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USSR Report

MILITARY AFFAIRS

(FOUO 8/82)

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CONTENTS

GROUND FORCES

EXCERPTS FROM BOOK ON FIRING AGAINST ARMORED TARGETS

Moscow BOR'BA S BRONIROVANNYMI TSELYAMI (METODICHESKOYE POSOBIYE) in Russian 1977 (signed to press 18 Oct 76) pp 1, 78, 77, 3-5, 6-7, 32-33, 50-51, 69-71

[Title page, annotation, table of contents, introduction, chapter excerpts, and conclusion from book "Combating Armored Targets (Methods Manual)", by N. I. Yezhov, Voyenizdat, 25,000 copies, 78 pages]

[Excerpts] Title Page

Title: "Bor'ba s Bronirovannymi Tselyami (Metodicheskoye Posobiye)" [Combating Armored Targets (Methods Manual)]

Author: N. I. Yezhov

Publisher: Order of the Labor Red Banner Military Publishing House of the USSR Ministry of Defense (Voyenizdat)

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Pages: 78

Annotation

This manual is intended for commanders of subunits in the ground forces.

The manual gives recommendations on the organization and methods of conducting training periods with personnel to teach methods of combating tanks, anti-tank weapons, and low-flying helicopters and airplanes. It also gives recommendations on certain questions of psychological conditioning at tactical training periods.

Table of Contents

Introduction

In the time that has passed since the end of the war the armies of various capitalist countries have been equipped with many different types of weapons, most important of which are tanks, self-propelled guns, infantry combat vehicles, antitank guided missiles launched from armored vehicles, and low-flying aircraft with armor (fire support airplanes and helicopters). This requires that fighting men in modern warfare exert greater effort and skill to repulse massed attacks by armored vehicles, air strikes, and the like under conditions where the enemy has used weapons of mass destruction and incendiary substances.

It is obvious that the entire burden of combating the enemy's armored ground and low-flying aerial weapons which have not been destroyed by our artillery and aviation will fall mainly on the forward subunits of the ground forces, motorized rifle, tank, and other subunits. Many factors will naturally affect the consciousness and psyche of fighting men in conditions where large numbers of different armored vehicles are used. We must not exclude any possibility of temporary stress in the soldiers and the appearance of the feelings of fear and dissatisfaction in the struggle against a menacing enemy.

To avoid such negative occurrences in battle or at least to minimize them, during the process of combat and political training each commander must systematically prepare the men to be able to operate and defeat the enemy in the most complex situation.

For example, take field training periods in combating tanks, which are contemplated by the Combat Training Program for motorized rifle and other subunits in the topics on tactics. The main purpose of these training periods is not just to teach accuracy and range of grenade throwing against moving armored vehicles, but also to give the soldiers a strong will to victory at the same time.

Unfortunately, there are cases where certain commanders conduct training periods on the same terrain, which has been studied in detail, without enough simulated objects or target equipment. The men solve tactical problems that are generally the same and do not carry out the full series of actions necessary to achieve success in battle, but only a few of the elements. In another variation they will perform all the actions, but under simplified conditions, without the necessary physical exertion.

To avoid all simplification and indulgence in organizing troop training in methods of combating armored vehicles, the subunit commander should strictly follow the principle "Teach that which is necessary in war."

Under the difficult conditions of contemporary warfare and also in different weather conditions soldiers should learn to wipe out various armored ground and aerial targets suddenly and quickly.

Skillful use of the elements of danger, risk, and tension during training periods is very important to teach the fighting men fearlessness, courage, and confidence in combating armored equipment. The most effective way is for the commander to use automated simulation equipment, simulators of atomic blasts, artillery shells, and aerial bombs, and complex obstacles and barriers. Then the actions of the subunit are accompanied by the relayed noise of contemporary warfare during repeated practice of rolling tanks over soldiers, dismounting and assaulting from moving tanks, firing against armored targets over the heads of the subunit and from the flanks, throwing live grenades against tanks, and the like.

When elements of danger and risk are introduced in practical training, safety precautions should be followed strictly to preclude accidents.

The commander must take the personal characteristics of his men into account when practicing methods of combating armored targets. The individual approach should be used for every trainee, watching for correct performance of procedures in using the weapons and remembering that certain mistakes can be caused by special characteristics of temperament, body build, and vision. Thus, the soldiers who are easily distracted should be given fixed attention. The commander must correct them more often, patiently and persistently teaching the procedure which they do poorly. It is advisable to assign well-trained fighting men to such soldiers. Support and correction from a comrade is sometimes as effective as criticism by the commander. Special attention should be given to those soldiers who are passive, tentative, and lack confidence in practicing the procedures of combating enemy armored equipment.

Thanks to correct combat training and party political training among the fighting men, during their time in the service they do develop the necessary practical

skills and the moral-political and psychological qualities which will help them win victory in a faceoff with enemy armored equipment.

Chapter 1. Combating Tanks, Infantry Combat Vehicles, and Armored Personnel Carriers

The commands of the armies of the capitalist countries consider tanks, infantry combat vehicles, and armored personnel carriers as the main striking force of the ground forces when waging combat operations where they use either conventional weapons or weapons of mass destruction. This is not accidental. The tracked and wheeled armored vehicles adopted by the armies of the capitalist countries have, in the opinion of foreign specialists, the necessary mobility, armor protection, and firepower. Many vehicles, especially tanks, are equipped with various mechanisms and devices which give them a high rate of fire, range, armor-piercing capability, and precision when firing both from a spot and on the move.

According to statements by foreign military specialists, the experience of combat operations in Southeast Asia and the Middle East has shown that close cooperation between tanks and mechanized infantry is particularly important where troops have high mobility. As a result of this, the commands of the capitalist armies are now devoting special attention not only to improving tanks, but also to building infantry combat vehicles and the further development of armored personnel carriers. In their opinion, broad use of modern armored vehicles increases the tactical mobility of the infantry and enables it to wage combat operations together with tanks in conventional battle formations. Therefore, foreign specialists are taking all possible steps to improve the fighting and technical characteristics of the armored equipment now available. To do this the quality of the armor itself is being improved and refinements are being made in the shape of the body and tower of the armored object. Special screening devices and nets are used to protect the body against the action of hollow charge shells. In addition, reducing specific pressure, improving the suspension system, and increasing engine power make it possible for combat vehicles to move across broken terrain at high speed. Mounting large-caliber guns with good ballistic characteristics, antitank guided missiles, and other powerful weapons on these vehicles, improving the fire control system, and increasing the standard ammunition package enable them to wage effective fire against targets from long range.

Every armored vehicle has its own characteristics and distinguishing features. To combat them one must have a good knowledge of their fighting characteristics, tactical-technical specifications, and vulnerable points as well as knowing the combat capabilities and methods of using one's own fire weapons.

The combat characteristics make it possible to determine how dangerous and how important an armored target is. One can recognize the brand and type of armored object by distinguishing features such as the shape of the muzzle brake of the cannon, the placement of the ejection device on it, and the shape of the body, tower, and running gear. A knowledge of the dimensions of the body (length, width, and height) makes it possible to determine the range to the target using

standard angle-gage optical instruments or available means, and a knowledge of the vulnerable points enables a squad (team, crew) leader to choose the correct type of weapons and ammunition to destroy the target reliably.

We give below the combat characteristics and distinguishing features of the principal models of tanks, infantry, vehicles, and armored personnel carriers of the capitalist armies.

Chapter 2. Combating Antitank Weapons

Along with improving tanks, infantry combat vehicles, and armored personnel carriers the armies of foreign countries are devoting considerable attention to the development of various antitank weapons. Their tactical-technical characteristics are being improved continuously and the principles of using them in battle are being refined. The number of antitank weapons, in particular self-propelled weapons based on armored vehicles, has begun to increase rapidly in recent times in the armies of the countries of the aggressive NATO bloc. The greatest development has occurred with the most dangerous antitank weapon , the antitank guided missile. In the opinion of foreign specialists, it has greater destructive range, better armor piercing capability, and greater accuracy than the other antitank weapons.

It is not accidental that antitank guided missiles occupy the leading place among antitank weapons, and to some degree are supplanting the others. Antitank guided missile launchers are mounted on various armored vehicles, personnel carriers, and tanks. In the U. S. Army, for example, in addition to the Sheridan light tank, a tower with a 152 millimeter gun, a launcher for the Shillelagh antitank guided missile, has also been mounted on the M-60 A2 medium tank.

Plans contemplate arming several other prospective tanks in the armies of the United States, West Germany, and other capitalist countries with antitank guided missles.

Certain classes of helicopters are also being equipped with these weapons because, foreign specialists believe, they can fire at an armored target from a more advantageous angle and destroy it even when it is in a trench and not visible to ground observers.

Antitank guided missiles, self-propelled antitank guns, and other antitank weapons are being supplied not only to motorized infantry, tank, and artillery subunits, but also support and even rear subunits. They enable the enemy to create a deeply echeloned antitank zone with mutually overlapping sectors of antitank fire both on the forward edge and within the depth of the battle formations. Combating antitank weapons, especially antitank guided missiles, will be difficult and tense. This is one of the most important missions of all subunits which support the combat actions of tanks, infantry combat vehicles, armored personnel carriers, and other combat equipment.

To master the methods of protecting combat equipment against fire by antitank weapons and to combat them successfully, one must have a good knowledge of their combat characteristics, tactical-technical specifications, strong and weak points, and identification signs, and also know the combat capabilities and methods of

use of one's own T/O weapons on offense and defense. In contemporary battle with highly effective means of destruction, the winner in a duel with antitank weapons will be the one who detects the target and executes aimed fire first. Therefore, skillful reconnaissance by observation and rapid preparation of initial firing data are crucial conditions for successfully accomplishing this mission. There can be no question of effectively combating antitank weapons if the fighting men are not able to detect them quickly by identification signs, give correct target indications, and beat the enemy in opening fire.

We give below the basic models of antitank weapons of the capitalist armies.

Chapter 3. Combating Helicopters, Airplanes, and Unmanned Air Attack Vehicles

Antiaircraft artillery is effective and the most active ground weapon in combating means of aerial attack. It is able to hit airplanes and helicopters at various altitudes. But it is much more difficult for this artillery to combat aircraft operating at low altitudes because of their high angular velocities.

In view of this, during the war in Southeast Asia U. S. aviation mastered the procedures for flight by combat aircraft and unmanned scout planes at low altitudes.

The military command of Israel also used airplanes operating at altitudes of 30-100 meters for reconnaissance and destroying targets in Egyptian territory.

According to the conclusions of foreign specialists, if an airplane flies to the target at an altitude of 50 meters or less this even minimizes the effectiveness of antiaircraft missiles used against it.

Rifles can be used extensively to combat enemy aircraft operating at low altitudes. The experience of the Great Patriotic War, as well as war experience from Korea and Vietnam, testifies to this. During the Great Patriotic War some 500 aircraft were shot down with rifles. During the wars in Korea and Vietnam fire from rifles, machine guns, and antitank guns made it difficult for American pilots to operate at low altitudes without punishment.

Because even with the availability of contemporary antiaircraft weapons — antiaircraft missiles, rapid-firing antiaircraft cannons, and machine guns — the role of the rifle in combating low-flying targets has not diminished, commanders at all levels should devote considerable attention to training men in combating aerial attack weapons with fire from T/O rifle weaponry.

Special emphasis should be put on the exceptional importance of psychologically preparing personnel to combat low-flying targets when they carry out massed attacks. Of course, every fighting man understands that massed aerial attack weapons operating at low altitudes or tree-top level represent the greatest danger on the field of battle. Therefore, when training in combating aerial attack weapons the principal attention must be focused on eliminating this so-called fear of aircraft in the men.

To combat airplanes, helicopters, and unmanned enemy weapons successfully, one must have a good knowledge of the nature and procedures of their actions against

ground targets, tactical-technical specifications, and vulnerable points to the fire of rifles, large-caliber machine guns, and other weapons, as well as a knowledge of the combat capabilities and methods of using one's own T/O weapons to combat aerial targets. Only with a knowledge of all this will soldiers, crews, teams, and subunit commanders destroy the aerial enemy confidently and reliably.

We give below the basic characteristics of different means of aerial attack of the armies of certain capitalist countries.

Conclusions

Learning methods of combating tanks, antitank weapons, and low-flying helicopters and airplanes is just part of the large set of troop combat training questions which are inseparable from the entire process of training, indoctrination, and military service.

It can be seen from the examples of training periods considered above that training the men in these important matters begins with individual training. Then the methods and procedures of combating armored targets are refined as the squad, platoon, and company work together during tactical training periods and exercises, as well as in training periods on other combat training subjects. Let us consider fire training. One of its most important missions along with tactics is instilling in the men those qualities which insure stability of professional skill as military specialists on the field of battle and allow them to carry out the combat mission successfully in their designated roles. For example, it is important for automatic riflemen, machine gunners, and gun layers to develop the ability to preserve in a complex situation of contemporary warfare the habits acquired during the process of peacetime training: firing the regular weapon accurately, the ability to drive back attacks by tanks and infantry combat vehicles, and the ability to combat antitank guided missiles, including those mounted on helicopters, low-flying airplanes, and unmanned enemy weapons.

For this purpose, fire training periods should be used to demonstrate convincingly the capabilities of the standard weapons and combat equipment in combating ground and aerial armored targets. There should be numerous drills that develop the men's actions to the point of automatism, and a situation similar to actual battle must be created for training fire. To do this firing ranges are usually rigged up with two variations of targets installed at different distances and in different directions and dispersed along the front and in depth. Targets that represent armored vehicles, both painted and camouflaged as an actual combat situation requires, are installed. The target field is prepared in secret from the trainees, and during firing the targets are partially or completely rearranged. Changes are made in the method of simulation or lighting of the targets, the position for firing, and so on.

To develop psychological stability in the men, inert grenades are fired at the tanks of the combat training group which is moving toward the trainee-grenade throwers.

In addition, systematic work should be done to develop the men's skills in identifying dangerous armored targets during rifle drills, firing, and tactical and

other field training periods. All these important questions of training fighting men in the methods and procedures of combating armored targets can only be solved through the joint efforts of commanders, political workers, party and Komsomol organizations, and teachers at military schools.

One of the conditions of success in this work is raising the level of combat training of subunit commanders, who are obliged to constantly refine the methods and procedures by which fighting men oppose enemy armored equipment.

When organizing training periods one must begin from real conditions and construct them with due regard for the time allocated, the availability of physical facilities for training, and the group of trainees. In some cases training periods at the training site are done by squads, while in others it will be the platoon. Where there is additional time it is useful to conduct a second training period in the subject as a practice drill.

Work to develop the necessary practical skills in the men and to instill them with strong psychological qualities during the process of teaching methods of combating armored targets must be combined with purposeful party political work to indoctrinate them in loyalty to the military oath and regulations, love of their homeland, and hatred for its enemies.

Propaganda for the glorious combat traditions of our Armed Forces and instilling the feeling of civil and military duty greatly facilitates the formation of the necessary qualities in the men. Passing on stories of the heroic deeds of Soviet fighting men during the Great Patriotic War should play an important part in this work.

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LOGISTICAL SERVICES AND SPECIAL TROOPS

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BOOK ON WARTIME TRANSPORTATION SERVICES

Moscow ESHELON ZA ESHELONOM in Russian 1981 (signed to press 11 Jun 81) pp 1,2,248 3-4, 5-12, 13-17, 73-75; 76-77; 124; 125-128, 162; 163-164; 208-209; 210-211, 233-239; 240-241

[Title page, authors' collective, annotation, table of contents, foreword, introduction and selected excerpts from book "Train after Train", edited by Lt Gen Tech Trps A. S. Klemin, Izdatel'stvo "Voyenizdat", 30,000 copies, 248 pages]

[Excerpts] Title Page [p 1]

Title: Eschelon za Eshelonom [Train after Train]

Signed to press: 11 Jun 81

Copies: 30,000

Pages: 248

Authors' collective [p 2]

A. V. Dobryakov (head), N. V. Borisov, V. I. Dmitriyev, A. P. Zavadskiy, M. P. Zaglyadimov, Ye. I. Zimin, A. Z. Klimovitskiy, L. A. Korzun (deputy head), Ye. M. Kul'kov, G. G. Moldavanov, K. I. Pavlovich, V. P. Pashkovskiy, N. A. Pozmogov, S. N. Ryabokobylko, M. P. Sakovich, N. L. Sokolov, and S. V. Khvoshchev

Annotation [p 2]

This book is dedicated to the heroic labor of the personnel of military communications agencies, the railroad troops, railroad workers, and water transportation workers during the Great Patriotic War. The authors here present in popular form the complex and multifaceted work of the military communications agencies and railroad troops and show their working experience in solving military transportation problems of planning and carrying out military shipments by rail and water transportation during the war years.

The book is intended for a broad range of readers.

Table of Contents [p 248]

Foreword [pp 3-4]

The Soviet Armed Forces, formed by the Communist Party under the direction of Vladimir Il'ich Lenin, have traveled a legendary path and covered their battle colors with unfading glory.

During the Civil War the young army of the Republic of Soviets smashed the unified forces of internal counterrevolution and the armed intervention of the imperialists. In the following years the Red Army had to defend the inviolability of Soviet borders more than once.

The most severe test of our entire people and our Armed Forces was the Great Patriotic War of the Soviet Union against fascist Germany.

Responding to the call of the Communist Party, the Soviet people and the fighting men of the army and navy rose up to defend their native land and by their heroism and selfless labor secured victory over the hated enemy.

Transportation workers and personnel of the military communications service and railroad troops made a worthy contribution to the common victory over the enemy.

All the operations of the Great Patriotic War were inseparably linked to broad use of all forms of transportation, with movement of enormous masses of personnel and materiel. The organization of military shipping, methods of rebuilding communications routes, and the organizational structure of military transportation services and troops were steadily improved, from operation to operation.

The further the events of those heroic years are from us in time, the more apparent the full significance of the wealth of experience accumulated during the Great Patriotic War is to us. This experience, gathered by small pieces,

is teaching new generations the difficult art of defeating a powerful enemy. It serves as an example of courage and heroism, of absolute devotion to our native land and to military duty.

Books that tell about the combat experience of the Great Patriotic War have both historical and practical value.

This book, "Train after Train," is dedicated to the work of transportation workers and the personnel of military communications and railroad troops during the war. It deals with the questions of preparations for and the work of transportation under wartime conditions, organizing and carrying out mass troop transfers, blockading and rebuilding communications routes, technical coverage for them, and improving the military communications service. The book reviews one of the key problems, insuring continuity of military shipping.

The book will undoubtedly be interesting not only for specialists working in organization and support of military shipping, but for all officers and generals of the Soviet Armed Forces and a broad range of readers who have an interest in questions of preparing and using transportation for military purposes.

General of the Army S. Kurkotkin

Introduction [pp 5-12]

The term "military communications" refers to land, water, and air communications routes that have been prepared and equipped with necessary means for moving troops and performing all types of military shipping in peacetime and war, as well as the military communications agencies working on them.

The military communications service in Russia originated in the early 17th century. According to the "Military Charter" of 1716, which was developed by Peter I, the job of organizing the shipment of military cargo for the army and road repair and maintenance was assigned to a military communications service. With the appearance of railroads and the electric telegraph, the military communications service was given the job of operating, destroying, and rebuilding railroads and dirt roads and operating waterways and post and telegraph lines.

Railroads were used for military purposes in Russia much earlier than in the United States and Prussia. The first military shipment was carried out in 1851, when the railroad between Moscow and Saint Petersburg was built.

In the spring of 1852 the first statute on Transport of a Military Unit was published. No other country which had railroads had such a statute at that time.

The development of railroad building in Russia in the late 19th Century created new conditions for mobilization and concentration of an army in theaters of military operations. This was reflected in the 1890 Statute on Field Troop Control, which devoted considerable attention to the military communications service.

At the start of World War I Russian rail transportation and the military communications service carried out major shipments to mobilize and concentrate troops.

But failures at the front and enormous devastation in the Russian economy created an exceptionally difficult situation in transportation. In September 1917 V. I. Lenin wrote as follows: "Russia is threatened by an inevitable disaster. Railroad transportation is disrupted beyond belief and the situation is becoming worse. The railroads will rise up, and shipment of raw materials and coal to the factories will stop. The shipment of grain will stop."[1] The campaign to rebuild the transportation system began immediately after the victory of the Great October Socialist Revolution. It took gigantic efforts from the Communist Party and the young Soviet State to overcome the paralysis in transportation.

V. I. Lenin devoted enormous attention to transportation, emphasizing the special role of the military communications service. He called railroad transportation "the key material factor in the war."[2] Without railroad transportation, he wrote, "Modern warfare is an empty phrase."[3]

History has demonstrated that the teachings of the revolutionary leader were entirely correct and timely.

The party and the country took all possible steps to build up their defense capabilities, increased the fighting strength of the Red Army, and improved the work of railroads and waterways. On 30 November 1918 the Soviet Government instituted martial law in railroad transportation.

A special commission of the Soviet for Defense of the Republic was formed to work out measures related to planning transportation work. The decree of the Soviet for Defense on 11 December 1918 entitled "Putting the Work of Railroad Transportation in Order," the May 1919 directive of the Central Committee on military unity, and the decisions of the 9th Party Congress with respect to transportation (April 1920) played a large part in this.

During the years of Civil War V. I. Lenin worked constantly to improve the work of transportation and support military shipping.

Speaking at the Plenum of the Moscow Soviet on 3 April 1919, V. I. Lenin said: "We say once again to all comrades — more people must be enlisted for work or food and transportation. Transportation work demands the greatest intensity. We have to see that workers at every meeting ask themselves how they can help transportation."[4]

During the process of building the Red Army and Navy the military communications service was also formed. Its jobs were to support military shipping, rebuild railroads, and improve transportation work.

On 5 March 1918 the Directorate of Military Communications of the former Headquarters of the Supreme Command was transferred to the newly-formed Supreme Military Council of the Republic, and on 8 May 1918 the People's Commissar of Military Affairs by order No 339 established the all-Russian Main Headquarters, which also had a Directorate of Military Communications. These two supreme agencies for management of military communications in the republic

existed in parallel until 2 September 1918 when they were merged into the Central Directorate of Military Communications under the Revolutionary Military Council of the Republic.

Directorates of military communications were set up in the headquarters of fronts, armies, and military districts; the line military communications agencies — directorates of the chiefs of troop movement and military commandants — were set up on the railraods.

During the Civil War the military communications service was given the mission of rebuilding and developing railroads, waterways, highways, and dirt roads, organizing troop movements and freight shipment, operating the postal and telegraph services (until 10 September 1919), operating motor vehicle columns, managing troop and worker trains, security and defense of railroads, and the like.

Thousands of railroad workers and employees, Red Guardsmen, soldiers, and also former officers in the Tsarist army who voluntarily joined the side of the revolution and put their knowledge and experience to work for it became the cadres for the military communications agencies.

The party organizations did a great deal of work in the army and navy military communications units and institutions. They exercised a major influence to indoctrinate personnel in a spirit of boundless devotion to the Soviet State, the Communist Party, and the people. The commissars of the military communications units and institutions were old Bolsheviks such as Z. Ya. Litvin-Sedoy, an active participant in the revolution of 1905 at Krasnaya Presna in Moscow, as well as P. V. Ribe, V. V. Fomin, Ya. A. Remtir, S. Ye. Shchukin, A. F. Shishov, L. V. Lemberg, A. Kh. Gruzdup, N. P. Sokolov, and others. Many of them were later transferred to command positions in military communications.

During the Civil War years the volume of military shipping by rail was more than 33,000 operational trains and almost 7,000 trains with supply cargoes. About 25 million men with weapons and equipment were moved by rail. Many units were moved from one front to another between two and five times in this period.[5] All these things made it possible to regroup personnel and equipment in time to deliver devastating blows against the enemy.

During the Civil War railroad troops rebuilt more than 22,000 kilometers of track and more than 3,000 bridges and repaired 16,500 railroad cars.[6]

Taking note of the heroic work of the railroad troops, order No 258 of the Revolutionary Military Council of the Republic on 31 January 1921 pointed out that the victorious advance of the Red Army was made significantly easier by the conscious and unselfish activity of railroad units to rebuild the railroads, the vital arteries of the active army.[7]

During the Civil War and subsequent years considerable attention was devoted to training command personnel for military communications agencies. Special schools were set up to train junior and senior command personnel for the military communications service. Special schools to train junior and middle-level

command personnel for the military communications service and courses for instructors to train Red commanders of military communications and railroad troops were set up in Torzhok in 1918. In 1920 they were reorganized into a single school, which in 1922 was transferred to Petrograd. In 1937 the school was renamed the Leningrad Military Communications School imeni M. V. Frunze.

For training senior command personnel in military communications the Military Engineering Academy in late 1918 set up a military roads division, which later became the department of military communications and existed until 1925. In 1925 the training of senior personnel began to be done in the military division of the Leningrad Institute of Engineers of Communications Routes, and after 1932 was transferred to the Military Transportation Academy. The first head of this academy was corps commander S. A. Pugachev, deputy chief of staff of the Worker-Peasant Red Army.

After bringing the Civil War to a victorious conclusion our country began peaceful building. V. I. Lenin and the Communist Party considered restoration and development of transportation to be of paramount importance.

Industrialization of the country supported technical reconstruction of transportation, which in turn promoted accelerated development of industry and agriculture and an increase in the country's defense capability.

Between 1921 and 1927 more than 6,000 kilometers of new railroads were built, the fleet of steam locomotives and cars was augmented, and the average daily load on the rail system increased.

The country's transportation system continued to develop rapidly in the 1930's. The traffic capacity of the most important rail sectors increased and new lines were laid with due regard for economic and defense needs.

It was during these years that K. Ye. Vorshilov, speaking from the podium of the 17th party congress in 1934, called railroad transportation the blood brother of the Red Army.

Railroad troops and military communications personnel took an active part in building and reconstructing the railroads and performing major overhaul work.

The military communications service continued its development during the years of peaceful building. In August 1921 a statute was published which concentrated the questions of preparing communications routes, military roads, and the organization of military shipping at the Central Directorate of Military Communications of the Headquarters of the Worker-Peasant Red Army.

In 1925 the first Statute on Troop Movements of the Worker-Peasant Red Army was published, and in 1929 a manual on troop movement by water came out.

Considerable attention was devoted to the questions of combat and special training for the units and agencies of military communications. Beginning in 1931

major military transportation exercises were held at the Central Zone training area and district training areas almost every year. These exercises also involved units of military aviation and, in some cases, airborne units as well. Among those participating in these exercises were K. Ye. Voroshilov, M. N. Tukhachevskiy, S. S. Kamenev, S. M. Budennyy, the chiefs of the main and central directorates of the People's Commissariat of Defense, and management personnel of the military communications agencies.

The head of the Central Directorate of Military Communications during the Civil War was M. M. Arzhanov, a strong-willed and decisive military engineer with a great deal of experience working in transportation.

The heads of military communications of the Red Army in the 1920's and 1930's were, in order, V. I. Sergeyev, B. Ye. Barskiy, M. M. Ol'shanskiy, E. F. Appoga, A. Ye. Kryukov, and N. I. Trubetskoy.

Corps commander E. F. Appoga made a particularly important contribution to the development of the military communications service in the 1930's. He devoted a great deal of effort to improving the service and preparing for large-scale military shipping. Under his direction a theoretical investigation of the most important problems of preparing and using transportation for military purposes was begun.

A number of steps were taken in the second half of 1940 and until the start of the Great Patriotic War to prepare communications routes and military communications units and agencies for work in wartime. But many of the planned projects had not been completed by June 1941.

The Great Patriotic War changed transportation work greatly. The system was transferred to a military footing very quickly.

Transportation work reached its highest intensity during the battles of Moscow, Stalingrad, and Kursk, during preparation for and conduct of the offensive operations in 1944-1945 (Belorussian, East Prussian, Wisla-Oder, and Berlin), and during the operation to crush the troops of imperialist Japan in 1945.

In the course of maneuvering operations transportation moved not only large units, but entire army and front formations.

This demonstrates the high level of organization in the work of railroad workers and military communications officer under wartime conditions on rail sectors that had just been rebuilt.

In his book "Small Land" where he describes the events during the transfer of the 18th Army to the Zhitomir axis in November 1943, Comrade L. I. Brezhnev remarks on the rapid advance of the trains: "The train which carried the Military Council, army headquarters, and political department left first. The trains carrying army units followed after it. They traveled quickly, stopping only to change locomotives."[8]

The Central Committee of the All-Union Communist Party (Bolshevik), the State Committee on Defense, and the military command devoted exceptionally great attention to transportation and military communications. In the first days of the war A. A.Andreyev, secretary of the party Central Committee, provided a great deal of help in the military communications work of the General Staff. He solved complex problems and helped work out cooperation between the Directorate of Military Communications and governmental bodies in transportation commissariats. The committee headed by I. V. Stalin, formed in 1942 under the State Committee for Defense played a large role in organizing shipping.

The service was headed by generals I. V. Kovalev and V. I. Dmitriyev in 1941-1945. The following generals and officers worked knowledgeably in important sectors: S. A. Andreyev, P. A. Bakulin, K. V. Vasil'yev, A. V. Vlasov, S. A. Gasparyan, B. N. Goryainov, M. I. Grishin, V. F. Dikushin, A. V. Dobryakov, F. I. Zelentsov, I. V. Kargin, I. G. Kashcheyev-Semin, I. K. Kechedzhi, A. N. Korolev, S. N. Kresik, A. A. Korshunov, S. M. Kostikov, A. G. Mgvdeladze, V. P. Medvedev, G. G. Moldavinov, M. V. Obyden, N. P. Pidorenko, P. I. Pirogov, K. A. Rassalov, P. I. Rumyantsev, V. V. Stolyarov, Ye. V. Tulupov, S. V. Khvoshchev, A. G. Chernyakov, Ya. I. Shchepennikov, and many others. Generals A. G Chernyakov and S. V. Khvoshchev later headed the Central Directorate of Military Communications of the USSR Ministry of Defense.

Military communications officers frequently served not only as organizers of shipping but also as the actual performers of plans under difficult conditions. More than 7,000 persons were awarded orders and medals for outstanding performance of military duty, courage, and valor.

In the work of rebuilding railroads the most outstanding units of railroad troops were those commanded by the following generals and officers: V. A. Golovko, I. A. Prosvirov, P. A. Kabanov, N. V. Borisov, A. Ye. Kryukov, I. S. Kartenev, V. V. Bezvesil'nyy, A. P. Smirnov, D. A. Lebedev, F. N. Doronin, A. S. Dugin, V. P. Tisson, P. I. Bakarev, A. Ya. Kirichenko, P. I. Korshunov, A. M. Kuznetsov, Sh. N. Zhilzhilashvili, D. A. Teryukhov, and others.

The party and government valued the military feats and labor valor of railroad troop personnel in the Great Patriotic War very highly: 28 servicemen were given the lofty title of Hero of Socialist Labor and Sgt. V. P. Miroshnichenko was made a Hero of the Soviet Union. More than 35,000 servicemen were given orders and medals.

The leadership and teachers of the Military Transportation Academy and the Higher School of Military Communications, who trained highly skilled cadres, made a significant contribution to victory over the enemy.

The State Committee on Defense and the Headquarters, Supreme High Command, devoted great attention to planning and using all types of transportation for military purposes. Marshals of the Soviet Union B. M. Shaporshnikov and A. M. Vasilevskiy and generals of the army A. I. Antonov, S. M. Shtemenko, A. V. Khrulev, and N. F. Vatutin did especially good work in management of military shipping and restoration of demolished transportation facilities.

With the development of transportation in the postwar period the military communications service was also improved. The questions of military transportation support to operations began to be decided in a new way based on the experience of the Great Patriotic War.

Marshals of the Soviet Union V. D. Sokolovskiy, M. V. Zakharov, and I. Kh. Bagramyan and generals of the Army S. S. Maryakhin and S. K. Kurkotin devoted constant attention to further development and refinement of transportation support for the Soviet Armed Forces in the postwar years.

The domestic transportation system overall withstood serious tests. A high level of organization and continuity of shipping was maintained and the system kept its mobility and survival capability through the joint efforts of transportation and military communications agencies.

It must be emphasized that cooperation between military communications personnel and transportation workers grew even stronger during the war years.

During the Great Patriotic War military communications agencies carrying out the assignments of the General Staff and headquarters of Rear Services of the Red Army cooperated closely in work with railroad troops, the motor vehicle road service, and representatives of the supply directorates at the front and in the Central Zone. Already then the war experience had demonstrated that the full volume of military shipping can be handled successfully only with integrated and rational use of all forms of transportation.

The idea of comprehensive preparation and use of various types of transportation is now universally recognized in the national economy as well.

During the Great Patriotic War, the country's transportation system, using all forms of transportation, performed a volume of shipping never before known in history. The railroads alone handled 443,213 trains (about 20 million cars) carrying troops, weapons, combat equipment, and supplies. Yet in the first days of the war the average daily load of troops and materiel was about 40 percent of the total load on the entire USSR railroad system.

It should be noted that 95 percent of shipping from the deep interior of the country to the rear boundary of the fronts was carried by railroad transportation.

Water transportation delivered more than 4 million troops, more than 785,000 wounded and sick, 4,500 tanks, 10,000 field pieces, and 21 million tons of materiel. Air transportation carried more than 2.7 million persons and more than 300,000 tons of freight.

After the Great Patriotic War the workers in all forms of transportation and the military communications service had to solve the complex problems of restoring and building up the capacities of the country's transportation system. By the heroic efforts of the entire Soviet people, the prewar level of development of transportation was not only restored, but also significantly exceeded in a short time.

The development of military communications was always directly dependent on the methods of waging war, improvements in the transportation system, and qualitative and quantitative growth in transportation equipment.

The problems of transportation support to the Armed Forces are much more complex today. To solve them today requires integrated measures to improve the country's entire transportation system, continued development and rapid introduction of new means of transportation, and developing more powerful means for construction and reconstruction of transportation facilities and for the use of automated control systems in transportation. Military communications personnel are working hard on these problems in close cooperation with transportation workers.

The military communications service of the Armed Forces celebrated its 60th anniversary on 5 March 1978. In his greeting in honor of the service's 60th anniversary, Mar SU D. F. Ustinov, USSR Minister of Defense, praised the service highly, pointing out that during the years of its existence the military communications service has played a significant part in supporting the life and activities of our Armed Forces and raising their combat readiness. He observed that the personnel of the service today are successfully performing the stepped-up socialist obligations they adopted for uninterrupted transportation support to the Soviet Army and Navy.

FOOTNOTES

1. Lenin, V. I., "Poln. Sobr. Soch." [Complete Works], Vol 34, p 155.

2. Ibid., Vol 38, p 400.

3. Ibid., Vol 35, p 395.

4. Ibid., Vol 38, pp 248, 249.

5. "Ukhodili na Front Eshelony" [The Trains Departed for the Front], Moscow, "Voyenizdat", 1974, p 8.

6. "Sovetskaya Voyennaya Entsiklopediya" [Soviet Military Encyclopedia], Moscow, 1977, Vol 3, p 322.

7. "Zheleznodorozhnyye Voyska s 1851 po 1941 God" [The Railroad Troops from 1851 to 1941], Moscow, "Voyenizdat", 1957, p 150.

8. Brezhnev, L. I., "Malaya Zemlya" [Small Land], Moscow, Politizdat, 1978, p 41.

Military Shipping by Rail During the War Years [pp 13-17]

During the prewar five-year plan the communist party and Soviet people did a great deal of work on technical reconstruction and development of railroad transportation, equipping it with advanced machinery, and introducing progressive forms of traction.

In a short time a large number of rail centers and marshalling yards were fundamentally reconstructed, new depots and car repair points were built, the track in the primary sectors was overhauled and light rails were replaced with heavier ones, and new railroads were built.

By the end of 1940 the total length of the rail network reached 106,100 kilometers. The average daily load grew to 117,000 cars and freight turnover on the railroads was 415 billion tons (85.1 percent of the country's total freight turnover). The fleet of steam locomotives and cars was improved. It included 28,000 steam locomotives and about 878,500 railroad cars. The total freight capacity of the cars reached 19 million tons. The percentage of four-axle cars increased. The average gross weight of a freight train was 1,301 tons, compared to 578 tons in 1913.[1]

Planned development and reconstruction of railroad transportation made it possible to establish a network of main sectors with uniformly good technical equipment, figured for a standardized length (120 standard axles) and weight (900 tons) for military trains (the figure was 550 tons in 1913).

The methods of organizing shipping were improved. A systemwide traffic schedule and unified plan for forming trains were developed. Car flows were organized on the basis of through shipping, and technical planning and integrated development of the carrying capacity of the railroads were introduced.

The reconstruction and technical re-equipping of railroad transportation facilitated further consolidation of our country's defense capability.

With the start of the war the flows of military trains moving toward the western boundaries of the country and evacuation shipping traveling from threatened regions near the front to the east increased sharply. This demanded hard, unselfish work, flexibility and resourcefulness in decision-making, and true labor heroism from railroad workers and the military communications agencies.

Not just at the start of the war but throughout the entire Great Patriotic War the employees of the railroads, military communications agencies, and railroad troops, disregarding time and often going without sleep or rest for several days, insured timely loading of troops and materiel, rapid travel to the front, and quick clean-up after enemy aviation attacked railroad transportation facilities.

This labor enthusiasm, augmented by advances and successes in the development and fundamental re-equipping of transportation, made it possible to emerge from the difficulties with honor and insure performance of the missions that arose from the demands of the Communist Party and Soviet Government with respect to defense

of the socialist homeland. This enthusiasm was invaluable in achieving victory over a powerful and treacherous enemy.

The Great Patriotic War confirmed this in full and showed how important railroad transportation and military communications were in supporting the combat operations of the Soviet Armed Forces, who mauled the enormous Nazi war machine.

"Without good railroads," Mar SU G. K. Zhukov wrote, "we would not have been able to carry out the large operational shipments that were comparatively frequent during the war, or even to keep up uninterrupted supply of materiel over great distances."[2]

Each operation conducted by the Soviet Army during the last war demanded enormous expenditure of personnel and materiel. More than 10 million tons of ammunition was used during the Great Patriotic War, and 16 million tons of fuel and lubricants.[3] The expenditure of other types of troop materiel also increased immeasurably. All these things had to be delivered to the front in a steady supply at the right time. No one form of transportation, no matter what its capacities, could have handled this enormous job of delivering everything that the troops needed for life and for battle. Therefore, all forms of transportation were enlisted to perform this vast mission. In the troop and army rear areas motor vehicle transportation was most important, while in the rear area of the front railroads and motor vehicle roads were used. Railroad shipping played the most important and decisive role in shipping from the rear of the country to the theater of military operations and shipping between fronts.

During the Great Patriotic War about 20 million cars (more than 440,000 trains) carrying troops, weapons, equipment, and materiel-technical supplies were delivered from the rear of the country to the front by rail.[4]

During World War I about 6,000 cars (150-170 trains) a day traveled on the railroads of all the fronts. But during the last war up to 6,000 cars were loaded on front roads on some days just in preparation for the Kursk operation;[5] this is as many as were loaded on all front railroads in World War I.

During the Civil War and foreign military intervention between 1918 and 1921, 40,401 troop trains and about 10,000 transports carrying supplies (6,679 trains) with an average of 40 cars in a train were shipped.[6]

The experience of the last war showed that in the hands of the military command railroads were a crucial means of strategic maneuvering with personnel and equipment. The transportation link between the rear of the country and the theater of military operations was accomplished mainly by rail.

The Soviet Armed Forces carried out 55 strategic offensive and defensive operations in the Great Patriotic War. During the period of preparation for each strategic operation large shipments were carried out to concentrate and regroup troops, replace personnel losses, and restore stocks of combat equipment, weapons, ammunition, and other forms of materiel. All this demanded especially intense work by railroad transportation and the military communications service.

Thus, during the period of the defensive battles at Moscow in preparation for the counteroffensive, 333,500 cars carrying troops and military supplies were delivered on the railroads running toward Moscow.[7]

Delivering the troops, equipment, ammunition, and other military supplies for the three fronts that participated in the Battle of Stalingrad required about 250,877 cars.[8]

During preparation for the defensive operation and offensive at Kursk, more than 313,000 cars were delivered and unloaded under the centralized plan alone, while the total volume of military shipping to support the Battle of Kursk was 467,255 cars.[9]

The Belorussian operation required 440,000 cars.

To support the L'vov-Sandomiercz and Iassy-Kishinev operations 240,000 cars carrying troops and supplies were shipped.

During the period of preparation for the Berlin operation more than 192,000 cars carrying military supplies were delivered to the railroads of Poland.

Major troop regroupings were carried out by rail during the war. For example, it took 894 trains to move the troops of the Don Front from the Stalingrad region to form the Central and Steppe fronts. In the fall of 1943 730 trains were used to move the troops of the Bryansk Front to form the 2nd Baltic Front,[10] and 506 trains were required to form the 2nd Belorussian Front in the spring of 1944. It took 860 trains to move the troops of the 4th Ukrainian Front from the Crimea in the summer of 1944. The regrouping of troops from the west to the Far East in June-August 1945 required about 1,700 trains.[11]

Each strategic regrouping of forces by rail required major organizational-technical measures to insure continuous performance of these massive troop transfers.

During preparation for operations the agencies of military communications and railroad administration had to cooperate in a precise, operational manner on planning, organization, and conduct of the shipping. Before the start of shipping the large and complex job of regulating rolling stock would be done to insure an uninterrupted supply of the required number of boxcars, flatcars, and steam locomotives to the loading roads. Loading and unloading areas for the trains were prepared in advance. Front rail sectors and loading and unloading regions had to be given air cover.

To insure secrecy of shipping train loading and travel was ordinarily done during the hours of darkness, which made operating conditions for the railroads much more difficult and required special precision in organizing train traffic. To avoid complications in the operation of the front railroads rigorous checks were established on timely loading of trains and removal of empty trains from the unloading region.

The times allotted to prepare railroad transportation for strategic troop regroupings were generally very limited. Therefore everything possible was done to see that the planning process and time required to transmit shipping assignments to performers took as little time as possible. The method of planning shipping established by the Central Directorate of Military Communications long before the war made it possible to lay out plans for shipping any volume very quickly. The operational shipping plan written at the Central Directorate of Military Communications was transmitted personally to the people's commissar of railroads or G. V. Kovalev, his deputy in charge of traffic. Before the shipping plan was given to the People's Commissariat of Railroads approximate figures on the planned shipment were communicated (number of rolling stock by loading roads, beginning of the shipment, and its pace). The Central Directorate of Military Communications also gave the preliminary order to the chiefs of troop movement on the loading roads and to the chiefs of front and district military communications concerning the beginning time and place of shipping for each particular unit. This kind of preliminary orientation of the People's Commissariat of Railroads and military communications agencies insured that shipping would begin at the time set by the military command.

It was very important to have constant information on progress in loading, train travel, and unloading. The military communications dispatcher service, which was set up during the Civil War and later refined, insured precise, operational monitoring of the condition of each train at any time of the day or night. Reports on operational shipping were submitted to the Central Directorate of Military Communications and the front directorates of military communications twice a day; for especially important trains reports were made four times a day. The positions of trains at the report hours were entered on a map of the rail system, which gave a graphic picture of the location of the trains and, if necessary, made it possible to carry out shipping maneuvers.

Soviet troops moved forward to meet the enemy, train after train.

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During the Great Patriotic War the Soviet Armed Forces carried out 55 strategic offensive and defensive operations, each of which required enormous work by the railroads, military communications agencies, railroad troops and special formations of the People's Commissariat of Railroads.

An enormous amount of work was done by the Headquarters of Rear Services of the People's Commissariat of Defense, the political agencies, the headquarters of the arms of troops, the Central Directorate of Military Communications, and the supply directorates to form and give material-technical support to reserve units and operational formations. This took place throughout the war, but especially in the initial period when 291 divisions and 94 brigades were transported to the front before 1 December 1941, chiefly by railroad. The commands of the military districts, local party, Soviet, trade union, and Komsomol organizations, and the military commissariats did a great deal of work to support these formations.

The Soviet command used railroad transportation to concentrate troops during preparation for and conduct of such operations as the Battle of Moscow, the

Battle of Stalingrad, the Battle on the Kursk Salient, the operation to break the Leningrad blockade, the Belorussian, East Prussian, Wisla-Oder, Berlin, and Far Eastern operations, and many others.

In addition to moving troops from deep within the country, the Soviet command very often carried out significant troop regroupings by rail. For example, after the fascist troops were smashed at Stalingrad (February 1943), the forces of the Don Front, some 900 trains, were moved to the central axis. The same year the troops of the Bryansk Front were transferred to the Velikiye Luki region. The shipment of troops by rail from East Prussia and the region around Prague to the Transbaikal and the Far East, a distance of 9,000-12,000 kilometers, in the summer of 1945 was a very important and difficult mission. The pace of this shipping on the Transsiberian railroad reached as much as 30 troop trains a day. This major transportation operation was carried out successfully on the whole.

During the Great Patriotic War many shipping operations were carried out by combined rail, motor vehicle, and water transportation. Many divisions, corps, and armies used all forms of transportation broadly in different combinations, which greatly speeded up the concentration of forces in the chosen axis.

The Soviet command successfully maneuvered with troops which were en route in the trains.

Operational shipping was carried out according to plans and assignments from military communications agencies following decisions of the General Headquarters, while shipping within fronts was done according to decisions of the front headquarters. Experience with planning operational shipping acquired during peacetime was used extensively during the war.

The volume of operational shipping was 244,603 trains, which was 55.2 percent of the total volume of military shipping.

Supply shipping occupied a significant place in the total volume of military shipping, 198,610 trains or 44.8 percent.

Military communications personnel had a very active part in organizing the evacuation of sick and wounded by rail. A total of 5,338,350 persons (11,863 trains) were evacuated.

The military communications service always took an active part in evacuation shipping of military plants and storage depots to the rear of the country and helped railroad workers and shippers in the evacuation.

The rapid improvement in technical equipment of the army and navy was reflected in support for military shipping and in its volume. Shipments of special and technical troops increased. The need for open rolling stock, especially large-capacity flatcars, increased greatly.

The presence of heavy combat equipment on the military trains forced the military communications service and railroad workers to re-equip and prepare the loading and unloading regions.

The personnel of front and army military communications agencies took an active part in working out plans to restore (and blockade) railroads, provide them with technical equipment, and clean up after enemy air attacks in order to get trains moving through the demolished facilities quickly.

Military communications agencies working together with engineering troops did a great deal of work to conceal troop movements and organize dummy (deceptive) rail shipments.

FOOTNOTES

1. "SSSR i Zarubezhnyye Strany posle Pobedy Velikoy Oktyabr'skoy Sotsialisticheskoy Revolyutsii. Statisticheskiy Sbornik" [The USSR and Foreign Countries after the Victory of the Great October Socialist Revolution. Statistics], Moscow, "Statistika", 1970, pp 105-109.

2. Antinenko, N. A., "Na Glavnom Napravlenii" (In the Main Axis], 2nd ed., Moscow, "Nauka", 1981, p 10.

3. "Tyl Sovetskiky Vooruzhennykh Sil v Velikoy Otechestvennoy Voyne 1941-1945 gg." [The Rear of Soviet Armed Forces in the Great Patriotic War of 1941-1945], Moscow, "Voyenizdat", 1977, p 5.

4. "Voyennyye Soobshcheniya za 50 Let", [Fifty Years of Military Communications], Moscow, "Voyenizdat", 1967, p 63.

5. "Tyl..." op. cit., p 235.

6. "Voyennyye Soobshcheniya..." op. cit., p 23.

7. "Tyl..." op. cit., p 230.

8. Ibid., p 232.

9. Ibid., p 121.

10. "Voyennyye Soobshcheniya..." op. cit., pp 48, 49.

11. Ibid., p 49.

Railroad and Military Communications Troops Engaged in Building and Rebuilding Railroad Facilities in the Front Region [pp 76-77]

There is no other case in world history where a country carried on restoration and construction of railroads on such enormous scale concurrently with major strategic operations, such as occurred in the USSR during the war.

In the prewar period questions of planning and development of the transportation system in the theater of military operations and preparation for, organization, and implementation of restoration and blockading work on railroad lines

within the People's Commissariat of Defense were directly managed by the Directorate of Military Communications of the General Headquarters of the Red Army. The headquarters of the military district and front had divisions of military communications which were directly subordinate to the chief of staff. For restoration, construction, operation, blockading, and technical support of railroads used for military shipping there were railroad troops subordinate to the commander of the district or front through the chief of military communications. In addition, in connection with the broad scope of railroad construction in the country, the Special Corps of Railroad Troops of the Worker-Peasant Red Army was formed in 1932. Until 1941 it worked on reconstruction of existing rail lines and construction of new ones on assignment from the People's Commissariat of Railroads. The units of the Special Corps had 55,000 men at the start of the war.[1] The total number of railroad troops at the start of the war was 97,100.[2] The railroad unit subordinate to military districts began to be reorganized in 1941. The districts began forming detached railroad brigades which included road maintenance battalions, bridge battalions, work mechanization battalions, operations battalions, and the like.

By the start of the war 10 of the 13 existing railroad brigades were engaged in building railroads in the western border military districts (three in the Western district, four in Kiev district, and three in the Odessa district).

To slow down the enemy advance, the fighting men of the railroad troops and military communications, who were retreating together with combat units of the Red Army, took steps to blockade the railroads. They removed technical equipment and dug up and mined tracks, bridges, and other structures.

There were no railroad units on the railroads of the Baltic region and many railroad lines of the western oblasts at the start of the war, so blockading was done chiefly by engineer and rifle units in the regions of their combat operations. Demolition was focal in character and chiefly involved blowing up large bridges. Working engines and most of the railroad cars from these lines were withdrawn to the rear.

Planned blockading work began to be done on a line from east of Narva, Velikiye Luki, Orsha, and Mogilev with the arrival of railroad units that had been mobilized.

There were many examples of courage and heroism by personnel of the railroad troops and military communications doing blockading work during the Great Patriotic War.

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During the Great Patriotic War the railroad troops and special formations of the People's Commissariat of Railroads plus military communications agencies improved the organization of construction and reconstruction work on railroad lines and technical equipping for them. By the end of the war the level of technical equipment among railroad troops had increased substantially compared to early 1942: seven times for cranes, eight times for pile drivers, 11 times for mobile power plants, four times for compressors, and five times for saw frames.[3]

By early 1944 the number of railroad troops had increased to 253,000, by war's end it was 272,000.[4] All this facilitated an increase in the rate of railroad reconstruction. Thus, whereas the pace of reconstruction in the winter of 1941-1942 was just 3.6 kilometers, in 1943 it was already five kilometers, in 1944 — seven kilometers and in 1945 eight kilometers a day. In certain operations the rate of reconstruction of railroads reached 15-20 kilometers a day and more.

Along with increasing the pace of restoration of rail lines the quality of reconstruction work improved. Thus, the proportion of restored rail sectors in USSR territory that received "outstanding" evaluations when turned over for use rose from five percent in 1943 to 50 percent in 1945.[5]

During the war years the railroad troops and special formations of the People's Commissariat of Railroads with the vigorous help of military communications agencies and the local population, restored and put back in working condition about 120,000 kilometers of railroad track between December 1941 and war's end. In addition they built and rebuilt 2,756 large and medium sized bridges with a total length of 242,143 running meters, more than 13,000 bridges and culverts, 46 tunnels (23,230 running meters), 2,348 water supply stations, and more than 729,000 kilometers of railroad communications wire. Railroad units explored and removed mines from more than 180,000 kilometers of railroad track, 19,947 bridges and other manmade structures, and more than 13,000 railroad stations and centers. The combat engineers of the railroad troops disarmed and destroyed more than 1,293,600 mines and high explosive shells, about 60,000 unexploded aerial bombs, and almost 1 million artillery shells.[6]

FOOTNOTES

1. Kabanov, P. A., "Stal'nyye Peregony" [Steel Runs], Moscow, "Voyenizdat", 1973, p 58.
2. "Tyl Sovetskiky Vooruzhennykh Sil v Velikoy Otechestvennoy Voyne 1941-1945 gg." [The Rear of the Soviet Ground Forces in the Great Patriotic War of 1941-1945], p 52.
3. Ibid., pp 242, 243.
4. Terekhin, K. P. et al., "Voiny Stal'nykh Magistraley" [Fighting Men of the Steel Roads], p 179.
5. ZHELEZNODOROZHNYY TRANSPORT, 1948, No 7, p 17.
6. "Tyl...," op. cit., p 243.

The Operation of Railroads in the Front and the Near-Front Zone [pp 125-128]

With the start of the Great Patriotic War an extremely difficult situation was created in USSR railroad transportation. It was a result of the fast-changing operational situation on the fronts, the increased volume of military shipping, and the vigorous actions of enemy aviation.

During the prewar period the Communist Party and Soviet Government had devoted considerable attention to improving the technical level of the railroads and streamlining their work. The fleet of locomotives was updated, with series E and SU steam locomotives replaced by series FD and SO steam engines which were twice as powerful. The fleet of four-axle cars was enlarged, and automatic coupling was introduced. Heavy-duty rails were laid on the main trunk roads.

Major changes took place in the organization of railroad operations. There was a systemwide train traffic schedule and a unitary plan for forming trains. Cadre training received considerable attention. Reorganization of the railroad system was accompanied by the development of socialist competition and introduction of progressive labor methods. All these things created the foundation for successful work by the railroads during the war years.

With the start of the Great Patriotic War railroad operating conditions changed abruptly. The flow of trains increased steadily and the routes changed. The volumes and urgency of shipping increased. The administrative boundaries of the operating sections were altered. Management of operations work was often done by agencies operating temporarily in the particular section, unlike the peacetime situation. Most of the railroad workers and military communications officers, especially those called up from the reserves, had not had the initial period of experience and were inadequately prepared for work under such conditions.

In the difficult military situation military communications agencies became more responsible not only for organizing and carrying out military shipping, but also for the quality of railroad operations, particularly in the zones of action of the fronts. Military communications personnel took an active part in organizing train traffic on rebuilt railroads. Military communications officers had to be highly practical, flexible, inventive in decision-making, and firm and persistent in carrying out decisions. This made heightened demands for the level of technical training, organizational capabilities, and moral-volitional qualities of military communications personnel.

The war did not change the basic principles of organizing railroad operations. Centralization of the management of operations work, planning, a high level of labor discipline, and broad initiative by railroad workers in local areas to perform their production assignments were effective throughout the entire war, both in the rear and on front railroads.

Planning time for railroad technical work changed. Beginning in the second half of 1941 the technical plan was compiled semimonthly and by 10-day periods, instead of monthly. The work indicators of the road were reviewed each month and adjusted depending on the situation. The front roads worked on the basis of operational assignments.[1]

On the front railroads, unlike the situation with roads in the rear, work plans began to be compiled at traffic service divisions, not road administrations. On the basis of the demands of the military commandants of rail sectors and the chiefs of directorates of military restoration work, the section chiefs would draw up plans for train and freight work over the next 24 hours and give them to

the road management. The road management and the chief of troop movement wrote up a systemwide daily plan.[2]

The temporary loss of the Donets Basin and failure to restore the Moscow coal basin completely led to an acute shortage of fuel. Fuel problems slowed down the trains at centers and led to a reduction in switching work. It was necessary to resort to extreme measures: to shut down the steam engines.

The military command helped the railroads look for and deliver fuel to coal storage facilities. When Bakhmach and Priluki stations ran out of coal reserves to supply to steam engines in August 1943, the coal was found at an inoperative sugar plant and delivered to the railroad's storage area by trucks belonging to the front. In the fall of 1944, on assignment from the command of the 1st Belorussian front, personnel of railroad and vehicle troops prepared and delivered 540,000 cubic meters of wood for the Kovel'skaya and Brest-Litovsk railroads.

By decision of the State Committee on Defense coal train traffic was speeded up to overcome fuel difficulties on the railroads. The roads established minimum supplies of fuel. Some railroads such as the Gor'kiy, Northern Yaroslavl', and October lines were partially switched to heating the locomotives with wood.[4] A movement to conserve coal developed on the initiative of the locomotive engineers. Coal substitutes began to be used, in particular a coal mixture.

The normative carrying capacity, established by technical specifications for the first phase of restoration, was 12 pairs of trains per day on a single-track line. This goal was not always met. Sometimes the traffic capacity of road sectors turned over for operation was just 6-8 pairs of trains.

Some rebuilt sectors were not accepted for use because of numerous flaws (the second track of the sector from Smolensk to Krasnyy Bor in the spring of 1944).[5] On occasion a sector that had already been adopted for use would be shut down again because of its unsatisfactory condition. For example, two days after completion of restoration of the Zhitomir — Korosten' sector traffic had to be stopped to take care of flaws.

These cases were minimized where representatives of military communications agencies exercised high standards in accepting rebuilt facilities for permanent use. An exceptionally difficult situation developed on the railroads because of failure to fulfill plans for the regulation of rolling stock. For example, in January 1944 the working fleet of cars on the Southwestern Railroad was three times the established norm. As a result, the speed of travel of military trains declined to 90 kilometers a day, while for supply transports it was much lower. A group of officials from the Central Directorate of Military Communications and the People's Commissariat of Railroads was sent out to fix up the situation on the road. Once in the local area the commission took steps to speed up train passage through the Kiev center, to encourage restoration work, to intensify unloading work, and so on.

The situation was practically identical in April-June 1944 on the Western Railroad. The pace of unloading transports fell behind the pace of their arrival at the unloading regions, and the difficulty of forming trains from empty cars complying with the requirements for car selection by type caused

large numbers of empty cars to accumulate. At this time an average of 210-295 trains (8,400-14,800 cars) per 10-day period were arriving on the road, while 163-235 trains (8,100-12,700 cars) were released from the road.

The station tracks were overloaded with empty cars. The road's work indicators began declining. While norms for operating speed were mainly fulfilled (the norm was 24.6 kilometers an hour and performance ranged from 22 to 28 kilometers an hour), sector speeds were regularly below established norms.[6] The norm was 14.4 kilometers an hour, but actual performance was 10.4-12.5 kilometrers an hour.

Through constant concern on the part of party, state, and economic bodies socialist competition was developed and support provided for all progressive initiatives by railroad workers to overcome the problems in work. The Ukase of the Presidium of the USSR Supreme Soviet on 15 April 1943 instituted martial law on railroads was very important for strengthening discipline in transportation and raising the precision of railroad work. All the workers and employees of the railroads were declared mobilized for the period of the war and assigned to work in transportation.

On 25 April 1943 the Sovnarkom ratified a new Statute on Discipline for Workers and Employees of the USSR Railroad Transportation. Extensive party political work to explain the new Statute produced positive results very quickly.[7]

[p 162]

Experience with the operation of railroads in areas liberated from the enemy, especially abroad, demonstrated the great efficiency of assigning mobile formations to the fronts: VEO's [expansion unknown], steam locomotive columns from the special reserves of the People's Commissariat of Railroads, and repair trains. Their composition and equipment made it possible to organize train traffic quickly in sectors which did not have operations organizations.

The transshipment areas which were organized at points where railroads with different track widths intersected played an important part in using Western European railroads for military shipping.

Our allies in the anti-Hitler coalition had high praise for our successful use of railroads during the Great Patriotic War. "We should note the outstanding use of railroads by the Russians. Using railroads the Russians carried out strategic concentrations and transfers of one or several armies in unbelievably short periods of time. Using railroad transportation the Russians were able to stun the German command, because such speed of shipment by rail was completely outside their experience."[8]

The railroad transportation and military communications agencies successfully handled their missions of insuring operation of railroads in the front zone and near the fronts during the war years.

FOOTNOTES

1. Kovalev, I. V., "Transport v Reshayushchikh Operatsiyakh Velikoy Otechestvennoy Voyny" [Transportation in the Decisive Operations of the Great Patriotic War], p 13.

2. Povorozhenko, V. V., "Organizatsiya Dvizheniya Poyezdov na Prifrontovykh Dorogakh" [The Organization of Train Traffic on Railroads Near the Front], Moscow, "Transzheldorizdat", 1943, pp 20, 21.

3. Antinenko, N. A., "Na Glavnom Napravlenii," op. cit., p 201.

4. "Ukhodili na Front Eshelony", op. cit., p 182.

5. "Arkhiv MO" [Archives of the Ministry of Defense], Fund 241, Inventory 2611, File 5, Sheet 5.

6. Ibid., File 20, Sheet 241.

7. Kumanev, G. A., "Na Sluzhbe Fronta i Tyla" [Serving the Front and the Rear], p 223.

8. "Voyennyye Soobshcheniya za 50 Let", op. cit., pp 58-59.

Military Shipment by Waterway [pp 163-164]

Water transportation was used extensively during the Great Patriotic War for military transport support of combat operations for transporting troops, march replacements, and military supplies from the rear of the country, and for medical evacuation. River ships were used on a broad scale to organize ferry and bridge crossings in support of operations by Soviet troops. In addition, water transportation was used to evacuate the sick and wounded, storehouses, industrial enterprises, and population. River and maritime transportation played an important part in maintaining shipping for the cities of Odessa, Sevastopol', Leningrad, Stalingrad, Novorossiysk, and Kerch'.

The transportation work of maritime and river transportation workers, navy men, and personnel of the military and naval communications service was performed in a difficult operational situation requiring maximum exertion of efforts of will, initiative, and courage.

The planning, organization, and support of military shipping on sea and river lanes during the Great Patriotic War had its own characteristic features in each basin. The maritime and river fleet was used most fully in those cases where water routes were the only means of communication.

At the start of the Great Patriotic War the length of usable internal waterways was 107,300 kilometers. River transportation had 3,494 self-propelled ships and 5,866 non-self-propelled ships. Maritime transportation had also developed. Its fleet consisted of 530 ships with a total load capacity of 1.47 million tons, including 89 oil tankers with a load capacity of 356,200 tons.

The Central Committee of the Communist Party of the Soviet Union and the Soviet Government devoted great attention to the development of maritime and river transportation. Despite considerable upgrading of the fleet, it still had ships which were 50 years old and more.

Shore facilities developed significantly along with the fleet. River transportation had 5,800 ports and docks, and new ports were built. The large ports were equipped with 1,600 units of cargo-handling machinery which did 47 percent of the loading and unloading work.[1]

The port system of maritime transportation developed significantly. Major ports such as Leningrad, Riga, Odessa, Novorossiysk, Baku, Batumi, Arkhangel'sk, Murmansk, Vladivostok, and others were equipped with loading-unloading machinery. But maritime and river transportation had very few ships designed for carrying heavy machinery. There was a shortage of movable equipment to use to adapt freighters for carrying personnel, and there were not enough heavy-duty cranes to handle tanks at seaports.

The line organizations of military communications in water transportation were formed by late 1937 by the People's Commissariat of the Navy. They were directorates of the chiefs of military transportation service of the maritime steamship companies subordinate to the chief of naval communications.

Directorates of the chiefs of troop movements were not formed on internal waterways until just before the war, when they were established for the following basins: Volga-Kama, Western, Moscow-Volga, Northern, and Northwestern. The line agencies of military communications on internal waterways, with the exception of the Northwestern and Amur basins, were included in the composition of the military communications agencies of the People's Commissariat of Defense, while the two exceptions mentioned above were subordinate to the People's Commissariat of the Navy. The organization of military communications service in water transportation did not meet defense needs. During the war these agencies of military communications were not formed until much later than they were needed (for example on the Dnepr and Don).

The Statute on the Chief of Troop Movements in Water Transportation was ratified on 9 October 1940, and in early 1942 the Statute on Line Military Communications Agencies and River Transportation (for Wartime) was ratified.

With the initiation of military operations all work by river transportation to carry out the orders of the Central Directorate of Military Communications and the Main Naval Headquarters was monitored by the directorates of the chiefs of roop ovements in the river basins. During the 1942 shipping season there were 13 directorates of military commandants of water regions and ports in the central river basin.

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In a short survey it is difficult to cover the full range of work related to planning, organization, and performance of military shipping by water during

the last war. But the figures that have been given show that the river, lake, and maritime fleets were very important in transportation support of major operations (in the defense of Odessa and Sevastopol', the Battle of Stalingrad, the defense of Leningrad, and elsewhere), in mass troop transfers and shipping strategic cargo such as petroleum, and in organizing crossings over major water ways.

In the preparation and work of the river, lake, and maritime fleets under wartime conditions there were both positive and negative aspects (lack of preparedness for the war in the so-called rear steamship companies, failure to adapt the fleet — especially repair ships, to carry heavy military equipment, delay in deciding the question of combat support for troop shipments by water, lack of preparedness to combat the danger of mines, failure to find operational solutions to organizational questions of military communications in water transportation, failure to develop steps during prewar times for rebuilding transportation facilities, including the organization of ship hoisting work and so on). All these shortcomings were overcome for the most part during the war.

The actual work of military shipping was done by the personnel of the river and maritime fleets, but ship personnel had a special role. The crews of many ships who performed assignments for the command demonstrated exceptional diligence, courageousness, heroism, fearlessness, and devotion to their socialist homeland. The fleets and flotillas took on a large share of the military labor of supporting and carrying out military shipments by water.

The personnel of military and naval communications agencies did an enormous amount of work in water transportation during the Great Patriotic War. They were a fairly small detachment, for the most part highly skilled specialists in preparation and use of water transportation for military purposes. They were people who knew military affairs, were devoted to their native land, and performed their duty to the end heroically, sometimes giving their lives. Under extremely difficult conditions they planned and carried out significant military shipping by water, participated in restoration of port and dock facilities, ships, and waterways, and solved many problems that arose during the Great Patriotic War.

FOOTNOTES

1. "Transport i Svyaz' SSSR" [USSR Transportation and Communications], Moscow, "Statizdat", 1957, p 143.

Air Defense of Railroads and Combat Support for Military Shipping [pp 210-211]

During preparation for its attack on the Soviet Union, the Nazi command envisioned massed strikes against our country's transportation arteries, especially trunk railroads, as one of the foremost missions. The Barbarossa plan pointed out that Russian railroads and communications routes would have to be cut off or knocked out, depending on their significance for the operation.

Railroad transportation found itself in a difficult situation as a result of the sudden enemy attack. Taking advantage of temporary air supremacy, the fascist command tried to paralyze the work of our railroads in the front zone and near the front.

On the first day of the war enemy aircraft carried out massed attacks on the border railroads. Strikes were delivered chiefly against major rail centers, stations, and bridges.

In the following days the intensity and scale of attacks by German fascist aviation on border railroads grew. During 22 and 23 June 1941 more than 100 railroad structures in the western part of the country were destroyed by enemy bombing and artillery shelling.[1]

Enemy aviation operated on a broad front from the Barents Sea to the Black Sea and subjected railroad facilities to a depth of 350-400 kilometers to intensive bombing.[2] In certain months of 1941 more than 20 railroads were in the sphere of enemy air action at one time.

Between June and December 1941 fascist aviation carried out 5,939 air attacks against railroads and dropped more than 46,000 aerial bombs.[3]

At the outset of the second day of the war our country's air defense was deployed primarily to repulse an aerial enemy at a depth of 500-600 kilometers.[4]

Units of border zone air defense were forced, while protecting targets, to wage battle against advancing enemy ground forces at the same time. Antiaircraft artillery was enlisted to repulse tank attacks, and antiaircraft machine gun units were turned against enemy infantry. Nonetheless, it was possible to protect most of the important sectors of railroad and highway and major bridges and crossings. They functioned without prolonged interruptions until the Soviet forces had withdrawn from the regions they were defending.

The special resolution of the State Committee on Defense of 2 September 1941 entitled "Steps Toward Air Defense of Rail Centers, Bridges, and Transports" played an exceptionally important part in improving the defense of communications lines. The resolution outlined specific steps to organize the air defense of key railroad facilities in the Soviet Union.

An extensive air defense system including antiaircraft weapons (artillery, machine guns, and antiaircraft armored trains), fighter aviation, and antiaircraft machine gun platoons, followed later by antiaircraft-machine gun-cannon platoons, was created to protect railroad sectors, centers, bridges, tunnels, front regulting stations, supply stations, troop loading and unloading regions, and other important rail facilities against enemy aviation from the first days of the war.

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Until the Great Patriotic War railroads were guarded by rifle guards of the People's Commissariats of Railroads and NKVD [People's Commissariat of Internal Affairs] troops.

With the start of the war the protection of all key railroad facilities was turned over to NKVD troops, which guarded more than 4,100 railroad transportation sites.[5] In some cases railroad militia was enlisted for security. In leading sectors of the fronts railroad units guarded important manmade structures until the arrival of NKVD subunits.

Railroad facilities in the deep rear were guarded by the paramilitary guard of the People's Commissariat of Railroads.

The number of NKVD units allocated to guard the railroads of a front depended on the operational situation, the length of the lines, the number of sites being guarded, and the number of units available to the command.

The average density of guards was 2-3 persons for two kilometers of track (it is interesting to note that German fascist troops assigned 9-12 persons per one kilometer of track).

The number of railroad sites to be guarded and their names were determined by the central commission and the interdepartmental road commission which included representatives of the People's Commissariat of Railroads, military communications agencies, the NKGB [People's Commissariat of State Security], and NKVD troops assigned to guard the particular objects.

In the difficult year of 1941 alone NKVD units and subunits guarding and defending bridges and rail sectors wiped out more than 26,000 enemy soldiers and officers, 40 aircraft, 150 tanks and armored vehicles, and 77 field guns of various calibers.[6] The territorial and transportation agencies of the NKVD and NKGB, the border troops, and the internal troops of the NKVD of the western districts provided reliable protection and defense for the rear of the active Soviet Army. There were especially hot and bloody battles in the first days of the war for bridges and crossings and rail centers and lines in the border regions.

The three squads of the 8th Security Detachment, headed by Sr Lt P. K. Starovoytov held the railroad bridge across the Western Bug River in the Brest region for four hours. The fascists attacked the bridge three times, but each time were rolled back. They poured artillery fire onto the border guards from two armored trains that were shooting across the river and they hurled mortars at them. Then the enemy tanks moved in. Almost all the defenders of the bridge perished.[7]

The battle for the railroad bridge across the San River at Peremyshl' was especially bitter and stubborn. The bridge was attacked by two enemy companies at the same time, with artillery support; the bridge was defended by small groups of Chekists from the bridge security garrison and border guards headed by deputy chief of the 14th Security Detachment Lt P. Nechayev. The enemy took no account of losses in his attempt to seize the bridge. The defenders of the bridge fought without fear for their lives. When new groups of border guards came up from the reserves the attacks were driven off.[8]

The fighting for the railroad bridge across the Prut River in the Kagul axis, in the sector of the 5th Security Detachment of the 25th Kagul Border Detachment of Moldavia, went on for two days. On 23 June 1941 the detachment received an order to blow up the bridge. It was seized and blown up by a 13-man group led by Sr Lt A. K. Konstantinov, assistant chief of staff of the border comandant's office. One part of the group performed the mission of seizing the bridge, while the second did the demolition work, and the third provided combat security. While an assault group distracted the enemy the combat engineers placed explosives under the bridge supports. The explosion rang out. But the bridge was only damaged. On 24 June the operation had to be repeated with a larger group. The bridge flew into the air at 2200.

Our country valued the feat of the Kagul soldiers highly. Three of them, including A. K. Konstantinov, were given the title Hero of the Soviet Union and the others who fought in the battle received orders and medals. [9]

Fortresses on wheels is what armored trains were called during the war. The armored trains of the 1st Division of NKVD troops assigned to guard especially important railroad structures took part in the fighting at Novograd-Volynskiy, Zhitomir, in the Belotserkov axis, and many other trunk lines of the Southwestern front.

Armored train BP-56 especially distinguished itself. It was covering the withdrawal of ourunits in the Novograd-Volynskiy region and found itself cut off from friendly troops. Fascist infantry with artillery and tanks appeared on the railroad crossings along the line from Novograd-Volynskiy to Korosten' on 6 July 1941 and knocked out the train's path of withdrawal. There were only two things to do: either blow up the train or repair the track under constant enemy fire and fight through to Kiev. The second plan was adopted. After repairing the damage and wiping out the guns and armored vehicles that blocked its path, the armored train broke through the enemy battle formations and arrived in Kiev on 11 July 1941.

The armored train was given the mission of guarding and defending the railroad line from Kiev to Teterev, preventing the German offensive from enveloping the Kiev Fortified Region. The fighting men of the train together with a ground security detachment discovered and disarmed the fascist spotters who were correcting the actions of the German bombers and then repulsed attacks by enemy aviation with antiaircraft fire. On 12 July 1941 the train was sent to Borodyanka station (50 kilometers northwest of Kiev) with the mission of helping our units stop enemy attempts to cut the trunk line from Kiev to Korosten'. Waging battle against enemy artillery and tanks, the armored train with the cooperation of infantry and the fighting men of a railroad battalion thwarted the enemy attempt to cut the rail line.

On 14 July 1941 BP-56 repulsed several attacks by fascist aviation in the Borodyanka sector and again fought against enemy tanks.[10]

At the same time BP-A of the railroad militia in cooperation with fighting men of the destroyer battalion of the Kiev railroad region and units of the Kiev Fortified Region, beat back attacks by tanks attempting to take Vorzel' station

and damaged the railroad track near the bridge across the Irpen' River where the line of defense ran.[11]

Armored train No 73 distinguished itself on the approaches to Moscow. It entered the battle against the enemy in Belorussia in the first days of the war, and then later fought at Leningrad. In August 1941 it defended a sector of the October Railroad between Gryady and Volkhovo stations.

On 21 November 1941 armored train No 73 arrived to defend the capital. It was assigned to guard and defend the rail sector from Yakhroma to Dmitrov. The guns of the train waged fire against enemy tanks, field guns, and mortars while its machine guns were used against infantry. During the war armored train No 73 also fought at Stalingrad and in the liberation of the Western Ukraine.

Throughout the war in many rail centers, stations, and sectors armored trains were assigned to guard and defend them against ground attacks by the enemy.

In the second half of 1944 the antiaircraft-machine gun-cannon platoons were also assigned to defend trains against attack by sabotage gangs. These platoons were equipped with machine guns mounted on the train for firing at ground targets, automatic weapons, and grenades for the fight against bandits on the L'vov, Kovel', Kishinev, Belostok, and Brest-Litovsk railroads.

The personnel of antiaircraft-machine gun-cannon platoon No 360, which was escorting military hospital train No 1131 when it was subjected to attack by enemy automatic riflemen, demonstrated great heroism and steadfastness. Despite the fact that the platoon lost almost one-quarter of its personnel, they drove back the enemy riflemen.

During the summer-fall offensive of 1944 guarding and defending the rear of the active army became especially important, especially in the western oblasts of the Ukraine, Belorussia, and the Baltic region. Nazi agents organized subversive activity by bourgeois-nationalist gangs in an attempt to disrupt the life that was being reorganized in the liberated regions. Therefore the Soviet command took steps to bolster the security of the railroads and motor vehicle roads, bridges, communications lines, and other facilities.

The 12th Detached Air Defense Battalion especially distinguished itself in the fight against bandits. It beat off 16 attacks by them against trains and transports it was escorting on the L'vov Railroad. The battalion killed 72 of the bandits and took 175 prisoner. In the course of the entire war the antiaircraft-machine gun-cannon platoon repulsed 63 attacks by enemy saboteurs and other groups.

With the entry of the Soviet Army onto the territory of neighboring countries in the second half of 1944 the mission of guarding the rear took on new, different features. On 18 December 1944 the State Committee on Defense adopted the decree entitled "Guarding the Rear and Communications Lines of the Active Red Army in the Territory of East Prussia, Poland, Czechoslovakia, Hungary, and Romania." This resolution ordered the People's Commissariat of Defense to form six divisions of 5,000 men apiece and turn them over to the NKVD. Three of them

began performing their missions during the Wisla-Oder and East Prussian strategic operations in East Prussia, Poland, and Czechoslovakia. In the second half of February 1945 three more divisions began combat activities in Romania and Hungary. They reliably supported the security of the front rear and communications lines of the active army.[12]

Considerable attention was also given to ground security and defense of the railroads of the Far East and their principal sites. Armored trains and anti-aircraft armored trains were used in addition to NKVD units. The security and defense of important sites was assigned to the border troops.[13]

Because the NKVD troops did not have a trained reserve, the security of Manchurian railroads liberated from the enemy was organized by the front commands. To do this each army assigned rifle units within its own rear region and their performance was monitored by military communications agencies. The 2nd Red Banner Army of the 2nd Far Eastern Front, for example, assigned 400 men to guard railroads at the disposal of military communications agencies.[14]

According to a decision of the Military Council of the Front, units of the 215th, 68th, and 97th rifle divisions of the 5th Army of the 1st Far Eastern Front were enlisted to guard the Kirin Railroad.

In addition, the chiefs of army military communications were also given platoons from reserve regiments. They were used to guard and escort trains from army bases to unloading stations.

The security of stations, bridges, water pumps, and sectors was provided by garrisons. The commanders of large rifle units distributed units at security sites according to requests from military communications agencies, which monitored the security of the railroads.

The local population was used to guard little-used railroad sectors in Manchuria. In this case security was organized and monitored by military communications agencies.

Military trains in assembly areas, at loading-unloading stations, and en route provided air defense and ground security with their own T/O means.

In the final stage of the war a significant share of the National Air Defense Forces, which were deployed in the rear of combined arms fronts, were used to cover communications routes, above all railroads, at a depth of 300-500 kilometers from the front line. For this purpose they assigned 10-34 percent of fighter aviation, 13-54 percent of antiaircraft artillery, and 27-60 percent of antiaircraft machine guns.[15]

All this led to a decrease in the number of attacks by enemy aviation and a change in attack tactics. Whereas enemy aviation carried out 5,848 air attacks on railroad targets in 1942, in 1943 the figure was 6,915, and in 1944 only 1,161 attacks were made.[16]

In the second half of the war the German fascist aviation was forced to change from daytime attacks to night attacks, and they directed their efforts primarily against railroad transportation targets. Whereas the number of night attacks against railroad targets in 1941 was 9.5 percent of the total number of attacks, in 1944 the proportion of night attacks rose to 85 percent.[17]

Between 1941 and 1945 enemy aviation made 19,863 attacks on USSR railroad targets, with the participation of about 60,000 aircraft. They dropped more than 243,000 high-explosive and fragmentation bombs and more than 120,000 incendiary bombs.[18]

During the war years 44 percent of the bombs dropped on the Soviet-German front were used against railroad targets.[19] Despite this, the enemy was not able to disrupt the work of the railroad for any extended period.

The average length of interruptions in train traffic after each attack by enemy aviation was about six hours, and only in isolated cases did the interruption exceed 24 hours.[20]

Considerable credit for the fact that, despite furious attacks by enemy aviation on the railroads, we did not lose a single newly formed tank or rifle unit in the entire war, goes to the personnel of the Air Defense Forces.[21]

Timely and correct organization of air defense of the railroads and combat support for military rail shipping played an important part during the war years in insuring stable work by the railroads and uninterrupted performance of large-scale military shipping.

FOOTNOTES

1. Kumanev, op. cit., p 64.
2. "Tyl", op. cit., p 227.
3. "Istoriya Velikoy Otechestvennoy Voyny Sovetskogo Soyuza 1941-1945" [History of the Great Patriotic War of the Soviet Union of 1941-1945], Vol 2, p 169.
4. "Istoriya Vtoroy Mirovoy Voyny 1939-1945" [History of World War II of 1939-1945], Vol 4, p 48.
5. "Voyennyye Soobshcheniya za 50 Let", op. cit., p 51.
6. "Biblioteka TsUPVOSO MO" [Library of the Central Directorate of Military Communications of the Ministry of Defense], inventory No 6218, sheet 195.
7. Ibid., sheets 305, 206.
8. Ibid., sheets 211, 212.

9. Ibid., sheets 214, 215, 216.

10. Ibid., sheets 217, 218, 219.

11. Ibid., sheet 219.

12. KRASNAYA ZVEZDA, 6 February 1975.

13. Vasilevskiy, A. M., "Delo Vsey Zhizni" [Work for a Whole Life], p 527.

14. Grishin, M. I., "Voyennyye Soobshcheniya v Kampanii Sovetskiky Vooruzhennykh Sil na Dal'nem Vostoke" [Military Communications in the Campaign of the Soviet Armed Forces in the Far East], p 95.

15. "Voyska Protivovozdushnoy Oborony Strany" [The National Air Defense Forces], p 328.

16. Kumanev, op. cit., pp 250, 301.

17. "Voyska Protivovozdushnoy Oborony Strany", op. cit., p 328.

18. "Voyennyye Soobshcheniya za 50 Let", op. cit., p 54.

19. "Tyl"..., op. cit., p 227.

20. Ibid.

21. "Sovetskiy Tyl v Velikoy Otechestvennoy Voyne" [The Soviet Rear in the Great Patriotic War], Moscow, "Mysl'", 1974, Book 2, p 226.

Party Political Work in Institutions and Units of Military Communications and Railroad Troops [pp 24-241]

The Communist Party of the Soviet Union, arming the Soviet people with a broad program of struggle against the German fascist aggressors, attached great importance to party political work in the army and the navy.

The conditions of the war demanded that party political work be reorganized to conform to the new situation and subordinated to the primary objective of smashing the German fascist aggressors.

The Communist Party attached enormous importance to political and ideological indoctrination of Soviet fighting men. Propaganda for the ideas of Marxism-Leninism and explaining to personnel the policy of the Communist Party and the just, liberating character of the Great Patriotic War played an important role in ideological and political indoctrination. Indoctrinating personnel in the spirit of Soviet patriotism and boundless love for their socialist homeland became paramount.

Revealing the life-hating, aggressive essence of fascism and instilling Soviet fighting men with burning hatred for the German fascist aggressors played a

large part in the ideological and political indoctrination of Soviet Army fighting men.

One of the main areas of party political work in the Soviet Army, including the institutions and units of military communications and railroad troops, was the campaign for high troop fighting effectiveness, combat and special skills, and firm military discipline. This was important because many front and line military commandants' offices on railroads and waterways, air defense units of military communications, railroad troops, and special formations of the People's Commissariats of Railroads were operating under the difficult conditions of a combat situation.

The new missions of party political work and the special features of doing it under wartime conditions demanded that commanders and party and Komsomol organizations of military communications agencies and railroad troops search for more effective forms and methods of personnel indoctrination. Mass agitation work became the leading form of political indoctrination of fighting men. The principal activities were political meetings, political information sessions, discussions, reading of newspapers, reports from the Soviet Information Bureau, orders of the Supreme Commander, bulletins, and the like. Skillful use of all the many different forms of party political work was an important condition for successful activity by party and Komsomol organizations on political and military indoctrination of both the personnel of military communications and railroad troops and the fighting men being transported by rail and water.

The institution of military commissars in the Soviet Army and Navy was very important. The commissars of the directorates of the chiefs of front military communications, air defense units, railroad troops, and the directorates of chiefs of troop movements on railroads and in river basis did an enormous amount of work on political and military indoctrination of personnel, managed party and Komsomol organizations of the units and institutions, and monitored performance of orders from the command. During the war their main efforts were concentrated on guaranteeing execution of plans for military shipping, achieving a high rate of restoration of railroads and waterways, reliable combat and technical cover for them, disseminating the work know-how of leading fighting men and workers of rail and water transportation, and introducing progressive labor methods in practice.

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