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Soviet Shapers of the Russian Approach to Large-Scale Combat Operations

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by Lester W. Grau, Ph.D.

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Our class enemies are empiricists, i.e., they move from case to case, directed not by an analysis of historical development, but by practical experience, routine, quick assessment and scent.

— Leon Trotsky

What's past is prologue.

— William Shakespeare, *The Tempest*

Introduction

The new Russia has emerged as a Eurasian power, determined to regain its status and defend its borders. Although a lot has changed in the past 27 years, much of current Russian military thought still uses the Soviet concepts of strategy, operational art, and tactics. Artillery also remains a major component of large-scale combat operations, as well as the use of a mathematical model known as the correlation of forces and means (COFM). The Soviets/Russians

have used the COFM model to identify the right amount of combat power needed, allowing flexibility in operational planning. An upgraded COFM model, operational art, fires, and maneuver will continue to influence Russian operational planning, as will the memory of Soviet experiences in World War II and the nuclear standoff of the Cold War. Russia is again determining how best to conduct conventional maneuver operational war under nuclear-threatened conditions, should this become necessary.

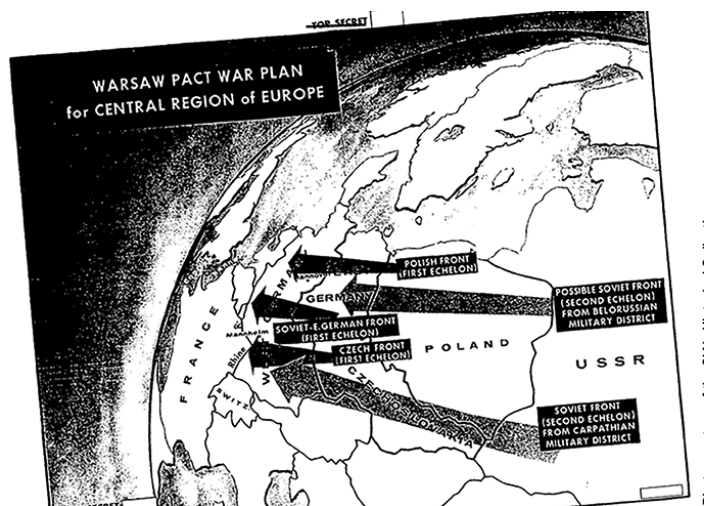
The "Revolution in Military Affairs"

In many respects, the U.S. Army has a tactical focus. The Russian Army has an operational focus. This difference is due to differences in geography, history, culture, military thought, and use of mathematical determinism. The Russian Empire, Soviet Empire, and modern Russia had/have the world's longest borders and a large landmass to defend. Throughout its history, all of its neighbors have invaded Russia—even non-bordering countries have gone well out of their way to invade them. Extending from this, today's Russia feels threatened, particularly by the North Atlantic Treaty Organization (NATO) expansion, color revolutions,¹ the U.S. abrogation of the Anti-Ballistic Missile

Treaty, and the U.S. Prompt Global Strike Command. In this context, Russians ask, how do we best defend the motherland?

During World War II, equally sized American and Soviet tactical units were not usually a match for equally sized units of their German enemy. The German Army was tactically proficient, regionally based, and better trained. The Soviet Union, which bore the brunt of the fight against Germany, won the war, not on the tactical level, but on the operational level. After the defensive operations of Kursk and Stalingrad, the Red Army began a series of offensive operations (by armies and fronts—a *front* is roughly an army group of three to five armies) against the Germans. Thirty-one Soviet fronts were constituted during the war. The General Staff designed these offensive operations not to culminate before launching another operation in a different sector. This constantly wrong-footed the Germans, who continually moved their operational and strategic reserves to the wrong area while the Red Army triumphantly advanced in another. During the Great Patriotic War (the Soviet war with Germany), the Soviets conducted more than 100 multi-front operations and more than 1,000 frontal operations. The Soviets won their war against Germany and their short war against the Japanese Kwantung Army on the operational level. Soviet military and civilian dead exceeded 20 million. More than 8 million of these were military from the 30 million raised for the war. From this horrendous experience, the Soviet Government decided that never again would it accept such losses.

The Soviet acquisition of atomic weapons in 1948 provided the possibility that the Soviets could use these weapons to avoid such future losses. However, Stalin envisioned future war only as a conventional war similar to that which the USSR had just conducted. Atomic weapons were merely more powerful artillery. However, with the death of Stalin in 1953, the “Revolution in Military Affairs” (the marriage of the atomic weapon with cybernetics and a long-range delivery system) began. The Soviet military began dual tracking for both conventional and nuclear war. Ground forces were cut from four to two million to provide funding for the development and fielding of the Strategic Rocket Forces. The assumption was that future war would become nuclear at a certain stage. This changed in 1968. The assumption had been that nuclear war would be short and violent and that the tempo of combat would greatly increase. However, the Voroshilov Academy of the General Staff conducted a study to determine whether nuclear weapons would really increase tempo. The findings were that tempo would be practically identical in both nuclear and conventional



June 1968. This map from the booklet “CIA Analysis of the Warsaw Pact Forces: The Importance of Clandestine Reporting” was developed by the CIA to show the Warsaw Pact war plan for the central region of Europe.

warfare in Europe. Irradiated zones, flooding, forest fires, destroyed cities, destroyed infrastructure, disease, and pestilence would severely retard the tempo of an advance in a nuclear conflict. And the prevailing winds in Europe blow to the east—carrying radioactive contamination with them.

Soviet planning returned to a balanced capability and a doctrine for fighting both nuclear and conventional war. New weapons and technology, such as micro-circuitry, directed energy, and genetic engineering blurred the distinction between nuclear and conventional war. As the Soviet Union and NATO faced off during the Cold War from 1968 to the collapse of the Soviet Union, both sides assumed that a future war in Europe would involve large maneuver forces from NATO and the Warsaw Pact fighting under nuclear-threatened conditions on the European plains. The NATO plan was primarily a large-scale defense to weaken and delay the Soviet offensive. There was a tacit understanding that at some point the confrontation could move into operational and, possibly, strategic nuclear exchange. All Soviet Cold War plans supposedly had a nuclear annex. In order to conduct a war against NATO or China, the Soviet Union reportedly had 210 to 211 motorized rifle and tank divisions, 17 artillery divisions, 8 airborne divisions, 5 anti-aircraft and missile air defense divisions, and 11 rear-area divisions, plus specialized divisions such as coastal defense and machine gun-artillery border defense divisions. Not all of these divisions were full-up, ready divisions. The ready divisions were facing China and NATO. Many of the other divisions were mobilization divisions with sufficient combat equipment, but only partial manning by cadre staffs and an understrength regiment or two. During general mobilization, reservists were to fully man these divisions. In a nation where all able-bodied males were conscripted for 2 or

Photo courtesy of the CIA's Historical Collections

3 years of military service, there were plenty of reservists with specific mobilization assignments.

The Great Debate

Current Russian military thought is grounded in the Tukhachevsky-Svechin debates of the 1930s [described below], the Soviet operational experiences of World War II, and the lessons of the Cold War nuclear standoff. The destruction school, headed by Marshal Mikhail Tukhachevsky (and including such luminaries as Mikhail Frunze, Vladimir Triandafilov, and Nikolai Varfolomeev) argued that future war was about mobility and firepower. To those Russian military minds, defense is useless because a country cannot defend against such weaponry. The enemy should not be allowed to visit destruction on the Soviet Union. Rather, when the enemy attacks, the proper response is to mount a series of immediate overwhelming counterstrikes against the enemy's territory. The proletariat of the enemy nation would rise and greet the Soviets as liberators. The attrition school, headed by General Aleksandr Svechin, argued that, in a world war, attrition is sensible and economic and the only way to achieve victory. A resolute attack consumes incalculable resources and, as a rule, is not justified by operational gains. Attacking forces run the risk of interdiction of lines of communication and flank attacks. The Soviet Union is vast, and the Soviet territory most likely to be involved in an enemy attack is rolling plains, vast rivers, large swamps, forests, and limited roads (which are impassable during the spring thaw and the wet autumn partial freezes). The best way to defend the Soviet Union is to draw the enemy into the depths of the country where the enemy's combat power and logistics would be stretched to the breaking point. Only after the enemy had reached its culmination point, should the Soviets conduct a massive counterstrike to destroy the enemy within the depths of the Soviet Union. This debate continued over a decade, but Svechin ultimately lost. When Germany attacked the Soviet Union in June 1941, the Soviets first mounted uncoordinated counterstrikes and then piled up defensive forces far forward—these blunders almost cost the Soviet Union the war. The popular theorist of today's Russian military is Svechin.²

Soviet/Russian Military Art is Divided into Strategy, Operational Art, and Tactics

Current Russian military thought still uses the terms and concepts from the Soviet period: strategy, operational art, and tactics.

Strategy investigates the nature and laws of armed conflict. It is derived from military doctrine, military experience, and an analysis of contemporary political, economic, and military conditions. It includes the preparation and



conduct of strategic operations, the conditions and character of future war, methods for preparing for and conducting war, types and use of armed forces, and strategic support of operations and leadership.³

Operational art encompasses the theory and practice of preparing and conducting combined and independent operations by large units (fronts and armies). It holds the intermediate position between strategy and tactics. Stemming from strategic requirements, operational art determines the methods of preparing for and conducting operations to achieve strategic goals while determining the task and direction for the development of tactics.⁴

Tactics deals with the preparation and conduct of combat by division, regiment, battalion, and below.⁵ Consequently, large-scale military combat is still classified within the Russian operational art and deals with the management of armies and fronts.⁶ During World War I, there was not a climactic final battle that decided the conflict. The best that the contending forces could achieve was tactical or temporal success. From this observation at the time, Soviet military theorists studied the changing nature of war and determined that there was an operational realm. Their main theorists discussed and debated this concept, including most of the participants in the Tukhachevsky-Svechin debates of the 1930s. All agreed on the importance of conducting successive operations.⁷ This was a pivotal time for the development of Soviet military thought and led to the Soviet victories in World War II. Unfortunately, none of this distinguished group of military theorists survived to view their success. They all were victims of Stalin's purges (1937 to 1938) preceding the German invasion. The terrain, weather, and incredible sacrifices of the Soviet peoples slowed the German advance while the Red Army rebuilt itself and learned to fight on the operational plane.

Key to the operational art that developed during World War II was deception planning. The Soviets did not conceal their intention to attack as much as the scale, scope, and location of the attack. The Soviets proved they could conceal what they wished to conceal and put an extensive effort into it.

Timing was also a key factor of the developing operational art. There was never a simultaneous Soviet attack along the entire front. Artillery fires should be sufficient and massed, and so one attack would be launched and then the artillery divisions would be shifted to support the next attack. The Soviets noted that the Germans would always move their reserve to deal with the initial attack, and if they launched enough attacks, the operational reserve would never get committed. The first place that the Soviets would attack would usually end up as the main effort, but often the Soviets had more than one effort. The Germans became proficient in using Soviet artillery patterns and reconnaissance efforts as indicators of attack. The Soviets discovered this and began duplicating these patterns as part of their deception efforts.

Operational encirclements were a key element of the developing operational art and grew out of the works of Tukhachevsky. More than 200 Axis division-sized units were surrounded and destroyed during 12 major Soviet encirclements.⁸ Toward the end of the Cold War, the functional tasks of the Soviet operational planners were to—

- ◆ “Investigate the rules, nature, and character of contemporary operations (combat action).
- ◆ Work out the means for preparing and conducting combat operations.
- ◆ Determine the function of large units (fronts, armies) and formations (divisions) of the Armed Forces.
- ◆ Establish means and methods for organizing and supporting continuous cooperation, security, and command and control of forces in combat.
- ◆ Delineate the organizational and equipment requirements of large units of the Armed Forces.
- ◆ Work out the nature and methods of operational training for officers, and command and control organs.
- ◆ Develop recommendations for the operational preparation of a theater of military operations (TVD).
- ◆ Investigate enemy views on the conduct of operational combat.”⁹

These functional tasks could almost be the table of contents of current Russian professional military education journals.

Fire Enables Maneuver and is a Form of Maneuver

Artillery has always held pride-of-place in the Soviet/Russian military. Direct fire artillery and/or mortars were an integral part of Soviet infantry battalions, and it was normal practice for an artillery battalion (sometimes two) to

be in direct support of an infantry (motorized rifle) or tank battalion. The Soviet Army was an artillery army with a lot of tanks. Massed artillery could blast gaps through stubborn defenses, defeat counterattacks, deny critical terrain to an enemy, gain ground, and create induced psychological paralysis and terror in enemy forces. Massed artillery was tighter and more effective within a 10-kilometer range, so Soviet artillery was always much further forward than that of NATO forces. Much of this artillery was positioned in direct lay for “fire over open sights.” Direct fire artillery is more responsive, more accurate, and more destructive. Further, direct fire or minimum elevation artillery firing allows friendly aviation to overfly friendly territory without closing down artillery support.

Precision-fire artillery and the development of a quick detect-destroy cycle had long been a goal of Soviet artillery. Remarkable headway was made in this direction (and has been achieved today), but the need, efficacy, and wide range of applications of massed fire artillery remain.

Like all competent gunners, the Soviets prefer to move their artillery after a fire mission to avoid enemy counterbattery fire. However, the Soviets also developed the concept of “maneuver by fire” [манёвр огнём]. Maneuver by fire shifts massed artillery fires within range onto a single key target to destroy it rapidly. The gunners accept risk by continuing firing, without shifting firing positions, until they destroy their target. The fire planning can be for a single concentrated mission or several, and the mission may be against several targets or shifted from one heading to another. Maneuver by fire is intended to accept risk in order to gain fire superiority over the enemy. Maneuver by fire can defeat counterattacks, deny critical terrain to an enemy, gain ground, or perform other maneuver force missions.¹⁰

Artillery has always been a major component of Soviet/Russian large-scale combat operations. Artillery was well integrated within the Soviet maneuver units, but there was also a significant artillery reserve held at army, front, and the supreme command (Stavka) during World War II. This artillery was used to weight the offensive or defensive in key sectors. Larger special-purpose artillery (siege guns and mortars, railroad guns, and, later, nuclear-capable guns) were normally retained in artillery reserves.¹¹

There was not a democratic distribution of assets, personnel, and supplies during World War II. Units that were making the main attack got what they needed. Units in a supporting or reserve role got less or got by with what they had. Artillery, as a major component of combat power, went to where it was needed to accomplish the mission. Calls for fire were treated similarly. This philosophy carried into the



By Игорь Савельев/Сreative Commons

The 9K22 "Tunguska-M" Gun/Missile Air Defense System (NATO reporting name: SA-19 "Grison") photographed during the 2008 Moscow Victory Day Parade, May 9, 2008.

Cold War, and it is still one of the most visible aspects in present-day Russian training exercises and even actions in Ukraine.

Tactical Predictability Enables Operational Flexibility

Since its inception, the Soviet Army relied on scientific and mathematical approaches to problem-solving and operational planning. Marxism-Leninism was presented as a "scientific" approach to organizing society, and centralized planning was applied to society as a whole—creating upheaval, famine, economic disaster, and eventually a public compliance.

Fortunately, mathematics has a more reliable and more direct applicability to military affairs, and there was little math anxiety in the Soviet officer corps. Mathematics, in fact, is still emphasized throughout civilian and military education, and many articles in professional military journals are collections of formulae and a discussion of their applications. Recurring military activities such as movement rates, fuel consumption, distribution of rounds in an impact area, emplacement times, smoke dispersal, and the like, can be mathematically determined—and readily adjusted for variations in terrain, weather, and altitude. Many of these activities were encompassed by applicable formulae and nomograms¹³ to allow quick and accurate solutions.

The Soviets further applied a scientific approach to operational planning with significant success. The Soviets studied military history as operations research and began to model combat based on detailed combat histories. One of the first problems was how to quantify military combat power. All

tanks are not the same, nor are aggregates of like tanks comparable to aggregates of different tanks. A Soviet motorized rifle platoon may differ from a Belgian mechanized infantry platoon in size, vehicles, communications, armament, training, combat experience, morale, and motivation. Terrain, artillery support, and mission will further complicate any comparison.

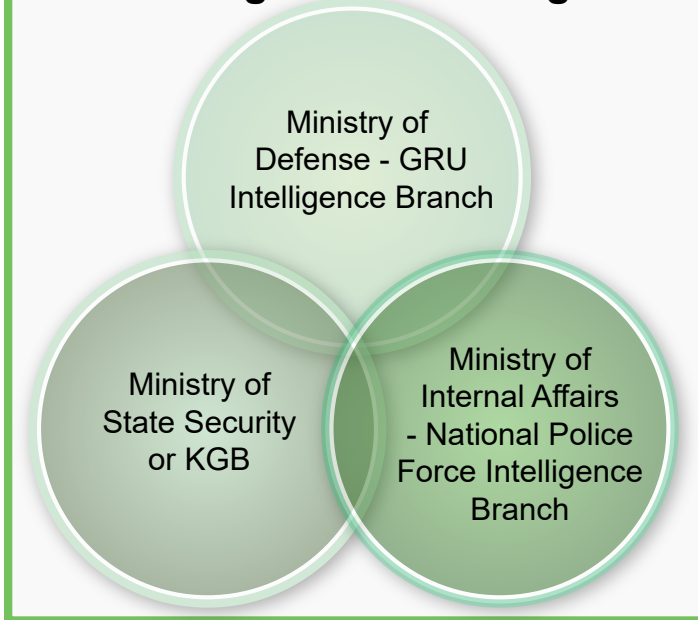
The Soviets began by using their T-54 medium tank as base 1. All other tanks were compared to the T-54 using criteria such as armor, armaments, rate of fire, radius of action, chemical, biological, and radiological survivability, height, weight, fordability, communications, accuracy, cross-country mobility, rounds on board, and the like.

All tanks were assigned a value relative to the T-54. Personnel carriers and other ground equipment were also rated against the T-54 and assigned a relative value. When the appropriate equipment was aggregated into respective tables of organization and equipment, it was possible to determine a mathematical value for the combat power of one unit and to compare it to another unit. However, this was not enough to determine if an attacker had a 3:1 advantage over a defender.

Combat is not fought on a pool table or chessboard. Mission (attacking, defending, retreating), terrain, training, time in combat, morale, readiness status, logistics support, regular soldiers versus reservists, and other factors all impact the mathematical value of the combat power of the unit. The Soviets determined mathematical "K" factors to apply to varying conditions to arrive at the realistic mathematical combat power for this unit.

The Soviets were interested in modeling tactical predictability where the outcome of a planned combat could be mathematically determined so that adequate combat power could be applied, while not committing too much power where it was not needed. This mathematical predictability of tactical combat allowed a great deal of flexibility in operational planning—where the Soviets had won their wars with Germany and Japan. This modeling is called the correlation of forces and means, or COFM. The Soviets produced corollary COFMs for artillery combat, air defense combat, air combat, and, reportedly, nuclear exchange. The Russian military inherited these models and the military scientists who devised and maintained them. This type of modeling is readily programmable in modern computer technology as are tactical formulae and nomograms.

Soviet Overlap in Intelligence Gathering



Intelligence Drives the COFM Model

To the Soviet military mind, the best intelligence came from a scout, commander, attaché, agent, spy, or mole who had been on the ground and made an informed determination. Electronic sensors, trackers, transmissions, and devices can be duped or reprogrammed. The Soviets invested heavily in all types of electronic reconnaissance but preferred reports from the man or woman on the ground.

The Soviets had three uniformed armed forces under three different ministries. The most apparent was the Army, Navy, Air Force, Airborne Forces, and Strategic Rocket Forces of the Ministry of Defense. Its intelligence branch, the GRU [Главное Разведывательное Управление], was responsible for collecting military and technical intelligence on external threats and allies. The Ministry of Internal Affairs was responsible for internal security and constituted a national police force that kept public order, suppressed and investigated crime, incarcerated felons and ran prisons, fought fires, managed the nationwide internal passport and registration system, suppressed gangs and riots, and managed traffic. It was more than normal police forces and highway patrols since it had divisions of uniformed soldiers for internal control. Its police intelligence branch watched the citizenry and suppressed crime (except for political crimes). The Ministry of State Security or KGB [Комитет Государственной Безопасности] was a major intelligence and security organization responsible for foreign intelligence, counterintelligence, security investigations, border guards, guarding of communist party and Soviet

Government leadership, and organization and safeguarding of government communications, as well as combating nationalism, dissent, anti-Soviet activities, and other political crimes. In addition to the border guards, it had divisions of uniformed soldiers to protect the Soviet Government. The Soviet Government further maintained these three powerful, uniformed armed forces as a protection against a coup de main by one of these ministries. Naturally, there was a lot of overlap in intelligence gathering, as the missions overlapped. Despite the division of labor, all three agencies could be working the same target.

Deconflicting intelligence reports from different agencies can be difficult. One of the advantages of the COFM model was its mathematical neutrality. The model presented a predictable outcome, but the model could be tweaked to safe-side an operational plan if the intelligence reports so indicated. Still, the COFM model required substantial input and regular updating to maintain its effectiveness. At the time, this could best be handled by intelligence operations focusing at the strategic and operational level. Today, it is harder to discern, but the idea of feeding the various mathematical models with data is voluminously evident in their unclassified military writings (discussions).¹⁴

Dealing with the New/Old Russia

The new Russia that emerged from the chaos following the dissolution of the Soviet Union is different from its communist past, but its history, culture, language, values, and worldview remain intact. Over the past decades, Russia has examined the Western world, adopting much of its technology but little else. It has reemerged as a Eurasian power with an increasing capacity to reach outside its traditional space. Russia challenges the world to regain its status and leadership and defend its borders. Small-scale difficulties such as Georgia, Crimea, the Donbas, and Syria can be handled with small forces. But this and future Russian leadership faces conditions that the Soviet leadership did not, such as a smaller population to guard a huge border, a more open media that forces the leadership to be more sensitive to casualties, and the loss of the western and southern buffer zones. New Russian military thinking must reflect these conditions as well. Russia is again determining how best to conduct conventional maneuver operational war under nuclear-threatened conditions, should this become necessary. Russia has made significant changes in how it will do so, but much remains the same. The key role of the operational art, fires, and maneuver, coupled with an upgraded, computerized COFM model, and other improved mathematical tools should be expected to continue to shape Russian operational planning. Current indicators are that they do. 🌟



T-72B3M main battle tanks at the Zapad 2017 exercise, September 14, 2017.

Epigraphs

Leon Trotsky, "Military Doctrine or Pseudo-Military Doctrinairism," 1921, as translated by Dr. Grau from a 1988 source. A similar translation is available on the marxists.org website where David Walters has transcribed "Questions of Military Theory, Military Doctrine or Pseudo-Military Doctrinairism," in *The Military Writings of Leon Trotsky, Volume 5: 1921-1923*, <https://www.marxists.org/archive/trotsky/1922/military/ch37.htm>.

William Shakespeare, *The Tempest*, act 2, sc. 1.

Endnotes

1. The term *color revolution* describes "various related movements that developed in several countries of the former Soviet Union and the Balkans during the early 2000s. The term has also been applied to a number of revolutions elsewhere...These movements generally adopted a specific colour or flower as their symbol." Wikipedia, s.v. "Color revolution," last modified 11 September 2018, 11:47, https://en.wikipedia.org/wiki/Colour_revolution.
2. For an excellent English-language edition, see Aleksandr A. Svechin, *Strategy* (Minneapolis: East View Information Services, 1992) with introductory essays by Andrei A. Kokoshin, Valentin V. Larionov, Vladimir N. Lobov, and Jacob W. Kipp.
3. N. V. Ogarkov, "Стратегия Военная" [Military Strategy], *Советская Военная Энциклопедия* [Soviet Military Encyclopedia], vol. 7 (Moscow: Voenizdat, 1979), 555-565. Note that the Soviets/Russians define doctrine as the nation's officially accepted system of scientifically founded views on the nature of wars and the use of armed forces in them.
4. V. G. Kulakov, "Оперативное Искусство" [Operational Art], *Советская Военная Энциклопедия* [Soviet Military Encyclopedia], vol. 6 (Moscow: Voenizdat, 1978), 53-57.

5. I. G. Pavlovskiy, "Тактика" [Tactics], *Советская Военная Энциклопедия* [Soviet Military Encyclopedia], vol. 7 (Moscow: Voenizdat, 1979), 628-631. Today, the brigade would also be considered a tactical unit; however, depending on the theater, a division or brigade could have an operational impact. Military districts and the supreme command are strategic entities that support operations.

6. Fronts are a wartime formation. Army groups are a peacetime designation for the same concept.

7. David M. Glantz, "The Nature of Soviet Operational Art," *Parameters* 15, no. 1 (Spring 1985), 2-12, <https://ssi.armywarcollege.edu/pubs/Parameters/articles/1985/1985%20glantz.pdf>.

8. I. D. Veprev and V. A. Smirnov, "Окружение" [Encirclement], *Советская Военная Энциклопедия* [Soviet Military Encyclopedia], vol. 6 (Moscow: Voenizdat, 1978), 37-38.

9. Glantz, "The Nature of Soviet," 11.

10. Ministry of Defense of the Russian Federation, "манёвр огнём," *Военный Энциклопедический Словарь* [Military encyclopedic dictionary], vol. 2 (Moscow: Ripol Klassic, 2001), 27.

11. This changed when the Soviets developed an effective 152mm tactical nuclear round and most 152mm howitzers could then be used in this role.

12. Photo by Пользователь - 9 мая 2008, CC BY 3.0, <https://commons.wikimedia.org/w/index.php?curid=10907606>.

13. A nomogram (also called a nomograph) alignment chart is a "graphical calculating device, a two-dimensional diagram designed to allow the approximate graphical computation of a mathematical function." Wikipedia, s.v. "Nomogram," last modified 13 July 2018, at 19:47, <https://en.wikipedia.org/wiki/Nomogram>.

14. As an example of a COFM approach, see "A Russian Approach to Interagency Cooperation," *OE Watch* 8, no. 4 (April 2018): 60, <https://community.apan.org/wg/tradoc-g2/fmso/p/oe-watch-issues>. The original article is Е.Г.Анисимов, В.Г. Анисимов, и И.В.Солохов, Проблемы Научно-методического обеспечения межведомственного информационного взаимодействия, *Военная Мысль*, No.12, Декабрь 2017, 45-51. (Y.G. Anisimov, V.G. Anisimov, and E.V. Solohov, "The Issue of Providing for Scientific Methodological Interagency Information Cooperation," *Military Thought*, no.12 [December 2017], 45-51.)

15. Photo by Mil.ru, CC BY 4.0, <https://commons.wikimedia.org/w/index.php?curid=62469060>.

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