After the end of World War I, Europe, including the Soviet Union, termed a “rush to fortify” seized all of its industrial areas. Approved by the RVS, the new defense system was then begun to be put into practice even as the civil war still raged. At the same time, however, the ongoing military operations of the civil war made it clear that continuous fortified lines didn’t conform to the character of that war. The total length of the combat fronts—about 5,300 miles (8,500 km)—and their relatively light coverage by troops on both sides, worked to prevent the kind of positional warfare seen in the First World War. The Russian Civil War was one of maneuver without continuous fronts. That's why the principle of continuous fortifications was almost immediately abandoned in favor of a new one. That new system of border defense was to be based on “fortified regions” (ukremenennye rayony), and was initially developed under the primary direction of engineer K.I. Velichko. The three main tasks he envisioned for fortifications in his new system were: 1) to cover the principal operational approaches along the border; 2) the maintenance of cross-river bridgeheads from which counteroffensives could be launched; and 3) the protection of politically or strategically important inhabited and industrial areas. Approved by the RVS in November 1918, the new defense system was then begun to be put into practice even as the civil war still raged.

The Stalin Line:
Fortification of the USSR’s Western Border
By Ivan Volkov & Evgeny Khitryak

Ed’s Note: all photos and drawings in this article are courtesy of the authors.

Rush to Fortify

What some military historians have termed a “rush to fortify” seized all of Europe, including the Soviet Union, after the end of the World War I. As early as 1918 it was proposed within the new Soviet government to defend the borders with the help of defensive zones referred to then as zavesa (curtains). Those zones were to include strongpoints and outposts on the roads and defiles, along with fortified camps and bridges. Each of them was to be manned by a detachment of 3,000 to 5,000 men and was to have a length of about 62 miles (100 km). In the autumn of 1918, then, with the forming of special construction organizations for the emplacement of fortifications, the Special Committee of the Revolutionary War Council of the USSR (Revvoensovet, RVs) approved the construction of continuous fortified lines on the northern, western and southern borders. At that time the only military personnel who had the necessary skills and experience for such projects were the engineering officers of the old tsarist army. The Soviet government therefore put out an appeal to all civilians in the country who had the required technical and military knowledge to join the Red Army (Raboche-Krestianskiye Krasnaya Armiya, RKKA). Many eminent Russian civilian engineers responded to the call. At the same time, however, the ongoing military operations of the civil war made it clear that continuous fortified lines didn’t conform to the character of that war. The total length of the combat fronts—about 5,300 miles (8,500 km)—and their relatively light coverage by troops on both sides, worked to prevent the kind of positional warfare seen in the First World War. The Russian Civil War was one of maneuver without continuous fronts.

The structures employed in those fortified regions were mostly ad hoc field works. Only in those cases where a fortified region was set up near an industrial center that featured cement production (for example, St. Petersburg), did they actually include concrete and ferroconcrete pillboxes. Due to that cement shortage, often only the front wall of a position was made of concrete with the rest built of wood. After the end of the civil war the question of border defense continued because the geo-strategic environment around the USSR remained hostile. In 1925 the strength of the Red Army was reduced to 600,000. That depleted force wasn’t able to provide the border security required for such a huge country. At the same time, though, the reduction in troop strength was unavoidable, as the Soviet Union simply wasn’t able to maintain a larger army because of its poor economic condition. The country therefore needed a simple and inexpensive means of border defense. In 1920 the first chief of the Military Engineering Academy, Feodor I. Golenkin, proposed constructing new and improved fortified regions in the most threatened areas of the western border. Their primary purpose would be to allow the scarce border units to hold back the enemy while full mobilization was underway. His proposition was supported by another Red Army specialist, Georgi G. Nevski, who later became head of all engineer troops of the USSR. In 1920 Nevski’s book, The Question of the Advanced Preparation of the Country in the Military Engineering Aspect, was published, and in 1922 another, The Experience of the Study of the Modern Forms of Advanced

A group of Mina bunkers in the Kiev Fortified Region (modern-day photo).
**Fortified Regions at the end of 1938**

<table>
<thead>
<tr>
<th>Military District</th>
<th>Fortified Region or Position</th>
<th>Length of Front of the Fortified Region, miles/km</th>
<th>Total of Machinegun Bunkers</th>
<th>Total of Artillery Casemates</th>
</tr>
</thead>
<tbody>
<tr>
<td>Leningrad</td>
<td>Karelian FR</td>
<td>40/65</td>
<td>180</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>Kingsierpp FP</td>
<td>25/40</td>
<td>35</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>Pskov FP</td>
<td>28/45</td>
<td>50</td>
<td>0</td>
</tr>
<tr>
<td>Belorussian</td>
<td>Polotsk FR</td>
<td>35/36</td>
<td>263</td>
<td>10</td>
</tr>
<tr>
<td></td>
<td>Minsk FR</td>
<td>87/140</td>
<td>242</td>
<td>26</td>
</tr>
<tr>
<td></td>
<td>Mzury FR</td>
<td>84/135</td>
<td>176</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Korosten FR</td>
<td>113/182</td>
<td>433</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>Novograd-Volynskiy FR</td>
<td>75/120</td>
<td>182</td>
<td>17</td>
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<tr>
<td>Kiev</td>
<td>Lutichev FR</td>
<td>78/126</td>
<td>340</td>
<td>7</td>
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<tr>
<td></td>
<td>Mogilev-Yampol FR</td>
<td>134/215</td>
<td>240</td>
<td>18</td>
</tr>
<tr>
<td></td>
<td>Kiev FR</td>
<td>53/85</td>
<td>190</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Pybnitsa FR</td>
<td>84/135</td>
<td>199</td>
<td>11</td>
</tr>
<tr>
<td></td>
<td>Tiraspol FR</td>
<td>80/129</td>
<td>254</td>
<td>15</td>
</tr>
<tr>
<td><strong>Totals</strong></td>
<td></td>
<td>915/1,473</td>
<td>2,784</td>
<td>119</td>
</tr>
</tbody>
</table>

Artillery Observation Post #55 of the Polotsk Fortified Region. This bunker has the complex version of the "hill type" of camouflage scheme. It was determined to be the most effective of all the patterns examined.
Fortification, followed. Both works proposed significantly reinforced and modernized fortified regions as the main form of the nation’s preliminary border defense. Those books laid the theoretical foundation of the early Soviet fortification school. The “Land Fortification Fronts” (Dolgovremennyi Sukhoopannyi Front) constructed from 1928 to 1934 were attempts to put those views into practice. The new fortified regions were defined as zones “equipped with a system of long-term and field-fortified constructions in combination with different artificial obstacles and prepared for long-term defense by specially trained fortress troops in close cooperation with infantry units.”

The main task of a fortified region was to require an attacking enemy to concentrate a substantial number of his divisions, including heavy artillery, in order to be able to take them by storm. Such an assault was intended to tie up the enemy for some lengthy amount of time. An attempt to outflank a fortified region would not only cost the enemy more time, but also allow defending troops to counterattack the aggressor’s exposed flanks. The fortified regions were (ideally) to include the following:

- a forward defense area of six to 7.5 miles (10-12 km), which was a zone of natural obstacles and observation posts; an outpost line, intended to meet the initial assault and channel the enemy force toward the main line or perhaps cause it to split; the main defense line of 1.25 to 2.5 miles depth (2-4 km); optionally, a rear line with field fortifications and obstacles with a depth of 1.25 to two miles (2-3 km) and situated six to 7.5 miles behind the main defense line; a fortified base near a railway junction, which was to serve as the supply distribution point for the entire fortified region.

A particular feature of the Soviet fortification school came from the fact its theoretical basis developed from the combat experience of the civil war melded with a retropective study of World War I. As a result, the conclusions drawn by Soviet fortifiers were different from the postulates that came to be accepted in France and elsewhere in the West. Venedikt Shperk, in his book *The History of Long-Term Fortification*, summarized those Soviet conclusions as follows.

World War I made it clear that large permanent fortifications like forts—those with large quantities of constructions of complex purpose concentrated in a small area—weren’t suitable for modern warfare in and around the Soviet Union. Field fortifications—those dispersed over a wide area with small constructions of various types—would be more effective than that older method.

Thus, from the time of its foundation, the Soviet fortification school maintained that in a future war the use of strongpoints within dispersed positions was best. Soviet military engineers often used the term “dispersed fortifications” (fortifikatsionnyy pynt), which precisely describes the essence of the fortified regions they set up. The fortified regions were far from being the only defense concept proposed by Soviet military theorists at that time. The difficult economic situation made the theorists examine unexpected solutions for border defense, for example, planting dense thorny shrubbery in chosen sites that would supposedly make those places impassable to troops.

Another concept examined in the late 1920s was termed the “Fortress-fortified forest.” The woodlands of the northwestern USSR were to be heavily laced with bunkers, transforming them into a vast and unassailable geographic area.

Some proposed ideas showed too much imagination to be taken seriously. One of the most unusual propositions called for creating dense linear fortifications similar to those used in the West in the First World War, only not along the border. Instead, the heavy defensive lines were to be set up running perpendicular to the border, allowing the enemy to advance far beyond it, only to then find himself threatened by flank attacks from those positions. The lines were to increase in strength as they ran deeper into Soviet territory, making it ever more difficult for the enemy’s forces to attack into them even as they overextending themselves moving into the country’s interior.

All agreed, however, that the fortified region concept served as the only acceptable solution to prepare future theaters of military operations for meeting an initial enemy attack. In 1928 the construction of the first one—the Karelian—was begun.

Theory into Practice

Stalin’s September 1927 declaration on the topic provided the final impetus for the beginning of the construction of the fortified regions. In it, he warned of the growing menace of a new war launched against the Soviet Union by the main capitalist nations of Europe Great Britain and France. He predicted they would start by having another country, probably Poland, actually initiate the war of aggression. In addition, he cautioned that Poland would be joined by the Baltic States and Finland. The collective-Soviet leadership considered that scenario dangerous, but not one that would result in a truly desperate situation. The USSR could reckon on victory, went Stalin’s reasoning, once the Red Army had gained a numerical superiority of two to three times that of the invading force. So sufficient time had to be gained to allow the nation to mobilize its population and resources to that extent. That, in turn, would only be possible with the proper military engineering preparations made in the border areas.

Stalin’s declaration ended what might be described as a period of Soviet military debate—even near-hysteria—on the topic. His initial plan called for the priority construction of four fortified regions along the most threatened sectors of the Soviet western border with Poland and the Baltic States, as follows:

- the Karelian Fortified Region, along the Finnish sector of the border to protect Leningrad (St. Petersburg);
- the Polotsk Fortified Region, covering the section of the border with Poland and Lithuania to protect Polotsk (then the key railway...
An artillery half-caponier near Gatai Molzhiskerskaya village in the Kiev Fortified Region (modern-day photo).

The changing out of a machinegun for a range finder.

Machinegun Bunker 292 of the Minsk Fortified Region (modern-day photo). This bunker was restored in its original condition several years ago and is now part of a large open-air historical complex near Minsk. The “smooth” style of camouflage was in widespread use for Soviet bunkers in 1939.

Junction in Belarus, and the main crossing point on the Dvina River (Daugava); the Muzyr (Polesias) Fortified Region, along the sector of border with Poland in the Polesis region (Pripyat River basin within the Pripyat Marshes), to block access to Gomel and Zhlobin; the Kiev Fortified Region, to protect Kiev (the crucial Ukrainian economic and political center) and the nearby crossing points of the Dnieper; a reconnaissance for the Lepel and the Kiev Fortified Region, to protect the Mozyr (Polesski) Fortified Region, and the nearby crossing of the Dvina River (Daugava); the main crossing point on the Dvina (another center of economic and political power of the USSR. The Pskov and Kingisepp regions, located where the threat was perceived as being more limited, were made less complex with fewer bunkers and a smaller infrastructure.

The changing out of a machinegun for a range finder.

An artillery half-caponier near Gatai Molzhiskerskaya village in the Kiev Fortified Region (modern-day photo).

The changing out of a machinegun for a range finder.
armed, but the process needed to bring them to full combat readiness was never finished because the invasion of Finland led to fortifications being started along those new borders. The headline “Stalin Creates a Maginot Line in the USSR” appeared in December 1936 in the Latvian newspaper "Sevodnya," and in other newspapers too. Together all the fortified regions formed an almost unbroken line. At the same time, the still limited economic potential of the USSR forced the planners to adjust the designs, numbers and types of fortifications to what was practical and not what was most desirable. As a result, the fortified regions had total defensive areas only one to 1.85 miles (1.5 to 3 km) deep. The fields of fire from the bunkers didn’t sufficiently overlap, and full mutual supporting fire from adjacent bunkers was seldom achieved.

**Tactical Layouts**

The Battalion Defense Area (bata’yonnyj raion obrony, BRO) was the principal tactical element of each fortified region. Each took up a sector 3.75 to 6.2 miles long (six to 10 km). Each BRO was occupied by one machinegun battalion dispersed into company defense areas. There was no universal system of division of fortified regions into BRO. The number in a region depended on specific local conditions. There was also no uniform system for designating the BRO. In some regions they were designated by Arabic or Roman numbers, and in others with Cyrillic letters.

The equipment and general design for the fortified regions during their first stage of construction met requirements based on the operational and strategic abilities of the most probable enemy at that time: the Polish Army. Those forces consisted of about 2 million men, organized into some 60 infantry divisions, several cavalry brigades, a small amount of heavy artillery, and weak aviation and tank units. In view of the characteristics inherent in that force, machineguns served as the main firepower in the fortified regions. Correspondingly, the machinegun bunker was the predominant type employed in the fortified regions during the first stage of their development. Artillery casemates constituted only 12 percent of the total number of bunkers built. The construction of anti-tank gun bunkers was also limited, and they were found almost exclusively at points covering main roads. None of the bunkers had anti-aircraft artillery. The strength of the concrete structures in terms of resisting enemy weapons fire was calculated on the type of artillery then available to the Poles.

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The diversity of the ferroconcrete structures in the regions can be divided into the following main types: heavy and light machinegun bunkers, command bunkers, artillery observation posts, artillery bunkers, anti-tank bunkers (mounted with T-26 tank turrets), and complex underground constructions of the Mina type (see description below).

Concerns about comfort for the garrisons of the bunkers received low priority. A bunker normally was no more comfortable for the troops than was life in a field trench, except the bunker offered more security during bombardment. Each bunker’s power supply was generally through an underground cable from an electrical substation. To protect against poison gas, the entrances were built so as to hermetically seal when closed. Weapon embrasures could also be hermetically sealed, and a manually operated air pump ensured the creation of overpressure in the bunker to prevent the penetration of poison gas. The bunker garrisons normally lived in wooden dugouts connected to them by communication trenches. A similar dugout served as an ammunition depot and storehouse.

Model 1910 Maxim water-cooled machineguns were the main weapon. In addition, every bunker had one or two light Degtyarev Model 1927 machineguns. The bunkers were also equipped with periscopes, telephone and radio communication equipment, a ventilation and air filter system, equipment for water-cooling the Maxims, and a water well operated with a hand pump.

In order to disguise the critical command bunkers and observation posts, they were made to appear from the outside as standard machinegun bunkers. They were larger than machinegun bunkers and frequently included an underground level. The command bunkers were equipped with supplementary sets of periscopes, telephones and radars, and they had their own electric generators. In the command bunkers and observation posts only light machinegun mounts were installed, which could be quickly replaced by range finders.

Light machinegun bunkers, each with just one embrasure, served as independent posts. They were simple structures consisting only of a firing chamber for a machinegun. The walls of such bunkers were merely splinter proof, and they could only protect their garrisons from small arms fire and shrapnel. Those “MS” machinegun posts (called MoSkit, the Russian word for mosquito) were built in the secondary sectors of the fortified regions. They were intended to protect the areas not covered by the fields of fire of the larger bunkers, to block hollows, etc.

Sometimes the MS positions were also set up to serve as decoys to draw enemy fire. They were intentionally kept poorly camouflaged in order to divert the enemy’s attention from other bunkers of the BRO. Those decoy bunkers were the first to open fire, again with the intention of drawing the enemy’s fire. The MS garrisons would then abandon their positions and make their way to the nearby large bunkers.

The artillery half-bunker was intended to protect the areas around the main line of bunkers opened fire. When the enemy began an assault with his main force through the decoy positions, the main line of bunkers opened fire.
The artillery casemates were larger constructions than machinegun bunkers, but the quota of artillery bunkers within the total was always small. The casemates had more interior rooms, including ones for electrical generators that supplied them as well as nearby machinegun bunkers (via underground cables). They were armed with 76.2mm guns. The “half-caponier” positions had two such guns while the full “caponiers” had four. As with the machinegun bunkers, the main reserves of ammunition and other equipment were stored in nearby wooden dugouts. Some of the larger structures had an underground level that served as a garrison caserne, but the general rule was to quarter the men outside the bunkers when not engaged in combat. Anti-tank bunkers with T-26 tank turrets were an unusual type of artillery bunker. Their design was simple: The concrete bunker held a minimal armament stock and was almost completely below ground level. Atop the bunker was a roof position mounting a standard T-26 tank turret armed with a 45mm gun and Degtyarev machinegun.

Mina

Some complexes consisted of several bunkers and auxiliary constructions connected with underground tunnels. They were termed “Mina” (mines), and only some of the fortified regions had them. The Serebrayma Mina, in the Mogilev-Vampil region, was one of the largest of such complexes erected on the western border of the USSR. It consisted of two double embrasure artillery half-caponiers, two double-embrasure machinegun bunkers, two entrance blocks, underground galleries, a command post, quarters for the garrison, a power-plant and an ammunition magazine. The length of the underground communication tunnels totalled 986 yards (901 meters), and they were located six to 10 yards below the surface. The concrete thickness of the front wall was 59 inches while that of the roof was 54 inches. The garrison numbered 150. Some Mina also served as shelters for regular infantry. The majority of the Mina were built in the Ukraine, where the lower water table allowed for the easier creation of subterranean facilities. Only two were built in Belorussia, both in the Mozyr Fortified Region.

Even just the superficial descriptions given above of the main types of bunkers in the fortified regions expose their deficiencies relative to western European standards. In comparison with such grandiose structures as the Maginot ouvrages, Belgian Fort Eben Emael, or the Greek border fortifications, the Soviet works appear primitive. Nevertheless, it would be a mistake to conclude the general concept of the Soviet fortified regions was unworkable. An examination of the technical characteristics of their construction, as related to the aspects of the general defense strategy of the country, indicates their concept was as modern as that of the German scheme used in the West Wall. The Soviet fortification theorists developed a great number of different projects, including the Mina, which were potentially comparable to some of the French ouvrages in their scale and power. Those large-scale projects were rejected, however, by the Red Army high command, mostly because they would’ve absorbed almost the entire defense budget. In addition the construction of huge fortified ensembles required time, while the Red Army needed ready-to-use defenses as soon as possible. Moreover, the most likely enemies of the USSR in the initial period of construction didn’t have super-powerful military forces; so there was no need to construct “super-fortresses.”

Conclusions

It should be remembered that exporting communist revolution—not securing its borders—had been the first of the guiding principles of the Soviet Union. During the period of political debate between the followers of Stalin and Trotsky in the 1920s, that principle temporarily receded into the background, but it nevertheless remained a fundamental goal. Thus the concern about defense of the borders never hindered the Red Army high command from simultaneously making plans for a future offensive war. The USSR, unlike France, didn’t seek permanent shelter behind a wall of fortifications. As early as 1926, Soviet military strategist A. Svechin, in his book Strategy, defined the fortified regions not only as “barriers” across an invader’s path, but also as “gatesways” in which Soviet forces could be safely marshaled before striking into enemy territory. Soviet fortified regions were built with both those intentions in mind. The main reason for the inability of the fortified regions to withstand the German attack in 1941 wasn’t because of faults in the theory of their use. The broader Soviet system itself was the Achilles heel of fortification construction in the USSR. Rigid economic planning caused divergence from accepted technological principles of construction. Premature removal of the masturber military specialists also contributed to the failure. Further, at the time construction was nearing completion in the 1930s, all such efforts were fraught with the danger of accusations of “sabotage.” That purge era saw the suppression of initiative by individuals and supervisors, and all found it best to try to blandly implement and carry out orders, even if doing so obviously created problems. It was planned to be impractical, it was better to simply lie instead of questioning their rationality and risk being labeled a “subverter.” The veil of secrecy that covered the construction of the fortified regions also played a negative role in terms of quality control. All that resulted in what turned out to be an overall low state of combat readiness in the fortified regions when war came. The inspection reports of 1938 and 1939 gave (suppressed) evidence of that sad fact. With the temporary closing in early 1940 of the greater part of the fortified regions, built along the pre-1939 Soviet borders, the process of getting the “Stalin Line” to full operational readiness became even more complicated. Even so, those few fortified regions of the “Stalin Line” that were fully equipped with weapons and troops put up stiff resistance against the Germans in the early summer of 1941. The Polotsk Fortified Region held the enemy for five days. The garrisons of the Mogilev-Vampil, Rybinsk and Tiraspol Fortified Regions, in conjunction with operations by field troops, actually brought a halt to the offensive of the German 11th and Romanian 4th Armies until outflanked by other forces moving down from the north. The battles along and within the Kiev Fortified Region lasted 70 days. The Karelian Fortified Region was never fully broken through. It could therefore be argued it was the stubborn resistance enabled by key portions of the fortified regions—not “General Mud” or “General Winter”—that first broke the momentum of Operation Barbarossa in 1941.

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