[redacted]

(146)

1.3(a)(4)

CENTRAL INTELLIGENCE AGENCY

WASHINGTON 25, D. C.

27 FEB 1962

MEMORANDUM FOR: The Director of Central Intelligence

SUBJECT : MILITARY THOUGHT: "The Problem of Transportation in Modern Warfare", by Lieutenant-General of Technical Troops I. Kovalev, Colonel-General of Technical Troops P. Bakarev, and Colonel K. Pavlovich

1. Enclosed is a verbatim translation of an article which appeared in the TOP SECRET Special Collection of Articles of the Journal "Military Thought" ("Voyennaya Mysl") published by the Ministry of Defense, USSR, and distributed down to the level of Army Commander.

2. In the interests of protecting our source, this material should be handled on a need-to-know basis within your office. Requests for extra copies of this report or for utilization of any part of this document in any other form should be addressed to the originating office.

[redacted]

1.3(a)(4)

Richard Helms
Deputy Director (Plans)

Enclosure

[redacted]

1.3(a)(4)

[redacted]

1.3(a)(4)

[redacted]

1.3(a)(4)

[redacted]

1.3(a)(4)

Original: The Director of Central Intelligence

cc: Military Representative of the President

Special Assistant to the President for
National Security Affairs

The Director of Intelligence and Research,
Department of State

The Director, Defense Intelligence Agency

The Director for Intelligence,
The Joint Staff

The Assistant Chief of Staff for Intelligence,
Department of the Army

The Director of Naval Intelligence,
Department of the Navy

The Assistant Chief of Staff, Intelligence
U. S. Air Force

The Director, National Security Agency

Director, Division of Intelligence
Atomic Energy Commission

National Indications Center

Chairman, Guided Missiles and Astronautics
Intelligence Committee

The Deputy Director of Central Intelligence

Deputy Director for Intelligence

Assistant Director for National Estimates

Assistant Director for Current Intelligence

Assistant Director for Research and Reports

Assistant Director for Scientific Intelligence

[redacted]

1.3(a)(4)

[redacted]

1.3(a)(4)

[redacted] 1.3(a)(4)

COUNTRY : USSR

SUBJECT [redacted]: MILITARY THOUGHT: "The Problem of Transportation in Modern Warfare", by Lieutenant-General of Technical Troops I. Kovalev, Colonel-General of Technical Troops P. Bakarev, and Colonel K. Pavlovich

DATE OF INFO : October 1960

APPRAISAL OF CONTENT : Documentary

SOURCE : A reliable source (B).

Following is a verbatim translation of an article titled "The Problem of Transportation in Modern Warfare", written by Lieutenant-General of Technical Troops I. Kovalev, Colonel-General of Technical Troops P. Bakarev, and Colonel K. Pavlovich.

This article appeared in the 1960 Third Issue of a special version of Voyennaya Mysl (Military Thought) which is classified TOP SECRET by the Soviets and is issued irregularly. It is distributed within the Ministry of Defense down to the level of Army Commander. The 1960 Third Issue was sent for typesetting on 17 October 1960.

Headquarters Comment: The article cited on page 3 was disseminated as [redacted] 1.3(a)(4)

[redacted] 1.3(a)(4)

[redacted] 1.3(a)(4)

[redacted] 1.3(a)(4)

The Problem of Transportation in Modern Warfare

by

Lieutenant-General of Technical Troops I. Kovalev,
Colonel-General of Technical Troops P. Bakarev, and
Colonel K. Pavlovich

The appearance of nuclear/missile weapons has caused basic changes in the means and methods of conducting armed combat.

On the basis of the well-known tenet of Engels that "tactics and strategy depend, first of all, on the level of production and means of communication attained at a given moment" (F. Engels, Anti-Duehring, State Political Publishing House, 1952, page 156), it is necessary to examine in the light of new conditions, one of the problems of utmost importance to our country, namely, the problem of transportation in modern warfare, the strategic role of which has grown immeasurably.

V.I. Lenin indicated that without well-prepared and organized transportation, and without railroads, modern warfare is an empty phrase.

These tenets of Marxist-Leninist teaching retain their full strength and meaning. Modern warfare will demand the maximum effort of the economic, military, and psychological forces of the country. From its very first moments the efforts of all types of transportation must be concentrated on supporting combat operations of the missile troops, PVO troops, and the first strategic echelon of our Armed Forces. At the same time tremendous efforts must be directed at ensuring shipments for mobilization of the armed forces and their strategic concentration.

[redacted] 1.3(a)(4)

[redacted] 1.3(a)(

[redacted] 1.3(a)(4)

In connection with this, it is impossible to agree with the opinion of Colonel-General A. Gastilovich which was expressed in his article.[1] He apparently maintains that allegedly mobilization and strategic deployment of a multimillion-man army is impossible and unnecessary under present conditions because nothing from the interior of the country will reach the front in time, and may not even reach it at all. In his opinion, the outcome of war will be decided by missile troops and border district armies, in such strength and with such armament as they had when war fell upon them.

The views of Colonel-General Comrade Gastilovich are apparently based on the assertion that allegedly under modern conditions only "blitzkrieg" war is possible.

We cannot agree with this viewpoint. The country and its armed forces should not be prepared only for a "blitzkrieg" war. The risk is too great, too great and tragic are the possible consequences in the event that the war assumes a protracted character. Indeed, the fate of the Socialist Camp will be placed on the scales of war. Prolonged war must not be rejected at the very outset. On the contrary, it is for just such a war that the country and its armed forces must be prepared, allowing, at the same time, for the possibility of a "blitzkrieg", and preparation for the latter must be provided for and carried out, but within the framework of preparation for a protracted war.

The tasks connected with preparation of transportation for war are distinguished by their tremendous labor-consuming character and demand great resources and attention. To organize these properly there must be a clear and concise conception of the nature of modern warfare. If we agree with the viewpoint of Colonel-General Comrade Gastilovich, and rule out the possibility of anything but a "blitzkrieg" which would be decided by the forces of only border district armies, and plan the development of the war economy, and specifically transportation, accordingly, then we may lose precious time made available by the period of peacetime development, and at a moment of severe trial find ourselves ill-prepared for a protracted war.

---

1. Special Collection of Articles of the Journal "Military Thought", First Issue, 1960.

[redacted] 1.3(a)(4)

[redacted] 1.3(a)(4)

[redacted] 1.3(a)(4)

Our opinions are based on the fact that nuclear/missile weapons will not eliminate massed armies but, on the contrary, will cause their inevitable increase, because losses in personnel will increase and large numbers of reserves will be required to replace them. Besides, no amount of missiles can ensure the occupation and retention of enemy territory; troops are needed for this, and a great many troops.

The decisiveness of the aims and the tremendous spatial scope of modern warfare make it necessary to transit considerable expanses. Armed combat carried on simultaneously in several isolated theaters of military operations will call for strategic and operational maneuvering of forces and weapons, as well as the bringing up of large quantities of supplies to troops in action during the course of the war. These shipments, for the most part, will be carried out not only on the territory of the USSR, but also on that of the adjacent allied countries, as well as on enemy territory.

Organizing shipments between countries is complicated by the varying widths of railway gauge, differences in means of transportation, and by the absence of a unified controlling organ which has appropriate authority for carrying out and coordinating military shipments between countries, conducted on land, sea, and air.

In addition to military shipments, consideration must be given to the large volume of shipments within each country to satisfy the requirements of the military economy and civilian population of the countries taking part in a war.

* * *

Recently, with the spread of opinion regarding the possibility of a "blitzkrieg", and the simplifications permitted in conducting command-staff exercises, many generals and officers have formed an incorrect idea

[redacted] 1.3(a)(4)

[redacted] 1.3(a)(4)

regarding the place and role of various types of transportation in war. The role of railroads is greatly belittled because of their supposedly great vulnerability to strikes of all types of weapons and the complexity of reconstructing them. These ideas are quite erroneous. Their authors fail to take into consideration the fact that railway transportation remains the basic and decisive type of transportation in the zone of interior and one of its basic types within the limits of the front.

The experience of many wars shows that with a well-organized reconstruction service, railroads possess a high degree of viability, and any damage to them is quickly eliminated. This pertains to the conditions of nuclear/missile war as well, during which it is possible to maintain relatively prompt reconstruction of damaged sections of railroad lines by the assignment of appropriate manpower and the extensive mechanization of work.

In relation to this question, the statements of two prominent American generals are of considerable interest.

The former commander of the 8th U.S. Army in Korea, Van Fleet, writes in his memoirs: "We knew that the basic mass of military supplies was delivered to the enemy by rail. We knew the location of all railway lines. We had superiority at sea and in the air...We did everything possible day after day, and still could not stop the traffic of the Red trains. We attacked with dive bombers and from low altitudes, shelled with artillery fire from heavy sea and landbased guns, attacked with rocket weapons and machine guns, and organized sabotage. We were witnesses of new proof of the dependability and flexibility of railroads in wartime."[1]

Chief Engineer of the U.S. Army General Hall, in mentioning that in case of war railways will pass from the category of a necessary means of transportation to one of vital importance, stresses the fact that even under the impact of the atomic bombs dropped on Hiroshima and Nagasaki, railway installations were the most stable.

---

1. James Van Fleet, Railway Transport and the Winners of Wars. Washington, 1956.

[redacted] 1.3(a)(4)

All this attests to the high viability of railroads and, consequently, also to the fact that with appropriate preparation and organization of a reconstruction service, they will be one of the major strategic means of support for armed combat even in modern warfare.

For proper clarification of the role of the individual types of transportation in the economy of the country, now and in the near future, let us list some figures which characterize their relative proportion in relation to the overall freight turnover of our country.

Types of Transportation	1940	1958	1965
	in percent		
Rail	85.1	81.17	71.33
Sea	4.9	6.6	10.5
River	7.4	5.3	5.1
Pipeline	0.79	2.1	6.8
Motor Vehicle	1.8	4.8	6.2
Air	0.01	0.03	0.07

It is apparent from these figures that rail transport still accounts for more than 80 percent of all freight and passenger shipments, and if we count only that which covers distances of over 1,000 km, then the proportion of rail shipments will rise to 90 to 95 percent. This should always be kept in mind in working out various theoretical conceptions and in developing long-term plans for shipments, so that they are based on the actual capabilities of the transportation means.

It is also necessary to take into consideration the fact that the railway type of transportation is the cheapest, and, after all, questions of economy have important significance not only in peacetime but in wartime as well.

[redacted] 1.3(a)(4)

[redacted] 1.3(a)(4)

[redacted] 1.3(a)(4)

The cost of shipping one kilometer-ton of freight by rail is about 3 kopeeks, as compared to 58 to 70 kopeeks by motor vehicle, and more than 3 rubles by air transport.

For a long time to come railway transport will have a decisive role in serving the transportation needs of the country, in peacetime as well as wartime, especially in long distance shipping of freight.

During the period of the Second World War, 1941 to 1945, the proportion for the various types of transportation in the total volume of military shipments (excluding medical shipments) were:[1]

Types of Transportation	Average Shipping Distance (km)	Proportion (in percent)
Railway	700	70.5
Water (sea and river)	700	9.5
Motor Vehicle	100	19.8
Air	700	0.2

In modern offensive operations, when the operational rear is of considerable depth, regardless of the development of other means of delivery, rail transport will carry up to 50 percent of all front shipments. Neither transport aviation, field pipelines, nor motor vehicle transport can replace railways in the near future.

We are for the comprehensive utilization of all types of transportation because no single type can independently fulfil all the needs of the national economy and the armed forces. Consequently, the task consists of working out the principles of comprehensive utilization of all types of transportation on the basis of a thorough analysis of the nature of modern warfare and taking into consideration the actual potentialities of the theaters of military operations. In accordance with this, we must bring about their development and essential construction.

* * *

1. Military Communications in Light of the Further Development of Military Art. Military Publishing House /date and page missing/

[redacted] 1.3(a)(4)

[redacted] 1.3(a)(4)

[redacted] 1.3(a)(4)

The viability of the transportation network depends to a large extent on the degree of its preparation in peacetime.

One of the most important measures is the development of a network of railroads and highways, construction of airfields, pipelines, river and seaports, and also of bypasses of major junctions of communications lines, tunnels, large bridges, etc. The accomplishment of these tasks will take a prolonged period of time and large capital investments, and in this connection, they must be closely coordinated with the economic needs of the country. It is necessary to combine correctly the economic and defense interests of the country, which in our opinion, is not always done in practice in questions of the development of the transportation network.

For instance, the Seven-Year Plan calls for laying 90,000 km of rails on railroad lines. Of this amount, only 9,000 km are allotted for new railway construction, and the rest will be used for the reconstruction of existing lines and replacement of old rails. It must be stated, that in the course of the past several years the rate of railway expansion has fallen behind the growth rate of the volume of industrial output. For the past 10 years the volume of industrial output has grown yearly by 10 to 12 percent, but the expansion of rail lines has been only 1 percent, and highways even less than that. The density of the network of rail lines and mobile highways even in the western theater of military operations, the most favorable in this respect, is illustrated by the following figures:

	Rail lines	Automobile highways
	(in km per 100 sq km of territory)	
In the Soviet Union	2.7	10.5
In other countries of the Socialist Camp	9.2	42.0
In the capitalist countries	10.7	75.0

[redacted] 1.3(a)(4)

[redacted] 1.3(a)(4)

[redacted] 1.3(a)(4)

It is necessary to note that in compiling these figures on the USSR, only those territories having the most highly developed networks of railways and automobile highways were considered.

Having a total network of main railway lines stretching for 123,000 km, we haul 60 percent more freight than the entire railway network of the USA, which stretches for 340,000 km (first-class roads only). Thus, the density of freight traffic carried by railways in the USSR is 4.5 times that of the USA. During the current Seven-Year Plan the average freight traffic density will be increased by another 50 percent approximately. Thus, despite the development of other means of transportation, the operating pace of the railways of the USSR in the coming years will not decrease, but on the contrary, will increase considerably. Meanwhile, it is now planned to utilize basic capital investment not for the development of new rail lines, but for the reconstruction of existing lines.

From the military viewpoint, in a number of important areas it would be more correct to solve the problem of ensuring the shipment of the increasing flow of freight by building new railway lines, because a denser network also has a higher degree of viability.

Converting the basic railway main lines to electric traction will not raise the viability of the transportation network, because the work of the railways will depend entirely on the uninterrupted performance of the powerful electric power plants, which in themselves will be an important target for enemy strikes. In these circumstances it is necessary to establish alternate sources of power (zakoltsevat) in our power system as soon as possible.

Diesel-electric traction is more independent, and consequently more viable, provided that stocks of diesel fuel are established for a prolonged period of time, because fuel suitable for diesel locomotive use is produced in only one or two places in the country. It must also be noted that our main line locomotives cannot be used abroad because of their clearance and load characteristics and the design of the running gear, which is not adaptable to West European gauge.

[redacted] 1.3(a)(4)

[redacted] 1.3(a)(4)

[redacted] 1.3(a)(4)

One of the measures for increasing the viability of the transportation network which is being carried out in peacetime is the construction of bypasses of major railway junctions and establishment of stocks of reconstruction materials and structures.

In our opinion, a number of errors are committed in this matter. Bypasses of junctions take a long time to build, and are expected to be used only in wartime. Thus, large capital investments are immobilized. For example, the bypass of the Smolensk railway junction, which has been under construction for 10 years, and whose estimated cost is 52 million rubles, does not completely perform the task of increasing the viability of this railway. It is necessary to construct wide bypasses of junctions, taking into account the possibility of using them in peacetime for transporting local freight, thus allowing for fast recovery of the expenditures which have been made.

Little attention has been given to the problems of the construction and development of rail spurs to river and seaports, moorages for support of combined rail-water shipments, and also to the construction of railway spurs to airports.

Not everything is going well in establishing stocks of materiel, structures and equipment for the reconstruction of bridges, tunnels, ports, airfields and other installations in the transportation network. For instance, the Ministry of Transportation is stockpiling pre-assembled, transportable (tselnoperevozimyy) spans weighing up to 68 tons to reconstruct bridges, and they can be transported only by rail and installed by special railway cantilever cranes.

Under modern conditions, when the enemy will attempt to cut our railway network into individual isolated sections, in a majority of cases it will not be possible to transport these spans and cranes by rail to the bridges under reconstruction.

In our opinion it would be proper to stockpile prefabricated bridge structures, and cranes to install them, so that in case of need they could be shipped by motor vehicle transport.

[redacted] 1.3(a)(4)

[redacted] 1.3(a)(4)

[redacted] 1.3(a)(4)

It is advisable also to establish stocks of materials and structures for reconstructing highway bridges and river ports.

At present the need has arisen for closer coordination of activities among the member countries of the Warsaw Pact. Many problems have accumulated which require coordinated solutions and collaboration. Specifically awaiting a solution are problems of great importance such as:

-establishing a park of special rolling stock which would allow for automatic transfer (while in motion) from the Soviet gauge of 1524 mm to the West European gauge of 1435 mm and back again without changing trucks;

-setting up extensions of rail lines with Soviet gauge deep into the territory of Poland, Hungary, Czechoslovakia and Rumania and of West European gauge deep into our territory;

-establishing common bases for reconstruction materials and structures and consolidating them;

-reinforcing railway and highway bridges to meet the load specifications of our rolling stock and units of independently driven equipment.

All these problems have a direct bearing on ensuring the viability and the uninterrupted performance of the transportation network during a period of war.

To solve them we must first of all enlist the services of the already existing Organization for the Cooperation of Railroads of the Socialist Countries (Organizatsiya Sotrudnichestva Zheleznykh Dorog-OSZhD) but include in it appropriate military specialists.

* * *

[redacted] 1.3(a)(4)

[redacted] 1.3(a)(4)

[redacted] 1.3(a)(4)

In addition to engineer-construction measures, the viability of communications lines is ensured by the presence of reconstruction organizations, capable of moving quickly to work installations and having at their disposal the necessary equipment cadres of specialists trained in working under conditions of radioactive contamination of the terrain.

Within the boundaries of the zone of the front, the viability and reconstruction of communications lines will be ensured by railway, engineer, and road units which are trained to perform this work in peacetime.

Reconstruction of the rear area networks is entrusted to the organizations in charge of their operation and which do not have the technical equipment or the trained cadres for performing this work.

The exception is the Ministry of Transportation, which has reconstruction trains and bases of reconstruction materials. In addition, for reconstruction of major installations it is provided that construction organizations of the Ministry of Transport Construction will be called upon. However, even these organizations are not trained in the reconstruction of installations destroyed by nuclear weapons.

In case of large-scale destruction of major railway installations whose reconstruction will require a great deal of time, the organization of temporary transshipment areas (vremennyy peregruzochnyy rayon - VPR) should be provided for in order to transit obstructed areas by using other forms of transport, primarily motor vehicle. For servicing the VPR, special mobile formations should be organized for wartime and equipped with loading-unloading machinery and motor vehicle transport.

It would be incorrect to assume that such special formations will be able to perform independently the task of transshipping freight in obstructed areas. Even rough estimates indicate that for setting up a VPR on such a main line as that between Moscow and Minsk, when the railway

[redacted] 1.3(a)(4)

[redacted] 1.3(a)(4)

[redacted] 1.3(a)(4)

junction at Vyazma has been destroyed, and through which pass 76 pairs of trains daily, the transshipment area stretches for 250 to 300 km, and for it to service transshipment of supply trains alone we shall need no less than 10,000 motor vehicles and more than 15,000 men for the loading-unloading operations.

In circumstances when the enemy inflicts large-scale destruction, it will be very difficult to effect necessary national economic and military shipments without strict centralization of the comprehensive utilization of all forms of transport.

At the present time in our country, all forms of transportation are controlled by various ministries and departments. Some of them are subordinate to central, and some to republic and local organs of authority. Because of this, it is very complicated,even in peacetime, to organize and conduct combined shipments with the participation of 2 to 3 types of transport.

In time of war, such bureaucratic disunity in transportation means is intolerable because it can lead to serious consequences for the armed forces, as well as for the economy of the country, and these consequences would be difficult to correct.

All forms of transportation which are at the disposal of the country can be systematically and expediently utilized only if the control of their exploitation emanates from a single center, closely connected to the Supreme High Command.

In our opinion, it is extremely essential to unite the management of all types of transport in one organ, for instance, in a specially established transportation committee. At the same time, decentralization of control must be ensured by establishing 8 to 10 directing bodies territorially and administratively linked with industrial-economic areas and military districts. Such a system will ensure the viability of the controlling organs and will permit a more effective solution of the problem of combined utilization of all types of transportation in peace and wartime.

[redacted] 1.3(a)(4)

[redacted] 1.3(a)(4)

[redacted] 1.3(a)(4)

At the same time it is necessary to complete the unification within the Ministry of Transport Construction of all construction organizations which conduct construction of rail lines and highways, pipelines, airfields, and sea and river ports, after preparing them organizationally and technically for wartime accomplishment of the most complex work in reconstructing communications lines in the zone of interior.

However, the forces of the construction organizations of the Ministry of Transport Construction alone will be far from sufficient to reach this goal. Appropriate preparation is needed so that reconstruction work and the establishment of VPR's are also assigned to local territorial organizations and the populace.

In wartime, reconstruction of communications lines in the zone of interior must become a common task of all the people and be organized by the State. People and equipment must be assigned in advance to all the most important installations (rail centers, ports, large bridges, etc.) and, in case of need, must go immediately to the installation and put themselves at the disposal of the chief in charge of organizing the reconstruction work.

Under peacetime conditions, it is expedient to conduct a series of measures in accordance with the policy of the Ministry of Defense and the civilian ministries to ensure more effective utilization of the means of transport in the initial period of a war.

In the present situation, to outfit one fully mobilized motorized-rifle division, various types of equipment must be brought from 29 to 32 separate depots to the activation point from distances of 500 to 2500 km. In order to decrease this volume of shipments at a time when the railways are working under the most strain, complete depots should be set up at the mobilization points, from which all the requisite military equipment and materiel could be obtained at once.

The problem of supplier and consumer routing of trains must be solved in order to reduce to a minimum the layover time of military goods at points where trains are reconstituted.

[redacted] 1.3(a)(4)

[redacted] 1.3(a)(4)

[redacted] 1.3(a)(4)

It is time to take practical action in creating special freight containers, pallets (poddon) and other means for shipping military goods which will ensure mechanization of loading-unloading work and will sharply reduce the layover time of trains in transshipment areas.

To decrease the time needed for full mobilization and shipment of troops of the first strategic echelon, the traveling speed of trains should be increased to 1000 km per 24-hour period (i.e. doubled) and the weight of a military train increased to at least 1500 tons (gross weight) instead of the 1200 tons used presently. The present level of technical equipment of railway transport fully allows implementation of these measures.

According to modern views, it is planned to reconstruct, in a frontal zone, 2 or 3 frontal railway routes and 1 or 2 lateral ones. To carry out these tasks, the composition of the front includes 5 or 6 railway brigades, reinforced with bridge regiments, battalions of railway pontoon bridges, special formations, and, when necessary, tunnel battalions.

The rate of reconstruction of railways will depend to a considerable extent on the extent and nature of their destruction and on the number of railway units assigned to the reconstruction of one or another railway route.

It is known that in previous wars each of the opposing sides tried to effect complete destruction of railways during a retreat. Roadbeds, tracks, all bridges and pipes, communication lines, railway water supply installations, and service and technical buildings were all blown up. Practically speaking, such complete destruction was possible only in a tactical zone of defense to a depth of 20 to 40 km from the main line of resistance, and then only under conditions of a slow retreat. In an operational zone 100 to 200 km in depth, railways suffered a slight to average amount of destruction.

In the currently effective regulations and instructions of our probable enemies, there is provision by way of "delaying operations" for massive obstructions along communications routes. In the field manual of the

[redacted] 1.3(a)(4)

[redacted] 1.3(a)(4)

[redacted] 1.3(a)(4)

US Army, Obstruction and Destruction, it is planned to use nuclear weapons to create obstructions. Considerable work has been done in West Germany in preparing structures for destruction. According to available data, mine devices have been installed in more than 300 installations (bridges, tunnels, dams, reservoirs).

The experience of the last war showed that the faster the rate of offensives of troops, the less time the enemy has to set up obstructions. Under modern conditions, with the fast rate of offensive and the dense railway network in the western theater of military operations, it is to be expected that the enemy will be in a position to destroy railways only by individual focal points, striving to split and break up the entire network into isolated sections. Moreover, first to be destroyed will be all large bridges and tunnels. The extent of destruction to railways in this case will not be as great as in the case of complete destruction, but the nature of destruction and conditions of reconstruction will be more complex than in the last war.

Under the conditions of highly mobile modern warfare, when offensive operations are conducted in great depth and the destruction of railways is accomplished at certain points, railway units will have to work along a wide front, separated from each other, as a rule, in small subunits, often in a "deep envelopment" of railway sectors still occupied by the enemy, or in "corridors" made by our troops.

Taking into account the possible tempos of offensive operations, railway troops must reconstruct the basic front railway main lines at a pace of no less than 45 to 50 km per 24-hour period and strive to raise this to 55 to 60 km per day. In the last war the railway reconstruction rate in one front operation was 5 to 8 km on one route (in individual cases up to 20 to 25 km).

In order not to be separated from the advancing troops by more than a distance of a day's ride by motor vehicle transport, railway troops must reconstruct any destroyed point or any installation in 3 to 3.5 days. If its

[redacted] 1.3(a)(4)

[redacted] 1.3(a)(4)

[redacted] 1.3(a)(4)

reconstruction requires more time (for instance, building a bypass of a railway junction or bridge, reconstruction of tunnels, etc), then it will be necessary to overcome the obstructed area by establishing a VPR and by wide use of other types of transport.

The task of increasing the rate of reconstruction of railways to 55 to 60 km per day, and more, demands a fundamental change in the technical equipment of railway troops, the creation of new types of reconstruction means based on wide use of automation, telemechanics, and the overall mechanization of reconstruction processes.

Railway troops must be mobile. Their technical equipment and reconstruction equipment must be capable of being transported not only by rail and motor vehicle transport, but also by airplanes and helicopters. Only by this approach can the task of increasing the pace of railway reconstruction to the required level be performed. In addition we must not lose sight either of certain problems of an organizational nature.

As is known, the composition of the troops of the Soviet Army which are deployed beyond the western national borders of the USSR does not include railway units. In case of war, railway units will take at least 5 to 6 days to arrive at the front and start work, while during this time the advancing troops will move forward considerably. Consequently, in the very first days of a war, a significant separation may develop between operating railways and the advancing troops.

All bases for reconstruction materials and structures are also located on the territory of the USSR, at a distance of more than 2000 to 3000 km from the line of deployment of troops of the first line. Even if there are sufficient stocks of these materials, it is impossible to deliver them quickly to reconstruction sites.

Such a situation cannot be considered normal. In order to reconstruct railways in the wake of the advancing troops, railway units and materiel bases must be located as close as possible to departure lines.

[redacted] 1.3(a)(4)

[redacted] 1.3(a)(4)

[redacted] 1.3(a)(4)

There is no clarity in the problems of organizing the operation of reconstructed sectors and their technical concealment. Many independently operating organizations have appeared in front railway sectors. Reconstruction of railways is conducted by railway brigades and special reconstruction formations subordinate to the chief of railway troops of the front (NZhVF), and operation of the reconstructed railway sectors is ensured by operating railway regiments and operating special formations, subordinate to the chief of the military-operating directorate of the front (nach. VEU). The organization of military shipments is conducted by the chief of military transport of the front (nachalnik VOSO). They all have equal rights and, with the exception of the chief of VOSO, are directly subordinate to the commander of the front. The NZhVF and VEU for special service are also subordinate to the Ministry of Transportation of the USSR.

When our troops are operating on the territory of allies, it must be taken into account that there are also local governmental organs of railway administration with whom the work must be coordinated.

As was pointed out earlier, under modern conditions we must strive for the comprehensive utilization of all types of transportation located within the limits of the front: rail, water, motor vehicle, air, and pipeline. Yet, all these types of transportation are subordinate to different arms of troops and services.

The need has arisen to examine the problem of setting up within the composition of the front a single military transport service (directorate), endowed with the necessary powers for organizing centralized utilization of all types of transportation subordinate to the front and appropriate authority to coordinate problems of military shipments with appropriate ministries and departments. The complement of this directorate must include experienced specialists and representatives of all types of transportation who are capable of establishing and efficiently directing a powerful transport service.

[redacted] 1.3(a)(4)

[redacted] 1.3(a)(4)

[redacted] 1.3(a)(4)

At the beginning of the Second World War an attempt was made to assign the responsibility for reconstruction and operation of front railways to a representative of the NKPS (Narodnyy Komissariat Putey Soobshcheniya - Peoples' Commissariat of Transportation), who was attached to the Military Council of a front. The experience of many wars has shown that front railways must be controlled by the military, especially beyond the limits of our national boundaries. In time of war, neither railwaymen nor local agencies of authority will recognize anyone else's authority, and no one else will have adequate legal rights.

At the present time the planning of shipments and coordination of the tasks of all types of transportation are the responsibility of the third department of the headquarters of the rear services of a front. This department will be unable to resolve a single practical problem, and will be a superfluous echelon of command, tying up the operations of all transportation agencies. This conclusion is corroborated by the experience of many practical exercises.

To ensure comprehensive utilization of all types of transportation, it will be necessary to make up mutually coordinated schedules and plans (possibly using electronic computing machines), a unified dispatcher control for shipments, good and accurately operating communications, etc. All this requires highly qualified specialists who have experience in working in transportation agencies.

To coordinate the preparation of the entire transportation network for operation in wartime, and also to resolve problems of its utilization in the interests of operating troops, it is necessary to set up, within the scope of the member-countries of the Warsaw Pact, an appropriate transportation agency which must be closely connected with the OSZhD.

It is also expedient to distribute properly the stocks of reconstruction materiel, and to unify reconstruction

[redacted] 1.3(a)(4)

[redacted] 1.3(a)(4)

[redacted] 1.3(a)(4)

equipment and reconstruction units so that they will meet modern requirements. Comprehensive utilization of all types of transportation must also be organized in accordance with a unified plan, regardless of the nation to which they belong.

It is perfectly obvious that appropriate preparation of means of transportation for work under conditions of war must be carried out in advance. Every delay in this matter is very dangerous because the scope of the work is so great that it will be impossible to make up lost time in the course of a war.

[redacted] 1.3(a)(4)

[redacted] 1.3(a)(4)