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MEMORANDUM FOR: The Director of Central Intelligence

FROM : John N. McMahon
Deputy Director for Operations

SUBJECT : MILITARY THOUGHT (USSR): Problems of Preparing Motor Transport for Wartime Operation

1. The enclosed Intelligence Information Special Report is part of a series now in preparation based on the SECRET USSR Ministry of Defense publication Collection of Articles of the Journal "Military Thought". This article first describes the motor transport situation in the early part of the Great Patriotic War, then lists some of the postwar changes, and finally outlines the main improvements still necessary. These include better vehicle design, use of alternate forms of fuel, decentralization of production plants, and a more uniform distribution of repair facilities. This article appeared in Issue No. 1 (68) for 1963.

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2. Because the source of this report is extremely sensitive, this document should be handled on a strict need-to-know basis within recipient agencies. For ease of reference, reports from this publication have been assigned [redacted]

[redacted]
John N. McMahon

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Summary:

The following report is a translation from Russian of an article which appeared in Issue No. 1 (68) for 1963 of the SECRET USSR Ministry of Defense publication Collection of Articles of the Journal "Military Thought". The author of this article is Lieutenant Colonel N. Pankov. This article first describes the motor transport situation in the early part of the Great Patriotic War, then lists some of the postwar changes, and finally outlines the main improvements still necessary. These include better vehicle design, use of alternate forms of fuel, decentralization of production plants, and a more uniform distribution of repair facilities.

End of Summary

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Problems of Preparing Motor Transport for Wartime Operation

by

Lieutenant Colonel N. PANKOV

The decisive role in shipments in a future war must undoubtedly belong to the integrated use of different types of transport both in the interior regions of the country and in the theaters of military operations. It is well to note that whereas in the past the main burden of the work of motor transport shifted with the onset of hostilities to the troops of the theaters of military operations, at the present time motor transport also plays a special role in the interior regions, which have lost their former invulnerability.

With the beginning of a war, motor transport will be charged with not only shipments within the national economy but also mobilization shipments, shipments for supporting the combat actions of the troops in the first strategic echelon, evacuating disabled civilians from the cities and large industrial centers, and for eliminating the aftereffects of enemy attacks on various rear installations.

A rapid increase in the role of motor transport under present conditions requires careful advance preparation based on the experiences of the Great Patriotic War and the postwar changes in the methods of armed combat and in the status of motor transport.

* * *

On the eve of the Great Patriotic War a number of substantial shortcomings were observed in the development of the motor vehicle industry and motor transport. The industry was basically producing the 1.5-ton technically obsolete GAZ-AA truck. The domestic plants were not producing any heavy-duty diesel-engine trucks, trailers, or semi-trailers. The motor vehicle development program marked for the third five-year plan was not fulfilled; rather, the output of motor vehicles was continuously cut back beginning in 1939. This led to the situation where the units and large units of the Soviet Army were equipped with motor vehicles at 89 percent of

the peacetime T/O&E and only 41.2 percent of the wartime T/O&E. Motorization of the ground forces of the Soviet Army was considerably below that of the German Fascist army.

The technical condition of the motor vehicle inventory in the national economy, which was, as we all know, the main reserve for the army, was extremely poor. Out of 820,000 motor vehicles only 444,000, or 55 percent, were serviceable. The reason for this lay in the lack of spare parts and servicing and repair materials and the unsatisfactory organization of the use, technical servicing, and repair of the motor vehicles. The dissipation of the vehicles among the small compartmentalized establishments had considerable influence on the lowering of the technical condition of the motor vehicle inventory. In 1941, 85.2 percent of the motor transport establishments in the country were small, each with one to four vehicles, and they lacked means of technical servicing and repair.

The mobilization plan called for the removal from the national economy for the needs of the army of 21 percent of the passenger vehicles and 35 percent of the trucks and special vehicles. With respect to the availability of these two categories of vehicles in the national economy, the number planned for delivery was very high, averaging 45 percent for the passenger vehicles and 68 percent for the trucks and special vehicles. The removal of vehicles from the national economy was not uniform for the various districts. Disregarding the possibility of an unfavorable development of combat actions, the mobilization plan called for the maximum number of vehicles to be taken from the interior military districts. There was, of course, no satisfactory basis for this decision. On the contrary, two essential factors suggested the necessity for withdrawing the greatest number of vehicles from the border military districts. First of all, the border military districts had only a small number of defensively important establishments from which the removal of vehicles for army needs was forbidden; secondly, obtaining vehicles in these districts could have prevented long trips on the vehicles and, moreover, could have guaranteed the accelerated buildup and deployment of the combat and transportation units. However, these factors were not taken into account in the mobilization plan. For the overwhelming majority of interior military districts the percentage of vehicles scheduled for removal from the national economy was higher than that for the border military districts. The vehicle depots were located accordingly. Over half of them were in the Moscow, North Caucasus, Volga, and Central Asian military districts. At the same time, in five border districts in the west there were only eight depots in all, or only 12 percent of the total, and in the territories of the Western and Baltic military districts there were none at all. As a

result, a great number of vehicles in the territories of the border military districts were captured by the enemy.

The 1941 mobilization plan called for sending a considerable number of vehicles from the interior areas of the country to the border districts for equipping the contingents being formed there. For example, the plans called for sending 15,571 vehicles into the Kiev Special Military District. They were to be unloaded at the district receiving-distributing centers and then driven to the units under their own power. Unfortunately, many of the vehicles sent from the interior areas of the country to the border military districts were captured by the enemy. Not only the inept planning of deliveries, but also the fact that unserviceable vehicles without drivers were often sent from the national economy to the army had a telling effect.

In 1941 the national economy sent 166,200 vehicles to the army and during that same time 159,000 vehicles were lost, i.e., 45 percent of all vehicles lost during the entire war.

In order to provide spare parts and tools for the vehicles scheduled for withdrawal from the national economy in the mobilization, mobilization reserves of so-called individual sets were produced. On 1 May 1941 there were 90,000 such sets in the country, or 25 percent of the number required. However, 45 percent of them were stored in the territories of the four western border military districts (Odessa Military District, Kiev Special Military District, Western Special Military District, Leningrad Military District). In the Leningrad and Kiev military districts each vehicle mobilized was assigned one individual set; for the 9,582 vehicles scheduled for withdrawal from the national economy in the Western Special Military District 12,490 individual sets were stored, or 1.3 sets per vehicle; at the same time in the Odessa Military District there were only 4,470 sets for 16,389 vehicles, or 0.25 set per vehicle. It must be said that by the beginning of the war extremely insignificant reserves of motor transport equipment had been produced because of the low limits allocated in accordance with the policy of the People's Commissariat of Defense. On the eve of the war the supply for the vehicles of the Soviet Army was at a lower level than for the national economy. In 1941, for example, 500 rubles were allotted for spare parts for each vehicle in the national economy, and only 274 rubles, or half as much, for the Soviet Army; each vehicle in the national economy was issued 1.6 sets of tires, whereas the Soviet Army was issued only 0.7 set, again only half as much. This made it very difficult to create emergency reserves.

Events on the Khalkhin Gol River and in the Western Ukraine and Western Belorussia, and the Soviet-Finnish War caused an increased expenditure of armored equipment. The army was being supplied at this time, however, on the basis of peacetime planning; and the People's Commissariat of Defense covered the increased losses of armored equipment by using troop emergency reserves and by transferring reserves from some districts to others. If we further bear in mind that almost half of the depots of armored equipment under district and central control were situated in the five western border military districts that were captured by the enemy soon after the onset of hostilities, then we can understand why the available supplies ran out so quickly. For the repair of vehicles in wartime it was intended that not only the repair facilities of the Soviet Army would be used, but also many industrial facilities in the national economy, the preparation of which was the responsibility of the Military-Industrial Commission under the Defense Committee of the Council of People's Commissars USSR and the corresponding mobilization organs of the people's commissariats and the General Staff.

Until 1939 the mobilization assignment that had been issued to the civilian repair bases in 1934 was not corrected nor refined; as a result it became obsolete and no longer satisfied the actual requirements for repairs. In 1939 during a review of the total requests for vehicle repairs by the People's Commissariat of Defense, no consideration was given to the actual capability of accommodating the requests in respect to either number or types of vehicles. In this connection some people's commissariats, by comparison with earlier plans, got larger requests, others got lower ones, and six of the people's commissariats received no assignments at all.

Another no less serious shortcoming in the preparation of the repair facilities for operation under wartime conditions must be considered the failure to supply the troops with the full complement of mobile repair means and the systematic failure to fulfil the plans for supplying them. On 15 June 1941 the troops had only an average of 42 percent of the full peacetime complement of repair equipment. The fulfilment of the supply plan was characterized as follows: in 1940 the plan was 29 percent fulfilled, while during the first quarter of 1941 not a single repair shop was set up. The failure to fulfil the plan is explained primarily by the insufficient supply of funds for machine tools, electrical equipment, and materials. The defense committee under the Council of People's Commissars USSR did not include the order for mobile repair means for the Soviet Army among the defense orders, as a result of which the supply of funds for them got the lowest priority.

The motor transport establishments experienced a great need for personnel. On the eve of the war, for every 100 vehicles in the national economy there were 80 drivers, four mechanics, and nine metalworkers. The qualification of the drivers was low -- 80.7 percent were class III -- which greatly influenced the lowering of the technical condition of the motor vehicle inventory in the national economy.

A unified service to provide centralized control of motor transport in both the national economy and the army had not been created; in the national economy there were the republic ministries for motor transport (common carrier motor transport) and the transport directorates of the various ministries; in the army the control of the various sectors of the operation and the use of motor transport was concentrated in three different services: the armored, military technical supply, and motor road services.

The above-enumerated shortcomings became most clearly apparent in the first days of the war; the elimination of them required incredible efforts on the part of the military command and the party and Soviet organs.

* * *

After the end of the Great Patriotic War, a whole series of measures for improving the operations of motor transport was introduced.

Army acquisition of more modern vehicles and complete motorization of the ground forces increased their maneuverability, helped in solving problems of transporting materiel, and made the troops less dependent on railroad operations.

At the same time, considerable work was done in decentralizing the production of motor vehicles by putting new plants into operation in the Ukraine, Belorussia, Georgia, and other areas.

The organizational principles of the use of common carrier motor transport set down on the eve of the Great Patriotic War were strengthened and further developed. In the first ten postwar years the common carrier motor transport freight turnover increased 35 times and by 1955 amounted to 22 percent of the total motor transport freight turnover in the country. By 1960 it was 26 billion ton-kilometers, which was 100 times greater than in 1940. A rapid growth of common carrier motor transport facilitates its preparation for operation in wartime, guarantees a well-organized and more effective utilization of the capabilities of the motor transport inventory,

and satisfies the requirements of the war economy while at the same time reducing the cost of transportation.

After the reorganization of the management of the industry and construction was carried out on the initiative of the Central Committee of the CPSU in 1956, there arose in the country powerful new common carrier motor transport organizations, in particular, the motor transport establishments of the national economic councils. By early 1961 more than 40 percent of the vehicle inventory of the country was concentrated in the common carrier motor transport establishments and in the national economic councils.

Considerable work in the postwar years was done in strengthening the motor transport establishments. For example, in 1960 more than 25 percent of the motor vehicles in the national economy were concentrated in motor transport establishments with 100 or more vehicles. If we take the common carrier motor transport inventory, then about 80 percent of the motor vehicles were concentrated in such motor transport establishments.

Beginning in 1951 centralized motor transport shipments of cargoes in cities and large industrial centers were initiated, and by December 1957 centralized intercity shipments.

The development of intercity, long-distance truck shipments, with proper preparation, will provide the possibility of organizing in wartime a duplication of the railroads, as well as motor transport delivery of particularly important and urgently needed cargoes from central depots and bases directly to fronts.

In the postwar years a great deal of work has been done in our country to modernize the technical servicing and vehicle repair bases. The capabilities of the repair facilities have been greatly increased, and these facilities now comprise one of the branches of the national economy.

At the same time we must point out that the present status of motor transport in the country still does not completely satisfy the requirements for reinforcing the defensive capabilities of the country.

The level of development of motor transport in the USSR is considerably below that of the developed capitalist countries. The relative proportion of motor transport in the total freight turnover of all types of transport will be slightly over five percent in 1965, whereas in the capitalist countries it accounts for more than 25 percent. In the

economically developed capitalist countries the part played by truck shipments exceeds the figures indicated and it continues to increase every year. Suffice it to say that in 1957 it had already reached: 50.4 percent in England, 25 percent in France, 73 percent in Italy, 25.2 percent in the US, and 21 percent in West Germany.

The advantages of motor transport in making short-haul intercity shipments have determined the rapid development of these in foreign countries. Thus, in the US, intercity motor transport freight turnover equals 40 percent of the entire freight turnover of the railroads, in England it is 55 percent, in France 25 percent, in West Germany 21 percent, and in Italy it is 40 percent more than the freight turnover of the railroads.

In our country it amounts to about one percent, which makes it very difficult to accomplish this task of duplicating the railroads.

The nomenclature of trucks produced by domestic plants is small. Trucks of up to two tons capacity make up eight percent, those of two to five tons 90 percent, and those of over five tons two percent of all the vehicles in the national economy. Abroad the number of heavy trucks amounts to 10 percent, and is increasing all the time.

Until recently our industry was producing for the most part trucks with standard open beds, the dimensions of which were too small, and are some 20 to 30 percent smaller than those of comparable foreign trucks.

One of the most backward areas of motor vehicle production is the production of engines, which, in a whole number of ratings, are inferior to the better models of foreign firms.

In our country the production of trailers and semi-trailers does not satisfy the growing demand for them. For example, in 1958, for every 180 trucks produced only one trailer with sides was produced. In the US the number of trailers with over five-ton capacity makes up 47 percent of the motor vehicle inventory of this capacity, and in West Germany two-axle trailers of over two-ton capacity make up 72 percent of the vehicle inventory of this capacity.

As usual the technical condition of the motor vehicle fleet is alarming. For example, in 1958, 30 percent of the entire number of trucks in the national economy needed repair, and in 1961 the number of unserviceable vehicles in the country exceeded the output of new vehicles.

The reason for this largely lies in the continued dispersal of the motor vehicle inventory among small establishments compartmentalized according to ministry, the lack of spare parts and repair materials, and a technical servicing and repair base that is not up to requirements. Only 60 to 65 percent of country's motor vehicle inventory is given regular technical servicing. We have only 50 technical servicing stations. The maintenance and garage equipment of the large motor transport establishments does not satisfy the requirements with respect to the mechanization and automation of the technical servicing operations. The mobile means of technical servicing and repair are very dissimilar in both type of body and equipment used. There is only one mobile repair shop with machining equipment for every 720 vehicles.

Compartmental limitation has precluded any rational deployment of repair facilities in the country that might correspond to the vehicle repair requirements of the various economic regions of the country. It has also led to unsatisfactory use of the country's existing production capabilities for stationary repair facilities and to the dissipation of capital investment among small general-purpose repair shops with a low level of work organization.

Compartmentalization according to ministry has also led to the detachment of a great number of repair facilities from the vehicle fleet they service. As a result there are times when inefficient rail and water shipments of unserviceable vehicles to be repaired are made over hundreds and thousands of kilometers. In 1960, for instance, the expenditures for sending vehicles into repair constituted 35 percent of all the expenditures for the major repair of vehicles.

Compartmentalization hinders the preparation of the repair base of the theaters of military operations, since it makes a rational distribution of repair plants and workshops out of the question. As a result such theaters of military operations as the Western and Northeastern have a very poor vehicle repair base. In many theaters of military operations (Northwestern, Far East, Northeastern), there is no base in the national economy for the repair of diesels, in others (Western, Far East, Northwestern) none for the repair of passenger vehicles and buses. Moreover, in certain theaters of military operations there is a concentration of vehicle repair facilities of the national economy in small areas. Thus, for example, the overwhelming majority of vehicle repair facilities in the Northwestern Theater of Military Operations are found in the southwestern part of that theater (Leningrad, Tallin, Riga) and in the Caucasus regions (Near East Theater of Military Operations) almost all of

the vehicle repair facilities of the national economy are concentrated in the cities of Tbilisi, Baku, and Yerevan.

The organization of the national economic councils has not led to the elimination of compartmentalization in vehicle repair. Suffice it to say that in the RSFSR the national economic councils have only 28 percent of all the repair facilities.

The general picture of the postwar development of motor transport shows that many shortcomings that were revealed even as early as the war years have still not been eliminated. This involves primarily the problems of raising the technical condition of the motor transport inventory of the national economy, improving the organization of its utilization and the supply of spare parts and maintenance-repair materials, and improving the material-technical base for technical servicing and repair of vehicles.

The nature of modern war requires in addition to the elimination of the above-mentioned shortcomings, the solution of such problems as the establishment of reliable and highly economical means of transportation that will satisfy the requirements of not only the national economy but also of the armed forces, the establishment of a rational structuring of the truck fleet of the national economy, and the guarantee of the stable operation of the automative industry under wartime conditions.

* * *

An analysis of the tactical-technical characteristics of the types of vehicles planned for the future shows that they will more fully satisfy the requirements of the branches of the national economy and the army with respect to both number of types and quality of their design. For example, by the end of the seven-year plan the proportion of heavy trucks in the inventory of the national economy will increase almost threefold, and of trailers and semi-trailers sixfold. Such a pronounced increase in heavy trucks will create a good base for supplying the required truck complement for the rocket troops as well as the motor transport units and large units. Along with this, in the inventory of the national economy there is planned a considerable increase in the proportion of smaller trucks.

The re-equipping of the Soviet Army on the basis of the most recent accomplishments of science and technology has abruptly increased the requirements of the various branches of the armed forces for vehicles with greater cross-country capability and load-carrying capacities. For this reason, emphasis in the present seven-year plan should be put on the

problems of producing heavy trucks, trucks with cross-country capability, and tractors and semi-trailers, both general-purpose and specially equipped ones for transporting missiles.

The peculiarities of the effects of mass-destruction weapons require the vehicle designs being developed to have increased stability against capsizing and catching fire. The design and configuration of the various units, assemblies, and whole vehicles, as well as the materials used, must have minimum camouflage give-away features, reduce the contaminability of vehicles, and facilitate the execution of ABC decontamination operations. The designs to be developed must incorporate the maximum possible interchangeability of parts and assemblies not only among various types of trucks and tractors, but also among the trucks and the towed trailers and semi-trailers. These designs must guarantee ease of assembly and disassembly of all mechanisms and assemblies and allow the use of progressive methods of repair and servicing. Simplicity, convenience, rapidity, and safety of servicing and repair represent the main technical requirements on vehicle designs being developed.

Of primary importance in motor transport under the conditions of modern warfare is the problem of negotiating water obstacles. World War II experience has shown that water obstacles can be negotiated successfully with special amphibious vehicles, the modernization of which must be conducted in the direction of guaranteeing protection of the hull against corrosion, increasing unsinkability, increasing the cargo capacity and speed. The use of plastic hulls on amphibious vehicles to exclude corrosion is promising. Along with modernizing amphibious vehicles, ordinary trucks will also have to be adapted for negotiating water obstacles. In the interior regions of the country this will facilitate the solution of the problem of duplicating the railroads with motor transport, since it will provide the crossing of cargo from one bank to the other before a crossing has been erected (in case a bridge is knocked out).

In our view, serious attention must be paid to the development of designs of vehicles which would be somewhere between a truck and a helicopter and have ideal cross-country capability. Such vehicles, lifting to a low altitude, are able to move over roads or terrain in the required direction and by the shortest route.

A most acute problem in modern warfare is the supply of fuel to motor transport.

The consumption of fuel in modern operations is 10 to 12 times that of the Great Patriotic War, and the requirements for high-octane gasoline has increased in connection with the appearance of a greater number of engines with high compression ratios. At the same time, the appearance of modern weapons has increased the probability of loss of fuel as a result of the destruction of reserves and of the installations engaged in the production and refining of petroleum. Acquiring special importance under these conditions is the problem of creating and rationally situating fuel reserves, supplying it to users on time, and guaranteeing stable operation of the installations of the petroleum industry.

No less important is the improvement of internal combustion engines so that they can operate on different fuels. The appearance abroad of multi-fuel engines that operate practically on any type of liquid fuel, is highly regarded in the military circles of the imperialist states, since this provides the opportunity of simplifying the work of the organs that supply the fuel.

The introduction of multi-fuel engines in our armed forces must be considered one of the most important directions toward the solution of the fuel problem for motor transport. Another no less important is the direction involving wider use of bottled-gas driven and gas-generator vehicles in the national economy.

During the Great Patriotic War a considerable number of vehicles in the national economy were adapted for burning local fuels, primarily wood, browncoal, peat, and straw. Gas-generator vehicles amounted to 20 percent of the total at the end of the war. After the war ended, attention to the use and improvement of gas-generator vehicles waned. As a result, their number decreased steadily year after year. For example, in three years (from 1956 to 1958) the number of gas-generator vehicles in the national economy was reduced to one-quarter; moreover, in the last five years in our country up to 60 percent of the gas-generator vehicles have been out of commission because of equipment failures.

The problem of providing fuel to all the motorized equipment under the conditions of modern warfare undoubtedly requires a continuation of the work in the area of perfecting the designs of the gas-generator vehicles and determining the areas in which they can be employed efficiently.

One promising direction in the solution of the fuel problem should be considered the use in the national economy of bottled-gas driven vehicles. The many years of experience in the use of such vehicles and the research

done in this area show that the wide use of them in the national economy, besides solving the problem of supplying fuel to the motor transport, will also lead to an extension of the service life of the engines by a factor of 1.5 to two. And in spite of the great possibilities of using bottled-gas driven vehicles in our country, their proportion is decreasing every year. The rapid development of the gas industry in the current seven-year plan is creating favorable conditions for a wider use of bottled-gas driven vehicles in the national economy.

A very urgent matter in the light of modern circumstances is the development of fundamentally new power plants for motor vehicles and tractor-trailer units. From the experience of the Great Patriotic War it is not enough to have the designs for new vehicle models. The production of vehicles must be mastered during peacetime and the production volume increased continuously when war breaks out. To meet this very important requirement, we must cut to a minimum the time spent on mastering the new vehicle designs and guarantee the steady operation of the motor transport subcontracting plants under wartime conditions. One of the most important prerequisites for the successful operation of the motor vehicle industry under the conditions of a modern war is the advance creation of reserves of production capacity and the decentralization and cooperation of the plants engaged in motor vehicle production. The seven-year plan calls for further decentralization of the motor vehicle industry and the specialization and cooperation of the plants. However, we must remember that even in 1965 more than 70 percent of the motor vehicles are scheduled for production by two plants, the Moscow and the Gorkiy plants.

Modern organization of motor transport must not only guarantee maximum production with minimum expenditure of forces and means but must also take into account military requirements, the most important of which must be considered ensuring rapidity and secrecy of the mobilization of motor vehicles as well as the flexible use of the transport facilities for the execution of the military and national-economic shipments as war begins.

The improvement of the organizational structure of the utilization of motor transport is connected primarily with a further enlargement of the motor transport establishments, concentration of them in the common carrier motor transport system, and rational distribution according to the transport routes.

In our view, the centralization of shipments must get further development, which will create a materiel-technical and organizational base for the inclusion of motor transport into direct mixed traffic with

railroad and water transport. The problem of duplicating the railroads in wartime urgently requires speeding up the development of intercity and international motor vehicle shipments.

A purposeful preparation of motor transport for operation under wartime conditions is unthinkable without a national plan for the utilization of the motor vehicle inventory of the national economy; such a plan would indicate what number of vehicles can be mobilized for the needs of the armed forces and civil defense, which ministries and agencies will supply vehicles, in what periods of time, and where. This plan must indicate which large motor establishments will be the basis for forming motor transport units and large units and which motor transport establishments will be used for military shipments in the initial period of war. This measure will permit the purposeful preparation of all motor transport establishments. It must be a hard and fast rule that a vehicle delivered from the national economy to the army during mobilization must come with a driver.

The experience of the last war shows that the problem of preparing the means of technical servicing and repair of motor vehicles is perhaps the most difficult and the most important.

Under war conditions the technical service and repair means of the national economy may be used for putting into running order the vehicles that are being mobilized out of the national economy, for bringing up to full complement the newly formed units and large units, and also for forming mobile repair units and eliminating the aftereffects of enemy attack.

A modern status of the motor transport material-technical base requires that the basic measures for its advance preparation provide, first of all, for the further improvement of the technical servicing of motor vehicles. This problem is bound up with the establishment of a branching network of technical servicing stations and with the mechanization and automation of the technical servicing processes. At the same time, there must be a fundamental reorganization of the system of repairing motor vehicles which will include the elimination of the principle of control over the repair facilities compartmented according to ministries. The repairing of motor vehicles must be organized according to economic regions, according to a territorial principle. In order to improve the management of the repair facilities and to develop them systematically, it may be considered expedient to subordinate all the repair facilities to specially created repair departments or directorates of the national

economic councils. This will make it possible to link the repair facilities more closely to the industrial enterprises, to bring about specialization and cooperation with a sharp reduction in the administrative apparatus. A fundamental reorganization of repair should also provide for the universal introduction of the unit repair method for motor vehicles both in the national economy and in the army, an increase in the quality of repairs, extensive specialization and expansion of the repair facilities, and coordination of the operation of the repair facilities in the national economy with the repair facilities of the Ministry of Defense.

At the same time we should disperse the existing facilities and rationally situate new facilities in accordance with the requirements of advance preparation of the theaters of military operations. It is further necessary to standardize the mobile repair shops of the national economy and prepare a part of the fixed facilities as bases for forming up mobile repair units.

The operation of the repair means to a great extent depends on the supply of spare parts and materials. For this reason the preparation of the material-technical base of motor transport should provide for a sharp increase in the production of tires, of scarce spare parts and maintenance and repair materials, not only to satisfy the present requirements of the motor vehicle fleet, but also to produce the required reserves for the event of war.

What has been said above covers only part of the problems associated with the preparation of motor transport for operation under modern wartime conditions. Nevertheless, a successful solution of these problems will guarantee the effective operation of motor transport in wartime and will prevent a repetition of those mistakes that were committed on the eve of the Great Patriotic War.