

BOWLES'S *VIEW* OF AN *ACCURATE MAP* OF THE *WORLD, OR TERRESTRIAL GLOBE*, laid down from the *BEST OBSERVATIONS* and *NEWEST DISCOVERIES*; particularly those of other celebrated *CIRCUMNAVIGATORS*: Illustrated with a variety of useful *PROJECTIONS* and *REPRESENTATIONS* of the *HEAVENLY BODIES*: the most approved *ASTRONOMICAL* and *GEOGRAPHICAL DEFINITIONS, TABLES, and PROBLEMS*. With an *easy and familiar Explanation* of the most curious and interesting *PHENOMENA* in the *UNIVERSAL SYSTEM*.
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Reconnaissance-in-Force Russian Style

Dr. Lester W. Grau

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Author Background

Dr. Les Grau, a retired U.S. Army infantry lieutenant colonel, is the Foreign Military Studies Office's (FMSO) research director. Previous positions include senior analyst and research coordinator, FMSO, Fort Leavenworth; deputy director, Center for Army Tactics, U.S. Army Command and General Staff College, Fort Leavenworth; political and economic adviser, Allied Forces Central Europe, Brunssum, The Netherlands; U.S. Embassy, Moscow, Soviet Union; battalion executive officer, 2-9th Infantry, Republic of Korea and Fort Riley, KS; commander, Headquarters and Headquarters Company, 1st Support Brigade, Mannheim, Germany; and district senior adviser, Advisory Team 80, Republic of Vietnam. His military schooling includes U.S. Air Force War College, U.S. Army Russian Institute, Defense Language Institute (Russian), U.S. Army Command and General Staff College, Infantry Officer Advanced Course and Infantry Officer Basic Course. He holds a bachelor's of arts degree in political science from the University of Texas-El Paso; a master's of arts degree in international relations from Kent State University; and a doctorate in Russian and Central Asian military history from the University of Kansas. His awards and honors include U.S. Central Command Visiting Fellow; professor, Academy for the Problems of Security, Defense and Law Enforcement, Moscow; academician, International Informatization Academy, Moscow; Legion of Merit; Bronze Star; and Purple Heart. He is the author of 13 books on Afghanistan and the Soviet Union and more than 200 articles for professional journals. Dr. Grau's best-known books are *The Bear Went Over the Mountain: Soviet Combat Tactics in Afghanistan* and *The Other Side of the Mountain: Mujahideen Tactics in the Soviet-Afghan War*. Dr. Grau and Chuck Bartles are authors of the recently published *The Russian Way of War: Force Structure, Tactics and Modernization of the Russian Ground Forces*, available as a free eBook at <https://community.apan.org/wg/tradoc-g2/fmso/>.

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Reconnaissance-in-Force Russian Style

by Lester W. Grau

***Разведка Боем:** Reconnaissance-in-force [literally: reconnaissance by battle] is the collection of information on the enemy by attacking with specially selected subunits. It is used in those instances where other attempts to obtain information about the enemy have failed. Reconnaissance-in-force may be conducted by designated reinforced motorized rifle or tank battalions/companies and reconnaissance subunits supported by aviation strikes, artillery fire and other means. Commanders in whose zones or sectors reconnaissance-in-force is conducted observe the conduct and evaluate the results of the effort, and therefore are prepared to exploit achieved success.¹*

Historically, reconnaissance-in-force involves a serious effort by an attacking force to develop information about an enemy. The attack requires substantial aviation and artillery support as well as ground activity to convince the defender that the attack is genuine and threatening, requiring the full commitment of the defense to defeating the attack. The U.S. Army first officially recognized reconnaissance-in-force in its 1939 edition of **Operations**.²

An example of its use was during early September 1944, when MG Lawton J. Collins conducted a major reconnaissance-in-force with his VII Corps, employing three divisions on-line to conduct a limited attack to penetrate the enemy defenses in the Aachen-Stolberg corridor and to seize bridgeheads over the Roer River in preparation for exploitation advances into Germany. The operation failed to achieve its initial objectives; however, it did develop intelligence about the defending German forces that paid future dividends.³

The practice of reconnaissance-in-force dates back at least to the Napoleonic wars. However, it came to prominence as a distinct form of combat during World War I and was incorporated into the Red Army's field regulations [*полевой устав*] in 1936. The regulations envisioned combined-arms combat involving reconnaissance battalions of a division, reinforced with tanks and artillery and additional infantry subunits.

The widespread Soviet use of reconnaissance-in-force during the Great Patriotic War (World War II against the Germans) refined the concept. The scope and size of Soviet reconnaissance-in-force attacks expanded dramatically as they successfully revealed the enemy forward defenses, integrated fire system, engineer obstacles and the withdrawal of enemy forces from their forward positions into their defensive depths. Soviet reconnaissance-in-force attacks also served to mask the activities of their own forces and to screen the main attack. During the final Berlin operation, two reinforced infantry battalions preceded each front-line division and attacked simultaneously across the entire front to develop necessary reconnaissance information and to prevent German determination as to the axis of the main attack in time to commit the reserve.⁴

Impact of Great Patriotic War experience

During the latter period in the war, when German forces were mostly defending, the Germans began holding the bulk of their defenders back from the forward edge of the defenses. In that way, the bulk of the Soviet artillery preparation would fall on empty ground. Following the artillery preparation, the defenders would rush forward to occupy their fighting positions and combat the Soviet attack. Therefore, in organizing a reconnaissance-in-force in this period, it was very important to determine the most advisable time for it: immediately before, several hours before or several days before the attack. Experience showed that the enemy managed to change his combat laydown and fire plan if a reconnaissance-in-force was conducted several days before the beginning of an attack. Reconnaissance-in-force immediately before an attack deprived him of this opportunity.

It also was important to determine the most advantageous time of day for a reconnaissance-in-force. Conducting it during the first half of the day permitted supporting it more effectively with artillery and having the main body exploit success. Conducting a reconnaissance-in-force at night required more artillery as well as illumination rounds to illuminate the terrain.⁵

The Soviets determined that conducting a reconnaissance-in-force in individual narrow sectors at different times did not reveal enough of the enemy laydown and defenses in the main attack sector. Simultaneous reconnaissance-in-force attacks on a broad front gave a fuller picture of the enemy and misled him regarding the axis of main attack and the beginning of a general offensive. Moreover, the enemy often took such an attack to be the main attack.⁶

During the Great Patriotic War, a division-level reconnaissance-in-force in a division would be organized and conducted by the division commander, often under authorization of his senior commander. After the division commander made his decision on the scheme of maneuver, the operations department (section) would implement the coordination for the plan. The chief of intelligence and chiefs of combat arms would be involved in compiling the plan, and it would be approved by the army commander.

There was no strict format for a reconnaissance-in-force plan, but it included the following: objective and missions of the reconnaissance in force; time for beginning and ending reconnaissance; composition of reconnaissance entities; means of reinforcement and support; preparation measures; the assembly area and time for occupying it; missions of combat arms and their coordination by lines; composition and missions of the reserve. A supplementary network of observation posts would be set up during the preparation period to study the enemy's behavior, fire plan, engineer structures and battlefield laydown.⁷

The success of reconnaissance-detachment actions was dependent on timely suppression of the enemy by artillery and other weapons; disruption of the enemy communications and command and control system; surprise attack; and the swift advance of the attacking subunits into the depth of the enemy defense. If the reconnaissance-in-force took place directly before the main attack, it was observed by first-echelon units and those that were to operate subsequently on that axis. At the end of the reconnaissance-in-force, the intelligence-section chief would collect and update all information obtained and compile a comprehensive report of observations. This would be given to the chief of staff or commander. After necessary processing, it would be sent to the next higher staff.⁸

A reconnaissance-in-force would also be used in the defense. The primary objective of such reconnaissance was to capture enemy prisoners and documents; collect the most reliable and accurate information on the enemy's composition, status, battle formation, fire plan and readiness for attack; and determine the axis of main attack as well as combat missions. A Russian reconnaissance-in-force from a defense was often conducted:

- When there was an expectation of an enemy attack from a position of direct contact, but there was no opportunity to collect such intelligence using other sources;
- When friendly artillery counter-preparation fire was being prepared to preclude enemy artillery strikes against deeper targets;
- When friendly artillery counter-preparation fire was being conducted and fire strikes were being delivered in front of the Soviet forward edge of the defense to determine the combat effectiveness of the enemy grouping and to create disorder within enemy units that were poised or deployed for an attack against the Soviet defenses.⁹

Reconnaissance-in-force in maneuver combat

The Soviet/Russian Army has recent experience in fighting guerrilla and limited wars (Afghanistan, Chechnya, Georgia, Ukraine, Syria), but large-scale maneuver conflict under nuclear-threatened conditions is its most potentially dangerous external threat. Fighting a peer or near-peer modern force presents distinct challenges in which reconnaissance-in-force may play an essential role.

Today's enemy defenses are so complex and diversified that they can only be revealed in their entirety, with sufficient validity and completeness, in the course of battle. When faced with a strong attack, the enemy is forced to use all the assets he has concealed carefully and simultaneously reveal his dispositions on the forward edge. In addition, having penetrated the enemy disposition, attacking subunits have the opportunity of determining the actual status of his defense and – from captured prisoners and documents – to check or reconfirm the affiliation of defending enemy troops.¹⁰

As a rule, a motorized rifle or tank battalion (company) is assigned to conduct a reconnaissance-in-force. Necessary reinforcements include tanks, tactical-intelligence subunits (platoon, squad) or a team of specially selected reconnaissance personnel from the reconnaissance battalion or reconnaissance company of the brigade (regiment) in the zone in which the reconnaissance in force is being conducted.¹¹ Support is provided by artillery and anti-tank guided missile (ATGM) fire, rocket-propelled flamethrower subunits and other weapons, as well as air strikes. On the evening before a reconnaissance-in-force, the battalion (company) occupies an assembly area, leaving enough daylight for familiarization with the terrain, the enemy dispositions and attack objectives.¹²

At the appointed time, the battalion (company) launches an attack during a brief fire preparation. Under cover of fire of artillery and weapons in direct lay, battalion (company) subunits swiftly attack the enemy, break into the forward edge of the enemy defense, seize and consolidate at designated lines or the lines they have reached and determine the enemy grouping, weapons and fire plan. They capture prisoners, documents, arms and equipment. In accordance with the senior commander's orders, when the enemy begins to withdraw, the battalion (company) either continues the attack by pursuing the enemy or consolidates at the designated line.¹³

In most cases, subunits conducting the reconnaissance-in-force are assigned the mission of seizing and holding certain lines or points in the enemy defense to improve positions of friendly troops or create an area from which to launch an offensive. With the successful advance of the reconnaissance-in-force, the main forces assigned to the attack are introduced into the breakthrough area to exploit success. Thus a successful reconnaissance-in-force can develop directly into an offensive battle or operation.¹⁴

If the enemy launches a counterattack after friendly troops seize the designated line, the battalion (company) repels it while continuing to conduct reconnaissance. If it is impossible to hold the designated line due to the counterattack, the battalion (company) can withdraw to the assembly area at the command of the senior commander who authorized the reconnaissance-in-force.¹⁵

Before and during a reconnaissance-in-force, special attention is given to organizing a system of observation that includes all combat arms and special troops. In the sector where the reconnaissance-in-force is planned, a maximum amount of observation posts and points are set up, and all subunit commanders are at their command-observation points and personally study the enemy battle formation and his fire and obstacle plan. Narrow sectors of observation are normal for this type of close observation. Observation targets within these sectors can be assigned. Reconnaissance helicopters can be used for observing the enemy defensive depth, and unmanned aerial vehicles can conduct reconnaissance over enemy territory that extends well past the territory on which the reconnaissance-in-force battalion (company) will fighting. Therefore, special attention is devoted to detecting counterattacking enemy subunits and units capable of attacking in front of their forward edge of defense.

All tactical reconnaissance – including electronic, artillery, aerial, anti-aircraft, engineer, radiation, chemical and biological – is activated throughout the period of the reconnaissance-in-force. Optical-thermal imaging systems provide 24/7 weather and target-designation surveillance by combining thermal and optical imaging while determining target coordinates for further observation.¹⁶ Units in close contact with the enemy may use the 1L277 Sobolyatnik and the 1L111M Fara-VR radar to assist their observation.¹⁷

A reconnaissance-in-force is not the initial reconnaissance but is essentially the final reconnaissance effort by troops on an axis. In addition to performing its immediate missions, reconnaissance-in-force provides an opportunity to confirm enemy information collected by all other reconnaissance methods.

Example

A Russian motorized rifle battalion is defending from positions in direct contact with the enemy. The enemy strength is uncertain, and there are some two kilometers between forces. The terrain is fairly open, trafficable and interrupted by occasional stands of deciduous trees in full foliage. The brigade's tank-battalion commander was directed to conduct a company-sized pre-dawn mounted reconnaissance-in-force. The company's mission is to determine enemy strength and dispositions, capture documents and prisoners and determine the strength and route of the counterattack force. The company will plan on withdrawing after one hour unless the enemy withdraws. If so, the company will provide support to a follow-on attack/pursuit. An artillery howitzer battalion and a motorized rifle platoon will provide support to the company.

The tank-battalion commander decides to employ his second company to conduct the reconnaissance-in-force. It will conduct an attack from the march from a company attack area forward of the brigade's second-echelon defensive area. The artillery battalion will conduct a 20-minute artillery preparation in advance of the attack and plan to conduct deeper fires, on-call fires and standing barrage fires on the flanks of the attack. The artillery battalion, motorized rifle battalion, reconnaissance company and engineers will establish observation posts overlooking the attack.

The attack commences before dawn following the artillery barrage with two tank platoons on-line. After breaking through the initial defensive line, the trailing platoon continues deeper to establish a support position. The right and left flank platoons reverse to begin their exploitation and possible withdrawal while determining and destroying the location and extent of enemy positions. The motorized rifle platoon dismounts, searching for prisoners, documents and enemy crew-served weapons. The enemy launches a counterattack, which is stopped by artillery fire and the forward tank platoon.

Upon the command to withdraw, the reconnaissance-in-force company will withdraw, normally under a particulate smoke screen. Upon the command to defend, the company will dig in as a supporting position for a follow-on battalion or brigade attack/pursuit.

Reconnaissance-in-force in contemporary combat

Currently, reconnaissance-in-force receives less attention in military circles. This is due to the creeping perception that incorporation of state-of-the-art reconnaissance systems will determine enemy composition, status, combat formations, planning and probable courses of action. The Gulf War clearly fed this perception, which lasted up to the Kosovo campaign. Kosovo demonstrated that a thinking enemy and difficult terrain can offset technological advantages.

Undoubtedly the new reconnaissance systems are welcome additions that assist planning and targeting – particularly when strong armies that are better equipped with state-of-the-art systems are fighting a less technically and combat-capable enemy. However, the experience of the Coalition of Western States against the Islamic State of Iraq and the Levant, or ISIS, in the city of Mosul (2016-2017) demonstrated that once an enemy has gone to ground in an urban (or mountainous) environment, high-tech reconnaissance systems are not as effective.

The Russians say that U.S. and Iraqi soldiers resort to the tactics of a unique “mini-reconnaissance”-in-force even when fighting against a less-equipped enemy. Inasmuch as it is very difficult to discover the enemy’s battle formation and fire plan within a city’s blocks, the Americans and Iraqis carried out assaults by small teams to lure the ISIS fighters to counterattack. After the terrorists emerged from cover, American aviation and artillery delivered a strike against them.

“This method of fighting terrorists in Iraq indicates that in fighting a determined and trained enemy, not even the most state-of-the-art equipment will permit obtaining precise coordinates of the disposition of his weapons in the battle formation,” write V. Kislov and A. Kostenko in their article “Разведка боем в современных условиях” [“Reconnaissance-in-Force under Contemporary Conditions”]. “Consequently, the study and use of old, tested reconnaissance methods supported by new technology is an important factor in preparing to conduct reconnaissance when other methods have not provided a proper result.”¹⁸

Today, reconnaissance-in-force is a variety of attack conducted by small forces whose missions are to determine the composition, status, battle formation, fire plan, engineer obstacle plan and capabilities for counterattacks at the tactical level. They collect the most complete and reliable information on the enemy and on the nature of his defenses, both at the forward edge as well as in the immediate tactical depth. Reconnaissance-in-force is one method of tactical reconnaissance.¹⁹ Tactical reconnaissance uses many other methods of collecting necessary information on the enemy, the main ones being observation, probing attack [поиск], raid and ambush. Aerial reconnaissance using unmanned aerial vehicles, signals intelligence, radar, electronic intelligence and imagery intelligence produce good results.²⁰

Each method has its positive points. A well-organized observation system provides reliable information on the disposition of the visible enemy, his movements and actions, and the location of surface-weapon emplacements and defensive structures. Accurate information about the enemy on a specific axis or in a specific area can be collected with a skillfully executed probing attack or ambush. Interrogation of prisoners and a study of enemy documents are an exceptionally valuable source of information on the enemy. Signals intelligence, radar and electronic-intelligence collection permit tracking the location of main enemy subunits in real time.²¹

The preceding forms of tactical intelligence may reveal the affiliation and intentions of the enemy; the disposition of enemy personnel and weapons, especially artillery; the changes in enemy defensive formations; and the morale of enemy troops. Imagery of a terrain sector occupied by the enemy provides the commander with information on

the actual condition of the objective at a given moment. The value of these tactical reconnaissance methods is indisputable, but it does not provide a full picture of an enemy defense, especially the disposition of his first-echelon companies and battalions.²²

What is a reconnaissance-in-force trying to accomplish?

- First, determine the actual location of the forward edge of the enemy defenses.
- Second, activate the entire enemy defensive plan.
- Third, determine enemy boundaries and flanks.
- Fourth, determine positions, routes, fire support and deployment lines for enemy counterattacks.
- Fifth, capture prisoners and documents.²³
- Sixth, seize and retain positions advantageous for continued reconnaissance or exploitation during an actual attack.

An experienced enemy will not want to disclose the frontline trace and positions of his defense, as that will attract accurate artillery fire. The enemy will create dummy, temporary firing positions, combat outposts and forward defensive positions in front of the actual defense. The dummy positions are built so they can be detected and draw off artillery fire. The actual positions will be well hidden from ground and air observation. Combat outposts, temporary firing positions and forward defensive positions are also concealed and are designed to shape the battle and inflict damage on an attacker in front of the actual defenses. The reconnaissance-in-force needs to determine the forward edge of the enemy defenses, particularly the location of anti-tank weapons, tanks and infantry fighting vehicles. The enemy defense may include a dummy forward-defensive position to which the enemy will withdraw under attack, leading the attacker into a fire sac where defensive fires are concentrated and into which a counterattack is planned.²⁴

A successful reconnaissance-in-force should activate the entire enemy defensive plan. A skilled enemy will employ duty weapons in temporary firing positions to deal with patrols, probing fire and probing attacks. Artillery, mortar, ATGM and automatic weapons in temporary firing positions should have no relation to their positioning in the main defense. Counterbattery radar, such as the U.S. AN/TPQ-36 and AN/TPQ-37 systems, will be camouflaged and shifted. Artillery firing positions and command posts will change positions periodically to avert detection.²⁵ The reconnaissance-in-force should convince the enemy that the attack is a genuine, all-out attack and cause the activation of all electronics, reveal enemy firing positions, disclose movement, trigger protective smoke and uncover engineer obstacles.

Determining enemy flanks and boundaries is an important mission of a reconnaissance-in-force since they are the most vulnerable locations in a defense. Knowing their location helps determine the main axis of any future attack and how to unhinge the enemy defense. Prisoners and captured documents are important in determining flanks and boundaries as well as troop strength and morale.²⁶

An enemy usually uses counterattacks to restore a lost position. Since enemy counterattacks are conducted using battalion and brigade reserves or second echelons, once a reconnaissance-in-force is counterattacked, it can determine the counterattack force composition, routes for conducting counterattacks and the lines of deployment of counterattacking units and subunits. Even in those cases where the enemy does not commit his tactical reserves, their disposition area is invariably discovered through the activity usually associated with reserve locations (stepped-up movement of personnel and equipment, radar activation, smoke and electronic denial).²⁷

A reconnaissance-in-force can be conducted from defensive positions in direct contact with the enemy or from the march. A reconnaissance-in-force is carried out to determine the composition of the enemy grouping or discover changes in it, and to determine or update the location of his forward edge of defense. Most importantly, it is done to preclude fire preparation of the attack against unoccupied, temporarily abandoned or insufficiently defended enemy positions. Reconnaissance-in-force must be conducted so the enemy is unable to ascertain when troops are launching an attack and will be unable to determine the axis of the main attack. As a rule, a reconnaissance-in-force is conducted on different axes and at different times of day for this purpose. But most importantly, the enemy must not realize that this attack is only a reconnaissance-in-force.²⁸



Figure 1. A Russian air-defense battery in December 2015 in the Syrian Arab Republic. (A Pantsir-S1 close-range defense system and two launch vehicles for S-400 long-distance flight missiles at Latakia.) At the appointed time, the Russian unit conducting a reconnaissance-in-force launches an attack during a brief fire preparation. Under cover of fire of artillery and weapons in direct lay, battalion (company) subunits swiftly attack the enemy, break into the forward edge of the enemy defense, seize and consolidate at designated lines or the lines they have reached and determine the enemy grouping, weapons and fire plan. (Photo by Russian Ministry of Defense, attribution: mil.ru)

Example

A Russian motorized rifle battalion is defending from positions in direct contact with the enemy. The enemy is defending along a railroad embankment with secondary positions about 100 meters behind the forward defense. The terrain is marshy. The battalion commander was directed to conduct a company-sized pre-dawn dismounted reconnaissance-in-force in the vicinity of Elevation 235.3. The company's mission is to determine the enemy strength and dispositions, capture documents and prisoners, and determine the strength and route of the counterattack force. The company will plan on withdrawing after one hour unless the enemy withdraws. If so, the company will provide support to a follow-on attack. A tank platoon will provide direct fire support to the company and be prepared to move behind the attacking company.

The battalion commander decides to employ his second-echelon company to conduct the reconnaissance-in-force. He designates a company attack area between two leading platoons in a forward company. Since the company must cross 300 meters of fairly open ground before reaching the enemy position, the brigade commander has assigned an artillery battalion to support the attack. The artillery battalion will conduct 10-minute artillery preparation in advance of the attack and plan to conduct deeper fires, on-call fires and standing barrage fires on the flanks of the attack. The artillery battalion, motorized rifle battalion, reconnaissance company and engineers will establish observation posts overlooking the attack.

The attack commences at dawn following the artillery barrage with three platoons on-line. After breaking through the initial defensive line, the middle platoon continues deeper to establish a support position. The right and left flank platoons begin their withdrawal, searching for prisoners, documents and enemy crew-served weapons. The enemy launches a counterattack which is stopped by artillery fire and the middle platoon.

Upon the command to withdraw, the reconnaissance-in-force company will withdraw, normally under a particulate smoke screen. Upon the command to defend, the company will dig in as a supporting position for a follow-on battalion attack.

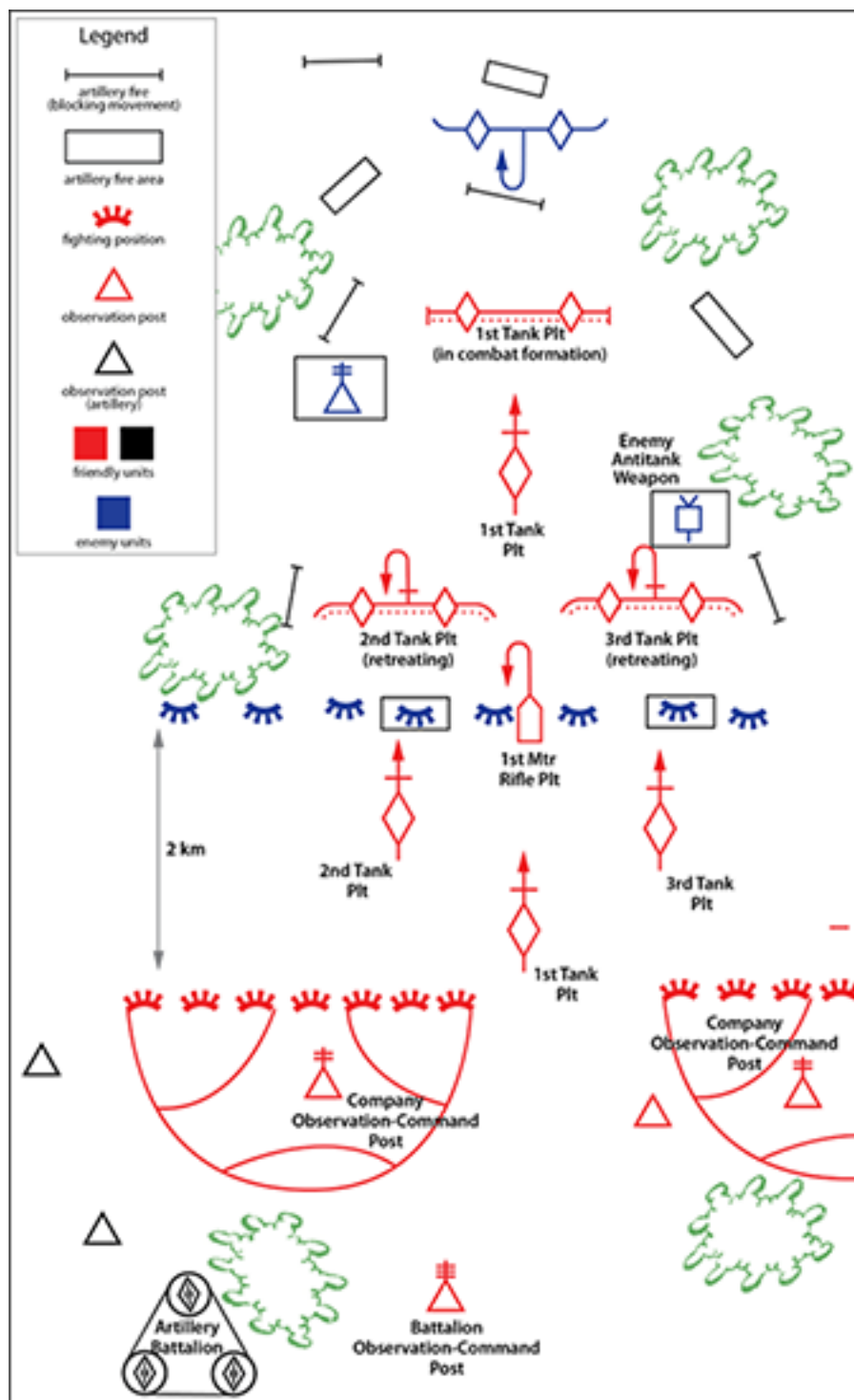


Figure 2. Russian deployment of forces for reconnaissance in force. (Graphic courtesy of Chuck Bartles)

Looking to near-term future

What is specifically missing in this Russian discussion of reconnaissance-in-force is its main drawback. A reconnaissance-in-force can result in heavy casualties with less-than-optimum results. During World War II, the Soviet Union lost more than 20 million military and civilians. Military losses were between 8.7 and 14 million. The Red Army soldier may not have loved the communist system, but he/she loved Mother Russia; Soviet military lives were spent prodigiously to stop the German advance, especially during the early days of the war. Few other nations have demonstrated the capacity to suffer so many losses without disintegration.

Today, the Soviet empire is past and a truncated Russia has a smaller population with a smaller proportion of service-eligible youth. New Russian equipment is far more concerned with ergonomics and preserving life than in the past. Before, it was the tanks that must be preserved or repaired while the deceased crews were replaced. Now, the philosophy seems to be to preserve the warrior's life and skills even with the sacrifice of the combat system. Net-centric warfare and robotics may support this philosophy.

The joint use of a motorized rifle (tank) battalion and reconnaissance subunits supported by the new Armata T-14 tanks is a promising development supporting the conduct of a reconnaissance-in-force. The T-14 provides target designation and adjusts the direct fire of its own escort of T-90 tanks as well as the Koalitsiya-SV 152mm self-propelled howitzers and short-range and medium-range air defense systems to its rear. This is an important implementation of the concept of net-centric warfare.

Further, the use of robotic complexes for various purposes – both combat ones for direct conduct of the attack as well as reconnaissance-combat ones used both for combat operations and only for reconnaissance operations – is an important direction for developing further methods of conducting a reconnaissance-in-force.²⁹

Integrated fires, rapid detect-destroy systems and the controlled, merciless onslaught of smaller robot tanks and assault vehicles may rip through robust defenses to determine the true nature of the defense and prepare the main attack to totally dismantle it. To the Russian way of thinking, the reconnaissance-in-force remains a viable method of tactical intelligence. Learning how to employ it optimally is the current challenge.

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*Dr. Les Grau, a retired U.S. Army infantry lieutenant colonel, is the Foreign Military Studies Office's (FMSO) research director. Previous positions include senior analyst and research coordinator, FMSO, Fort Leavenworth; deputy director, Center for Army Tactics, U.S. Army Command and General Staff College, Fort Leavenworth; political and economic adviser, Allied Forces Central Europe, Brunssum, The Netherlands; U.S. Embassy, Moscow, Soviet Union; battalion executive officer, 2-9th Infantry, Republic of Korea and Fort Riley, KS; commander, Headquarters and Headquarters Company, 1st Support Brigade, Mannheim, Germany; and district senior adviser, Advisory Team 80, Republic of Vietnam. His military schooling includes U.S. Air Force War College, U.S. Army Russian Institute, Defense Language Institute (Russian), U.S. Army Command and General Staff College, Infantry Officer Advanced Course and Infantry Officer Basic Course. He holds a bachelor's of arts degree in political science from the University of Texas-El Paso; a master's of arts degree in international relations from Kent State University; and a doctorate in Russian and Central Asian military history from the University of Kansas. His awards and honors include U.S. Central Command Visiting Fellow; professor, Academy for the Problems of Security, Defense and Law Enforcement, Moscow; academician, International Informatization Academy, Moscow; Legion of Merit; Bronze Star; and Purple Heart. He is the author of 13 books on Afghanistan and the Soviet Union and more than 200 articles for professional journals. Dr. Grau's best-known books are **The Bear Went Over the Mountain: Soviet Combat Tactics in Afghanistan** and **The Other Side of the Mountain: Mujahideen Tactics in the Soviet-Afghan War**. Dr. Grau and Chuck Bartles are authors of the recently published **The Russian Way of War: Force Structure, Tactics and Modernization of the Russian Ground Forces**, available as a free eBook at <https://community.apan.org/wg/tradoc-g2/fmsso/>.*

Notes

¹ Ministry of Defense of the Russian Federation, *Военный Энциклопедический Словарь [Military Encyclopedic Dictionary]*, Second Volume, Moscow: Ripol Klassik, 2001.

² Robert G. Fix, *Reconnaissance-in-Force: A Key Contributor to Tempo*, Fort Leavenworth, School of Advanced Military Studies monograph, 1992, <http://www.dtic.mil/dtic/tr/fulltext/u2/a264418.pdf>, accessed July 26, 2017. *Probing attack* is a term that is sometimes used interchangeably with *reconnaissance-in-force* but differs in that the primary mission of a reconnaissance-in-force is to develop a more complete intelligence picture, whereas a probing attack is limited to determining strong and weak points in the enemy defense.

³ Ibid. There was a sardonic U.S. soldiers' observation that "[t]hey called the operation a 'reconnaissance-in-force,' a term used to minimize disappointment over the failure of an attack." Cited in Fix's monograph and attributed to Ned Russell, *Springboard to Berlin*, 1943.

⁴ Ministry of Defense of the Russian Federation, "Разведка Боем" [Reconnaissance by Battle], *Военная Энциклопедия [Military Encyclopedia]*, Volume 7, Moscow: Voenizdat, 2003.

⁵ V. Kiselov and A. Kostenko, "Разведка боем в современных условиях" ["Reconnaissance-in-Force under Contemporary Conditions"], *Армейский сборник [Army Digest]*, July 2017.

⁶ Ibid.

⁷ Ibid.

⁸ Ibid.

⁹ Ibid.

¹⁰ Ibid.

¹¹ These reconnaissance elements determine the density of enemy personnel and weapons in strongpoints, trenches and connecting passages; observe areas of disposition of his closest reserves; determine the strength of defensive structures; capture prisoners, documents and models of arms, combat equipment and gear; and conduct reconnaissance through intercepts of enemy telephone conversations by connecting to his wire lines of communication.

¹² Ibid.

¹³ Ibid.

¹⁴ Ibid.

¹⁵ Ibid.

¹⁶ The Russian authors are being too general here. Night-vision devices are affected by heavy rain, heavy snow and sandstorms.

¹⁷ Ibid. Russia's next generation of man-portable short-range reconnaissance radar, the 1L277 Sobolyatnik, the 1L111M Fara-VR and the new Kredo-1 are found at company and battery level and higher.

¹⁸ Kiselov and Kostenko.

¹⁹ Ibid.

²⁰ Ibid.

²¹ Ibid.

²² Ibid.

²³ Ibid.

²⁴ Ibid. The article does a lot of mirror imaging of Russian defensive practices.

²⁵ Ibid.

²⁶ Ibid.

²⁷ Ibid.

²⁸ Ibid. Example created by author from a study of numerous Soviet and Russian examples.

²⁹ Kiselov and Kostenko.

Acronym Quick-Scan

ATGM – anti-tank guided missile

FMSO – Foreign Military Studies Office

ISIS – Islamic State of Iraq and the Levant