

MS # D-076

AN ARMY ENGINEER IN RUSSIA (1942)

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incl 1

I joined Headquarters Eleventh Army in the fall of 1942, when this Army was inserted at Leningrad into the left sector of Eighteenth Army, Army Group North.

The commanding general, Field Marshal von Manstein, the army headquarters staff (minus the office of the chief of supply and administration), and the troops, were en route from the Crimea, where they had gained fame through the capture of the Sevastopol Fortress.

The Army was not subordinated to Army Group North but placed under the direct command of OKH and was to be committed elsewhere upon completion of its next mission. For this reason Eleventh Army's office of the chief of supply and administration remained attached to Army Group South. Consequently, Eleventh Army depended for its supplies on Eighteenth Army, or Army Group North.

The Army's next assignment was to be the conquest of Leningrad and of the Karelian region located between the German and Finnish front. The attainment of this objective would have meant a considerable lessening of the pressure on our Finnish allies already under a severe strain at that time (approximately 16 percent of the Finnish male population were then under arms). Such conquest would have eliminated the Finn's Karelian front and could have improved the entire situation in the Baltic region. Losing the Leningrad naval base, and being deprived of its dockyards and factories virtually would have compelled the Russians to abandon the Baltic area.

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This mission was to be executed in the following stages:

- a) Concentration of main effort on Leningrad;
- b) close encirclement to be effected west of the Izhora ~~estuary~~ estuary;

c) eastward sweep aimed at cutting off the eastern part of the Neva, with center approximately at Dubrovka.

The German armament top echelon requested that the numerous factories and dockyards which were in operation be saved from destruction as much as possible, i.e. that the city be spared.

-4-

I wish to state at the outset that the Russians frustrated these plans by local attacks and counteroffensives, such as for instance south of Voronezh and at the Don northwest of Stalingrad. Some of the forces needed for the planned attack were absorbed at those points. On the other hand, the troops and ammunition which had arrived, as well as the close support Air Corps "Richtofen", constituted a welcome aid for ~~myself~~ overcoming the difficulties presented by the situation south of Lake Lodoga.

Consequently, this report does not deal with any specific case but concerns the commitment of engineer headquarters and troops operating in Russia under frequently fluctuating conditions, and presents the conclusions to be derived.

1) Mode of Operations

a. Upon my arrival I found the following staff, which was organized (Compared with the armies of other nations, these staffs were kept small in number).

Officers: Army engineer officer - one brigadier general

first special staff officer, also
acting as deputy army engineer officer one colonel

second special staff officer, in charge)

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first special staff officer, also acting as deputy army engineer officer one colonel

second special staff officer, in charge)
of the commitment of engineer formations,)
and of engineer services within the) each position held
Army area) by one major or
captain

third special staff officer, responsible)
Army formations and movements for the entire)

SS { third special staff office , responsible)
 for furnishing replacements for the entire)

Army plus the office of the chief of)

supply and administration)
 officer,)

fourth special staff ~~XXXXXX~~, in charge)
 of construction elements of all sorts,)
 and responsible for the construction of)
 roads, highways, and permanent bridges

each position held

by one major of

adjutant for personnel matters and)
 acting as commanding officer of head-)
 quarters personnel.)

captain

In addition there were fifteen noncommissioned officers and enlisted men, including clerks, cartographers, etc.

This organization of the staffs worked satisfactorily; keeping them small proved a sound policy. It resulted in close and flexible cooperation and a high degree of adaptability. It served to avoid waste and friction and still attained a fair distribution of duties.

It frequently became necessary to divide the staffs for separate assignments, of which one might call for the army engineer officer with small escort party to accompany the operations staff of the commanding general to the advance command post, or another which might involve a special commitment of some of the staff members, such as large-scale river crossing operations.

Owing to this variety of staff duties and to the fact that the first special staff officer often was called upon to act also as deputy chief for routine and army headquarters activities as well as troop matters, he had to have qualifications above average. Combat experience was required,

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Owing to this variety of staff duties and to the fact that the first special staff officer often was called upon to act also as deputy chief for routine and army headquarters activities as well as troop matters, he had to have qualifications above average. Combat experience was required, and he had to go through considerable training in large-scale planning and staff duties. At this point I may emphasize that no peacetime army can ever do too much in

training its officers for the next higher rank. In time of war the turnover of officers is rapid and promotions happen suddenly.

- b. The army engineer officer acted according to the following directives:

Service Regulations for Army Engineer Officers

(drawn up from memory; published in the winter 1939 issue of the Army Bulletin)

The army engineer officer is directly subordinate to the commanding general of the Army; he acts as his adviser in all matters pertaining to problems of engineering, including construction of field fortifications as well as the commitment of engineer formations and construction troops of the Army.

In cooperation with the chief of staff and the operations officers, he prepares the engineer annex to the field order, and in conjunction with the chief of supply and administration, he is responsible for supplies of engineer equipment and materiel.

The care of the GHQ engineer and construction teams attached to the Army is incumbent upon him. By order of the commanding general, he has to supervise the engineer troops of the corps and divisions.

In matters pertaining to his particular field, he has the authority to deal directly with the engineer commanders attached to the corps and the divisions, as well as the chief of engineers and fortifications.

-6- The commanding general may assign him to special missions with portions of his

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In matters pertaining to his particular field, he has the authority to deal directly with the engineer commanders attached to the corps and the divisions, as well as the chief of engineers and fortifications.

-6- The commanding general may assign him to special missions with portions of his staff (such as river crossings, construction of field fortifications, etc). As assistant to the commanding general, the army engineer officer is given disciplinary powers of a brigade commander in all matters pertaining to the engineer and

construction troops directly under Army.

The staff is part of the command echelon of Army headquarters.

Supplementary Remarks: Prior to the Russian campaign, the chief of engineers and fortifications was charged with the construction of the entire road network in the theater of operations. Even then the Army engineer officer, in addition to his other tasks, was assigned the same duties in the Army zone of operations, and was placed in charge of the road construction teams. For these ~~tasks~~ tasks, the staff was reinforced by a small group of specialists who were assigned by the Organization Todt.

Commentary: In general, this procedure proved effective. The military geologists section was attached to the Army engineer officer. Although it was true that the Army engineer officer depended on the cooperation of the military geologists with respect to the construction of field fortifications, the problems of high tides, etc., the collaboration of these specialists was just as essential for the operations section (for instance in connection with floods), for the chief of supply and administration who was concerned with water supply, and for other branches of Army headquarters. Therefore, it might have been more expedient to attach the military geologists section to the command group which received the requests of all departments. This would have avoided inadequate utilization of the military geologists' services. On the other hand, the Army engineer

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The organization of road construction detachments with elements of the Organization Todt was an unfortunate move. With all due respect to their technical knowledge, it was not good practice to have non-military men impart instructions, or even issue orders, to soldiers. It would have been better to draft these valuable individuals for the Army and integrate them by rank, instead of recruiting them as specialists in unfamiliar uniforms. Troops in the field will not tolerate for long addition of branches which enjoy special privileges.

c.) Except for minor changes, the following corps and divisions were subordinated to Eleventh Army headquarters:

The 223d, 132d, and 24th Divisions of XXX Corps;

the 28th Light Infantry Division, the 5th Mountain Division,

and the 227th Division of XXVI Corps;

the SS Police Division, the 250th (Spanish) Division, and

the 121st Division of LIV Corps;

~~XXXXXXXXXXXX~~

the 215th, 58th, and 225th Divisions, and the 2d SS Infantry

Brigade of L Corps.

The 12th Panzer Division, the 170th Division, and occasionally the 3d Mountain Division, constituted the reserves of Eleventh Army headquarters.

While the corps headquarters staffs remained with their sectors, the divisions or portions thereof altered the chain of command according to the requirements of the situation.

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While the corps headquarters staffs remained with their sectors, the divisions or portions thereof altered the chain of command according to the requirements of the situation.

The strength of the units varied greatly; all divisions were below wartime strength. For instance, the 5th Mountain Division and the SS Police Division

were considerably depleted. Replacing men and equipment became a problem.

See sketch #1 concerning the commitment of corps and divisions at the time Eleventh Army headquarters assumed command.

d. The following engineer and construction units were at the disposal of Eleventh Army:

Engineers attached to each division: One battalion. These elements were considerably mauled after continually repeated commitment as infantry. The replacement situation was quite critical.

Engineers attached to each corps: One engineer commander and staff; one subordinate GHQ engineer battalion (motorized); their strength was greater than that of the divisional battalions, but their motorization was inadequate.

Engineers at the disposal of army headquarters: Six GHQ engineer battalions, some fully, some partially motorized; two training staffs (stationed in Hungerburg - Narva and Luga (respectively)).

Bridge Columns at the disposal of Army headquarters: Only fourteen columns with heavy ponton and trestle equipment.

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Construction Troops

under Army head quarters: Two regimental staffs; five construction battalions; three road-construction battalions; several Organization Todt construction detachments. Only 50 percent of the required personnel strength were available, and ~~ix~~ it was impossible to bring up any replacements.

-8- (all elements were assigned to the maintenance of highways and corduroy roads)

During September 1942, the engineer battalions received two thousand replacements, which were supposed to suffice for the Army. This was not enough to bring the corps of engineers up to full strength. Experience has proven that the employment of engineers in infantry combat -- a practice which developed in Germany through pressure of circumstances -- bleeds them to exhaustion. Modern warfare entails enormous demands by the armament industry and all branches of the armed forces for technicians and craftsmen. This need causes a scarcity of skilled technical replacements which for the engineers too, are available only in limited numbers.

The drafting of all professional boatmen, even of those on inland waterways, into the naval service proved a serious disadvantage. The manipulation of bridge construction equipment in difficult situations was greatly handicapped. Five to ten percent of the engineer personnel had to be professional ship crews.

The lack of mechanics might have been offset advantageously if the tools issued to the engineer battalions during peacetime had remained in use and become part of the wartime equipment. These tool sets consisted of the gun and

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The lack of mechanics might have been offset advantageously if the tools issued to the engineer battalions during peacetime had remained in use and become part of the wartime equipment. These tool sets consisted of one generator and a number of power tools, such as electric drills, milling cutters, chisels, etc. The manipulation of these tools was easily learned, and with their aid

there would have been a chance, even for unskilled personnel, to achieve important technical feats. In other words, it might have been possible to some extent -- particularly if all construction battalions had been thus equipped -- to compensate for the lack of technical training and the manpower shortage.

The country's general scarcity of such items would also have been alleviated.

2. Field Marshal von Manstein's conducting operations from the advance command post was characteristic for his method of command. He was aided by a small operations staff which included the army engineer officer and the army communications officer, while the administrative headquarters functioned in a quiet area some distance away. For instance, it was planned to conduct the attack on Leningrad from the Duderhof Heights north of Krasnoye Selo. During the engagements fought in September and October south of Lake Ladoga the command post was located in Ushaki near Tosno. Accordingly, the corps and division command posts also were moved far up front. This resulted in good cooperation between the staffs and close contact with the units.

The following additional characteristic features of von Manstein's military tactics are noted:

- a. Careful preparation of his operation plan in great detail;
- b. utmost importance of the commitment of artillery and air force, and consequently

c. the importance of weather conditions in making decisions;

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- b. utmost importance of the commitment of artillery and air force, and consequently
- c. the importance of weather conditions in making decisions;
- d. his resoluteness, notably in launching attacks but also in discontinuing engagements which were doomed. X He had a special talent for the regrouping of forces.

I will not presume to add any more to the appraisal of Field Marshal von Manstein who ~~has~~ has been recognized internationally.

3. Brief description of the terrain

The region between Leningrad, Lake Ilmen, and Lake Peipus consists of alluvial land formed on primary moraine deposits. Therefore, it contains many swamps and moors. (At this point I call attention to the extensive peat-moor south of Shlisselburg, which played an important part during the battle south of Lake Ladoga.) The terrain is marshy, intersected by many small streams, and there are many ponds. The area is interspersed with sandy moraine deposits and dunes.

Most localities and settlements were built on the latter. They were the only areas in which field fortifications could be constructed without special provisions. Installations in other regions could only be built above the ground. Coverage from the rear and drainage then presented great difficulties.

-10- The rivers and larger streams in this terrain, not being regulated, deeply eroded the terrain, and at the time of the autumn rains and the thaw they turned into raging torrents.

The ground was wet and therefore densely covered with underbrush (birches, alder-trees, etc.) which offered little protection against air reconnaissance, but interfered with friendly as well as enemy ground observation. There were only a few large fir-forests, such as between the Leningrad-Chudovo railroad and

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These natural handicaps prevented the full development of the traffic

n

network. Highways and railroads converged toward Leningrad. The only good cross connections were in the metropolitan area of Leningrad with its suburbs. Kolpino, Pushkin, Krasnogvardeysk, Krasnoye Selo, and Strelna. This limited accessibility greatly hampered the shifting of reserves. (For further details see section #7.)

The localities, with the exception of the above mentioned suburbs and several larger cities like Tosno, Lyuban, and Chudovo, often consisted of nothing but wooden structures of the most primitive nature and completely lacking in sanitation. The following locations served as important observation points: Kelkolovo, west of MGa, from where it was possible to overlook the heights east of Leningrad to a distance of fifty kilometers; the castle-tower near Pushkin which commanded a view as far as the southern outskirts of Leningrad; the Duderhof heights which overlooked Leningrad; Strelna from where it was possible to see the dock yards and factories in the western part of Leningrad; and Peterhof from where it was possible to observe Kronstadt.

4.. The population to a large extent was of Ugro-Finnish descent.

The people were of average ability and not as reserved as the population of Central Russia. We ~~xxxx~~ won their confidence and they worked for us willingly. Their standard of living was low. The younger generation

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-11- Partisan Activities. In 1942 the partisans operated in small groups of not more than fifty men. Their methods called for operations in places with few troops and for gradual disappearance as they approached the front line. Their three main spheres of activity were: the area between Luga and Pskov (headquarters of Army Group!), the large forests between the Leningrad-Chudovo and Leningrad-Luga highways, and the region near Kingisepp east of Narva. Their raids were carried out in defiance of international law and were held in contempt by every decent soldier. The partisans acted like criminals from ambush, and in many cases with bestial cruelty against individual soldiers, messengers, officers, and even medical troops.

In addition, they frequently mined the few existing roads and particularly the corduroy roads, as well as the railroad tracks. They made the transportation system less safe and compelled us to drive in convoy, i.e. in groups of four or five vehicles; however, they did not interfere with the regular transmission of orders or the flow of supplies for the troops.

Their forays were a scourge for the population, which frequently gave us advance notice. The people also helped us to capture partisans.

Besides the partisans, numerous agents were operating behind our lines. Such agents were often recruited among the younger intelligentsia, comprising quite a number of female students. They were equipped with portable radios and

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Besides the partisans, numerous agents were operating behind our lines. Such agents were often recruited among the younger intelligentsia, comprising quite a number of female students. They were equipped with portable radios and some explosives and were dropped from planes. The self-sacrificing spirit of these agents, who had the courage of their convictions and were filled with enthusiasm for their country and communism, commanded our respect to some extent.

They were also given valuable aid by large portions of the population.

Oddly enough, they did not enter effectively with the highly important and extensive wire net.

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In conclusion, I wish to call attention to the "Military Geography Reports" of the German General Staff, which are comprehensive and include excellent special maps. They proved very useful and presented all information desired.

5. The military situation before Leningrad brought no sensational development in the fall of 1942.

As ~~xxxxxxxxxxxxxxxx~~ already mentioned in the introduction, the German command soon was compelled to abandon its major strategic objective. The battle was fought for the purely tactical aim to hold the eastern front from Shlisselburg to the south, because the provisioning of the entire Volkhov and Pogostye front depended on the possibility to move supplies via Krasnogvardeysk and Tosno on the Leningrad-Chudovo highway and the railroad running parallel thereto. (See sketch #2). The shorter and direct line of communication extending from Pskov along Lake Ilmen had ceased to function in January 1942 when the Russians set up the bridgehead at the northern bank of the Volkhov river north of Novgorod, and contact was never re-established. Consequently, a vital artery was at stake.

The initiative remained with the Russian command, whose major objective was to free Leningrad. To accomplish this mission, ^{the} land route over the

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The initiative remained with the Russian command, whose major objective was to free Leningrad. To accomplish this mission, ^{the} land route over the eastern part of the Neva had to be opened. Such an achievement would have made them independent of the difficult supply route of limited capacity which extended across Lake Ladoga from Novo Ladoga to Ladozhskoye Ozero and functioned in the

winter between the same points over the ice of Lake Lodoga. The pressure on the the Finns at the Karelian front would thus have increased dangerously, aside from a moral victory in the eyes of the world and the effect on the Scandinavian states.

The situation which Eleventh Army found when assuming command in the sector had developed from these Russian endeavors. (See sketch #3). About 1 August 1942, the front extended generally from Vornovo via east of Gaytolovo to Lipka; it was now pushed back to a line extending from west of Voronovo, north of Mga, via Posolok No. 8 to Lipka and was dented at many points. The attacks continued.

Other nerve centers of the front were: the sector between Tosno and the mouth of the Izhora river, and that at Uritsk near the Gulf of Finland. Their objective was the establishment of a land route to the Russian bridgehead at Oranienbaum.

Whereas our troops held the above sectors despite a very extended front, the enemy, on 27 September 1942, penetrated deeply into the area between the Mga-Leningrad railroad and the Sinyavino - Leningrad highway. Serious fighting developed after 8 September when the Russians attempted to attack from the north across the Neva, with the center of their front at Dubrovka, and after 26 September when they had succeeded in establishing two bridgeheads at the southern bankd.

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The unfavorable terrain and the scarcity of roads delayed the bringing up of reserves and spelled trouble for the German command.

On the other hand, the German command benefited from the Russians' typical inability to coordinate their attacks across the Neva from the east and the north. They invariably attacked from one direction only. Presumably, their artillery and aviation were incapable of employing effective technique when their spearheads came within three kilometers of the objective.

Until the commitment of the Richthofen Air Corps, the air situation was such that despite the weakness of our air forces

- a. the Russian planes departed as soon as individual German fighter planes appeared;
- b. our air reconnaissance beyond the front, particularly over Leningrad and Kronstadt, was all but halted for want of fighter escort;
- c. Russian bombers, some of them of the most obsolete type, hardly penetrated into enemy territory -- 30 kilometers during the day and up to 75 at night -- and during uncoordinated attacks dropped their bombs without real effectiveness.

14- Russian artillery fire, except for artillery preparation, was limited in range and effectiveness, although essential junctions, such as the road forks at Krasnogvardeysk and at Yam Izhora, and even the vitally important Krasnovardeysk railway line were within range. The best and most dreaded Russian weapons for offensive as well as defensive operations were the medium and heavy

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By 5 September 1942 we had smashed the advance elements of the Russian spearhead. (See sketch #4)

Several regroupings were slowed down by poor road conditions. Reserves were moved up. The 3d Mountain Division, made up entirely of fresh troops and up to full fighting strength was committed. Finally the decisive attack was carried out successfully after inclement weather on 29 September had hampered the air forces and thus caused a delay. After the Russians had sustained extremely high losses, and 13,000 prisoners had been captured, the Sinyavino pocket collapsed. By 15 October it was mopped up and the front moved up to the former main line of resistance.

In addition, our counterattacks eliminated by 15 October the bridgehead at the southern banks of the Neva near Dubrovka, as well as the penetration near Poselok No. 8 in the Shlisselburg seat moor; here too the former main line of resistance was regained.

Army headquarters immediately proceeded to withdraw troops and organize them into reserves. Thus, the 3d Mountain Division, the 28th Light Infantry Division, the 132d and 121st Divisions, and the 12th Panzer Division left the front. See sketch #5 describing the final situation.

Hitler's next objective was the elimination of the deep penetration at Pogostye, which existed since March 1942 in the center of the eastward facing front sector of Army Group North. At the same time, however, Hitler had taken divisions away from GHQ & reserves, the prolonged rains already had set in, and

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The detailed description of operations should be left to reports by tactical and subordinate commanders.

6. Land mine warfare. Germans used the well-known Tellermines and antipersonnel mines, in addition to improvised mines. In 1942 it was customary to use four Tellermines per meter of front as protection against tanks, even when the front was behind a river such as the Neva. The mine belt originally laid in the army sector was interrupted in various points by Russian penetrations like those at Voronovo, across the Neva, also east of Mga, south of Shlisselburg, at the southern Leningrad front, near Utrisk, etc.; moreover, ~~xxx~~ winter weather and thaw made the efficacy of the remaining minefields seem ~~x~~ doubtful. The Army therefore decided on laying new minefields before the entire front. The required quantity of 700 000 mines was requisitioned. Compliance with this request seemed likely as Hitler had ordered the output of 7.5 million mines. But, this production figure was not attained, because the large-scale explosives production plan, the so-called Krauch-Plan, was a failure.

Consequently, the old mine belt was supplemented and patched. The points of penetration too were sealed off with mines. Russians prisoners, though, revealed that the effect was negligible. This was confirmed during exploration of the area following counterattacks.

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Russians are remarkably ingenious and versatile in constructing and laying all sorts of mines, and particularly in placing concealed charges at the most unexpected places, for instance, under dead soldiers, under gravestones, etc. The partisans caused most damage through nightly mining of roads and corduroy roads,

while the mines before the frontlines were less effective. In this connection, I refer to the German manual "Enemy Mines". This manual was published by OKH from autumn 1941 to 1944 and each year a new edition was issued of which 60% dealt with Russian mines and mine igniters. (For information about mines detonated by radio, see section #9, training.)

The Russians were asskilful in detecting German mines and mine fields. This has been confirmed by repeated interrogations of prisoners as well as the simple but practical instructional pamphlets which were found on them and which had been issued for training purposes.

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1. Land mine warfare actually was far from palying as important a role as had been ascribed to it in peacetime. The element of fear was its most effective aspect, but mines could not block the terrain. It was possible to breach any minefield, once detected, for attacks by tanks and infantry. As soon as this was achieved, the minefield became harmless and lost its value. Mines proved effective when used as road blocks against surprise attacks during outguard duty and security operations.
2. The many cases of accidents suffered by civilians in the rear area because of mines which had been left lying about, prove the wisdom of strict control on the basis of mine maps and charts, such as ordered by the German Army command. (See

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2. The many cases of accidents suffered by civilians in the rear area because of mines which had been left lying about, prove the wisdom of strict control on the basis of mine maps and charts, such as ordered by the German Army command. (See army manual for engineers, booklet #4). As the front rolled back quickly towards the end of the war, it was unfortunately no longer possible to exercise this control thoroughly.

The following conclusions can be drawn:

1. Mines against Russian tanks require ten to fifteen kilograms of explosive charges because the tracks of these tanks are extra wide (roughly seventy centimeters) and the tanks can still be driven even if the track has been damaged in part;
2. in order to render electric mine detectors ineffective, mines and igniters should be made of glass or plastic, but never metal;
3. as road blocks and expedient obstacles against tanks, the further development of the hollow-charge mine coupled with pressure rail seems advisable. This type can cause damage to the weak tank belly, hit the inside of the tank with deadly effect, and is powerful enough to destroy the tracks;
4. ideally suited for the igniting of defensive minefields would be the manual detonation by sections, because it would ensure safety during the laying and lifting of mines, it could be made safe at crucial moments and, if necessary, attacks could be launched across the minefields without the dangerous operation of removing the mines which the enemy is likely to notice. For reasons of material shortages we were not able to develop this method;
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5. in view of the many cases of accidents suffered by non-participants it would be advisable to make the mine igniters with a built-in "neutralizer" so that, after a certain time, they would be rendered harmless. Germany had planned the manufacture of this type but did

not start its production owing to shortages of material. An international agreement, such as the one concerning submarine mines, might be required.

7. The struggle for maintenance of the roads, or rather the struggle with nature, was a difficult one and of decisive importance in the area before Leningrad as well as in almost all other sections of Russia. The marshy terrain lacked good drainage. The inferior drainage system, instead of being improved, had been allowed to fall into decay under the Bolshevistic regime. Twice a year, in the late fall during the rainy period, and during the spring thaw, an excessive quantity of subsoil water accumulated. During such periods, even the seemingly firm roads and highways, owing to their usually weak subgrade on water-logged ground, were no match for heavy loads. The weight of the motorized supply units was enough to disrupt the roads. The population met such emergencies by using mud sleds.

The hard-surface roads around Leningrad converge toward the capital. The only noteworthy roadbelt was the one connecting Kolpino, Pushkin, Krasnogvardeysk, Krasnoye Selo, and Strelna, as far as our troops could use it. Another ring-shaped type of road net, partly developed, extended from Tosno through the forests via Lisino and Siverskaya to Rojdestvennoye. Apart from the constant necessity of protection against the partisans in this extensive wooded region, it also was imperative to continue the important ~~xxx~~ road for many kilometers as a corduroy road for heavy duty.

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These roads were too far removed from the front and communications were inadequate. Additional roads mostly corduroy roads, had therefore to be maintained

near the front from south of Yam Yakhera to south of Krasnogvardeysk.

The following roads were used:

- a. one road close to the front,
- b. one road forming an inner ring
- c. one outer ring of roads (see sketch #1).

No practicable hard-surface road lead in the Leningrad area to the eastward facing part of the front. In this area the Army depended on two long corduroy roads: one near the front and in part open to enemy view.

This road extended from Soblino station via Choske to Mga, branching off eastward to Synyevino and westward to the mouth of the Tosno river; the other road led from Tosno via Shapki to Mga.

Army headquarters had to maintain roughly 120 kilometers of corduroy road. Nevertheless, the roads had to remain open day and night for movements of troops and supplies.

Corduroy roads are bound to slow down all movements. The average march ~~performance~~ performance of the foot soldiers dropped to three kilometers and hour, and a truck or armored car hardly averaged eight kilometers. These roads proved as strenuous to the foot soldiers as to the motorized elements. Sensitive equipment, such as range-finders and similar instruments suffered from the innumerable jolts. The worst was that these roads hampered the speedy movement of reserves in cases of emergency.

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Two methods of construction were customary. One type of corduroy road was ~~xxx~~ built for extra heavy duty and another for light duty. Since it

was impossible to obtain longer logs, the road was built just wide enough to accommodate one truck, and with one passing point at every kilometer. The two types of roads differed inasmuch as the heavy duty road was laid on five timber supports, whereas the light duty road was laid directly on the ground. The diagonally constructed double-layer road of logs ten to fifteen centimeters thick was fastened on the sides by border logs which were anchored in the ground with stakes and wire slings.

It was obviously impossible for the limited number of about 5000 construction troops to maintain these roads and the 120 kilometers of corduroy road, although the construction crews had been committed for this purpose exclusively. Even complete ~~xxxxxxx~~ engineer battalions committed for such operations -- a procedure not usually followed in the German Army -- could repair only the most serious damage. Entire road sections broke down for want of manpower.

The seriousness of this problem is indicated by the commanding general's abandonment of the plan to attack across the eastern part of the Neva, because the lines of communications required for these operations were insufficient and could not be established in time.

This problem could have been solved only by the accelerated construction with reinforced concrete, or with ~~xxxxxxxxxxxxxxxxxxxxxxxx~~ steel plates and steel netting at the most troublesome points. Neither was attainable, owing to the critical concrete and

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Only about 25 of the bridges could be kept up. The bridges were provided with icebreakers and reinforced to ^{PRO} protect them from flood damage wherever the

necessary forces could be made available for such improvements. The lack of manpower made it often impossible to comply with the troops' request for the construction of bridges along their lateral roads. The high tides in Russia demanded the construction of bridges on a few firm supports which had to be well protected against ice floats and washouts, for any other type would have been swept away.

Preparations for snow clearance of the most important roads had to be started early. Each summer the motorized snow-clearing detachments were assembled in a depot in Germany for training and repair of equipment. Five detachments were promised to the Army and each was equipped with three motor-driven snow-ploughs. Snow was also cleared by makeshift arrangements: Horse-drawn snow-ploughs were requisitioned from the communities, the extent of their contributions being determined by their peacetime obligations. These operations were initiated and supervised in early October. Whenever the need arose they were assisted with funds and the local troops were pressed into service.

In summarizing I wish to state that the road construction units (a total of forty battalions) activated for the German Army would have sufficed for a campaign in the West, but in the face of the difficult transportation situation in the East they were bound to fail.

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8. As to the frequently raised question regarding the preparation of rear positions or the timing of large-scale destruction in case of withdrawals, the shortage of manpower made it impossible to provide for either. The only maintenance works performed were those along the former Russian bunker line near Luga.

Either factor might have played a decisive role in the battle south of Leningrad in the spring of 1943. However, the Russian method of launching major attacks during freezing weather was scarcely handicapped by the destruction of roads and villages. During frost periods the Russians could use their tanks in every terrain. Contrary to European soldiers, Russians did not depend on localities, not even in winter. The Russians, accustomed to ice and snow, always manage to procure primitive shelter and food.

9. Much was accomplished in training the engineer units through cooperation with the commanding general, despite the critical situation. Generally, four engineer battalions were in training. Replacements from Germany and small detachments of the committed battalions were given also four weeks of training.

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The following training centers, each headed by a regimental engineers staff, were maintained:

- a. One at Luga, where the units were trained for river ~~xxxxxx~~ operations, as assault troops to attack pillboxes, to launch attacks across mine fields;
- b. another at Narva-Hungerburg gave instructions about assault boats and the launching of attacks across rivers under difficult conditions.

These specialized services of the engineers were important for an attack on Leningrad but had been neglected during the prolonged commitment in positional warfare, so that the training of replacements was not up to par. These training

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of civilization, the desolation, the partisan plague and other characteristics of the Russian theater of operations.

One important, specialized training should be mentioned at this point: the detection and lifting of Russian remote-controlled mines detonated by radio. These devices were used with considerable effectiveness for large-scale demolitions as early as 1941 when the Finns took Viborg; also during the capture of Kiev in 1941, as well as in 1942 when Sevastopol was occupied. We could therefore assume that these same devices would be used at a point as vital as Leningrad. The Russians radio-controlled mine-detonator was considered the best of the types known to us. It consisted of three parts, of which none was bigger than a large, well-filled briefcase; it was easy to move, convenient to hide, and difficult to detect. I cannot give a detailed technical description from memory. However, it had two safety devices to prevent accidental detonation: One was a clockwork starting only upon reception of a predetermined radio signal and running for a certain length of time. It was set to detonate only at definite intervals. The other device was a code signal instrument transmitting signals at a certain speed. Detonation was possible only upon ~~xxxxix~~ reception of these signals. Moreover, since the capture of Kiev, lifting operations were greatly hampered by the booby-trapping of charges by means of pull and release-type igniters.

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The location of the mine was revealed by the clockwork mechanism which was found by means of sensitive sound detectors. Prepared posters appealing to the population and promising prompt financial awards usually helped to trace the mines.

Whenever the approximate location was detected, a sounding instrument was employed in addition to a radio-jamming device which, upon receipt of evenly repeated radio signals, destroyed their effectiveness by jamming the detonating impulses.

This protection enabled the engineers to deactivate igniters and charges. For this purpose a small number of specialists detachments was organized and assigned to operations during which such charges were likely to be encountered. The close cooperation between such an intercept detachment of the signal corps and selected engineers was taught at the Luga training center. Additional details can be found in the service manual entitled "The Russian Remote-Controlled Detonation Device", which was published about the fall of 1941 by the OKH Ordnance Office and classified "top secret".

10. Bringing Up of Engineer Equipment and Materiel

Every civilized country has certain installations, such as factories, smithies, carpenter shops, sawmills, etc., which the Wehrmacht used as stopgaps for its engineers supplies. Nothing of the sort was found in Russia, outside of the large cities and industrial regions. The population perforce made no demands for such necessities. A nail or a pin were rare objects of value. There was no stock of supplies such as wire or similar items. The army therefore depended for practically all categories on supplies from Germany. This hand-to-mouth provisioning made it impossible for me to set up the urgently needed engineer depots.

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It should be pointed out that the flow of supplies from Germany never ceased and that it sufficed for the essential requirements of the troops. Ever since the

disastrous winter of 1941, standardized trains had been introduced. These trains were loaded with building material for the construction of

23 a. the obstacles, each train containing enough material, including some of the necessary posts to set up about 10 kilometers;

b. field fortifications, each train carrying enough, including two cars loaded with trench stoves, for building approximately 250 dugouts. This arrangement proved very satisfactory in the "barren" countries.

The forces required enormous quantities of timber for:

- a. the construction of obstacles,
- b. road construction (corduroy roads),
- c. construction of field fortifications,
- d. shelters in the rear area,
- e. firewood.

The procurement duties were shared by the army engineer officer and the chief of supply and administration attached to Eighteenth Army. The army engineer was furnished the timber for the requirements listed under a, b, and c, and the timber for the d and e categories was allotted to the chief of supply and administration. Timber near the front had to remain untouched for camouflage purposes, and except for kindling wood nothing grew there anyhow. Timber therefore had to be cut far to the rear. This necessitated a special organization. Sawmills were dismantled in Germany and moved to the front. It was

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was the situation slightly better.

This report deals with a type of front often encountered in the East.

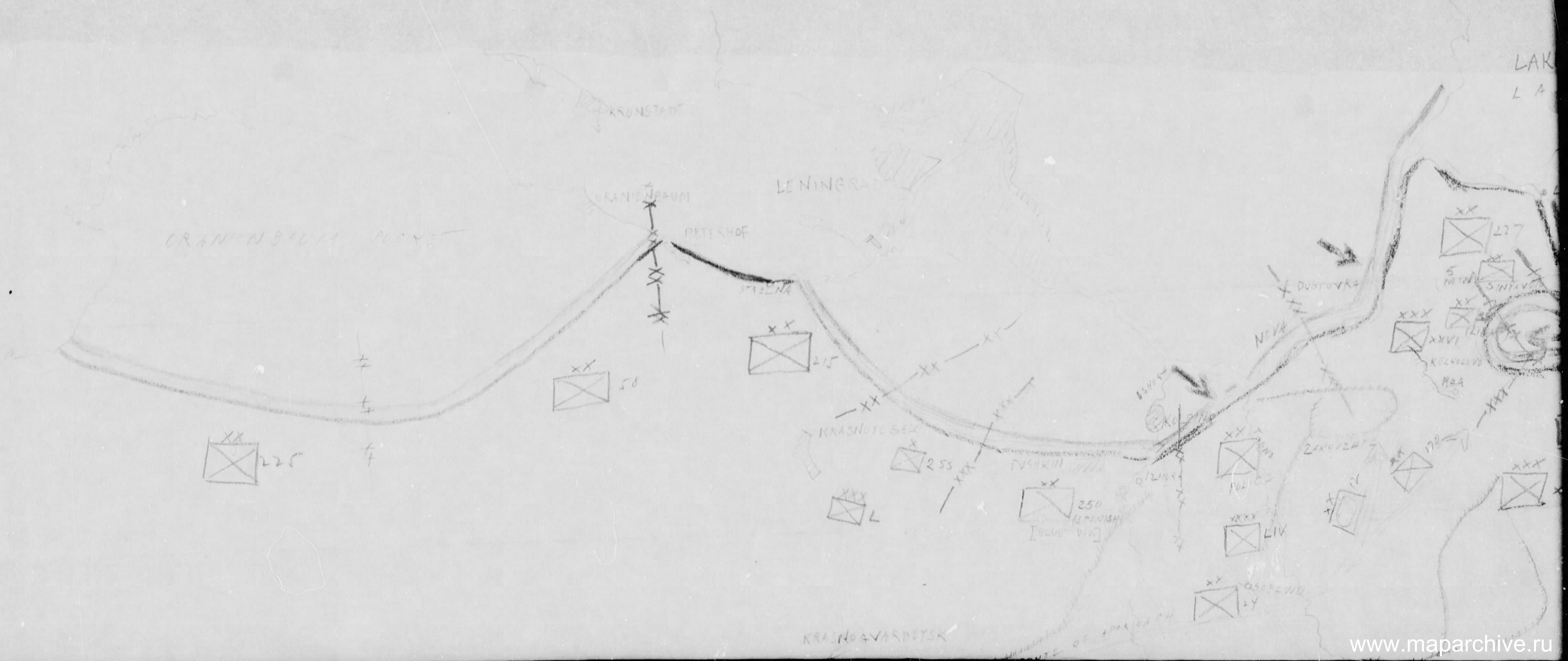
It describes the unnumerable worries and hardships which beset just one branch of the service, and which the command and the units, from general to enlisted man, had to face daily, in addition to actual combat. How immeasurably these burdens were increased by the responsibility for the large number of special fields! The German soldier faced the numerically superior enemy and realized at the same time the distress of Germany. For almost four years the German soldier faithfully and unflinchingly fulfilled his duty in protecting the culture of Western Europe, bringing the greatest physical and spiritual sacrifices. In addition, being the product of a high standard of civilization, he also feared the mysterious, incomprehensible, and tricky nature of Russia and the present-day Russian people. Considering these sacrifices and sufferings, we hope that in spite of past and present events, the sacrifices were not in vain, lest concepts of destiny and providence lose their meaning.

Annex

List of the most important engineer manualsfor the campaign against the Soviet Union

		<u>Edition</u>
1.	General engineer serve for all arms	1942
2.	Training directive for engineers, pamphlet #4, mines and igniters	1942
3.	The ice mine 1942	1942
4.	Enemy mines and igniters	1942 or 1943
5.	The Russian remote-controlled ignition device	1941
6.	The hollow charge mine	1943
7.	Notebook for the winter campaign	1942

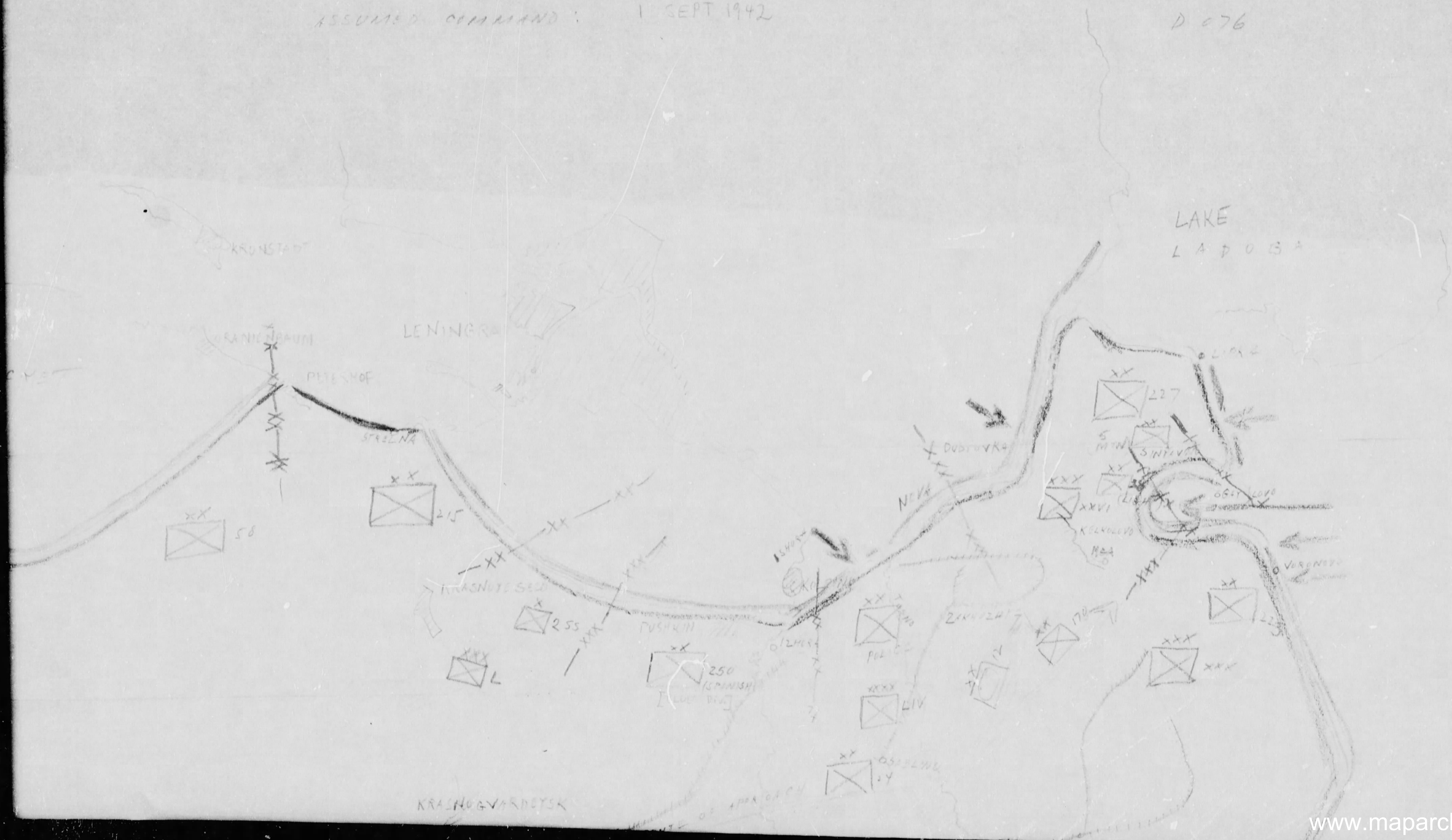
COMMITMENT OF FORCES
AT THE TIME SLEPUSHIN ARMY HEADQUARTERS
ASSUMED COMMAND: 1 SEPT 1942



COMMITMENT OF FORCES
AT THE TIME ELEVENTH ARMY HEADQUARTERS
ASSUMED COMMAND: 1 SEPT 1942

SKETCH #1

D 076



XX 225

XX 58

XX 215

KRACHNUTSELO

XX 255

PUSHKIN
[BLUE DIV]

XXX L

XX 170

XXX LIV

XX 27

KRACHNUTSELO

ROUTE OF APPROACH

TOWN

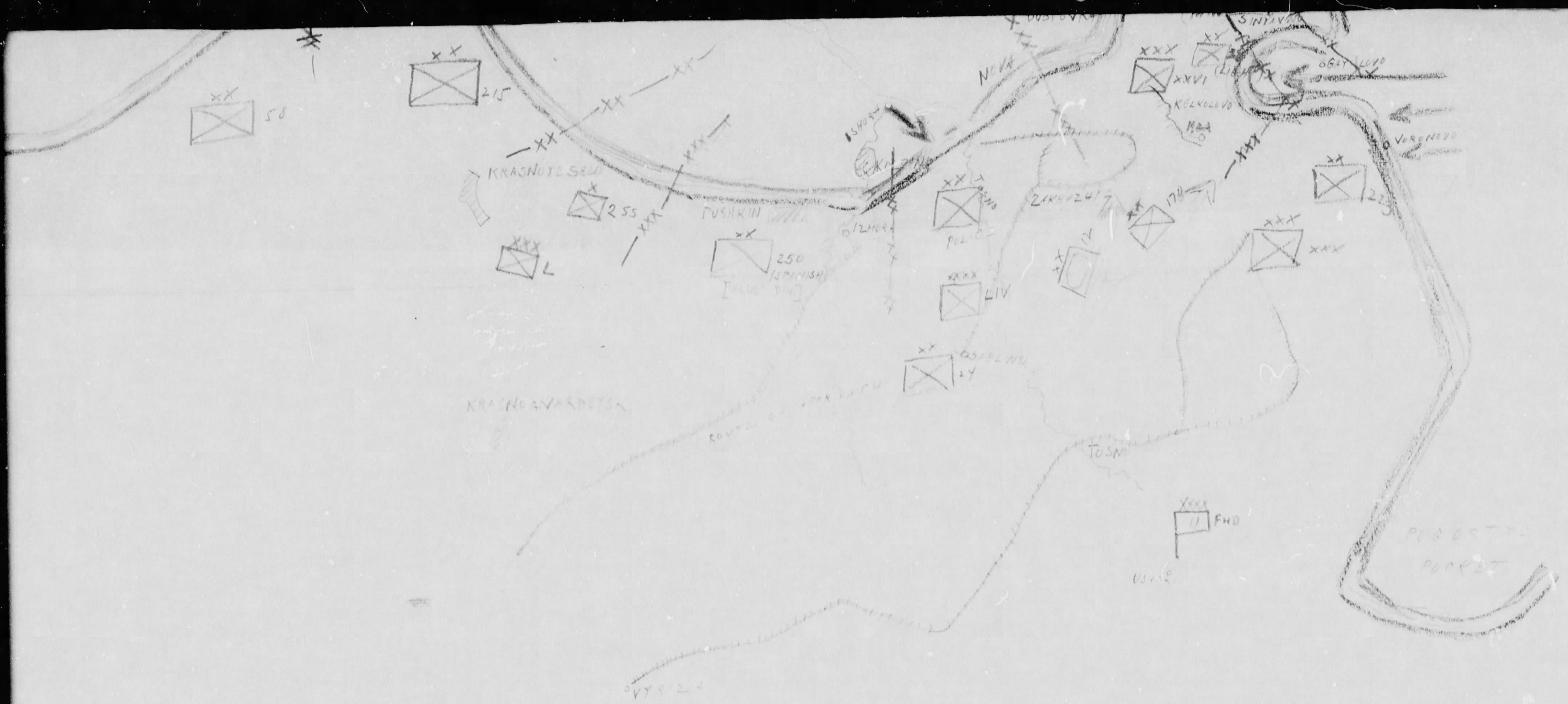
XXX 11 FWD

USHAR

XXX 11
DROJDESTVENNYE

——— CIRCUIT ROADS

SCALE OF
METERS



COR DRUYOY ROSS

SCALE OF RUSSIAN MAP USED:
 1" = 2000 YDS
 LONG - V 60 AND W 60

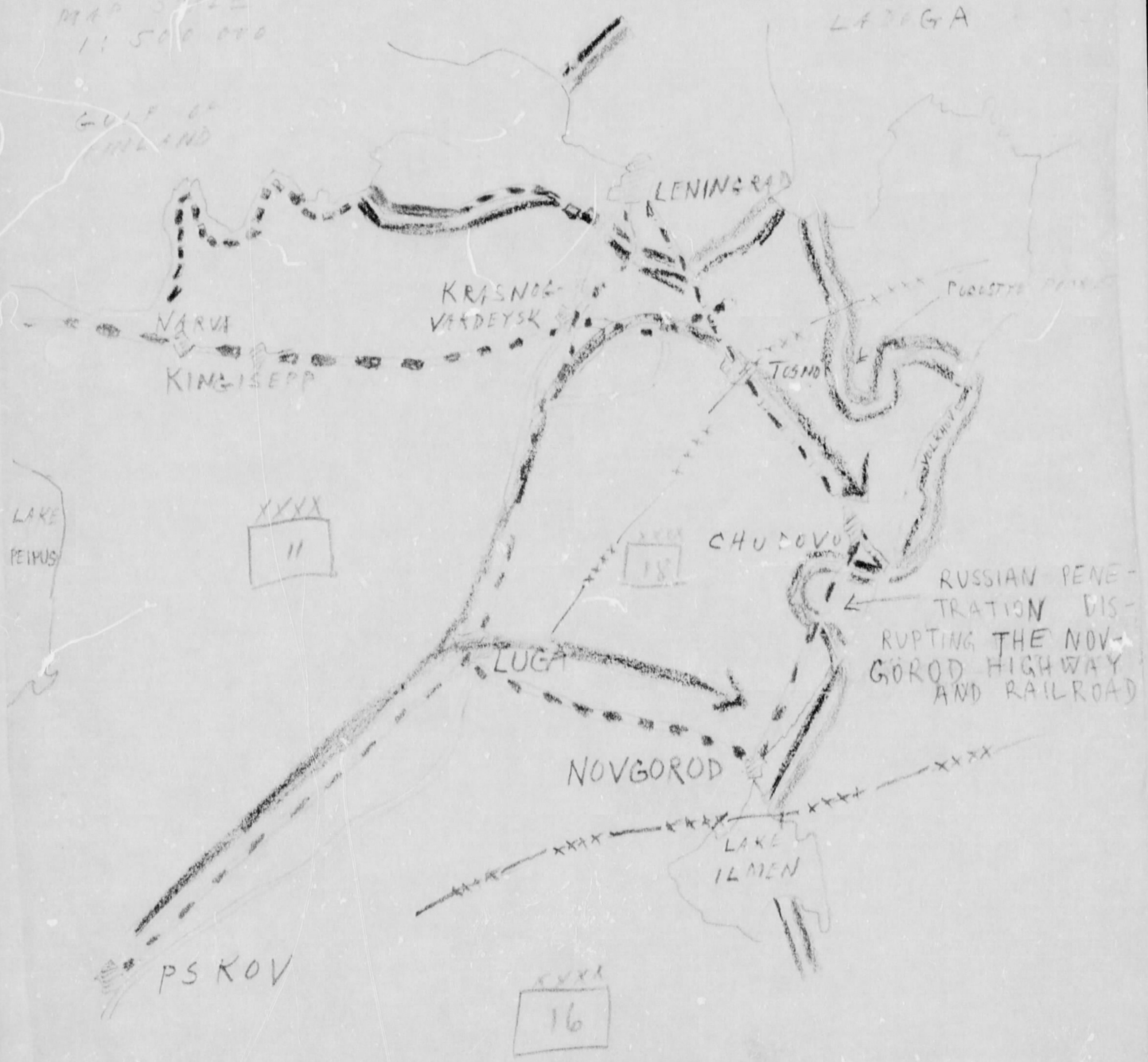
D 076

SKETCH # 2
TO WHICH

THE EXTENT OF THE VOLKHOV
AND EASTERN FRONT DEPENDS ON
THE ROAD AND RAILWAY FROM
KRASNODAR DEYSK VIA TOSNO TO CHUDOVO

MAP SCALE
1:500,000

LAKE
LADOGA

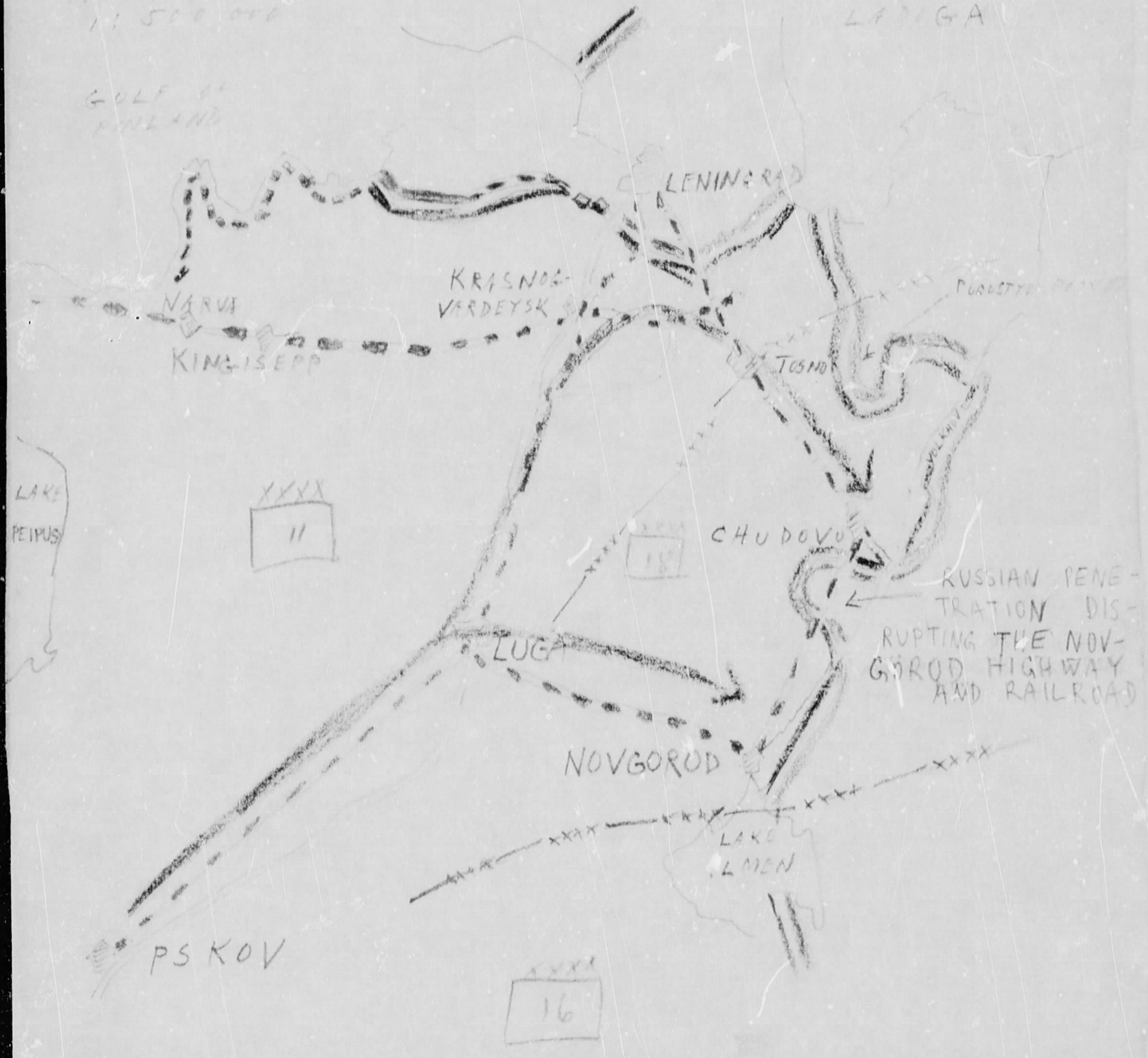


THE ROAD AND RAILWAY FROM
KRASNŌVARDEYSK VIA TOSNO TO CHUDOVO

MAP SCALE
1:500,000

LAKE
LADIGA

GULF OF
FINLAND



LAKE
PEIPUS

XXXX
11

XXXX
15

RUSSIAN PENE-
TRATION DIS-
RUPTING THE NOVG-
GOROD HIGHWAY
AND RAILROAD

XXXX
16

→
SUPPLY ROUTE

D 076

SYMBOLS 3



THE BATTLE SOUTH
OF LAKE LADOGA

CRISIS OF THE BATTLE: 26 OCTOBER 1942

MAP SCALE APPROXIMATELY 1: 200,000

D 076

SKETCH #4

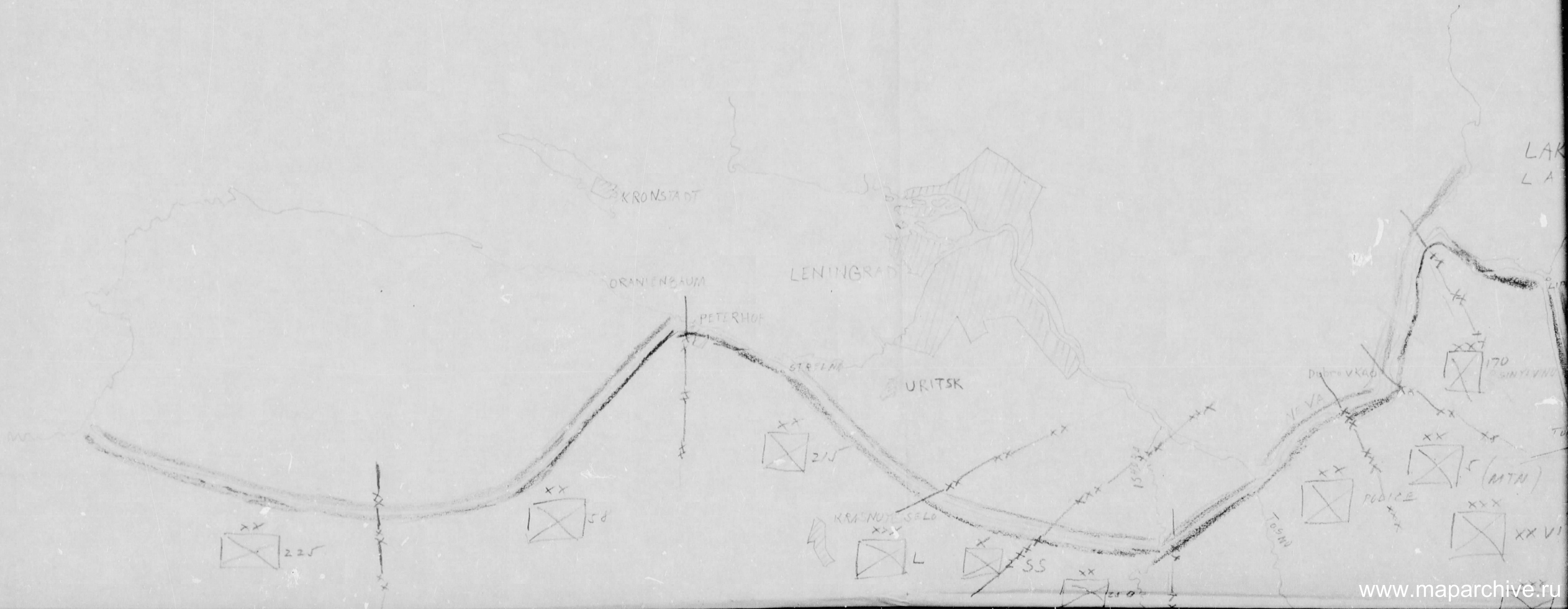


THE BATTLE SOUTH
OF LAKE LADOGA

END OF BATTLE: NOVEMBER 1941

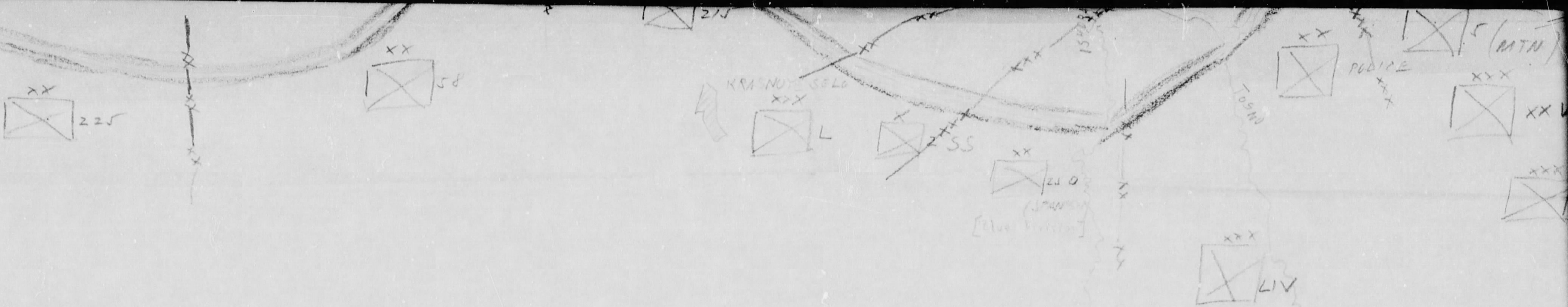
MAP SCALE
APPROXIMATELY 1:250,000

FINAL SITUATION ABOUT 20 OCTOBER 1942



FINAL SITUATION ABOUT 20 OCTOBER 1942





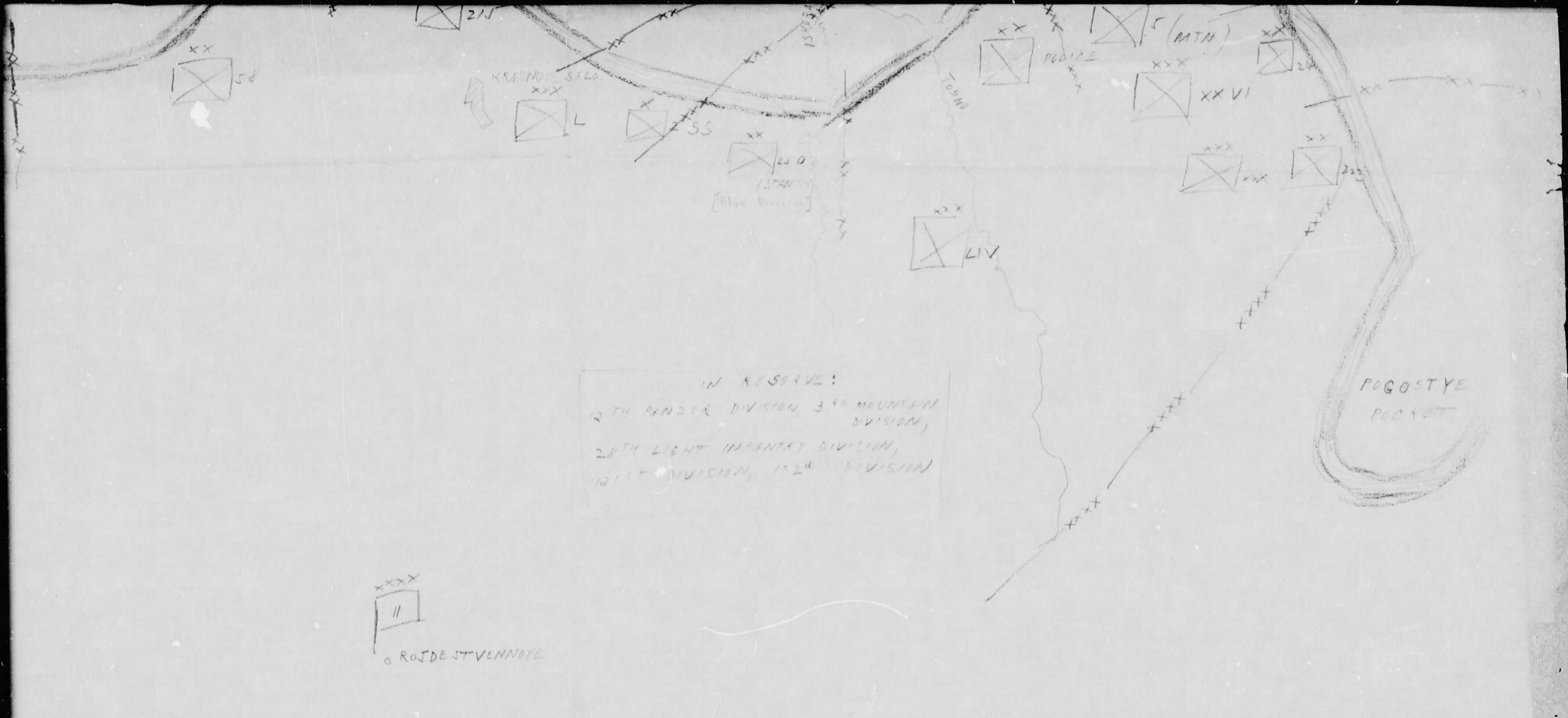
XXXXX
 ||
 O ROJDE STVENNOYE

SCALE 1:300 000

Map V60 : W60

SCALE OF

SHEET



SCALE OF RUSSIAN MAP USED:
 1: 300,000
 SHEETS V 60 AND W 60