivery of materiel and medical support, it is necessary to use a variety of calculating equipment (electronic computers, keyboard calculators and others). All this considerably facilitates the control of the rear services, and increases its reliability and efficiency.

In operations on coastal axes, rear services support is organized to allow for joint actions of the troops and fleet forces, with close cooperation in the work of their rear services. The main matters of cooperation may be: the use of combined-arms materiel supplies to support joint combat actions; the allocation of areas for the positioning of rear services units and facilities in the coastal zone, use of the lines of transportation and transport and of medical facilities, and mutual assistance in eliminating the aftereffects of enemy nuclear strikes. To ensure close cooperation it is desirable to reciprocally detail rear services operations groups to the rear control posts.

These, briefly, are the main principles of the organization of rear services support of army and front troops in an offensive operation. These principles must be constantly developed and improved to allow for equipping the troops with new combat equipment and for modern methods of conducting operations.

List of Attachments

1. Table of the Approximate Composition of the Rear Services of a Front.
2. Organizational Structure of the Rear Services of a Combined-Arms Army.
3. Diagram of the Organization of Front Rear Services in an Offensive Operation (variant).
4. Organization of Army Rear Services in an Offensive Operation (variant).
5. Organization of Road Traffic Control Service in the Zone of a Road Traffic Control Brigade (variant).
6. Army Materiel Requirement for an Operation (average data according to the experience of a number of exercises).
7. Echeloning of Materiel Reserves in a Combined-Arms (Tank) Army.
8. Diagram of the Organization of Delivery with Integrated Use of All Types of Transport in a Front Offensive Operation (variant).
9. Organization of Delivery in an Army Offensive Operation.

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Attachment 1

Table of the Approximate Composition of the Rear Services of a Front

Designation of the main rear services units and facilities	Number
Mobile missile technical bases	2 - 3
Surface-to-air missile technical bases	2 - 3
Missile transport battalions	2 - 3
Headquarters of front bases	3 - 4
Separate servicing battalions	3 - 4
Separate servicing companies	2 - 3
Motor transport brigades	2 - 3
Motor transport battalions	2 - 3
Missile propellant delivery motor transport battalions	1 - 2
Pipeline brigades	2 - 3
Pipeline battalions	1 - 2
Railroad brigades	2 - 3
Road traffic control brigades ☆	2 - 3
Bridge brigades	1
Bridge construction battalions (separate bridge construction battalions, engineer bridge battalions)	3 - 4
Road construction battalions	3 - 4

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Designation of the main rear services units and facilities	Number
Headquarters of hospital bases	6 - 8
Medical motor transport companies, battalions	6 - 8
Medical air regiments	1 - 2
Separate medical detachments	8 - 10
Hospitals (various) composing the front hospital bases	250 - 300
Tank recovery battalions	2
Motor vehicle recovery battalions	1 - 2
Tank repair battalions	9 - 12
Motor vehicle-tractor equipment repair battalions	13 - 15
Mobile tank repair shops	3 - 4
Front depots (composing front bases)	50 - 60
Rear security division	1

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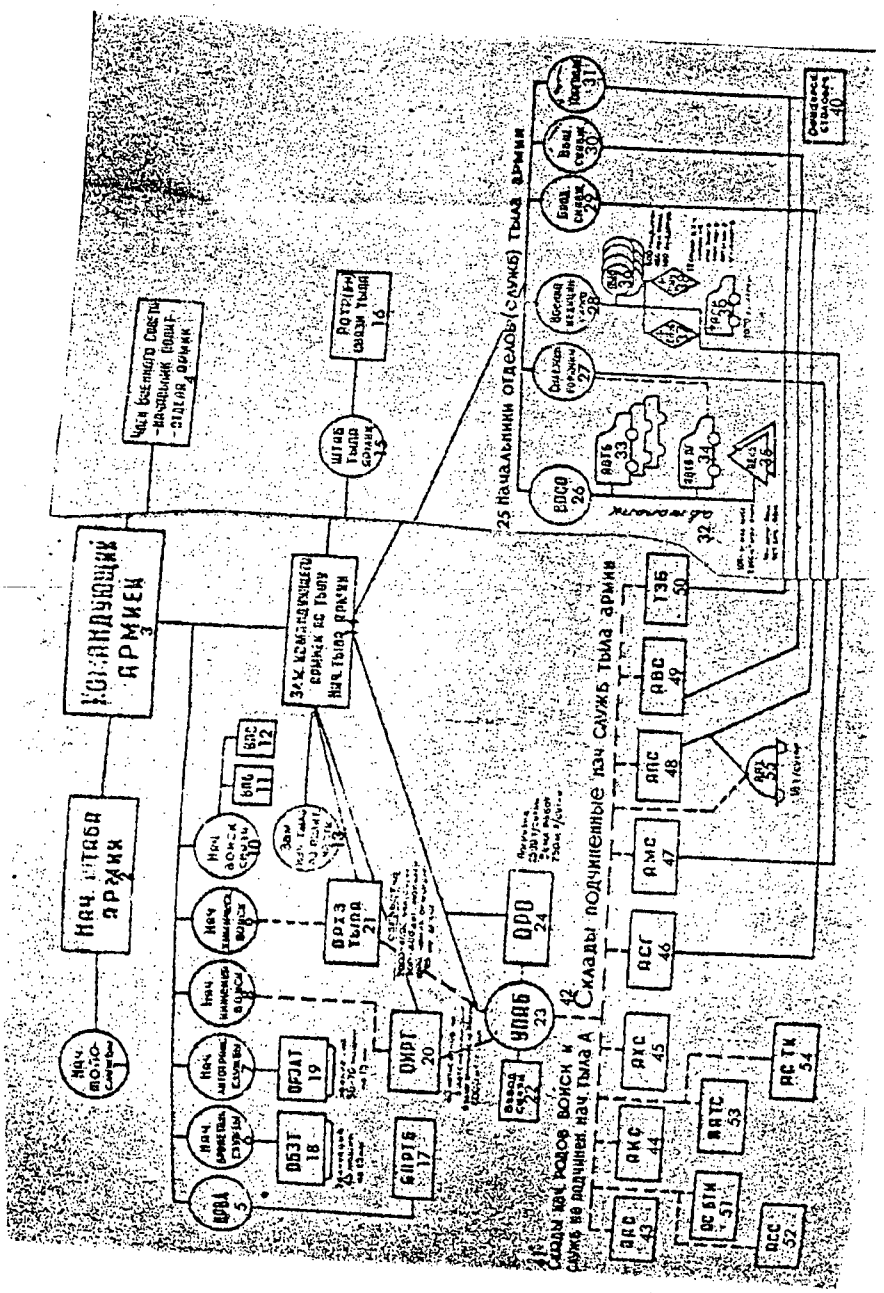
Attachment 2



Organizational Structure of the Rear Services of a Combined-Arms Army

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Legend for Attachment 2

1. Chief of the Topographic Service
2. Chief of Staff of the Army
3. Army Commander
4. Member of the Military Council and Chief of the Political Department of the Army
5. Chief of the Rocket Troops and Artillery
6. Chief of the Armored Service
7. Chief of the Motor Transport Service
8. Chief of the Engineer Troops
9. Chief of the Chemical Troops
10. Chief of the Communications Troops
11. Military postal base
12. Military post office
13. Deputy Chief of the Rear for Political Affairs
14. Deputy Army Commander for the Rear and Chief of the Rear of the Army
15. Rear staff of the army
16. Rear communications company (battalion)
17. Army mobile missile technical base
18. Separate tank recovery battalion
    (Evacuation of 45 vehicles over a distance of 15 kilometers per day.)

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19. Separate motor vehicle recovery company
(Evacuation of 50-70 vehicles over a distance of 15 kilometers per day.)

20. Separate rear engineer company
(Excavation of 40 pits of 114 cubic meters each and five protective shelters of 114 cubic meters each: 6,000 cubic meters of earth-moving work per day.)

21. Separate rear chemical defense company
(Decontamination treatment: 2,000-4,000 men per day, 300-400 vehicles per day, 1,600 (?) [several words illegible] per day, and 75 kilometers of road per day.)

22. Communications platoon

23. Headquarters of mobile army base

24. Separate servicing company
(Loading: 2,500 tons per day; earth-moving work: 750 cubic meters per day.)

25. Chiefs of departments (services) of the army rear services

26. Military transportation service (VOSO)

27. Fuel supply service

28. Military medical service

29. Rations supply service

30. Clothing supply service

31. Military trade (PX)

32. Motor transport regiment

33. Motor transport battalion

34. Fuel delivery motor transport battalion

35. Separate road traffic control battalion
(100 linear meters maximum bridging per day (?); 1,000 cubic meters of earth-moving work per day.)

36. Separate medical detachment
(Medical assistance to 500 wounded per day; evacuation of 160 men per trip; 100 convalescents.)

37. Sanitary-antiepidemic detachment

38. Medical reinforcement detachment
(12 groups, including 4 surgical groups and 2 groups each of of four other types [types of groups are illegible].)

39. Medical motor transport detachment
(Evacuation of 1,000 men per trip.)

40. Officer's mess

41. Depots of chiefs of branch arms and services not ~~subordinate~~ to the Chief of the Rear of the Army

42. Depots subordinate to the chiefs of the services of the army rear services

43. Army artillery depot

44. Army engineer depot

45. Army chemical depot

46. Army fuel depot

47. Army medical depot

48. Army rations depot

49. Army clothing depot

50. Trade and procurement base

51. Army armored equipment depot

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52. Army communications depot

53. Army motor vehicle-tractor depot

54. Army topographic map depot

55. Mobile field bakery
(18 tons per day)

Attachment 3

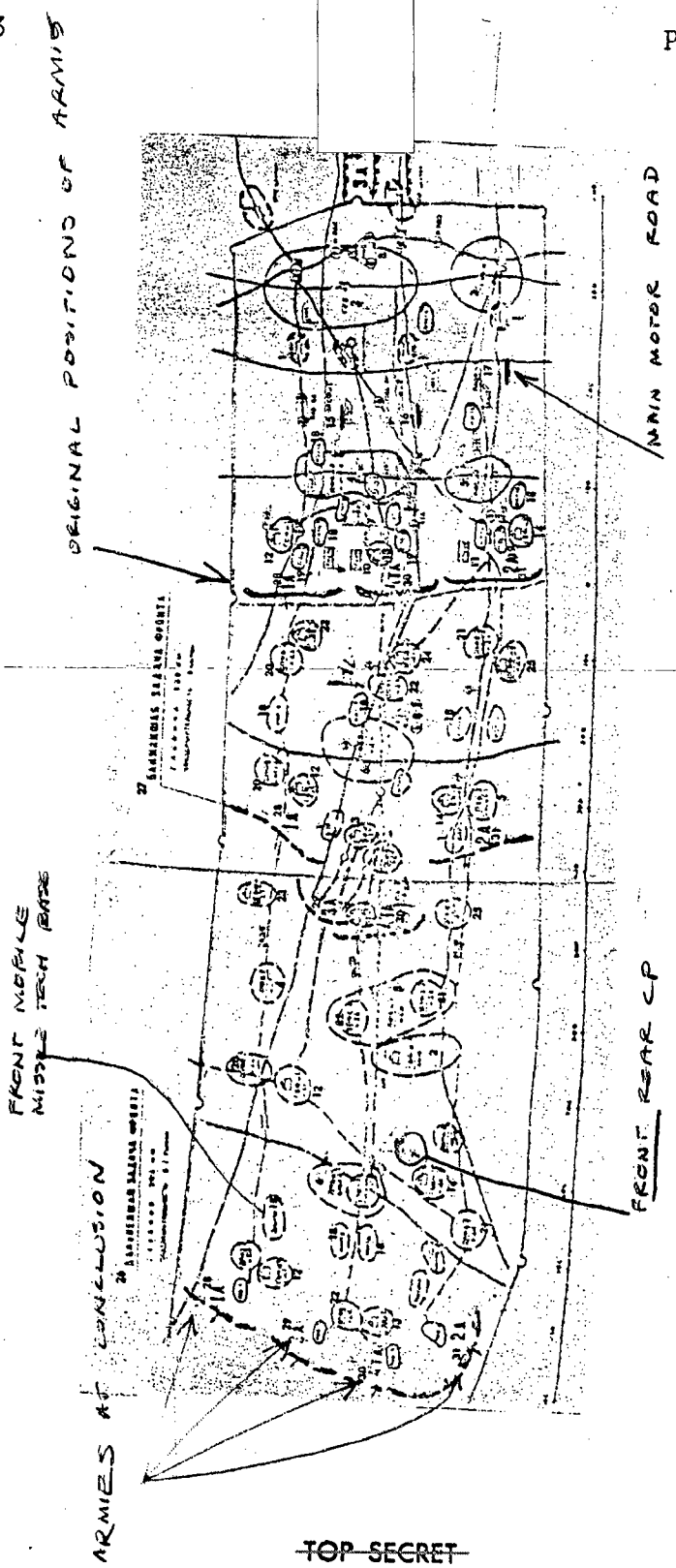

Diagram of the Organization of Front Rear Services in an Offensive Operation (variant)

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Legend for Attachment 3

1. Temporary transshipment area
2. Rear Front Base No. 1
3. Branch of Rear Front Base No. 1
4. Forward Front Base No. 2
5. Forward Front Base No. 3
6. Forward Front Base No. 4
7. Front rear control post
8. Materiel support airfields
9. Rear control post of 1st Army
10. Rear control post of 4th Tank Army
11. Rear control post of 2nd Army
12. Front Hospital Base No. 1 and Headquarters of Front Hospital Base
13. Front Hospital Base No. 2 and Headquarters of Front Hospital Base
14. Front Hospital Base No. 3 and Headquarters of Front Hospital Base
15. Front Main Motor Road No. 1
16. Front Main Motor Road No. 2
17. Front Main Motor Road No. 3
18. Front mobile missile technical base

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19. Mobile army base

20. Branch of Forward Front Base No. 2

21. Branch of Forward Front Base No. 3

22. Branch of Forward Front Base No. 4

23. Branch of Hospital Base No. 1

24. Branch of Hospital Base No. 2

25. Branch of Hospital Base No. 3

26. Immediate Task of the Front
    Depth: 300 kilometers
    Duration: 6 days

27. Subsequent task of the Front
    Depth: 800 kilometers
    Duration: 7-9 days (?)

28. 1st Army

29. 3rd Army

30. 4th Tank Army

31. 2nd Army

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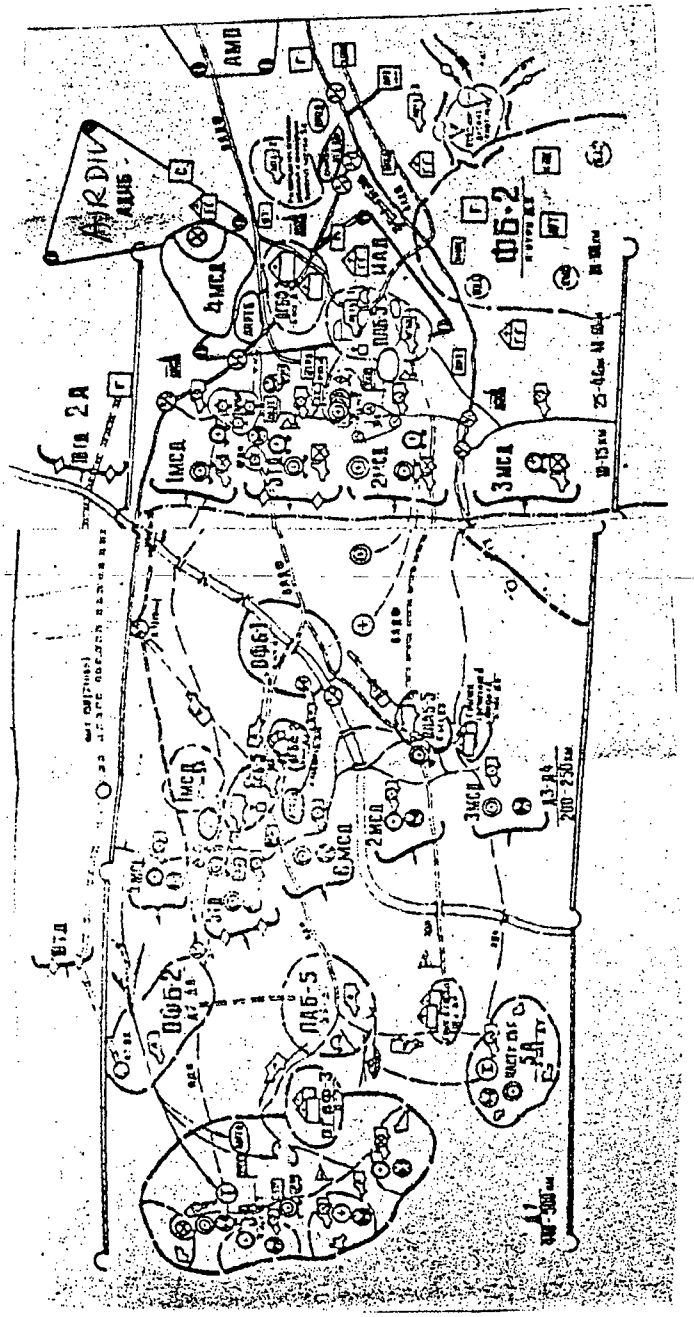
Attachment 4



Organization of Army Rear Services in an Offensive Operation (variant)

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Legend for Attachment 4

Collection point for damaged motor vehicles

Collection point for damaged tanks

Stationary army facilities

Garrison hospitals

Hospitals

Medical-sanitary battalion, not deployed

Medical-sanitary battalion, deployed

Separate medical detachment, not deployed

Separate medical detachment, deployed

Division medical aid post

Medical reinforcement detachment

Army sanitary-antiepidemic detachment

Front chemical depot

Front medical depot

Stationary chemical depot of military district (group of forces)

Stationary artillery depot of military district (group of forces)

Stationary engineer depot of military district (group of forces)

Stationary communications depot of military district (group of forces)

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Stationary fuel depot of military district (group of forces)

Stationary army engineer depot

Stationary army artillery depot

Stationary army armored equipment depot

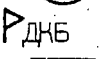
Army motor transport battalion

Army motor transport

Division combined depot

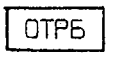
Separate repair and rehabilitation battalion of a division

Unloading station



Road traffic control battalion

Separate tank recovery battalion



Separate tank repair battalion

Army command post

Army rear control post

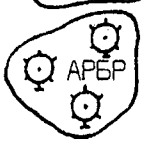
Landing strip

Airfield

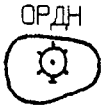
Mobile field bakery

Separate missile transport battalion

Army mobile missile technical base



Army missile brigade



Separate missile battalion

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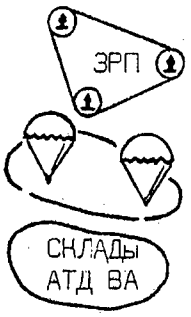

ЗРП	Surface-to-air missile regiment
	Enemy airborne landing
СКЛАДЫ АТД ВА	Depots of the aviation technical division of the air army
Д3-Д4 200-250 км	D3-D4 200-250 kilometers (accomplishment of the immediate task)
Д7 400-500 км	D7 400-500 kilometers
10ТД 2А	10th Tank Division of the 2nd Army
ПМТ-150 (7ТПБР)	Field mainline pipeline-150 millimeters in diameter (7th Pipeline Brigade)
5А	5th Army
5А к исх. д7	5th Army (by end of D7)
часть сил 5А к исх. д7	Part of the forces of the 5th Army (by end of D7)
1МСД	1st Motorized Rifle Division
5ТД	5th Tank Division
2МСД	2nd Motorized Rifle Division
3МСД	3rd Motorized Rifle Division
4МСД	4th Motorized Rifle Division
ИАД	Fighter air division
АДИБ	Fighter-bomber air division
АМО	Materiel support airfields

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ОАДФ	Front main motor road
ВАДФ	Front auxiliary motor road
АДА	Army motor road
ФБ-2 / к утру д2	Front Base No. 2 (by morning of D2)
ОФБ-1 / к исх. д3	Branch of Front Base No. 1 (by end of D3)
ОФБ-2 / к исх. д4	Branch of Front Base No. 2 (by end of D4)
ОФБ-2 / д7-д8	Branch of Front Base No. 2 (D7-D8)
ПАБ-5	Mobile Army Base No. 5
ПАБ-5 / д5-д7	Mobile Army Base No. 5 (D5-D7)
ОПАБ-5 / к исх. д3	Branch of Mobile Army Base No. 5 (by end of D3)
ОГБФ-2 / к исх д	Branch of Front Hospital Base No. 2 (by end of D Day)
ОГБФ-2 / к исх. д4	Branch of Front Hospital Base No. 2 (by end of D4)
ОГБФ-3 / к исх. д7	Branch of Front Hospital Base No. 3 (by end of D7)
группа госпиталей фронта / к исх. д3	Group of Front hospitals (by end of D3)

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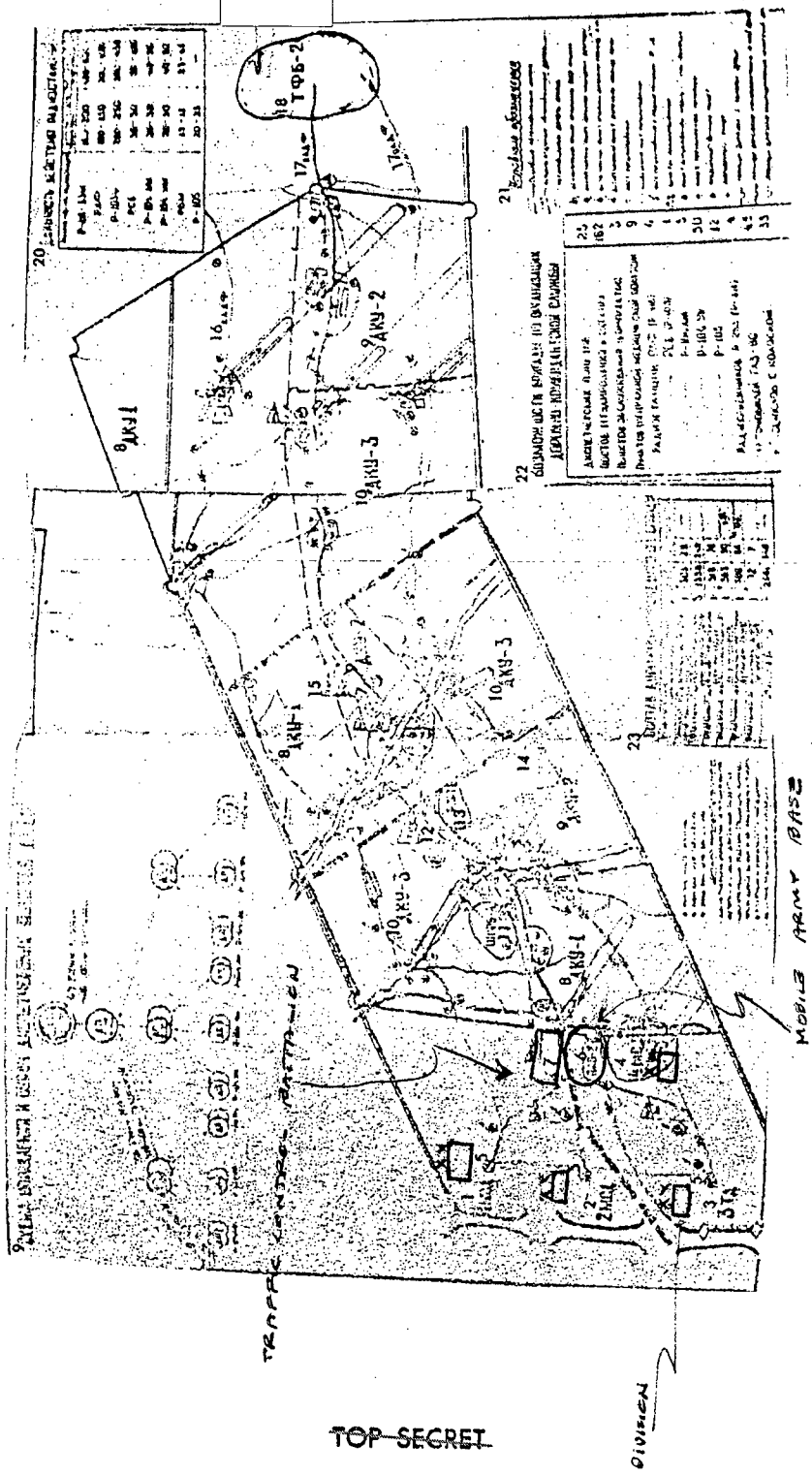
Attachment 5



Organization of Road Traffic Control Service in the Zone of a Road Traffic Control Brigade (variant)

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Legend for Attachment 5

1. 1st Motorized Rifle Division
2. 2nd Motorized Rifle Division
3. 3rd Tank Division
4. 4th Motorized Rifle Division
5. Division combined depot
6. Mobile Army Base No. 2
7. Road traffic control battalion
8. Road Traffic Control Sector No. 1
9. Road Traffic Control Sector No. 2
10. Road Traffic Control Sector No. 3
11. Branch of Forward Front Base No. 4
12. Rear control post of front
13. Front mobile missile technical base
14. Army mobile missile technical base
15. 2nd Road Traffic Control Brigade
16. Front main motor road
17. Front auxiliary motor road
18. Rear Front Base No. 2

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19. Diagram of Control and List of Dispatcher Points of a Road Traffic Control Brigade. 25 dispatcher points are shown in the diagram: one in overall control; six deployed in pairs at the intermediate level; and 18, equipped with the R-104BM radio, deployed in pairs at the lowest level [other details illegible].

20. Range of Operation of Radio Sets

Designation of Radio Set	Range of Operation (kilometers)	
	[illegible]	[illegible]
R-118B3M	? - 200	400 - 500
RAF	100 - 150	200 - 300
R-103M	200 - 250	300 - 450
RSB	30 - 50	50 - 100
R-104AM	20 - 30	40 - 50
R-104BM	20 - 30	40 - 50
RBM	15 - ?	25 - 45
R-105	20 - 25	-

21. Conventional Symbols [illegible]

22. Capabilities of a Road Traffic Control Brigade for Setting Up a Road Traffic Control Service

Dispatcher points	25
Traffic control posts	162
Servicing points (sets)	3
Special medical aid points	9
RAF (R-118) radio sets	4
RSB (R-103) radio sets	1
R-104AM radio sets	5
R-104BM radio sets	30
R-105 radio sets	12
R-253 (R-311) radio receivers	4
GAZ-69 vehicles	45
Motorcycles with sidecars	33

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23. Composition of Road Traffic Control Brigade

[Headings illegible]			
[brigade subunits illegible]	203 1338 319 363 309 72	28 249 78 90 88 7	[column, probably for remarks, is illegible]
Total in road traffic control brigade	2604	540	

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Attachment 6

Army Materiel Requirement for an Operation
(average data according to the experience of a number of exercises)

			Ammunition (units of fire)							Fuel (fuelings)					Other (tons)	Grand Total (tons)
			Tank	Artillery	Mortar	Antitank guided missile	Anti-aircraft	Small arms	Total (tons)	Diesel fuel	A-70	B-70	B-91 B-95	Total (tons)		
Expenditure and combat losses	For fulfilment of immediate task	When moving forward (deploying) 100 - 150 kilometers	-	-	-	-	-	-	-	0.5-0.7	0.35	0.4	0.7	1,800	200	2,000
		Total for D-day, counting forward movement	0.6	0.8	0.6	0.8	1.0	0.25	4,200	1.1	0.60	0.75	1.4	3,900	900	9,000
		Total for days D-D4	1.8	2.1	1.6	1.6	2.5	0.9	10,000	2.9	1.65	1.9	4.0	10,000	2,000	22,000
	For subsequent task		1.2	1.0	1.0	0.5	1.5	0.5	6,400	1.6	1.05	1.1	2.0	5,500	1,100	13,000
	Total for operation		3.0	3.1	2.6	2.1	4.0	1.4	16,400	4.5	2.7	3.0	6.0	15,500	3,100	35,000
To establish reserves by the end of the operation*			2.5	1.25	1.25	2.5	2.5	1.15	6,000-8,000	2.95	1.9	2.5	5.5	7,700 - 9,000	10% 1,300-1,700	About 15,000
Total requirement			5.5	4.35	3.85	4.6	6.5	2.55	23,000	7.45	4.6	5.5	11.5	23,000	4,000	About 50,000

* Counting losses in personnel and equipment by the end of the operation

Attachment 7

Echeloning of Materiel Reserves in a Combined-Arms (Tank) Army

Units, large units, formations		Ammunition (units of fire)					Fuel (fuelings)				Rations (daily rations)
		Artillery and mortar	Tank & anti-tank guided missile	Anti-aircraft	Small arms	Weight (tons)	Diesel fuel	Motor vehicle gas	B-70 aviation gasoline	Weight (tons)	
With the troops	In the units	0.8	1.75	1.5	0.8	MR regt 180 * / tank regt 320	1.75	1.25	1.5	MR regt 120 / tank regt 200	11
	In division depots	0.2	0.5	0.5	0.2	MR div 360 / tank div 390	0.5	0.25	0.5	MR div 230 / tank div 240	2
	Total in divisions	1.0	2.25	2.0	1.0	MR div 1,670 / tank div 1,770	2.25	1.5	2.0	MR div 1,140 / tank div 1,190	13
In mobile army base depots	of combined-arms army	0.25	0.25	0.5	0.15	1,400	0.7	0.4	0.5	2,150	2
	of tank army	0.25	0.25	0.5	0.15	1,140	0.9	0.5	0.6	2,230	2
Total in the army	combined-arms	1.25	2.5	2.5	1.15	10,560	2.95	1.9	2.5	9,400	15
	tank	1.25	2.5	2.5	1.15	8,660	3.15	2.0	2.6	8,215	15

* MR regt = motorized rifle regiment

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Attachment 8

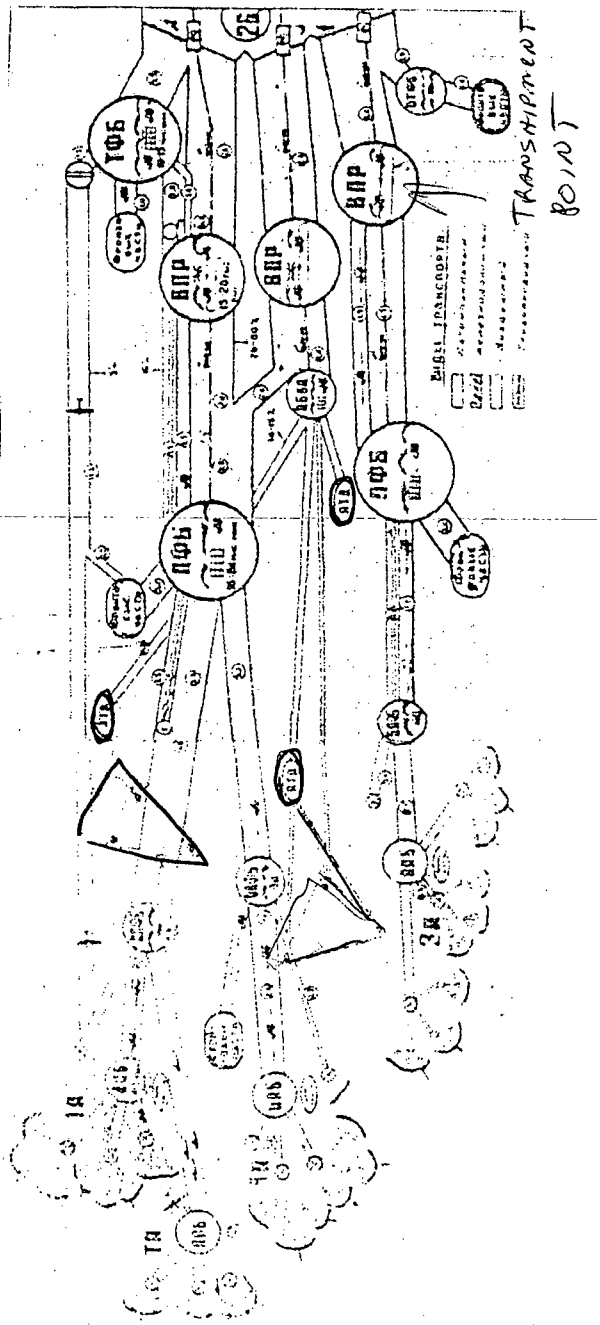

Diagram of the Organization of Delivery with Integrated Use of All Types of Transport in a Front Offensive Operation (variant)

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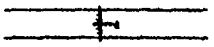
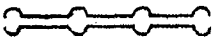
Legend for Attachment 8

	Air transport
	Pipeline transport
	Motor transport
	Rail transport
ТФБ (10-15 тыс. тонн)	Rear front base (10-15 thousand tons)
ОТФБ	Branch of rear front base
ВПР (15-20 тыс. тонн)	Temporary transshipment area (15-20 thousand tons)
ПФБ (16-20 тыс. тонн)	Forward front base (16-20 thousand tons)
ОПФБ (4-6 тыс. тонн)	Branch of forward front base (4-6 thousand tons)
ПАБ (4-5 тыс. тонн)	Mobile army base (4-5 thousand tons)
АТД	Aviation technical division
ФРОНТОВЫЕ ЧАСТИ	Front units
АРМ. ЧАСТИ	Army units
⊗	Division Combined Depot
□	Regiment materiel reserves
△	Battalion materiel reserves
1A	1st Army
TA	Tank army
4A	4th Army
3A	3rd Army

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Fuel depot

Airfield

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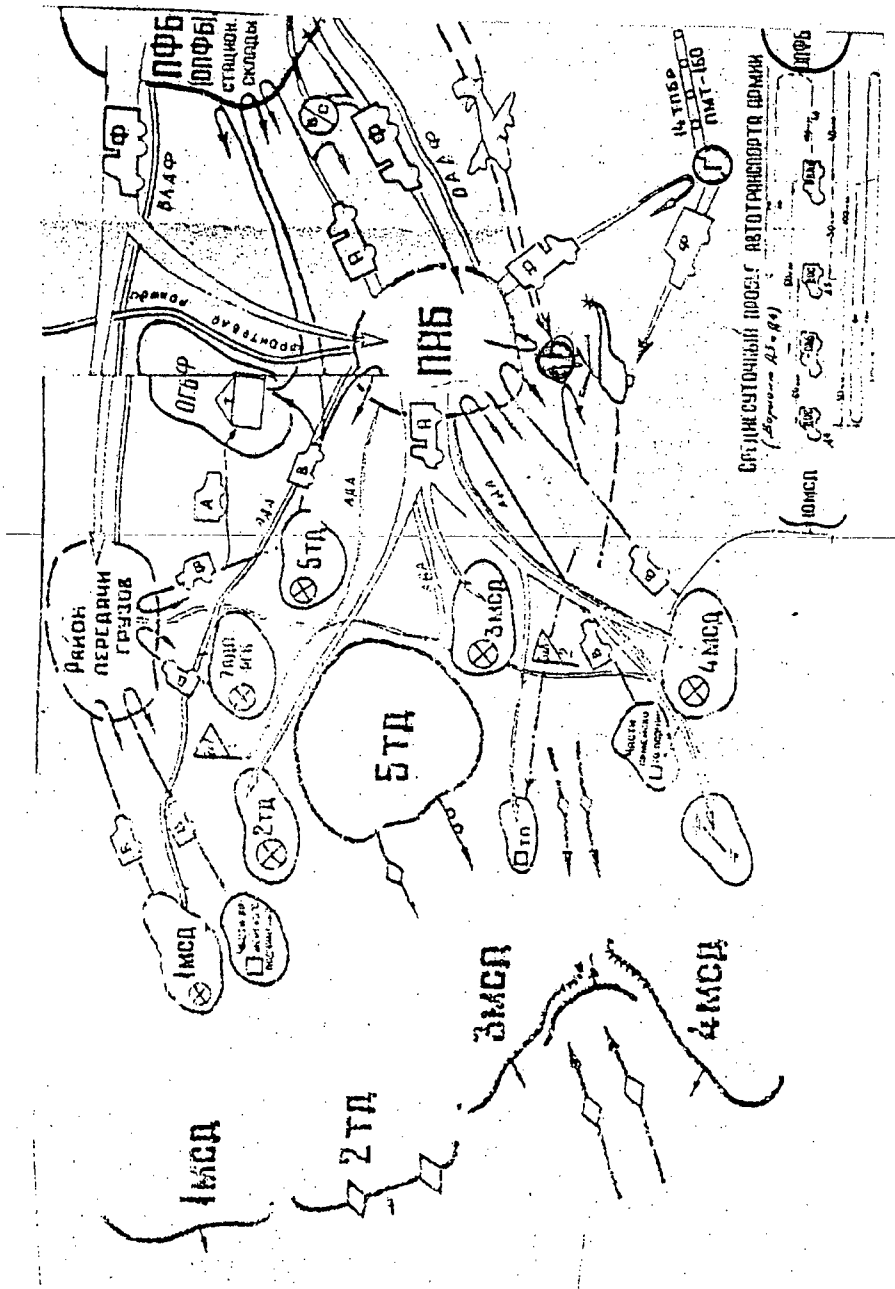
Attachment 9



Organization of Delivery in an Army Offensive Operation

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Legend for Attachment 9

ПФБ (ОПФБ) СТАЦИОН. СКЛАДЫ	Forward front base (branch of forward front base) stationary depots
ВАДФ	Front auxiliary motor road
ОАДФ	Front main motor road
ФРОНТОВАЯ РОКАДА	Front lateral motor road
АДА	Army motor road
ОГБФ	Branch of a front hospital base
ПАБ	Mobile army base
РАЙОН ПЕРЕДАЧИ ГРУЗОВ	Cargo transfer area
14ТПБР	14th Pipeline Brigade
ПМТ-150	Field mainline pipeline-150 millimeters in diameter
1МСД	1st Motorized Rifle Division
2ТД	2nd Tank Division
3МСД	3rd Motorized Rifle Division
4МСД	4th Motorized Rifle Division
7АДП РГК	7th Breakthrough Artillery Division of the Reserve of the High Command
ТП	Tank regiment
ЧАСТИ АРМЕЙСКОГО ПОДЧИНЕНИЯ	Units of army subordination
	Unloading station

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Fuel Depot

Airfield

Road traffic control battalion

Front motor transport

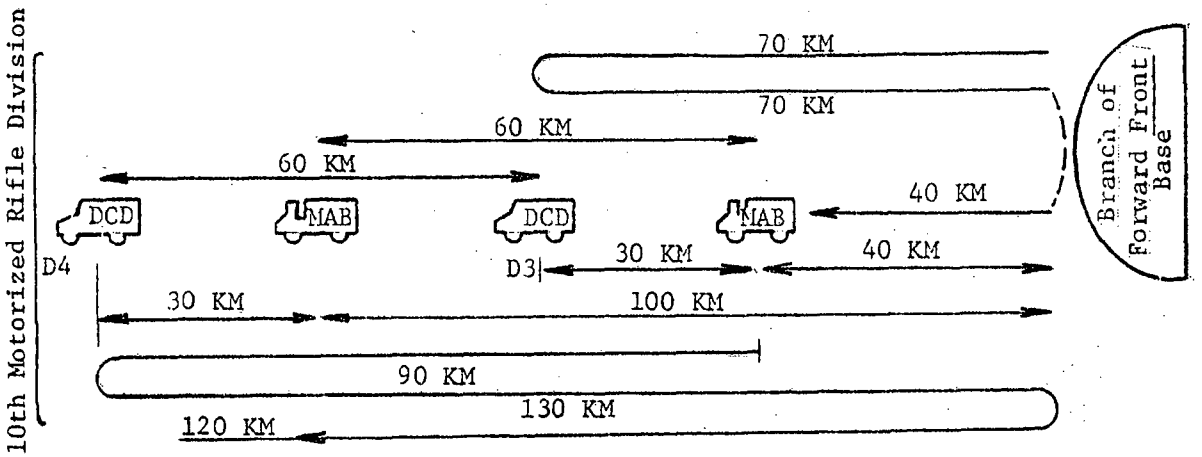
Army motor transport

Tactical motor transport

Division combined depot

Regiment materiel reserves

Average Daily Run of Army Motor Transport
(Variant for D3 and D4)



MAB = Mobile army base
DCD = Division combined depot

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