

The Tanks of August

Edited by Ruslan Pukhov

Foreword by David Glantz

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The publication of this collection of essays coincides with the second anniversary of the armed conflict between Russia and Georgia on August 8-12, 2009.

The first essay looks into the transformation of the Georgian armed forces under President Mikhail Saakashvili and details Tbilisi's key preparations for the war.

The second and central essay offers a detailed timeline of the hostilities. It draws on a wide range of sources, from official chronicles and statements to recollections of the eyewitnesses on both sides and Internet reports. The timeline contains detailed descriptions of all the key combat operations and episodes during the war.

The third essay analyses Georgia's efforts to rebuild its military machine since August 2008, as well as the existing military situation and the balance of power in the region.

The four remaining chapters look into several individual aspects of the Five Day War, including combat losses on both sides, Russian aviation losses, and the post-war deployment of Russian military bases in Abkhazia and South Ossetia, now recognized by Moscow as independent states.

The Annex details in chart form Georgia's procurement of heavy arms and military equipment in 2000-2009.

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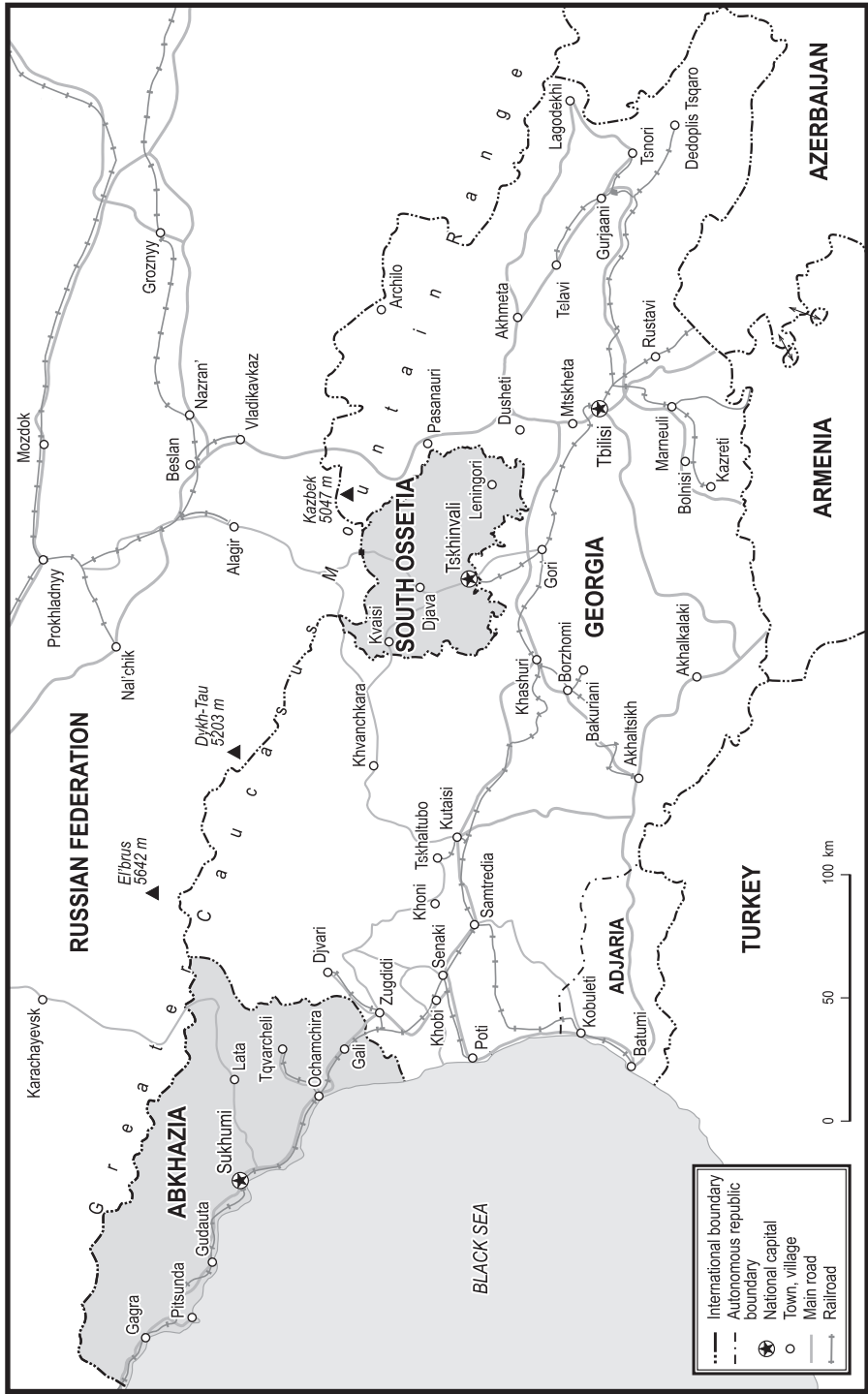
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Cover photo: a convoy of Russian tanks in South Ossetia, August 2008,
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Foreword

This substantive book, an anthology of seven chapters and an appendix, contains essays dealing in detail with various aspects of the Russo-Georgian War, a conflict which took place over a period of five days in August 2008. It is the first comprehensive account published to date about the short, but vicious war between the Armed Forces of the Republic of Georgia and the Russian Federation. Sharply conflicting political points of view render the causes, nature, and consequences of this war innately controversial. Nonetheless, at the very least, the political, social, and military dimensions of this war vividly illustrate many of the sharp controversies characterizing the post-Cold War world – a world many observers mistakenly asserted would mark the final triumph of peace over war. Therefore, together with the on-going and increasingly violent “War against Terror,” which pits an especially radical and bellicose form of Islamic Fundamentalism in armed struggle against fundamental aspects of Western civilization, the Russo-Georgian War defies the views of those who proclaimed an “End to History” in the wake of over forty years of Cold War. In short, the descriptions of war contained in this book starkly confirm that nations and their governments still act like nations and governments of old, and man, with all of his inherent flaws, remains man.

Produced by the Centre for Analysis of Strategies and Technologies (CAST), a non-governmental organization [NGO] based in Moscow, the six essays written by members of the NGO provide in-depth analysis of the political, social, economic, and military context for and causes of the war, the nature of wartime military operations, the human and materiel costs of the brief struggle, and the war's likely implications for the future. Because the book's authors are based in Moscow, quite naturally they present primarily the Russian perspective on most matters. Despite this inherent "slant," the book clearly and candidly addresses such controversial issues as purported wartime atrocities, air and missile attacks on civilian targets and ensuing civilians casualties, Russian military combat losses, even those caused by "friendly fire," and, in addition to problems faced by Georgian forces, those that plagued the Russian Army during the course of combat. Therefore, in terms of its detailed content and clarity, this book represents an ideal point of departure for the publication of subsequent more detailed accounts of the war. For context, the readers of this book should also examine the report prepared by the Independent International Fact-Finding Mission on the Conflict in Georgia, now available on line.¹

As for the book's contents, the lead essay, written by Vyacheslav Tseluiko, describes the development of the Georgian Armed Forces from the formation of the independent Georgian state in 1991 to the conflict in August 2008. By exploiting a wide range of documents related to foreign military assistance to Georgia, Tseluiko reveals the nature and perceived intent of Georgia's military reform program and assesses the impact of that reform on the course and outcome of the ensuing war. The second essay is a detailed account of the military dimension of the war written by Anton Lavrov, which describes the war's course chronologically, and, while highlighting such controversial issues as military and civilian losses, assesses the performance of the contending armies. Of note in this chapter are the striking continuities in Russian force structure as indicated by the Russian Army's extensive employment of battalion tactical groups to conduct tactical maneuver on a battlefield increasingly dominated by new precision-guided weapons and munitions (PGM), a theme that has dominated Soviet and Russian military thought since the 1980s. Tseluiko's second essay returns to military-institutional matters by assessing the impact of the war on the Russian and Georgian Armed Forces. Specifically, Tseluiko emphasizes changes in force structures, the increasing importance of crisp and effective automated command and control, particularly in the realm of air-ground combat, and the influence of new types of weaponry in the Russian military and extensive international arms transfers to Georgia.

¹ See *Report of the Independent Fact-Finding Mission on the Conflict in Georgia*, prepared by the Independent International Fact-Finding Mission on the Conflict in Georgia, Volumes I and II, September 2009, at <<http://www.ceiig.ch/Report.html>>

Lavrov follows with four detailed essays dealing with the nature, causes, and likely effects of Russian aircraft losses during the war; the nature and reasons for the Georgian Army's excessive personnel and equipment losses; the postwar establishment of Russian bases in the independent Abkhazian and Southern Ossetian states; and a separate essay on Russian and allied losses during the war. Finally, the appendix details in chart form arms transfers to and purchases by the Republic of Georgia between 2000 and 2009. The authors have also provided a useful map that shows the locations where most of the fighting occurred.

Above and beyond the issues directly related to the Russo-Georgian War, this book also focuses on and analyzes the probable nature of military operations in the post-Cold War world. This is vitally important because, to a considerable degree, this war illustrated most if not all of those tendencies and trends so evident in that emerging world. For example, politically, the war pitted the Russian Federation, the chagrined and somewhat resentful successor state to the bulk of the former Soviet Union, against the Republic of Georgia, a new but far smaller successor state situated in the Caucasus region along the Russian Federation's southern border. The Russian Federation, having lost vast territories, resources, and populations to successor states that emerged independent after the Soviet Union's collapse in 1991, perceived genuinely severe threats to its national security largely because the dissolution of the former Soviet Union deprived it of necessary strategic defensive depth, that is, large territories hitherto considered vital parts of its first and second strategic echelon.

On the other hand, the Republic of Georgia, enthusiastic over its newly won independence, seemed determined to flex its new military "muscles" and victimize its former parent state by seizing and annexing the regions of Abkhazia and South Ossetia, which it believed were rightfully its own, but without consulting the inhabitants of both regions. Similarly, many economic and social differences only intensified hostilities on both sides, as did prospects for possible Georgian admittance to NATO, which earlier discussions between the Russian Federation and Western nations seemed to preclude.

In terms of its nature, conduct, and duration, the Russo-Georgian War also closely resembled the circumstances and outcome of the Arab-Israeli War of 1967. Just as Israel anticipated Arab aggression, absorbed a first strike by Arab states, and then struck back effectively in a massive counteroffensive that demoralized and defeated the coalition of Arab states in just six days of fighting, the Russian Federation too accepted a Georgian first strike, then responded massively and routed Georgian forces in just five days. Additionally, as was the case with Israel, which punished the Arab aggressors by seizing and holding territory (the Golan Heights), the Russian Federation likewise punished Georgian aggression by seizing, retaining, and then granting independence to Abkhazia and South Ossetia. Militarily, while the Israeli manner of conducting military operations set the standard for such operations for

decades to come, the organization of Russian forces signaled the emergence of a new Russian Army, whose structure and task organization (tactical battalion groups) set new military standards for the future.

Since acute differences remain between states in the Caucasus region, despite its Russian focus and point of view, this book is a “must read” for those interested in the Russo-Georgian war, in particular, and issues of national, regional, and international security in the future, in general.

David M. Glantz
Carlisle, PA

Georgian Army Reform under Saakashvili Prior to the 2008 Five Day War

Vyacheslav Tseluiko

Brief history of the Georgian army since 1991

The Georgian army was born back in the days when the republic was still part of the Soviet Union. On December 20, 1990 the Georgian authorities announced the creation of the National Guard¹, and then on April 30, 1991 began drafting recruits for it. That latter date is now celebrated as Georgian Army Day.

In the early 1990s, the National Guard consisted of volunteers. Many of its members, including some officers and even its commander, Tengiz Kitovani, had no higher military education. That did not stop some of them later on from taking up senior positions in the Georgian army. In August 2008, both deputies of the Chief of Joint Staff, G. Tatishvili and A. Osepaishvili, hailed from the National Guard and had no higher military education². Like many such formations throughout the world, the Georgian National Guard suffered from lack of training and poor discipline. Later on, the National Guard was incorporated into the Ministry of Defense – but by the end of the 1992-1993 war with Abkhazia, that incorporation was still in the early stages.

The ministry itself was created in 1992, well after the Georgian declaration of independence. In the spring of that year, the 11th Brigade (1st Brigade of the

1st Corps) was set up as part of the ministry³. The Georgian Defense Ministry formations that took the most active part in the war with Abkhazia included the 2nd Corps, especially its 23rd Mechanized Infantry Brigade, manned predominantly by ethnic Georgians who lived in Abkhazia. Other Georgian law-enforcement agencies, primarily the Interior Ministry, were also heavily involved in Abkhazia.

Non-governmental paramilitary formations, such as Jaba Ioseliani's *Mkhedrioni* militia, constituted another important element of the Georgian military machine in Abkhazia in 1992-1993. But those groups had even greater problems with discipline than the rest of the Georgian forces.

One final group worth a separate mention is the Zviadi loyalists, the backers of Georgia's deposed first president Zviad Gamsakhurdia. Their relations with the Georgian government troops during the war in Abkhazia ranged from cooperation to armed mutiny in the last days of the defense of Sukhumi.

On the whole, the Georgian military effort in Abkhazia was plagued by the lack of single military command, and the resulting inability to concentrate the resources and manpower where it really mattered. It also suffered from undisciplined commanders in the field, who were often too eager for glory to follow orders. Another factor that determined the outcome of the war was the mutiny by Zviadi loyalists.

After the defeat in Abkhazia and the end of the civil war, Georgia stepped up the reform of its military machine. The paramilitary groups were largely brought to heel, though that effort was only properly completed under Mikhail Saakashvili. Zviadi loyalists were crushed, the *Mkhedrioni* militia disbanded, and the other nongovernmental formations (including the White Legion, the Forest Brotherhood and the Hunters) were brought under partial government control. The National Guard was becoming increasingly integrated into the Defense Ministry. Eventually its remit shrank to training the reserves, implementing mobilization plans in wartime and assisting the civilian authorities during civil unrest or disaster relief.

The military reform and development effort was held back by a number of problems. The topmost among them was meager funding. As recently as 2002, the country's defense spending was only 36m lari⁴, rising to 60.9m lari in 2003⁵. Officers and civilian contractors in the Defense Ministry were paid peanuts, soldiers in the barracks were expected to get by on a bare minimum, the equipment was all decrepit and obsolete, and the combat readiness level predictably low. On top of all that, there was pervasive corruption in the military system, uncertain loyalties of Adjarian leader Aslan Abashidze, and doubts as to whether the law enforcement agencies in the Adjarian autonomy would take orders from Tbilisi if push came to shove.

But there were also positive changes in the last few years of Eduard Shevardnadze's rule, such as growing military assistance from foreign countries.

America was the key donor, with its 64m dollar Georgia Train and Equip Program (GTEP), implemented over the period of April 2002 – April 2004. The money was used to train and equip the light infantry battalions of the 11th Brigade (now the 1st Infantry Brigade), the 16th Mountain Battalion of the National Guard (including the Mountain Warfare School in Sachkhere) and a Combined Mechanized Company (set up by merging a command company, a tank company, a mechanized infantry company, engineers and a battery of 120 mm mortars)⁶. According to the Georgian Defense Ministry, the list of formations trained under the GTEP program includes three battalions of the 1st Infantry Brigade, the 21st Battalion of the 2nd Infantry Brigade and a tank battalion – some 2,702 servicemen in total. (It also appears that the personnel of the 16th Mountain Battalion was used to create the new 21st Light Infantry Battalion, and the mechanized company – given its size – was quite rightly upgraded to a battalion.)⁷ The program expired on April 24, 2004 – that is, after Mikhail Saakashvili came to power – but the credit for it should rightly go to Shevardnadze and his top military commanders. Foreign assistance was not limited to training Georgian army units in Georgia itself. Equally important was the fact that many senior Georgian officers were invited to take courses in countries such as Germany, the United States, Turkey and Ukraine. Many of the now serving Georgian military commanders took part in that training program under President Shevardnadze.⁸

Apart from training, Georgia also received foreign assistance in the form of arms and equipment. The United States donated scores of trucks and 10 Bell UH-1H helicopters (four of them were to be cannibalized for parts). Another two helicopters of the same type were received from Turkey. Ukraine gave ten L-29 trainer jets and the *Tbilisi* fast attack craft-missile (Project 206MR). On the whole, the Georgian army had begun to improve under Shevardnadze – but that process continued at a much greater pace following the arrival of Saakashvili.⁹

Georgian army priorities under Saakashvili

Upon his arrival to power in late 2003, Saakashvili and his team announced a number of programs and policy documents setting out the priorities of army reform. These included the National Security Concept¹⁰, the Threat Assessment Document¹¹, the National Military Strategy¹², the Strategic Defense Review¹³, and the Defense Minister's Vision¹⁴. A gradual change of emphasis in those documents, released over the period of 2005-2007, reflected a certain evolution of the Georgian government's views of its army and of the threats the nation might have to face from other states and non-state actors. Some of the policies were amended in line with the change of thinking in the Georgian political and military leadership – more details on that later on.

The first of the strategic military documents adopted by the new government was the National Security Concept (NSC). That was a broad policy document outlining the government's vision of the national values, domestic, foreign and economic priorities, environment and culture – as well as, of course, defense.

The list of national priorities in the paper included:

- territorial integrity;
- stability in the Caucasus and the Black Sea region;
- securing a role for Georgia as a transit corridor.

The challenges the Georgian army would have to face were defined in the list of the key threats to national security, which was as follows:

- Violation of Georgia's territorial integrity – here the policy referred to its two former autonomies, Abkhazia and South Ossetia;
- Spread of armed conflict from neighboring countries, primarily from the Russian North Caucasus;
- Military aggression by other nations (this the authors of the document considered unlikely) or non-state actors (the more likely scenario, in their view);
- Terrorist attacks and acts of sabotage against key infrastructure such as oil and gas pipelines, as well as against foreign embassies and missions;
- Contraband and organized international crime;
- Russian military bases on Georgian territory, which were viewed as a short-term threat, pending their complete withdrawal.

The Threat Assessment Document (TAD) and the National Military Strategy (NMS) contained more or less the same list of national security threats. The NMS, however, listed as a threat not just the Russian military bases but also the Russian peacekeepers in Abkhazia and South Ossetia. The new version of TAD adopted in 2007 stated that the threat of large-scale aggression against Georgia had diminished. That change was most likely prompted by the completion of the withdrawal of the Russian military bases from Georgia, among other things.

The Strategic Defense Review (SDR) of 2007 linked the priorities of defense spending to key threats, including:

- Large-scale aggression against Georgia (seen as an unlikely scenario);
- Renewal of hostilities in the breakaway autonomies;
- Spread of conflict from the North Caucasus;
- Spread of conflict from the South Caucasus nations;
- International terrorism.

Military planning was based on the assessment of which of the identified threats was the most likely, and which potentially the most dangerous. Renewal of hostilities in the former autonomies was seen as the most likely threat in the 2007-2012 time frame, and large-scale aggression as the most dangerous. The review went on to say that in the 2013-2015 time frame international terrorism should be seen as the most likely threat, and the spread of conflict from the North Caucasus as the most dangerous. That assessment was predicated on the notion that the conflict with the former autonomies would have been peacefully settled by that time, and that both Abkhazia and North Ossetia would have been reintegrated back into Georgia. Another assumption was that Georgia would have made significant progress towards becoming a NATO member, making the country safe from large-scale military aggression. In the absence of such progress on NATO membership and peaceful settlement with the former autonomies, military planning would be based on the threat assessment of the previous period, the document said.

Two things need to be made clear. First, although it was stressed that large-scale aggression by a foreign country (i.e. Russia) was seen as unlikely, preparations for such a scenario were a key component of Georgia's military planning and preparations (more on that later). And second, NATO membership was seen as a safeguard against such an aggression. That thinking was also reflected in the earlier documents, such as the National Security Concept and the National Military Strategy. Apart from the general aspiration to become part of the Western civilization, NATO membership plans were also based on very practical considerations. The government realized that Georgia's own resources were limited, and its ability to fend off aggression by a much more powerful nation such as Russia questionable. Those considerations were reflected in policy documents such as the NMS.

Meanwhile, the requirement for the Georgian armed forces was to be able to take part in military action as part of a coalition as well as to fight on their own in situations such as foreign aggression. A decision was made to integrate the Georgian military machine into NATO by adapting it to fight as part of NATO forces in various operations outside Georgia. That, however, necessitated a reconfiguration of the national armed forces in a direction quite opposite to the requirements of self-sufficiency. The difficulties brought about by that inherent contradiction were only compounded by the need to make do with very limited resources.

In effect, participation in NATO operations required a reorganization of the Georgian army into a small professional force, highly mobile, relatively lightly armed, and working to NATO standards and specifications. Sending troops on foreign missions also meant diverting limited resources from other military programs. What is more, as Georgia's own policy documents recognized,

participation in NATO or US military operations only increased the threat of a terrorist attack against Georgia. Nevertheless, Georgian military strategists who worked on the SDR were clearly mindful of NATO recommendations. Under that document, by 2015 the Georgian army was supposed to have been transformed into a small and lightly armed force, which would clearly run counter to Georgia's own requirement for military self-sufficiency.

For Georgia, self-sufficiency meant being able to fight on its own in the event of an escalation in the former autonomies or an external aggression. That would require a numerical superiority, both in equipment and manpower, over the Abkhaz and Ossetian forces in a classic or counterinsurgency war. In other words, the Georgian army needed to bulk up, not to shrink, with more heavy arms and a large, adequately trained force of reserves.

Preparations for potential aggression by a large foreign country also required a strong professional army, a large reserve, proper equipment (including air defense systems) and the ability to wage guerilla warfare against a more powerful adversary. The latter requirement was reflected in the NMS, and plans for an effective force of reserves were introduced in the 2006 amendments to the document as part of the Total Defense doctrine. The NMS also said that the basic tactical formation of the Georgian army, a light infantry battalion, must be able to wage classical warfare as well as guerilla ("unconventional") warfare – autonomously, but as part of a general strategy (so-called "network warfare"). The document therefore introduced the requirement for proper guerilla warfare training for regular forces and some of the reserves. Part of the reason for that thinking was Georgia's rather unconventional approach to defensive warfare against a stronger adversary. Considering the small size of the country and its bruising experience in the early 1990s, when attempts to retake lost territories took years with little to no result, the authors of the NMS took a dim view of strategic retreat. Therefore, the document's recommendation for Georgian army units facing a superior advancing force was to switch to guerilla warfare without abandoning their territory. The best way of countering large-scale aggression, according to the NMS, was to create the conditions in which the potential adversary would suffer substantial losses with uncertain chances for success, and would thereby be deterred from attacking in the first place.

Overall, the NMS defined the objectives of the Georgian armed forces in the following way:

- defense in the general sense, including protection of the country's territorial integrity, which included the possibility of offensive operations against the former autonomies;
- prevention and deterrence of potential aggression;
- high level of the armed forces' readiness to react to any threats to national security;

- international military cooperation with NATO and on a bilateral level.

The document also contained a list of requirements to the Georgian armed forces:

- flexibility (i.e. ability to counter a variety of threats, from foreign aggression and non-state actors to natural or man-made disasters);
- ability to conduct operations involving combined services;
- compatibility with NATO military formations;
- proper operational planning;
- supporting civilian authorities;
- high quality of the information and reconnaissance component.

The SDR document set out the priorities of military development until 2015, including:

- increasing the mobility and combat readiness of the Georgian army as a means of deterring potential aggression;
- creating an effective reserve, which would form the basis of the Total Defense doctrine;
- improving the effectiveness of the Georgian army during operations in mountainous terrain;
- improving the Georgian forces' ability to take part in international and counter-terrorism operations;
- protecting key infrastructure from acts of sabotage;
- defending the Georgian airspace;
- assisting the civilian authorities in disaster relief.

Based on all of the above, the following set of conclusions can be drawn:

1. The development of Georgia's military capability in 2003-2008 was adversely affected by two contradictory approaches to the overall task of protecting the country from large-scale foreign aggression. One was for Georgia to join NATO, the other to rely on its own army. The two different choices necessitated two very different ways of shaping the armed forces, especially given the limited defense spending. During that initial stage, the government was leaning towards the first approach – i.e. relying on NATO for its defense – but also made certain steps that were more in line with the second approach.

2. Georgia was making no secret of the fact that it viewed Russia as its most likely adversary. Russia figured first and foremost in the Saakashvili regime's planning for both the most dangerous scenario (large-scale aggression) and the most likely (escalation in the former autonomies). That view informed the entire strategy of reforming the Georgian army for the period until the government could secure NATO membership.

3. The requirement for the Georgian army to be prepared for the two different scenarios (the most likely and the most dangerous) translated into the need for a universal combat capability. The first scenario called for a force capable of waging classical and counterinsurgency warfare, with multiple layers of command. The second would involve guerrilla-style “network warfare”, with the core of the Georgian army – light infantry battalions – operating with a large degree of autonomy.

4. To fend off potential Russian aggression, the Georgian government relied on the doctrine of Total Defense, based on the heavy involvement of the civilian population as part of a large military reserve. The idea was to deter Russia by confronting it with the prospect of heavy losses, with uncertain chances for a positive outcome of the conflict.

Georgian army reform under Saakashvili

Structural reform

The Saakashvili government copied the Western model of military set-up, with the Defense Ministry staffed by civilians, a civilian minister, and a separate military command structure in the form of General Staff/Joint Chiefs of Staff. Adopting the NATO system was one of the requirements of the Individual Partnership Action Plan (IPAP)¹⁵. The transformation of the General Staff into Joint Staff (JS) was part of the same drive. The JS was given the command of all the armed services (the Army, the Air Force and the Navy), as well as departments such as the National Guard, logistics, training, intelligence and military police¹⁶, and some other agencies.

The formations that took their orders directly from the JS included the Special Operations Group based in Vashlijvari, a suburb of Tbilisi (the former Kojori special forces brigade). The group included a special operations squad (staffed only by officers)¹⁷, a special operations battalion, a special operations school and a Navy special operations squad.¹⁸ In 2008, an existing military police company and some of the personnel of the special task force battalion formed the core of a new military police battalion, which takes orders directly from the JS.¹⁹

According to the national policy documents, the Army (Land Forces) forms the core of the Georgian armed forces.²⁰ As part of that strategy, in the autumn of 2004 the Interior Ministry’s militarized service, the Interior Troops, were transferred to the Defense Ministry²¹. The reason for that was poor coordination between the two ministries during the 2004 armed conflict in South Ossetia, as well as the need to remove duplication between the ministries in exercising their remit within the recognized Georgian borders. The former Interior Troops then became the core of the Army’s new 4th Infantry Brigade. Their helicopter

squadrons were merged with the Air Force. The existing Army brigades and battalions were reorganized, and received new numbers.

Following that reshuffle, as of January 1, 2007 the Georgian Army included: the HQ, four infantry brigades, one artillery brigade, seven independent battalions (a combined tank battalion, two combined light infantry battalions, one combined engineers and chemical battalion, medical, communications and intelligence) and an air defense battalion. Of the four infantry brigades, three (1st, 2nd and 3rd) were manned only by professional soldiers and officers; the 4th included some conscripts. The total Army manpower stood at 16,993 people.²²

In accordance with NATO recommendations, which were reflected in the 2007 SDR document, the Army's numerical strength was due to shrink to 11,876 people by 2015 as part of further reform. The 4th Infantry Brigade, the two independent light infantry battalions and the independent tank battalion were due to be disbanded. The remaining three infantry brigades would each lose a light infantry battalion. The howitzer and anti-tank batteries of the Artillery Brigade were also facing the axe. The existing military police battalion, the logistics battalion and the Air Force's army aviation battalion would all be included in the Army command structure. Finally, the electronic intelligence battalion would be reorganized into a military reconnaissance battalion.²³ Overall, the Army was due to lose eight light infantry battalions (out of the existing 14), two tank battalions out of five, and two howitzer battalions out of seven.

Those plans were obviously at odds with Saakashvili's ambition to "restore the territorial integrity" of the country. They did not quite tally with his determination to "unfreeze" the conflicts in the former autonomies and pick a fight with Russia. That is why NATO's recommendations and the army-slashing aspirations of the SDR document remained firmly on paper. Far from shrinking, the Georgian Army actually began to grow very rapidly in 2007. That growth was reflected in the 2008-2011 Minister's Vision document, which attempted to explain to NATO why Georgia had abandoned plans to disband the 4th Infantry Brigade and, not satisfied with that, went on to create the 5th Infantry Brigade.²⁴ Tbilisi cited the increase of its force in Iraq from 850 to 2,000 soldiers, as well as a deterioration in relations with Russia.

On September 14, 2007 the Georgian parliament approved the increase of the armed forces from 28,000 to 32,000 people.²⁵ The Defense Ministry then announced vacancies in the 4th Brigade and the newly created 5th Infantry Brigade, based in the western town of Khoni.²⁶ The brigade's 51st Light Infantry Battalion completed its basic training course on March 7, 2008.²⁷ Nevertheless, by August 2008 the new brigade was not really up and running. Meanwhile, the replacement of the 4th Brigade's conscripts with professional soldiers was completed only in the summer of 2008, and much of its strength had only had the time to finish preliminary training.²⁸

On July 15, 2008, the Georgian parliament approved yet another increase of the military strength to 37,000 people. Plans were afoot to create the 6th Infantry Brigade and beef up the Navy and Air Defense. On the day of the vote in parliament, Georgia began the deployment in Gori of an independent Engineers Brigade – but that process still wasn't finished in August.

The resulting composition of the Georgian Army on August 8, 2008 was as follows: the HQ; five infantry brigades (the 1st in Gori, the 2nd in Senaki, the 3rd in Kutaisi, the 4th in Vaziani near Tbilisi, and the 5th in Khoni); the artillery brigade in Gori (some of its strength was based in Khoni); the engineers brigade in Gori; six independent battalions (a combined tank battalion in Gori with 50 T-72 tanks, a light infantry battalion in Adliya, a medical battalion in Saguramo, a communications battalion in Vaziani, an electronic reconnaissance battalion in Kobuleti, and a logistics battalion in Tbilisi); and one air defense battalion in Kutaisi. The total Army strength stood at about 22,000.²⁹

A typical Georgian infantry brigade had a total manpower of 3,265 people³⁰ and comprised: the HQ (60 people) and the HQ company (108 people and two BMP armored infantry vehicles); three light infantry battalions (591 people each); one combined tank battalion (two tank companies and one mechanized company, with a total of 380 soldiers and officers, 30 T-72 tanks and 15 BMP armored infantry vehicles); a logistics battalion (288 people); an artillery battalion (371 people, 18 towed 122 mm D-30 howitzers, twelve 120 mm mortars and four ZSU-23-4 air defense systems) reconnaissance company (101 people, 8 armored personnel carriers) communications company (88 people, 2 APCs) combined engineers company (96 people).

The artillery brigade served as the main backup for Army operations. As of mid-2008, the brigade included: the HQ; a battalion of 2A65 Msta-B 152 mm towed howitzers; a battalion of 2C3 Akatsiya 152 mm self-propelled howitzers; a battalion of Dana 152 mm self-propelled gun-howitzers; a battery of 2S7 Pion 203mm self-propelled guns; a rocket artillery battalion (MLRs); an anti-tank battalion³¹; a training battalion; a logistics battalion; a guards company.³²

The Georgian peacekeeper battalion was deployed in the direct vicinity of Tskhinvali. As of August 8, it consisted of the 11th Light Infantry Battalion of the 1st Infantry Brigade and a mechanized company of the Independent Tank Battalion.

When the war broke out, the larger part of Georgia's best-trained 1st Infantry Brigade was in Iraq³³ – including personnel of the HQ and the HQ company, the 12th and 13th Light Infantry Battalions, the logistics battalion, the engineers and reconnaissance companies, and a large part of the tank company's strength. The 1st Brigade was initially supposed to return from its tour of duty in Iraq in the summer of 2008, but those plans were delayed in order to give the replacement 4th Brigade more time to prepare.

As of August 2008, the Georgian Army's arsenal included:

- T-72 main battle tanks of various modifications – 191 (including about 120 of the upgraded T-72-SIM-1 tanks);
- T-55AM tanks - 56;
- BMP-1 infantry fighting vehicles – 80 (including 15 upgraded BMP-1U);
- BMP-2 infantry fighting vehicles – 74;
- BRM-1K combat reconnaissance vehicles – 11;
- BRDM-2 armored reconnaissance and patrol vehicles – 5;
- BTR-70 armored personnel carriers – 31; (including 16 upgraded BTR-70Di vehicles);
- BTR-80 armored personnel carriers – 35;
- MT-LB multipurpose tracked armoured vehicles – 86;
- 2S7 Pion 203 mm self-propelled guns – 6;
- 2S19 Msta-S 152 mm self-propelled howitzer – 1;
- 2S3 Akatsiya 152 mm self-propelled howitzers – 13;
- Dana 152 mm self-propelled gun-howitzers – 24;
- 2A65 Msta-B 152 mm towed howitzers – 11;
- 2A36 Giatsint-B 152 mm towed guns – 3;
- D-30 122 mm towed howitzers – 109;
- MT-12 100 mm anti-tank guns – 15;
- D-48 85 mm anti-tank guns – 40;
- GradLAR 122 mm/160 mm MLRS – 4 to 8;
- RM-70 122 mm MLRS – 6;
- BM-21 Grad 122 mm MLRS – 16;
- 120 mm mortars – about 80;
- 60 mm, 81 mm and 82 mm mortars – about 300;
- S-60 57 mm towed anti-aircraft guns – 15;
- ZU-23-2 twin 23 mm anti-aircraft guns (some of them mounted on MT-LB chassis) – 30;
- ZSU-23-4 Shilka self-propelled anti-aircraft system with four 23 mm guns – 15.

The Georgian arsenal also included large numbers of anti-tank guided missile systems such as Fagot, Faktoriya and Konkurs, as well as man-portable anti-aircraft missile systems (Strela-2M, Igla-1, Igla and Grom 2).

The Georgian military reform under Saakashvili also involved the **National Guard** – here, too the country followed NATO recommendations³⁴. From what was essentially a smaller version of the Army, the National Guard was transformed into a system of training reserves and implementing mobilization and territorial defense plans, with a secondary role of assisting the civilian authorities in disaster relief. The Georgian government was struggling with the

conflicting needs of reducing the size of the armed forces in line with NATO recommendations, while also remaining prepared for an escalation in Abkhazia and South Ossetia, and possibly for a conflict with Russia as well. The Georgian answer to that dilemma was a large program of training reserves.

Even before the 2004 conflict in South Ossetia, a decision was made to set up territorial National Guard battalions manned by volunteers, who were given a three-week training course. A total of 27 such battalions were created.³⁵ But the program only gained its truly impressive proportions after the parliament approved the Total Defense doctrine in September 2006 and the bill on the reserve service the following December³⁶. Under the bill, the Georgian military reserve would be made of three components: the active component (conscription), the individual component (retired soldiers and officers of the regular army), and the National Guard (the volunteer battalions trained in 2004-2006). In 2007, the Defense Ministry rolled out an 18-day training program for active reserve light infantry battalions. The plan was to merge those battalions into brigades at a later stage. The 10th Brigade would be based in Kojori, the 20th in Senaki, the 30th in Khoni, the 40th in Mukhrovani, and the 50th in Telavi. Apart from the light infantry battalions, the reserve brigades were also supposed to include artillery batteries.³⁷ The 420th Reserve Tank Battalion was created in 2008.³⁸

The composition of the Georgian **Air Force** in August 2008 was as follows:

- The Air Operations Center;
- Marneuli Airbase
(a squadron of Su-25 attack aircraft and a squadron of L-39 trainers);
- Alekseevka Airbase (a squadron of Mi-8 helicopters and a squadron of UH-1H helicopters) plus a mixed helicopter squadron (Mi-8, Mi-14 and Mi-24);
- UAV squadron;
- Six radar stations;
- Electronic reconnaissance unit;
- Two air defense bases (two battalions of S-125M SAM systems, two batteries of the Buk-M1 SAM systems, up to 18 units of the Osa-AK/ AKM SAM systems and several units of the Spyder-SR SAM system);
- Training center with a squadron of An-2 light transport aircraft.³⁹

Under the reform plans outlined in the SDR document, the Georgian Air Force was expected to shed all its aircraft by 2015, turning essentially into an air defense service.⁴⁰ The existing squadron of Su-25 was due to be disbanded, and the remaining helicopters and UAVs would be transferred to the Army. But those projections were greatly at odds with the reality. The Georgian Air Force continued to buy more Su-25 and L-39 aircraft in 2007-2008, and the Georgian leadership was discussing plans to place an order for several fighter jets.

In August 2008, the Georgian Air Force had: 10 Su-25 attack aircraft (five of them upgraded to the Su-25KM Scorpion specifications), 2 Su-25UB combat trainers, 12 L-39C jet trainers, 4 Yak-52 piston trainers, 6 An-2 light transports, 5 Mi-24V and 3 Mi-24P attack helicopters, 18 Mi-8T/MTV utility helicopters, 2 Mi-14BT utility helicopters, 6 Bell UH-1H and 6 Bell 212 utility helicopters.

The **Georgian Navy** consisted of the main Navy base in Poti; a secondary Navy base in Batumi; a fleet that included a squadron of missile crafts, a squadron of patrol boats, and another squadron of transports (assault landing ships); a unit of marines and a mine clearance team. The fleet's total manpower was in the region of 1,000 people. Its ships included: 2 fast attack craft-missile: the *Tbilisi* (Project 206MR) and the *Dioscuria* (La Combattante II-class); 8 patrol boats, 2 landing craft (LCU), 2 small landing craft, up to 6 small boats.

It appears, however, that most of the Georgian Navy's ships and boats (including the two fast attack craft-missile) were not in proper working order when hostilities began in August.

There was also the Georgian Coast Guard, equipped with just one patrol ship, the *Ayety* (a former German Lindau-class minesweeper) and up to 35 patrol boats. Under the SDR plans, the Coast Guard was due to be merged with the Navy by 2015.⁴¹

Training and professionalism

In terms of military discipline, training and professionalism, the Georgian army had made great progress by 2008 compared to the earlier days of near-anarchy. That progress was based on three key factors: a) a transition from conscription to professional service; b) reform of the military education and training system; and c) foreign assistance.

Compared to other CIS nations, Georgia has probably been the most successful in phasing out conscription in favor of professional service. There have been two main reasons for that. First, the unresolved conflicts on Georgian territory and high probability of an armed conflict meant that those Georgians who elected to enter military service were highly motivated. That was especially true of the ethnic Georgian refugees who had fled from the former Georgian Soviet Republic's autonomies. And second, Georgian soldiers are relatively well paid, even by the standards of the richer post-Soviet republics. According to the Georgian Defense Ministry's spending figures for 2008, the monthly salary of a Georgian corporal (the starting rank when entering professional service) was 925 lari (640 dollars at the mid-2008 exchange rate). A lieutenant's salary was 1,119 lari (770 dollars). Compared to 2004, a corporal's pay had risen by 764 per cent, and a lieutenant's by 631 per cent (though the figures are not adjusted for inflation)⁴². Strong competition for every vacancy meant that the army could choose only the best. Apart from high basic pay, Georgian soldiers also enjoy generous social

benefits, and they live in comfortable new or refurbished military compounds. Service in the military is especially attractive to the struggling refugees from the former autonomies. And since many of them have personal reasons to want to join the army due to their past experience, they are disproportionately represented in the Georgian armed forces. The generous pay of the Georgian soldiers has its downsides as well: military commanders are often tempted to give the jobs to their friends and relatives, regardless of their professional qualifications.

The Saakashvili government has also reformed military education and training. Officer training in particular has undergone a serious transformation. The old Soviet system, whereby junior officers would spend years in military school, has been replaced by the Western model: short training courses alternating with longer stints of service in the field. The regular army (especially its newly created formations) and the National Guard required large numbers of new officers, which is why a short junior officer training program was rolled out. There are three levels of courses (A, B and C), each lasting 7-10 months. Once the cadet completes all three, he is given the rank of lieutenant.⁴³ Those who wish to enroll are required to have college-level education, so during the courses themselves no time is wasted on general disciplines, as happens in many other post-Soviet military schools. The advanced C-level course is where recruits are given specialist training. In late 2007 – early 2008, 54 young officers took a 9-month course which included air assault and parachute training at the Alekseevka airbase, and mountain training in Sachkhere. They were also coached by Georgian and Israeli experts in topography and urban warfare tactics. Another 150 recruits enrolled in 2008.⁴⁴ Due to the shortage of junior officers experienced by the expanding Georgian army and the National Guard, the Defense Ministry introduced fast-track junior officer courses for professional service sergeants with prior college-level education. Upon completion of the 9-week courses the sergeants are given the rank of Second Lieutenant.

The next stage of officer training is the 12-18 week Captain-level course at the Academy of National Defense, the former Tbilisi Artillery Command School. The course was developed for Senior Lieutenants, Captains and Majors – most of them company commanders and heads of battalion HQs.⁴⁵ There is also a fast-track 5-week course for Captains.⁴⁶

The fighting ability of the Georgian army under Saakashvili is adversely affected by two major problems:

- One is the high number of fresh new officers, who still need time to learn theory and gain proper experience in the field – though training assistance offered by foreign countries helps here a bit.
- The other is the frequent reshuffles in the higher echelons of the Georgian army, with young and relatively junior officers often appointed to

senior positions. To illustrate, many commanders of infantry brigades hold the rank of Major or even Captain. Meanwhile, more experienced commanding officers are often sent into retirement for political reasons.

Nevertheless, the bulk of the Georgian servicemen are notably better trained than before, thanks in large part to improving standards at the Krtsanisi National Military Training Center. That Center has received generous foreign assistance: its instructors have been trained in Western academies, its equipment and facilities have been upgraded using foreign aid, and a number of training programs are funded by Western donors. Western-trained instructors have been instrumental in rolling out the Basic Combat Training program, which is essentially a military induction course for cadets and candidates for professional service vacancies. Another training program worth a separate mention is the US-funded Georgia Sustainment and Stability Operations Program. Its first phase, GSSOP-I, worth 61m dollars, was launched in the spring of 2005 and ended in the autumn of 2006. Its beneficiaries were the 22nd, 23rd and 31st Light Infantry Battalions, the logistics battalions of the 1st and 2nd Infantry Brigades, the reconnaissance company of the 2nd Brigade and an independent military police company. The second phase, GSSOP-II, lasted from the autumn of 2006 until the summer of 2007. The beneficiaries were the 32nd and 33rd Light Infantry Battalions, the logistics battalion of the 3rd Brigade, the brigade's reconnaissance, engineering and communications companies, and the communications company of the 2nd Brigade.⁴⁷ It must be said, however, that the program was largely aimed at preparing Georgian troops for service in Iraq, and focused on counterinsurgency operations. The 4th Infantry Brigade, which led the Georgian offensive against Tskhinvali in August 2008, was not involved in that training program at all.

Georgia also used foreign assistance in setting up the junior commanders' school in Gori (which was later moved to Krtsanisi) and especially the mountain warfare school in Sachkhere, which relied heavily on French and Swiss help. Many Georgian cadets, officers and light infantry formations have passed through the Sachkhere school, which is especially important for the Georgian army given the country's mountainous terrain.⁴⁸

As part of Georgia's NATO integration plans, and in an effort to improve the military communications system, the government has signed a contract for the supply of radio communications systems for the Georgian army with America's Harris Corporation. Georgian instructors trained by Harris now teach at a special training center hosted by an independent communications battalion in Saguramo.⁴⁹

Apart from NATO countries, Georgian officers have also been sent for training to Ukraine. More than 150 Georgian servicemen took a training course

in 2007-2008 at the Kharkiv Air Force University, including at least 30 pilots. After clocking up 25 hours on the L-39 trainers during the 8-month course, and taking additional training with the Mi-8 helicopters, those pilots returned to Georgia to continue their training at the Marneuli airbase.⁵⁰

Foreign private military contractors have also played a role in building up Georgia's military capability. US contractors such as MPRI, Cubic Defense Applications and American Systems have been involved in consulting the Georgian Defense ministry and training the Georgian special task forces. Israeli companies, including Defense Shield, have been contracted to train junior officers and NCOs, as well as to help with general planning.

A large-scale training program for the active (conscript) component of the military reserve as part of the Total Defense doctrine was rolled out in 2007. Under the National Guard's training plan for 2007, 25,000 reserves were due to take an 18-day course, and 27 territorial battalions of the National Guard were scheduled for a refresher course. Many of the active reserve conscripts were college or university students. Their 18-day program included small arms training (4 days), tactics (8 days), engineering (1 day), arms and tactics of the potential adversary (1 day), survival and first medical aid (1 day) and field training (1 day), plus 2 days for organizational issues.⁵¹ Given the short duration of the course, it is unlikely that the trainees will have learnt very much – at the very best, they will have got a very general idea of what military service is like. The eight-day refresher training in 2008 for the reserves called up the previous year was also clearly far too short. Once that course was completed, new conscripts of the 2008 draft began to arrive at the National Guard bases for the 18-day program. The scale of the basic reserve training program (25,000 fresh conscripts each year) and the refresher courses (25,000 people in 2008 and a projected 50,000 in 2009), was probably far too ambitious. Training reserves to proper standards required more spending to allow for longer courses, with more time both at the firing range and in the class. There was also a serious shortage of commanding officers for the reserve brigades and battalions, and of specialists trained in the use of heavy arms, artillery and armor.

No wonder then that the program of building a large and effective military reserve has turned out to be a failure, as demonstrated by the Five Day War. The National Guard battalions were of little use in battle. They were poorly trained, didn't have enough commanding officers and lacked heavy infantry arms, including anti-tank weapons. On the whole, that failure can be attributed to strategic errors (such as putting quantity over quality) as well as lack of time. The National Guard formations manned by ethnic Georgians living in the conflict zones, which took on the role of self-defense militia during the hostilities, also proved largely ineffective. Their morale and motivation was better compared to the other reserves, but they suffered from all the usual problems of the Georgian National Guard.⁵²

On the whole, the Georgian military capability had made great progress since the departure of President Shevardnadze. But judging from some Internet reports in 2008, many foreign military advisers and instructors (including those from the United States, Israel and Ukraine) were quite scathing about the Georgian army's level of professionalism, compounded by some innate traits of the Georgian psyche. They complained that most of the new recruits entering professional military service were poorly educated. There was a serious problem with discipline. Theft of army property, corruption and cronyism were rife. Many Georgian officers were poorly trained, and lacked any inclination to learn. Commanders were often loath to enforce standards and discipline, and Georgians in general were said to be all too eager to show off.

New weapons and equipment

Weapons and equipment has undoubtedly been the greatest area of improvement of the Georgian military capability under Saakashvili. The key factor here was a massive increase in military spending. The Georgian Defense Ministry spent more money in 2007 than during the three previous years put together.⁵³ The weapons procurement budget reached 291.8m lari (177m dollars) in 2008.⁵⁴

During the early years of the Saakashvili government, the Georgians mostly bought Soviet-made hardware from the army surplus of other CIS nations (primarily Ukraine) and Eastern Europe. It was cheap and did not require expensive training. The shopping list included T-72 main battle tanks, BMP-2 infantry fighting vehicles, BTR-80 armored personnel carriers, 2S3 and Dana self-propelled howitzers, D-30 towed howitzers, mortars, small arms, anti-tank missiles and grenade-launchers, Buk-M1 and Osa-AK/AKM SAM systems, man-portable SAMs, Mi-24 attack helicopters, etc. By 2008, Georgia had achieved a clear superiority in arms and equipment over the armies of its two former autonomies, Abkhazia and South Ossetia.

Thanks to its high level of military spending relative to GDP, Georgia took its military procurement policy to another level in 2007. It became the first of the former Soviet republics to begin placing large orders for Western-made military equipment, and launched a program of upgrading its existing hardware to Western standards.

One of the largest infantry procurement programs, launched in January 2008, was to replace the entire Georgian regular army's Kalashnikovs with the 5.56 mm M4A3 automatic carbines made by America's Bushmaster Firearms International. For all its pros and cons, the decision was fully in line with the government's course towards NATO membership, as it made the Georgian army more compatible with coalition forces during operations such as the ones in Iraq and Afghanistan. Also, the National Guard's large active reserve needed to be armed one way or another. The government therefore decided to upgrade

the regular army to the M4A3 carbines, and give its old Kalashnikovs to the reserves. It must be said, however, that the Georgian army's procurement process is rather disorganized, and much of the Defense Ministry's limited resources are therefore wasted.

In order to prepare its army for the possible use of force against the former autonomies, as well as to deter Russia from becoming involved, Georgia had spent a lot of money on heavy weapons. The largest of the Army procurement programs included:

- Self-propelled artillery: several battalions of self-propelled artillery were set up as part of the Artillery Brigade. Georgia bought twelve 2S3 self-propelled howitzers from Ukraine and 24 Dana systems from the Czech Republic over the period of 2003-2006. In also bought five 2S7 Pion 203 mm self-propelled long-range guns from Ukraine in 2007-2008.⁵⁵
- Six RM-70 122 mm multiple-launch rocket artillery systems were bought from the Czech Republic starting from 2003. More importantly, Georgia also bought four to eight Israeli-made GradLAR systems; some of them were equipped with 160 mm LAR-160 Mk IV rockets with a range of up to 45 km. There is some uncertainty over the purchase of 262 mm long-range M-87 Orkan MLR systems from Bosnia-Herzegovina. Some 500 rockets for these systems were sold to Georgia in 2006, but it remains unclear whether the five launchers ordered by Tbilisi have actually been delivered.⁵⁶
- Mortars were seen as an effective weapon in mountainous terrain, especially if the Georgian army is forced to fight as a guerrilla force against a stronger opponent. In addition to the mortars Georgia had inherited from the Soviet army, it bought large batches of them from the Czech Republic and Bosnia-Herzegovina.⁵⁷ It also received 60 mortars of the 60 mm caliber from Greece as a gift.⁵⁸ Georgia was especially interested in the 60 mm and 81/82 mm mortars as they do not count towards the ceilings agreed in the 1990 Conventional Forces in Europe Treaty (CFE).
- In an effort to bolster the tank and armor component of its armed forces, Georgia bought large batches of them from Ukraine and the Czech Republic. Over the period of 2004-2008, Georgia bought 180 T-72 main battle tanks, 52 BMP-2 infantry fighting vehicles, 15 upgraded BMP-1U vehicles, 30 BTR-80 armored personnel carriers, and 25 upgraded BTR-70Di armored personnel vehicles.⁵⁹ In late 2007 Tbilisi placed an order for 76 new Ejder armored personnel carriers with Turkey's Nurof. Previously, the Georgian Interior Ministry had bought from Turkey 100 Otokar Cobra light armored vehicles.
- Large numbers of cars and trucks were bought in order to bolster the army's mobility. Some 400 KrAZ trucks were bought from Ukraine

(150 of them in 2008).⁶⁰ Tbilisi also bought KamAZ trucks from Russia, as well as Toyota Hilux pickups and Land Rovers from other countries.

- Apart from the already mentioned M4A3 carbines, Georgia also bought Western-made sniper rifles, AGS-17 automatic grenade launchers from Ukraine, and Fagot and Konkurs anti-tank guided missile systems from Bulgaria.⁶¹

Under the CFE Treaty, Georgia's quota of heavy weapons is 220 tanks, 135 infantry fighting vehicles, 85 armored personnel carriers, and 285 guns of the 100 mm and larger caliber.⁶² And while the armored vehicles quota is quite adequate to the Georgian army's needs, the artillery limitations are clearly a bit tight, given the size of Georgia's artillery formations.

In addition to buying new weapons, several big upgrade programs have been rolled out under the Saakashvili government. The largest of them include the upgrade of the Georgian fleet of T-72 tanks to the T-72-SIM-1 specification, developed by Israel's Elbit Systems. The Georgian version of the T-72-SIM-1 tank is equipped with a GPS navigation unit, separate infrared cameras controlled by the commander and the driver, and a Harris Falcon communication system. They are also equipped to fire Ukrainian-made *Kombat* guided tank-launched missiles (400 of them were bought from Ukraine in 2007). All those upgrades made the Georgian T-72's superior to the tanks of Georgia's former autonomies and other nations of the Caucasus, as well as to any tanks Russia's North Caucasus military district could deploy in 2008. That superiority is especially strong during night time and in adverse weather conditions. The first Georgian tank company to be trained in the use of the upgraded tank began its training on February 13, 2008, and finished on February 25, 2008.⁶³ By August 2008, the Georgians had upgraded 120 of their T-72's.

The Georgian Air Force procurement program included the purchase of L-39 trainers, as well as Mi-8 and Mi-24 helicopters from Ukraine; *Shturm* anti-tank guided missiles from Kazakhstan⁶⁴, *Elbit Hermes 450* and *Skylark* UAVs from Israel, and the modernization of the Su-25 attack aircraft to the Su-25KM specification. The latter program involved Israel's Elbit Systems. Georgia also signed a contract with America's Sikorsky Aircraft for the delivery of 15 new UH-60 utility helicopters in 2010-2011.⁶⁵

Serious progress was made in upgrading the country's air defense system. Two modern 36D6-M radars were bought from Ukraine under Saakashvili, five *Kolchuga-M* passive sensor systems, one *Mandat* radioelectronic warfare system, two battalions of the *Buk-M1* SAM systems, and up to 18 *Osa-AK/AKM* SAM systems.⁶⁶ Four Georgian P-18 radars were upgraded by Ukraine's *Aerotekhnik*a to the P-180U specification. In 2008, *Aerotekhnik*a also linked all of Georgia's military radars and four civilian air traffic control radars, as well as the *Kolchuga-M* passive detection systems, into a single ASOC system with a

control center in Tbilisi. A battery of the latest Rafael Spyder-SR SAM systems was bought from Israel. The Russian Defense Ministry also reported that in 2008, the Georgian army bought a Skywatcher automated theater air defense control system from Turkey's Aselsan. All of these preparations were obviously meant to neutralize the Russian Air Force in the event of an armed conflict between the two countries, although the scale of those preparations did not quite match the level of threat. The Georgian army also had a large number of man-portable SAM systems, including 30 modern Grom 2 systems bought from Poland.

The Georgian Navy's biggest acquisitions under Saakashvili included the *Dioscuria* fast attack craft-missile (French made, of the La Combattante II-class) given in 2004 by Greece as a gift, along with 10 Exocet MM38 anti-ship missiles.⁶⁷ The Georgian Coast Guard has also placed an order for two high-speed patrol boats of the MRTP 33 and MRTP 20 classes - these are now being built in Turkey.

Infrastructure

Military infrastructure development took up a large chunk of the Defense Ministry's spending under Saakashvili. The government pursued a two-fold objective: improving the Georgian servicemen's living and training standards, and setting up new military bases closer to the expected theater of conflict. The latter priority led to the creation of a new base in Gori for the 1st Infantry Brigade, and of another base in Senaki for the 2nd Infantry Brigade. The Artillery Brigade was then moved to the former base of the 3rd Brigade in Gori, and a new base was built in Khoni for the newly-created 5th Infantry Brigade. As a result, by 2008 Georgia had its 1st Infantry Brigade and the Artillery Brigade stationed within 30 km of the Ossetian border. The 2nd Infantry Brigade was stationed within 40 km of the Georgian-Abkhazian border along the river Inguri, and the new 5th Infantry Brigade within 60 km of that border.^{68,69} Meanwhile, the 3rd Infantry Brigade, which is based in Kutaisi, could be deployed against either Abkhazia or South Ossetia, depending on where it was needed the most. All those relocations gave Georgia a much better starting position in the event of a blitzkrieg against its former autonomies.

The construction of a modern and well-equipped base of the 2nd Infantry Brigade in Senaki was completed in May 2007, and of the 1st Brigade's new Gori base in January 2008. In addition to building the new bases, Georgia also refurbished the old ones, belonging to the regular army as well as the National Guard, which uses them as reservist training centers. One project worth a separate mention is the refurbishment and upgrade of the Marneuli airbase, with Turkish assistance.⁷⁰

Financing

Foreign assistance played a significant role in the financing of Georgia's army, but it should not be overestimated. Georgia has been receiving foreign assistance from

a number of countries, and the cost of these programs often ran into millions or even tens of millions of dollars. The largest of them, GTEP and GSSOP-I, cost more than 60 million dollars each. But compared to Georgia's own military spending, the total amount of foreign funding is not that large. The accumulated figure over the period of 2002-2008 is estimated at 300m dollars.

US military assistance, which is of course the most frequently mentioned, began back in 1997. This is when, at President Shevardnadze's request, Georgia was included in the US-funded International Military Education and Training Program (IMET) and Foreign Military Financing (FMF). At first, the Americans were quite cautious. They donated to Georgia only "non-combat" equipment from the US army stock, all of it hopelessly obsolete. In 1999-2001, Georgia was given 10 old Bell UH-1H helicopters (all made in 1973-1974; four of them were to be cannibalized for spares), 500 old trucks (made in 1969-1971), 30,000 uniforms, 16,000 pairs of boots, mine-clearing tools, communication equipment, generators, army tents, etc. The cost of the program was 11m dollars, including 3 million spent on helicopters and pilot training. Georgia was given a further 17.5m dollars worth of aid in 1997-1999 under the FMF program, which included training courses for 140 Georgian officers.⁷¹

As part of the US-funded Georgian Border Security and Law Enforcement program, the Georgian border guard was given 18m dollars worth of aid in 1999.⁷² That included the refurbishment of the Alekseevka airbase, which is the home base of the Georgian Air Force's helicopter squadron, and the construction of a modern new border post and the Krasnyy Most checkpoint on the border with Azerbaijan. The Georgian Coast Guard was given two Point-class patrol boats from the US Coast Guard stock. Over the period of 1992-2005, the United States gave Georgia 134.58m dollars worth of assistance under the Export Control & Border Security (EXBS) program.⁷³

The total amount of US military and security aid to Georgia in 1992-2005 is 379.02m dollars.⁷⁴ That figure does not include most of the spending under the GTEP and GSSOP-I programs in 2002-2006 - their worth is estimated at about 125m dollars, and only a small fraction of it came from the FMF funding. But out of the 379.02m dollars, 283 million was spent on various auxiliary programs, as well as improving the border guard service, law-enforcement, measures against organized crime, contraband and proliferation of weapons of mass destruction, etc. The program from which the Georgian armed forces benefitted the most directly in terms of arms and equipment was the FMF program, worth only about 83.29m dollars over the period of 1992-2005. Meanwhile, officer training under the IMET program cost a very modest 7.18m dollars.

We estimate the annual amount of US military aid to Georgia in the five-year period to 2003, the year President Shevardnadze was deposed, at about 20m dollars on average, excluding the GTEP and GSSOP-I training

programs. Total foreign military aid in that period amounted to 25-30m dollars a year (again, not including the GTEP training program). That figure was comparable to Georgia's own annual defense spending in 1997-2000. Starting from 2001, the amount of foreign military aid given to Georgia started to rise very sharply – especially after the GTEP program was rolled out in 2002 and 2003. Over the period of 2002-2004, the United States alone gave Georgia about 98m dollars in military assistance.⁷⁵ Total foreign military aid in 2002 and 2003 was worth an estimated 50m dollars. The budget of the Georgian Ministry of Defense was only about a third of that figure, so 70 per cent of the country's defense spending was funded by foreign countries. Essentially, in the last couple of years of the Shevardnadze presidency, the Georgian armed forces were bankrolled by NATO countries, primarily the United States.

Immediately after the arrival of Saakashvili (in 2004-2005), US military aid – especially the GTEP, GSSOP-I and GSSOP-II training program – continued to play an important role. But the rapid growth of Georgia's own defense spending soon outstripped foreign assistance. In 2004, Georgian armed forces were given 40m dollars worth of aid by the United States, and a record 74 million in 2005. But the country's own defense budget over those two years was 300 million. Starting from 2005, Georgian military spending began to grow at a break-neck speed, with massive year-on-year increases, reaching almost 1bn dollars by 2007. That year saw the end of the GSSOP-II program, and America's military aid to Georgia fell to a modest 13-16m dollars a year⁷⁶, most of it spent on training. What is more, Georgia had to pay for all the foreign assistance its army had received by sending its troops to participate in US-led and NATO operations in Iraq, Kosovo and Afghanistan. Those missions cost Georgia as much as it had received in foreign military aid, if not more.

Turkey's military assistance to Georgia over the period of 1997-2006 is estimated at over 37m dollars.⁷⁷ Other nations also contributed, mostly by training Georgian officers. That list includes Germany, Britain, France, Greece, a number of Eastern European nations and even China.

But in the end, starting from 2006, direct foreign military assistance ceased to be a major factor in the ongoing improvement of Georgia's military capability. The Georgian government has increased its military spending to such a degree that the armed forces can now afford expensive arms procurement and upgrade programs. The Georgian army no longer has to take what it is given by foreign donors – it can now place relatively large orders for fairly advanced arms and equipment of its own choosing.

Table 1. Georgia's actual military spending in 2003-2008 (excluding foreign military assistance)

Year	2003	2004	2005	2006	2007	2008
Spending plan, million lari	60.9	67	138.9	392.6	513.2	1,100
Actual spending, million lari	60.9	173.9	368.9	684.9	1,494	1,545
Actual spending, million dollars	30	97	203	388	940	1,003
Actual military spending relative to GDP, %	0.7	1.8	3.2	4.9	8	8.1

Source for spending figures in lari: Strategic Defense Review. Georgian Ministry of Defense, Tbilisi, 2007. Table compiled by CAST.

Table 2. US direct military assistance to Georgia in FY 2007-2010, million dollars

Financial year	2007	2008	2009	2010 (request)
Foreign Military Financing (FMF)	9.7	9	11	16
International Military Education and Training (IMET)	1.16	0.761	1.15	2
Non-Proliferation, Anti-Terrorism, Demining, and Related Programs	5.15	3.21	2.2	n/a
Total	16.01	12.982	14.2	> 18

Source: US Department of State.

Two key observations can be made about the financial side of Georgian military policy. The first is the huge increase in military spending under Saakashvili. Compared to 2003, the spending figure for 2007 had multiplied by a factor of 24.5. That is probably a world record, although if foreign military aid is taken into account, the actual increase in the funding of Georgia's army was a bit less extreme. The second observation is that the Saakashvili government has introduced the practice of increasing actual military spending compared

to budget projections, sometimes revising the figures upwards several times through the course of a single year.

To illustrate, the Georgian Defense Ministry's budget was revised upwards no less than three times in 2007. Actual spending reached 940m dollars that year, an increase of 191 per cent compared to the initial spending plan. The additional money was spent on:

- increasing the size of the Georgian contingent in Iraq;
- increasing the size of the armed forces from 28,000 to 32,000 people and plans to create the new 5th Infantry Brigade;
- the rollout of the National Guard's active reserve training program;
- additional arms procurement and upgrade programs.

The 2008 Defense Ministry spending plan was 1,100m lari. But Georgia sustained heavy military and economic losses during the war in August. As a result, in the second half of 2008 it was forced to put its plans for further military expansion on hold, and focus on restoring its damaged military infrastructure. The army was given an additional 450m lari in September, and the actual 2008 spending figure reached 1,545m lari (1,003m dollars). Much of it was apparently spent on financing the war effort and repairing the damage sustained during the conflict, so the rest of the spending programs had to be cut. Amid the world economic crisis that soon followed, it became clear that Georgia could no longer afford to keep its military spending at an unprecedented 8 per cent of the GDP. For the first time in many years, the Georgian military budget was cut in 2009, falling to 940m lari.

Conclusions

There has been a rapid increase in Georgia's military capability and the size of its armed forces since the Saakashvili regime came to power. The country has achieved serious progress in military training, infrastructure, procurement and upgrade programs. The government's policy of ramping up military spending was instrumental here, while foreign military assistance was a contributing factor. Compared to the Shevardnadze days, the Georgian army has undergone a radical transformation. By the summer of 2008, it had turned into a serious threat to the former Georgian autonomies. All that being said, Georgia's efforts to bolster its military capability under Saakashvili have been held back by numerous contradictions in its strategy, erratic planning and serious difficulties with personnel training. All these problems have been compounded by the rapid increase in the army's size and frequent politically motivated rounds of sackings of senior officers. Meanwhile, the military training system simply could not keep up with the rapid increase of personnel numbers.

The culmination of Mikhail Saakashvili's years of efforts to transform the Georgian army came in August of 2008, when the ambitious and nationalistic Georgian leader ordered his troops to conquer South Ossetia. The operation to capture Tskhinvali involved the bulk of Georgia's combat-ready forces (with the exception of the main strength of the 1st Infantry Brigade, which was serving in Iraq). This military brinkmanship immediately led to an armed conflict with Russia, and a massive retaliatory strike by the Russian troops. Only three days after the beginning of the operation, the Georgian forces began their hasty retreat from South Ossetia, which soon degenerated into the erstwhile attackers fleeing as fast as they could towards Tbilisi, leaving a large quantity of arms and equipment behind. The ensuing mobilization of reserves, in line with the Total Defense doctrine, failed to stop the rout. The reserves were poorly trained, their morale was low, and there were not enough trained commanders to lead them. Meanwhile Russian aviation lost more airplanes to friendly fire than to Georgian air defense. Behind the veneer of annual military parades, the entire Georgian military machine was extremely disorganized, poorly led and completely unprepared for a serious conflict. For all Saakashvili's efforts, his army has failed to become a modern and effective fighting force, capable of standing its ground before the armed forces of a great world power. Picking a fight with Russia turned out to be a big and costly mistake.

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Timeline of Russian-Georgian Hostilities in August 2008

Anton Lavrov

Introduction

Mikhail Saakashvili came to power on the back of several key promises, including a speedy return of his country's separatist regions of Abkhazia, Adjara and South Ossetia to the Georgian fold. That promise caused a further deterioration in relations between Tbilisi and the three breakaway territories. Adjara was soon reintegrated into Georgia by peaceful means, although those means were backed by the threat of force. But an attempt to repeat that scenario with South Ossetia led to an armed confrontation involving the Georgian Army, the South Ossetian troops and militia, and Peacekeeping Forces. Clashes in August 2004 led to casualties on both sides. Georgia sent tanks and heavy armor to the border regions of the unrecognized republic, and seized a number of disputed heights. At least 16 Georgian soldiers died in the ensuing clashes. The Russian peacekeepers in the republic could do little, after the Georgian Defense Ministry threatened in no uncertain terms to use force against them if they tried to intervene.

Nevertheless, the 2004 clashes in South Ossetia ended before they could spiral into an outright war. The Georgian leadership well realized that its troops

did not have clear superiority even over that small separatist region at the time. And the South Ossetians had demonstrated beyond any doubt their readiness to fight for their independence. Any attempt to retake the region by force would inevitably have led to a long and bloody conflict. As for Abkhazia, it was the stronger of the two remaining breakaway republics, so Georgia's chances of bringing it to heel by force were even more remote.

Eventually Georgia withdrew its troops from South Ossetia, and only a small part of the lands seized during the conflict remained under Georgian control. The government in Tbilisi decided to concentrate on reforming the army and bolstering its fighting ability before taking on the separatists. In the years that followed, the Saakashvili administration pulled off a radical transformation of the Georgian armed forces. Military spending shot up, reaching 8 per cent of GDP in 2007-2008. Conscription was phased out and replaced by fully professional service. A massive arms procurement program was rolled out, which included more than a hundred T-72 tanks, dozens of heavy artillery, more than 200 light armored vehicles, and several attack and transport helicopters. Georgia also bought advanced Israeli-made UAVs, which enabled it to monitor the entire territory of the unrecognized republics from the air. In addition to that, it began training a large force of reserves, adding 25,000 people to their number every year in an effort to bring the overall size of the reserve to 100,000 people.

The reformed Georgian army had an impressive combat training program, with large-scale military exercises. The scenario almost always involved offensive operations, with large numbers of heavy armor and artillery. The Georgian command expected that once the regular separatist troops had been crushed, it would have to deal with insurgency in the separatist territories, so the training program placed heavy emphasis on counterinsurgency operations.

The United States provided valuable assistance in training the Georgian troops. Tbilisi had agreed to send a large force to Iraq, so the United States rolled out a large training program focusing on counterinsurgency. Those skills were later used very successfully during combat operations in Iraq. But they were not very relevant to waging conventional warfare against another country's army. The training program did not include the use of artillery, armor or aviation in large-scale operations. Nor did it prepare the Georgian troops to hold their ground against a stronger adversary.

Meanwhile, the Georgian secret services were working flat out to collect intelligence information in Abkhazia and South Ossetia. Apart from traditional human intelligence-gathering, they relied heavily on technology. The Georgian electronic reconnaissance service monitored cell phone conversations in the whole of South Ossetia and part of Abkhazia. The UAVs bought from Israel were on routine patrols, gathering intelligence on the separatist troops and

military infrastructure, as well as on the Russian peacekeepers stationed in the two breakaway regions. The UAVs were also used to collect footage of key cities, the Inguri hydroelectric power plant, bridges, tunnels, ports, etc. High-resolution satellite imagery of the key areas was bought from foreign commercial providers. The Georgians used it to monitor the construction of the bases of the Russian peacekeepers in South Ossetia and to develop detailed map-boards for future offensive operations.

The Georgian Peacekeeping Force in the Georgian-Ossetian conflict zone consisted of regular Georgian Army units. That was used as an opportunity for Georgian soldiers to study the area where they would be expected to fight later on. To make sure that as many soldiers as possible could make use of that opportunity, there were very frequent rotations of the Georgian peacekeeping contingent. Instead of the six months stipulated in the agreements on the peacekeeping forces in the region, the Georgian battalions would sometimes be rotated after only about a month.

Apart from modernizing the armed forces, the government made a priority of developing and training the militarized and special task force units of the Interior Ministry. Several special task squads were formed to fight against the separatists. The Interior Ministry was given light armored vehicles, artillery and UAVs (including the Israeli-made Elbit Hermes 450 drones). Part of the reason for that strategy was to circumvent the restrictions on stationing army units in and around the conflict zones. It was the Georgian Interior Ministry's militarized formations that had been causing the most trouble on the border prior to the August 2008 conflict.

Meanwhile, the armies of Abkhazia and South Ossetia were stagnating at best. Unable to procure heavy arms from the outside or to keep their existing equipment in good working order, the two breakaway regions had to contend with a gradual degradation of their military capability. And while Abkhazia still managed to maintain a moderately useful regular army, South Ossetia had to rely almost entirely on militia armed with little more than small arms and mortars. By 2008, the entire South Ossetian tank strength had dwindled to a combined company of the hopelessly obsolete T-55's (about 10 of them in total). The region's heavy artillery strength was limited to a handful of the 2S3 Akatsiya and 2S1 Gvozdika self-propelled howitzers, and a few towed guns. There were also up to ten multiple launch rocket systems (MLRS), with a very limited stockpile of ammo.

It soon became obvious that the balance of power in the region had shifted. The Abkhaz Army and the small armed forces of the sparsely populated South Ossetia no longer had any real hope of fending off a Georgian assault on their own. The small and lightly armed Russian Peacekeeping Force (500 soldiers in South Ossetia and 2,300 in Abkhazia) was no longer a match for the Georgian

army, either. It became clear that the only way to defend the two unrecognized republics if Georgia tried to retake them by force would be for the Russian Army to intervene very directly.

Russian armed forces in the region ahead of the conflict

Amid growing tensions between Russia and Georgia, and the continuing improvement of the Georgian military capability, the Russian top brass began to consider an armed conflict with Georgia over the separatist region a distinct possibility. Nevertheless, no special preparations were being made for a possible war. It was expected that in the event of a conflict, the forces stationed in the region – the North Caucasus Military District formations, the Airborne Assault Troops and the 4th Air Force and Air Defense Army – would be able to cope on their own.

The North Caucasus Military District has some of Russia's most competent troops, thanks largely to the years of conflict in Chechnya and the neighboring regions. The District's forces have gained valuable combat experience fighting the local insurgents and terrorists. They have also undergone serious structural transformations. It is in the North Caucasus Military District that the Russian Army has made the most progress in switching to the brigade structure. Two new mountain motorized rifle brigades had been formed in Dagestan and Karachayevo-Cherkessiya by the time the war with Georgia began. Many of the formations stationed in the region maintained permanent combat-ready status. Each of the permanently combat-ready regiments was capable of fielding a combat-ready battalion-size tactical group (about a third of the regiment's strength) within 24 hours.

The North Caucasus Military District also had the largest share of professional soldiers (as opposed to conscripts) compared to the other districts. The 42nd Motorized Rifle Division stationed in Chechnya was the only division in the entire Russian Army fully deployed under a wartime manning chart and staffed only by professional soldiers.

But for all their experience of real combat, the District's units had to make do with old and obsolete equipment. The prospect of an armed conflict with Georgia did not really change the situation. The District lacked any first-class heavy weapons. The most advanced tanks it could field were the slightly upgraded versions of the T-72's, scattered in small numbers across several tank units. None of those units had any T-80 or T-90 tanks. The 42nd Motorized Rifle Division was given woefully obsolete T-62's, which were still usable for counterinsurgency operations, but completely inadequate in any confrontation with a serious adversary. Motorized infantry was in no better condition. Apart from the BMP-2 and BTR-80 vehicles, which are themselves fairly aged, it was still heavily reliant on the ancient BMP-1 and MT-LB.

The Russian 4th Air Force and Air Defense Army, which is stationed in the North Caucasus region, had a lot of combat experience after the Chechen wars,

and large amounts of equipment. It included three fighter aviation regiments and one fighter airbase in Armenia; two frontal bomber regiments, three ground attack and one reconnaissance aviation regiment, plus three helicopter regiments and one transport airbase. But very little of its equipment was new or upgraded. Only the 487th Helicopter Regiment in Budennovsk had received several upgraded Mi-24PN attack helicopters, and the 368th Attack Aviation Regiment (also based in Budennovsk) had been given about 10 modernized Su-25SM attack aircraft.

All those Russian forces may have been scattered all across the North Caucasus District's large territory, and their equipment may not have been brand new – but they were still far superior to the Georgian army, both in terms of their numerical strength and their fighting ability. They could also be reinforced by the highly mobile units of the Airborne Troops. The Russian government and military commanders apparently believed that all this was sufficient to deter Georgia from trying to use force against Abkhazia or South Ossetia.

In 2006 Russia began a series of large-scale military exercises in the North Caucasus Military District. A demonstration of Russian force in the region for Georgia's benefit was certainly part of the reason for the decision. The largest of those training events were the 'Caucasus Frontier 2006', the 'Caucasus Frontier 2007', and the 'Caucasus 2008'. They were held during the summer as a series of separate maneuvers by the 58th Army and the 4th Air Force and Air Defense Army stationed in the region. They also involved units of the Airborne Troops and the Russian Black Sea Fleet. As usual, the Airborne Troops were represented by one battalion-size tactical group of the 76th Airborne Assault Division from Pskov and units of the 7th Airborne Assault Division based in Novorossiysk.

The scale of the exercises was increasing every year. The 'Caucasus 2008' event involved 10,000 servicemen and hundreds of tanks and pieces of armor.

Meanwhile, tensions in Abkhazia had reached a critical point in the first half of 2008, following a series of incidents involving Georgian UAVs crossing into Abkhaz airspace, and with Georgian troops amassing on the Abkhaz border. The Russian forces were involved in shooting down three Georgian Hermes 450 drones at the time.

Russia had to bolster its Peacekeeping Force in Abkhazia, bringing its size to the agreed ceiling of 3,000 servicemen. In addition to the three motorized rifle battalions already deployed in the region (the 42nd Independent Motorized Rifle Battalion of the 15th Samara Independent Motorized Rifle Brigade, 526th and 558th Independent Motorized Rifle Battalions of the 131st Maykop Independent Motorized Rifle Brigade), Russia sent another battalion-size tactical group. It belonged to the 108th Airborne Assault Regiment of the 7th Novorossiysk Airborne Assault Division. The peacekeeping force was also reinforced by two army Spetsnaz companies. Units of the Russian Railway

Troops were also brought in for a period to complete the repairs of the railway track between Sukhumi and Ochamchira. The railway could be used to speed up the deployment of Russian reinforcements in Abkhazia in the event of an armed conflict.

In contrast to all the activity in Abkhazia, no significant Russian troop movements had been reported in South Ossetia or the Russian border regions in the period before the war in August 2008. The 'Caucasus 2008' exercise involved more troops than the previous year's event, but on the whole, it was not much different from all the previous exercises. The only notable change was a somewhat greater emphasis placed on Abkhazia by the Russian commanders.

For the first time, the scenario of the exercise included the landing of a marine company from a large assault-landing ship onto the beach of the Imereti lowlands near Sochi, only a few miles away from the Russian border with Abkhazia. Also unusual was the relocation of a small number of Su-24M front-line bombers to the Sochi Airport, from where they took off for several training flights.

Apart from the large annual exercises, Russia also held numerous smaller training events in the region. During the frequent political bust-ups with Georgia or growing military tensions in the areas close to the breakaway regions' borders, Russia would also hold unscheduled training events. They would usually involve the deployment of a small Russian force in the immediate vicinity of the South Ossetian border, from where it could rush to the aid of the Russian peacekeepers in the breakaway republic in the event of a sudden Georgian attack.

The plans of the two sides

The main focus of the Georgian plans of attack against South Ossetia in 2008 was to advance very quickly deep into the region's territory. Using the overwhelming superiority of its beefed-up army, Tbilisi hoped to crush the main South Ossetian force as quickly as possible, occupy the capital Tskhinvali, and block the Trans-Caucasus Motorway to prevent the arrival of volunteers from Russia. Speed was the utmost priority of the entire operation, with the aim of seizing all the main South Ossetian towns and villages within three or four days. Tbilisi would then install a Georgian administration led by Dmitriy Sanakoev in Tskhinval, and announce that Georgia was back in control of the breakaway region. After that it could proceed to crushing any remaining pockets of resistance, one by one. Some 40,000 reserves, whose training was due to be completed by the time the war began, would be involved in maintaining Georgian occupation of the territory and conducting counterinsurgency operations.

The offensive against South Ossetia would involve large forces of the Georgian Defense Ministry and the Ministry of Interior. One infantry brigade

was to occupy the village of Khetagurovo, west of Tskhinvali. Another was to take the Prisi heights and the villages of Dmenis and Sarabuk to the east of the South Ossetian capital. The two brigades would then go around Tskhinvali and meet near the village of Gufta, blockading the capital from all sides. Then they would move quickly towards Djava and the Roki tunnel, so as to prevent any reinforcements from coming into South Ossetia. Meanwhile, units of the Interior Ministry and army special task force squads, supported by artillery and tanks, would take Tskhinvali and conduct a clean-up operation. The Artillery Brigade was to provide fire cover at every stage of the offensive. Small groups of Georgian Army, the size of a battalion, were to strike at the secondary targets: the Leninogorsk and Znaur districts, and the village of Kvaysa.

The main weakness of the Georgian plan was that it completely overlooked the possibility of the Russian army's intervention in the conflict. There appeared to be no preparations at all for a possible confrontation with the Russian troops. Neither had the Georgians taken any reasonable precautions to provide air defense cover for their attacking forces, even using the existing air defense capability. Soldiers had received no information to the effect that a clash with the Russian troops was a possibility. It is not at all clear why the Georgian Government was so confident that Russia would stand aloof.

Tbilisi may have hoped that by offering Moscow safety guarantees for the Russian peacekeepers in the republic, Georgia could either prevent or at least delay Russia's involvement. The expectation was apparently for Moscow to try diplomacy first. Once that failed, authorizing the use of force and troop deployment would take several days, by which time most of the South Ossetian territory and settlements, as well as the strategic Roki tunnel, would have been under Georgian control, making any Russian attempts to intervene quite pointless.

Russia, meanwhile, was well aware of the Georgian plans for an attack against South Ossetia. The only crucial detail it did not know was the precise date of the operation. The political decision to protect the vulnerable republic in the event of a Georgian offensive was therefore made well in advance. There was a clear possibility of the entire South Ossetian territory being occupied within days: its territory was small, its armed forces weak, and its capital very vulnerable, being located right on the border with Georgia. The large Georgian enclaves within the republic were another factor in Georgia's favor. The Russian military command therefore made certain preparations so as to be able to come to the aid of South Ossetia as soon as possible once the Georgian offensive began.

After the completion of the 'Caucasus 2008' exercise, a small Russian force consisting of two reinforced motorized rifle battalions remained near the border with South Ossetia. Its task was to enter the republic's territory within hours of Georgia launching an offensive, and help the Russian peacekeepers. Backed by

Russian aviation, it was to prevent the Georgian troops from advancing deep into South Ossetia until the arrival of large reinforcements from Russia. The nearest Russian units maintaining permanent combat readiness status would take 24 to 48 hours to reach the republic. If necessary, highly mobile airborne troops would also be deployed. Additional Russian troops would be sent to Abkhazia as a precaution in the event of a conflict.

As a result of all those preparations, Russia was able to enter the fray within hours of the Georgian offensive. Georgia's best-laid battle plans, which discounted the possibility of Russian involvement, were in ruins. The Georgian military command was forced to improvise, while the Russian plans for defending the two republics worked out very well. Thanks to the experience gained during the numerous exercises in the region, the Russian permanent-readiness troops were able to deploy without a hitch in real battle conditions.

Timeline of the combat operations

1-7 August

The intensity of sporadic exchanges of fire between Georgian and South Ossetian villages in July 2008 was much higher than usual at that time every year. But the real escalation did not begin until August. The countdown to the war may have started on August 1. A Georgian Police pickup truck, a Toyota Hilux, was blown up at 0800 by an improvised explosive device planted on the side of a detour road between Georgia proper and a Georgian enclave to the north of Tskhinvali. Five policemen were injured. The Georgians had no doubt that the South Ossetian separatists were responsible.

At 1817 of the same day, snipers of the Georgian Interior Ministry's special task force retaliated by attacking the border checkpoints of the South Ossetian Interior Ministry. Four Ossetians were killed and seven injured, most of them South Ossetian Interior Ministry servicemen. On the night of August 1-2, heavy exchanges of fire broke out across the border. The sides used grenade launchers and mortars. The number of Ossetian casualties rose to six, including one soldier of the North Ossetian Peacekeeper Battalion. The number of injured reached 15, including several civilians. On the Georgian side, six civilians and one policeman were injured. Those were the heaviest losses in one day since the 2004 conflict.

Amid this rapid escalation, the South Ossetian Government ordered the evacuation of women and children from Tskhinvali and the village of Dmenis close to the border with Georgia. Organized convoys of evacuees began to arrive in Russia in the morning of August 2. Many South Ossetians fled to safer places within the republic.

Despite the deterioration in South Ossetia, the large-scale Russian military exercise in the region, the 'Caucasus 2008', ended on August 2, as previously scheduled. Most of the Russian troops which took part in the event were withdrawn

to their permanent bases. On the same day, the battalion-size tactical group of the 76th Airborne Assault Division's 104th Airborne Assault Regiment began its withdrawal from the border with South Ossetia back to its base in Pskov. Its soldiers were flown back home, and the equipment followed by railway.

Only a small Russian force remained near the South Ossetian border, in a field camp struck at the North Caucasus Military District's training range near the Mamison pass. Its job, as usual, was to provide contingency cover for the Russian peacekeepers in South Ossetia during the latest bout of tensions between Russia and Georgia. The Russian force included two reinforced motorized rifle battalions: one belonging to the 135th Motorized Rifle Regiment of the 19th Motorized Rifle Division, the other to the 693rd Motorized Rifle Regiment of the same division. Its total strength was 1,500 servicemen, fourteen T-72B main battle tanks, and sixteen 2S3 Akatsiya 152 mm self-propelled howitzers. The mountain training range, which is only 30km away from the Roki tunnel, is a very convenient hideout for assembling troops. From there, they can quickly be moved to South Ossetia. There are no large settlements anywhere near the range, and it is situated well away from the Trans-Caucasus motorway, so any troop movement can remain relatively unnoticed. Russia also had nine BM-21 Grad MLR systems at a smaller training range near Kesatikau, which is even closer to the Roki tunnel.

Amid the escalation in early August, the Russian Peacekeeper Force in South Ossetia was put on the highest state of alert. The period of August 2-5 was relatively quiet, with only a few sporadic exchanges of small arms fire. But on August 6, the exchanges intensified. Mortar and small arms fire continued from both sides all through the night of August 6-7. Fourteen people were injured in Tskhinvali, most of them peaceful civilians, and another four in the neighboring South Ossetian villages.

In the afternoon of August 6, the Georgian Army was put on high alert. The Georgian government had decided to launch an armed offensive against the breakaway republic. It set up an operational command led by the Army commander, which quickly approved the overall plan of the operation and began issuing orders for troop movements. On the night of August 6-7, the 3rd and 4th Infantry Brigades were ordered to move to the border with South Ossetia, and instructed as to the overall objectives, tasks and plans of the operation. At 0100 on August 7, Georgia also began partial mobilization of reserves. On the same night, Russian peacekeeper stations reported that several Georgian UAVs had crossed into South Ossetia in the direction of Djava.

On August 7, Georgia began evacuating women and children from the village of Ergneti near the border with South Ossetia. Georgian peacekeepers and police forces started to advance into the disputed territories and seized several strategic heights there, which they immediately began to fortify. That

triggered new exchanges of fire. At 1400, the South Ossetian forces hit a Georgian BMP-2 infantry fighting vehicle near the Georgian border village of Avnevi. The vehicle sustained a direct hit from a mortar and was completely destroyed. Two Georgian servicemen of the 1st Infantry Brigade were killed and another five injured. They were on peacekeeping duty at the time. At 1430, Georgian President Mikhail Saakashvili issued an order to begin preparations for an attack against South Ossetia. The Georgian Army began to enact its well-prepared plans for an offensive and advance towards the border.

Exchanges of fire continued on August 7 between the South Ossetian positions near the village of Khetagurovo and the Georgian villages of Avnevi and Nuli. Both sides used small arms, grenade launchers and mortars. Exchanges also continued between the Georgian enclaves and Tskhinvali, but with less intensity. At 1545, Georgian army units opened fire at targets in Khetagurovo and the southern fringes of Tskhinvali. Using self-propelled artillery and tanks, they suppressed South Ossetian firing positions near Khetagurovo. The use of heavy armor and artillery by the Georgian forces signaled a sharp escalation of the conflict. The Russian troops at the training ranges near the South Ossetian border were put on high alert.

At 1700, the Georgian peacekeepers left the HQ of the Joint Peacekeeping Forces in Tskhinvali and the joint checkpoints around the city upon receiving orders to that effect from their command.

Late in the afternoon, exchanges of fire started to wane from both sides. At 1936, Mikhail Saakashvili made a televised address to announce a unilateral ceasefire. Only sporadic exchanges of small arms fire continued in the next several hours. But the movement of Georgian Army and Interior Ministry forces towards the conflict zone continued as before. Georgian troops were taking up positions for an offensive. From their vantage points on the summits around Tskhinvali, Russian peacekeepers and South Ossetian armed forces saw large convoys of the Georgian Army advancing towards the border. At 2300, the assembly of the main Georgian attacking force at the border was complete. The assembly plans had been executed quickly and efficiently. As a result, dozens of Georgian tanks, heavy artillery and MLR systems had been amassed in the Georgian sector of the border zone, in contravention of the ban on heavy arms in the area.

On the left flank of the Georgian attacking force was the 4th Infantry Brigade from Vaziani (a Tbilisi suburb), which was to take the Khetagurovo village by storm, then cut off the Zarskaya detour road and occupy Ossetian villages to the west of Khetagurovo. The brigade would then take the Zarskaya road to the Gufta village and the strategic Gufta bridge. The 3rd Infantry Brigade from Kutaisi was given the left flank, to the east of Tskhinvali. Its main force had amassed on the border by the morning of August 8, and its tank battalion had arrived by noon. The 3rd Brigade was to storm the Prisi heights, as

well as the villages of Dmenis and Sarabuk, then go around Tskhinvali towards the Georgian enclaves in the Bolshoy Liakhvi gorge and on to the village of Gufta, where it would meet the 4th Infantry Brigade and thus complete the encirclement of Tskhinvali.

The center of the attacking force, which was to storm Tskhinvali itself, consisted of various militarized special task force units of the Georgian Interior Ministry, armed with several dozen light armored vehicles (mainly the Cobra armored vehicles with 12.7mm machine guns and 40mm automatic grenade launchers). They were supported by a Independent Combined Tank Battalion from Gori, the Georgian Special Operations Group and an Independent Light Infantry Battalion of the Georgian Defense Ministry (the former Marines battalion).

The reserve of the attacking Georgian force consisted of the 53rd Light Infantry Battalion of the 5th Infantry Brigade from Khoni. The Georgian Peacekeeper Battalion was stationed in the immediate vicinity of Tskhinvali. It included the 11th Light Infantry Battalion of the 1st Infantry Brigade (its two other light infantry battalions were in Iraq at the time) and a mechanized company of the Independent Combined Tank Battalion. The 1st Infantry Brigade's artillery battalion was also taking part in the offensive, as did the self-propelled artillery and MLR systems of the Artillery Brigade stationed in Gori. The Artillery Brigade's artillery spotter posts had been deployed on vantage points around Tskhinvali and in the villages of the Georgian enclave well in advance of the offensive.

On the western borders of South Ossetia the Georgians had two small groups of forces. They were to attack from the weakly defended flank, seize the town of Kvaysa and try to advance towards the Djava settlement so as to cut off the Trans-Caucasus Motorway and maybe even seize the Roki tunnel. In the area of the Perevi settlement, the offensive was to be led by an Independent Combined Mountain Rifle Battalion and a Police special task force squad, and near Kvaysa by a Combined Battalion of the Interior Ministry's Constitutional Security Department.

The overall strength of the Georgian Army group amassed near the South Ossetian border by the morning of August 8 was about 12,000 soldiers and 75 T-72 main battle tanks. The Interior Ministry forces had an additional 4,000 people and 70 Cobra armored vehicles. Only the 2nd Infantry Brigade remained at its base in Senaki so as to cover western Georgia in the event of the Abkhaz Army opening a second front. But in the evening of August 7, the Georgian command decided to move that brigade towards Tskhinvali as well. Part of the 5th Infantry Brigade and units of the Georgian Interior Ministry were left behind to hold the Kodori Gorge.

At 2330 on August 7, the Georgian Army received orders to open fire. At about 2335, the Georgian Artillery Brigade and artillery batteries of the

infantry brigades began to soften up the targets in South Ossetia by shelling command facilities in Tskhinvali, previously reconnoitered defensive positions of the South Ossetian forces, the city itself and the neighboring villages. They were using mortars, self-propelled and towed artillery of the 122 mm, 152 mm and 203 mm caliber, and 122 mm and 160 mm MLR systems.

At 2345, the Commander of the Joint Peacekeeping Force in South Ossetia, Russian Maj Gen Marat Kulakhmetov, had a telephone conversation with the Commander of peacekeeping operations of the Georgian Joint Staff, Brigade General Mamuka Kurashvili. The latter informed the Russian commander about the beginning of the Georgian military operation. According to some reports, Kurashvili offered the Russian peacekeepers safety guarantees in return for not intervening in the situation or trying to stop the Georgian offensive.

August 8

South Ossetia

The South Ossetian capital Tskhinvali and its neighboring villages came under heavy fire from more than a hundred pieces of artillery and mortars, and more than 30 MLR systems. The Georgians attempted to deliver surgical strikes, targeting a list of command and military facilities to be destroyed. But insufficient accuracy of their fire led to serious damage to residential areas and civilian buildings. Almost the entire territory of the city came under heavy shelling. Some of the Georgian shells overshot the city completely and landed well to the north of it, in the villages of the Georgian enclave, including Tamarasheni.

At first, the Russian peacekeepers in the city were not specifically targeted by Georgian artillery - but a few stray shells did cause some damage. At 0003, one of them landed on the territory of the Joint Peacekeeping Force HQ. At 0045, the Upper Compound of the Russian peacekeepers was hit. The peacekeepers' observation posts near the Georgian border started taking sporadic small arms and mortar fire from the very first minutes of the conflict.

At about 0030, the Commander of peacekeeping operations of the Georgian Joint Staff, Brigade General Mamuka Kurashvili, made a statement for the media. He accused South Ossetia of continuing to fire at Georgian villages. He therefore announced that Georgia was no longer bound by its unilateral ceasefire declared only a few hours earlier, and launching "an operation to restore constitutional order in the conflict zone".

At 0040, artillery of the Georgian 4th Infantry Brigade began to pound targets inside Khetagurovo ahead of the ground offensive. At 0100, the brigade's 41st and 42nd Light Infantry Battalions began their attack, quickly took the village of Muguti without encountering any resistance, and after a short battle with a much weaker Ossetian force took Khetagurovo by storm. Meanwhile, the Brigade's 43rd Battalion advanced into South Ossetia to the west of Tskhinvali and proceeded

on foot towards the district center of Znaur. It did not encounter any resistance and quickly occupied several Ossetian border villages of the Znaur District.

At about the same time, Georgian forces crossed into South Ossetia in the remote Leninogorsk (Akhalgorsk) District, which has long been a subject of a territorial dispute between Georgia and the breakaway republic. The attacking force consisted of small special task squads of the Georgian Interior Ministry. The South Ossetians had almost no fortifications or armed soldiers in this sparsely populated district, so the Georgians were able to occupy several villages here very quickly and without a fight.

Almost immediately after the beginning of massive Georgian shelling of South Ossetia, at 0100 on August 8, the Russian General Staff ordered the troops deployed at the training ranges near the Ossetian border to march towards the Roki tunnel. Within half an hour of receiving the orders, the two battalion-size tactical groups of the 19th Motorized Rifle Division's 693rd and 135th Motorized Rifle Regiments were on the move.

At about 0100, the Russian Defense Minister, Anatoliy Serdyukov, was on the phone with President Dmitry Medvedev to report about the beginning of the Georgian offensive. It seems likely that during that phone conversation, the president authorized the Russian Army to cross into South Ossetia. At 0200 on August 8, the first Russian armor of the 693rd Motorized Rifle Regiment's battalion-size tactical group crossed into South Ossetia. It was soon followed by the battalion tactical group of the 135th Motorized Rifle Regiment.

According to the initial plans, the two reinforced battalions were to take under their control the road from the Roki tunnel to Tskhinvali, and ensure safe entry into the republic of additional Russian troops, which would then counterattack and repel the Georgian offensive. The battalion group of the 693rd Motorized Rifle Regiment would hold the stretch of the road between the tunnel and Djava, and forces of the 135th Regiment the stretch between Djava and Tskhinval.

After crossing into South Ossetia via the Roki tunnel, the Russian troops continued towards Djava. The reconnaissance company of the 693rd Motorized Rifle Regiment was left behind to hold the southern end of the tunnel. Individual motorized rifle platoons were positioned at key points along the road as the rest of the group advanced deeper into South Ossetia.

At 0300, the 19th Motorized Rifle Division's 503rd Motorized Rifle Regiment, which was at its home base in Troitskoye, and several other units of the North Caucasus Military District were put on high alert. The same orders were given to units of the 42nd Motorized Rifle Division stationed in Chechnya, including its 70th and 71st Motorized Rifle Regiments and the 50th Self-Propelled Artillery Regiment. The battalion tactical group of the 76th Pskov Airborne Assault Division's 104th Airborne Assault Regiment, which had returned from the exercise in North Ossetia only the day before, also received marching orders.

Meanwhile, the Georgian side also began to ramp up its attacking force. At about midnight, the 2nd Infantry Brigade, which was initially told to remain at its base in Senaki, not far from Abkhazia, was ordered into the conflict zone. At 0300, the Georgian government announced general mobilization of the reserve. The military enlistment offices started phoning the reserves, of which Georgia had 45,000 by the time the war began.

After shelling Tskhinvali for several hours, the Georgian forces began to advance towards the city. The small South Ossetian artillery forces and mortars opened fire at the Georgian troops amassed near the village of Zemo-Nikozi, but they were poorly organized and ineffective, managing only to slow the Georgian offensive. The Ossetian MLR systems also failed to inflict any significant damage or silence Georgian artillery. The South Ossetian forces were joined by several armored vehicles belonging to the 'Alaniya' Peacekeeper Battalion manned by North Ossetians. One of the battalion's BMP-2 infantry fighting vehicles was destroyed near the village of Tbet.

At 0400, Georgian troops approached the city and joined battle with small armed groups of the South Ossetian Defense Ministry and other law-enforcement agencies, as well as the local militia, which tried to slow the Georgian advance. At first, the Georgian tanks provided fire cover to the infantry without entering the city, pounding the Ossetian firing positions from a distance.

At dawn, the Georgian forces amassed on the western borders of South Ossetia also began their attack. The special task force units of the Georgian Interior Ministry's Constitutional Security Department tried to enter Kvaysa, but encountered stiff resistance from fortified positions manned by a platoon of the South Ossetian Defense Ministry. Several Georgian soldiers were injured, and the entire force withdrew back into Georgian territory. The Georgians mounted no further attacks on this stretch for the rest of the war, firing only sporadically at South Ossetian territory and the Kvaysa village from across the border.

In the morning of August 8, the Georgian Air Force moved three of its Mi-24 attack helicopters from the Alekseevka airbase near Tbilisi to the village of Kaspi, from where they were to provide air cover for the Georgian offensive against Tskhinval. The forces amassed near Kaspi were ordered to set up a forward base for the helicopters there, with a reserve of fuel and ammunition.

The first groups of mobilized Georgian reserves started gathering at the enlistment offices at 0500. From there they were ferried by buses to the military bases, where they were issued weapons and ammunition. Then they were brought to the conflict zone near the city of Gori. The greatest mobilization effort was undertaken in the Gori region and the capital Tbilisi. In western Georgia, mobilization proceeded at a slower pace; the reserves were assembled at a military base in Senaki rather than being sent to South Ossetia.

At 0600, the Georgian 3rd Infantry Brigade began an offensive in the region of Eredvi, to the east of Tskhinvali. Its three light infantry battalions began their advance towards the large Ossetian village of Dmenis and the smaller settlement of Sarabuki, conducting clean-up operations in the neighboring villages in the process and seizing strategic vantage points. The brigade soon encountered resistance from an Ossetian force, up to a single company in size, armed with grenade launchers and mortars and firing from fortified positions at the Prisi heights.

Also at 0600, special task force units of the Georgian Interior Ministry joined the offensive against Tskhinvali. Their path towards the city lay in the immediate vicinity of the Russian peacekeepers' Southern compound with about 250 peacekeepers. After the Georgian forces approached the compound, an exchange of fire broke out with the Russian peacekeepers, which slowed the Georgian offensive. The Georgian Cobra armored vehicles opened fire at the Russian compound from large-caliber machine guns. The Commander of the Russian Peacekeeper Battalion ordered three BMP-1 infantry fighting vehicles to be positioned along the perimeter of the compound to prevent it from being overrun by the attackers. The Georgians then requested several tanks to be sent in from the Independent Combined Tank Battalion.

At 0630, the Russian peacekeepers sustained their first casualties after three Georgian T-72 tanks of the Independent Combined Tank Battalion approached the Southern compound on the outskirts of Tskhinvali and opened fire. The very first tank shot destroyed an observation post on the roof of the barracks, killing a Russian peacekeeper and a South Ossetian observer. The tanks then hit all three BMP-1 vehicles of the peacekeeper battalion, which were blocking the entrance to the camp. Five members of their crews were killed: privates Gimatov, Marchenko, Polushkin, Shmyganovskiy and Yasko of the 135th Motorized Infantry Regiment. One of the Georgian T-72's was hit by a RPG-7 anti-tank rocket launcher. It got stuck in an irrigation canal about 300 meters from the compound and was abandoned by its crew. The other two tanks then withdrew to a safe distance and continued firing at the compound. They were soon joined by Georgian artillery and mortars.

Meanwhile, a Russian convoy consisting of the two already mentioned battalion tactical groups reached Djava at 0630 and continued to Tskhinvali without stopping. Its most urgent task was to block the Trans-Caucasus Motorway north of the Georgian enclave and the Gufti bridge, as well as the Zarskaya detour road. The goal was to prevent Georgian troops from quickly reaching Djava and then the Roki tunnel, blocking the arrival of further Russian reinforcements into the republic.

At about 0700, the convoy of the 693rd Motorized Rifle Regiment came under a bombing raid by four Georgian Su-25 attack aircraft on the stretch of the road between Djava and Tskhinvali. The aircraft were trying to destroy the

strategically important Gufti bridge, which the South Ossetian and Russian troops would need to reach Tskhinvali. But the Georgians were using unguided 250 kg bombs; there were several near misses but no direct hits. Neither the bridge, nor the Russian convoy sustained any damage. Nevertheless, the attack took the Russian vanguard force by surprise. It did not have any air defense capability, and wasn't yet covered by fighter aviation. The Georgian aircraft were therefore able to return to their base unharmed. After a short pause, the Russian convoy continued its movement. Apart from the bridge, the Georgian aviation also targeted a number of military installations, including a South Ossetian army base near Djava and a parking lot where the North Ossetian peacekeeper battalion kept its trucks and other equipment. Several homes were destroyed in the neighboring villages during the raid. The pilots also informed the Georgian command that a large convoy of troops and heavy armor was moving towards Tskhinvali.

The Georgian aircraft returned to their base and began preparations for another mission – but it was cancelled after Russian aircraft were spotted in the skies over North Ossetia. The Georgian command decided not to risk another bombing raid as the defenseless Su-25 attack aircraft would be an easy target for the Russian fighters now on patrol in the republic's airspace. So as not to lose their handful of combat airplanes and trained pilots, the Georgians spread the Su-25's all over their home airfield and hid them under camouflage nets. The planes did not take to the skies for the remainder of the armed conflict – but neither were any of them lost, even during the Russian bombing raids against Georgian airbases.

On approach to the Gufti bridge the Russian 693rd Motorized Rifle Regiment came under small arms fire from the Georgian enclave. The attackers may have been a Georgian reconnaissance and sabotage team sent to destroy the bridge or make it impassable. Russian tanks returned fire, and the adversary offered no more resistance. But as the Russian convoy was crossing the bridge, the No 005 BMP-2 vehicle had an engine failure and had to be pushed over the side of the bridge into the river to let the rest of the convoy pass.

At 0745, Georgian tanks firing from the area of Zemo-Nikozi damaged the medical station of the Russian peacekeepers' Southern compound and destroyed three ambulance trucks. At 0830 the medical station came under fire once again and was completely destroyed, along with several other buildings on the territory of the compound.

At 0800, a Georgian Combined Mountain Rifle Battalion and a special police squad crossed into South Ossetia from the Perevi district on the breakaway republic's western border. That brought the number of directions of Georgian attack against South Ossetia that morning to seven, along the entire length of its border with Georgia. Near the Ossetian village of Sinaguri the Georgians

encountered resistance from the local militia, which they managed to overcome only by 1400 on August 8. The attacking force moved a bit further inland but was soon forced to halt at a blown-up bridge. There was no further combat action in this area for the rest of the conflict.

By 1000 the Georgian Army had overcome pockets of resistance by the South Ossetian forces and the 'Alaniya' Battalion of North Ossetian peacekeepers on the southern and southwestern approaches to Tskhinvali, and taken several villages. The Georgian Interior Ministry force sent to seize Tskhinvali was still struggling to enter the city. The Georgian command therefore ordered the 41st and 42nd Light Infantry Battalions, which had already taken Khetagurovo and were holding the Zarskaya road, to join the Interior Ministry forces storming Tskhinvali. Once they had arrived at the scene, the Georgians made another attempt to take the South Ossetian capital.

Also by 1000, a fire that broke out in the Russian peacekeepers' Southern compound as a result of Georgian shelling had destroyed almost the entire fleet of its cars and trucks, as well as several armored vehicles. The peacekeepers were forced to take cover from constant shelling and small arms fire in the basement of the barracks and in the boiler house. They were therefore unable to put up much resistance or stop the Georgian troops entering Tskhinvali.

At about 1100, soldiers of the Georgian 4th Infantry Brigade entered the city from the southwest, along the road leading to the village of Tbet. Georgian Interior Ministry forces, backed by armored vehicles of the Independent Combined Tank Battalion and soldiers of an Independent Light Infantry Battalion, entered the city from the south, from the village of Zemo-Nikozi. This time round they met with little resistance from the half-destroyed and burning Russian peacekeeper base. Nevertheless, a force of Georgian troops was brought in to encircle the base and isolate it from Tskhinvali. The peacekeepers' compound was essentially under a Georgian blockade.

Meanwhile, Georgian Army and Interior Ministry forces were moving deeper into Tskhinvali along its central streets, setting up roadblocks and gradually clearing the territory of any pockets of resistance. They were opposed by small and uncoordinated squads of lightly armed South Ossetian special task forces, police and militia, who had very limited stocks of ammo and anti-tank weapons. Their main holdouts were apartment blocks in the southern and southwestern areas of the city.

To the east of Tskhinvali, the Georgian offensive was also making steady progress. By 1100 the 3rd Infantry Brigade's battalions had taken fortified Ossetian positions on the Kokhati hills, seizing several mortars along the way, and approached the outskirts of the Dmenis village. But there they were slowed down by South Ossetian forces fortified on the surrounding hills, and soon had to take cover from the first Russian air raids.

Shortly after 1000 on August 8, Russia began its bombing campaign against Georgia. From the outset, Russian aviation pounded not only the advancing Georgian troops around Tskhinval, but also targets deep inside Georgia. At 1030, it bombed the military base in Vaziani, which was used as the assembly point for the reserves. Several people were injured. At 1057, Russian bombers raided the Independent Combined Tank Battalion's base in Gori.

In Tskhinvali, the largest (several dozen people) and best-equipped group of South Ossetian armed services and militia was holding an area in the city center around the Headquarters of the Joint Peacekeeping Force. It was led by the Secretary of the South Ossetian Security Council, Gen Anatoliy Barankevich. At about 1400, a Georgian T-72 tank, side number 406, belonging to the Independent Combined Tank Battalion, approached the HQ of the Joint Peacekeeping Force (North compound) on the intersection of the Moskovskaya and Privokzalnaya Streets. There it was hit from an RPG-7 anti-tank rocket launcher by Gen Barankevich. The rocket struck the rear of the turret, which was not protected by reactive armor. The tank's ammunition detonated, and it was completely destroyed along with its entire crew. Several minutes later and on the same street, the South Ossetian militia hit another two T-72 tanks belonging to the same Georgian battalion.

Almost simultaneously with the destruction of the three Georgian tanks, a pair of Russian Su-25 attack aircraft raided the positions of the Georgian 4th Infantry Brigade's 42nd Light Infantry Battalion, which was taking a rest in the Dubovaya Gardens on the western outskirts of the city. More than 20 Georgian soldiers were killed and several dozen injured. The battalion fled in panic, leaving behind its dead and much of the equipment, including at least three T-72 tanks (side numbers 103, 109 and 111). News of the losses sustained in the city, the entry of the Russian forces into the fray and the hysterical rumors of "the destruction of the 42nd Battalion" spread like wildfire among the Georgian troops in the city, wreaking havoc on their morale. They immediately began a retreat from Tskhinvali, having taken no more than 30 per cent of its territory, mainly in the west and southwest. The tide of the Georgian offensive against the South Ossetian capital turned at about 1400 on August 8.

At around the same time, the Georgian 2nd Infantry Brigade from Senaki began assembling in the conflict zone. Its forces were gathering near the village of Takhtisdziri. The entire force was in place by the end of the day. Several of the Brigade's tanks and an infantry company, which were among the first to arrive, were rushed to the Eredvi area to support the floundering offensive of the 3rd Infantry Brigade and the 5th Infantry Brigade's 53rd Light Infantry Battalion, which had already been brought forward from the reserve.

At 1415, the Georgian Government made a televised announcement of a "humanitarian ceasefire" from 1500 to 1800 to allow the civilians still remaining

in Tskhinvali to leave the city. The South Ossetian militia were offered amnesty if they surrendered. The city's population was offered only one safe corridor leading south into Georgia. But very few people in Tskhinvali were aware of the offer as most of them were taking cover from Georgian shelling in their basements and weren't watching television.

Meanwhile, artillery of the Russian 693rd Motorized Rifle Regiment and the BM-21 Grad MLR systems of the 292nd Combined Artillery Regiment finished setting up their positions by 1500 and opened fire at Georgian troops. That only served to increase the panic among the retreating Georgians. By 1600, almost the entire territory of Tskhinvali was free of them. A small Georgian force remained holed up on the southern fringes of the city and in the suburb of Shankhay (Shanghai), where it was still blockading the Russian peacekeepers' compound. The South Ossetian militia used the respite to set up communications, coordinate their actions and replenish ammunition. They then proceeded to clear any remaining pockets of Georgian resistance in the city.

Almost immediately after the abrupt end of the offensive in Tskhinvali, the Georgian advance to the east of the city also ground to a halt. Light infantry battalions of the 3rd Infantry Brigade came under artillery fire from the Russian and South Ossetian forces, and were targeted by several Russian air raids. They were eventually forced to retreat back to Eredvi. Tanks of the 2nd and 3rd Infantry Brigades also left their positions outside Tskhinval and retreated even deeper into Georgia for fear of Russian bombing raids.

At 1600, Il-76 transports of the Russian Air Force's 103rd Air Transport Regiment began airlifting a battalion-strength tactical group of the 104th Airborne Assault Regiment from Pskov to Beslan. Forces of the 19th Motorized Rifle Division also continued their movement into South Ossetia. There was no let up in the Russian Su-24M and Su-25 aircraft pounding Georgian forces around Tskhinvali and on the Gori-Tskhinvali road, as well as military infrastructure deep in Georgian territory.

At 1505, the military base in Vaziani, where Georgian reserves were still assembling, suffered another air raid. There were several casualties and some damage to the base itself. At 1630, two Russian Su-24M frontline bombers struck Georgia's main airbase in Marneuli, destroying three An-2 light transports belonging to the Georgian Air Force. At 1700 there was another attack on the base by a pair of Su-25's, and at 1735 yet another by three Su-24M's. The Bolnisi airfield was also bombed. Then at about 1800, the Russian Air Force lost its first aircraft during the conflict. An Su-25 of the 368th Attack Aviation Regiment from Budennovsk came under friendly fire from a man-portable SAM system as it was overflying the positions of Russian troops along the Zarskaya road. The pilot, Lt Col Oleg Terebunskiy, ejected to safety.

By 1700, another three Mi-24 attack helicopters of the Georgian Air Force had arrived from their base in Senaki at the makeshift helipad near Kaspi, taking up the size of the Georgian attack helicopter group there to a formidable six. But mindful of the Russian fighter jets whizzing overhead, the Georgian command did not order any of those helicopters into action on that day.

By 1800, Georgia's fresh 2nd Infantry Brigade had arrived in the conflict zone by rail and taken up its initial positions. It began preparations for an advance towards the village of Khetagurovo, recently abandoned by the 4th Infantry Brigade. By then, almost the entire Georgian Army (apart from several units of the 1st and 5th Brigades) and a large part of the Interior Troops had been brought to bear against South Ossetia.

Once the Georgians had realized that the storming of Tskhinvali had failed, and that the Russian army was pouring into the conflict zone, they began withdrawing from the villages of the Georgian enclave to the north of Tskhinvali. Residents of the villages, soldiers of the 1st Infantry Brigade serving in the Georgian peacekeeper battalion there, police and armed formations of the Georgian government in South Ossetia were all leaving the area. By late afternoon, most of the villages of the Bolshoy Liakhvi gorge had been almost completely deserted by the Georgian armed forces.

At about 1800, Georgian army units backed by several tanks of the Independent Combined Tank Battalion made another attempt to enter the southern fringes of Tskhinvali via the 'Shankhay' district from the Zemo-Nikozi area. But on the far approaches to the city they came under artillery and mortar fire from the Russian troops and small arms fire from the Ossetian militia. The attack ground to a halt, and by 1900 the Georgians withdrew back to their positions in Zemo-Nikozi.

During a relative respite in the fighting at about 1900, and following negotiations involving OSCE mediators, 24 Russian peacekeepers who had sustained serious injuries were allowed to leave the blockaded Southern compound. The evacuation was carried out using a Ural armored truck, the only one that had survived the shelling of the compound. Following negotiations with the blockading Georgian forces, the truck was allowed out of the compound, but it then came under Georgian mortar fire as it was leaving the city. Nevertheless, it managed to break through to the Zarskaya road, where it was met by forward units of the 135th Motorized Rifle Regiment.

By 2200, Tskhinvali had been cleared of Georgian troops and returned fully under the South Ossetian forces' control. The Zarskaya detour road was also cleared following the Georgians' withdrawal from Tbet and Khetagurovo. Late in the afternoon, the road was used by an advance group of the Russian forces to enter Khetagurovo. The group included two T-72B tanks of the 19th Motorized Rifle Division's 141st Independent Tank Battalion, and part

of the strength of the 135th Motorized Regiment's reconnaissance company (23 soldiers).

In the last hours of August 8th it became clear that the Georgian offensive against South Ossetia had fizzled out. In the center, the Georgian attackers were forced to withdraw from Tskhinvali and take up positions in the border villages on Georgian territory. To the east of the city, Georgian forces had pulled back towards Eredvi and Prisi, abandoning most of the positions they had seized in the morning and early afternoon. To the west of Tskhinvali, in the Znaur district, the 43rd Light Infantry Battalion had managed to take a few kilometers of South Ossetian territory, but failed to seize the district center itself. On the western border of South Ossetia, a small Georgian force had failed to make any inroads at all. The Georgians were successful only in the remote Leninogorsk district, where the South Ossetians had almost no armed strength when the offensive began.

The number of Russian troops that entered South Ossetia on August 8, based on the nominal strength of the formations involved in action on that day, can be estimated at 3,000-3,500 soldiers, armed with about 30 tanks and as many pieces of self-propelled artillery. That group was equivalent in strength to one Georgian infantry brigade, and much smaller than the total Georgian force amassed in and around Tskhinvali on August 8. The Russian troops were therefore unable to mount an offensive to throw the Georgians back from the South Ossetian border and establish a buffer zone, so as to prevent Georgian shelling of South Ossetian territory. The Russian command therefore continued to bring more troops into the republic. Meanwhile, the Russian Air Force had flown 63 sorties that day to provide air cover to the peacekeepers and Russian troops.

Apparently aware that it still had superiority in numbers, the Georgian command decided to attempt another offensive the following day. It positioned the fresh 2nd Infantry Brigade on the border, poised for an attack, and regrouped the units that took part in the August 8 operation. Georgian artillery, which had not sustained any losses, continued to shell targets in South Ossetia and was preparing for a massive barrage to support the new offensive.

Abkhazia

In the first few hours of the conflict it remained unclear whether the assault on South Ossetia would be followed by a simultaneous offensive against Abkhazia. There were large Georgian forces stationed in the direct vicinity of the Abkhaz border and in the upper Kodori gorge, which is disputed by Georgia and Abkhazia. Those forces included the 2nd Infantry Brigade in Senaki, units of the 5th Infantry Brigade in the Kodori gorge and several thousand servicemen of the Georgian Interior Ministry. Georgia also had the ability to mobilize and arm thousands of trained reserves in a matter of one or two days.

That is why the Abkhaz Security Council held an emergency meeting at 0200 on August 8 and approved the decision to put some of the Abkhaz Army units on high alert, move those troops towards the border with Georgia and begin mobilization of reserves. At 0500, Abkhaz forces began their movement towards the border in the Ochamchira and Gal districts. They included the 1st Independent Tank Battalion and the 2nd Independent Marines Battalion. In compliance with a demand received from the command of the Joint CIS Peacekeeping Force, they halted at the edge of the arms restriction zone established under the Treaty of Moscow, and began to fortify their positions.

Meanwhile, the Russian Government approved an emergency decision to send extra troops to Abkhazia, most of them airborne assault units. In the morning of August 8, the 7th Airborne Assault (Mountain) Division stationed in Novorossiysk was ordered to put together three battalion-strength tactical groups and send them to Abkhazia. Some of the forces would be brought in by sea.

By late afternoon, a battalion tactical group of the Division's 108th Airborne Assault Regiment had begun boarding large tank landing ships (LSTs) of the Russian Black Sea Fleet in the port of Novorossiysk. The first LST to depart was the *Tsezar Kunikov*. After taking on 150 soldiers and 20 vehicles, the landing ship was heading for Abkhazia by 1900. By 2030, most of the battalion group's strength had assembled in the port after returning from the Ramenskoye training range. The *Saratov*, an LST en route to Sevastopol, was ordered to turn back.. It returned to Novorossiysk at full speed, unloaded all its cargo by 2300 and then took up the rest of the battalion group – 450 soldiers and more than 100 vehicles.

By nightfall, several small combat ships based in Novorossiysk had also left the port and headed for the Abkhaz coast to cover the landing of the Russian troops and protect Abkhazia from the sea. The flagship of the Russian Black Sea Fleet, the *Moskva* guided missile cruiser based in Sevastopol, also began urgent preparations to put to sea.

At 2345, two Russian combat aircraft, most likely Su-24MR's, were sent to take aerial photographs of Georgian positions in the Kodori gorge. They used photoflash bombs during the mission. The images were later used to plan the Abkhaz and Russian offensive in the gorge.

August 9

South Ossetia

At 0130, Georgian artillery began softening up targets in South Ossetia ahead of another offensive to be led by the 2nd Infantry Brigade. Heavy shelling continued until 0230; after that, there were only sporadic shots. At about 0600, Georgian troops launched an offensive in several directions. The 22nd and 23rd Light Infantry Battalions of the 2nd Brigade, backed by tanks, began their advance towards Khetagurovo.

There they encountered resistance from the Russian recon unit and tanks which had entered the village by nightfall on August 8. The 2nd Brigade lost at least two soldiers in a long-range exchange of fire. Meanwhile, the small Russian force in Khetagurovo pulled back from the village without any losses and managed to break through to Tskhinvali along the road via the village of Tbet, which was still free of Georgian troops. Since there were no Georgian forces in the city at the time, the Russian force reached the compound of the Russian peacekeepers on the southern fringe of Tskhinvali without encountering any resistance. At 0400, 23 soldiers of the 135th Motorized Rifle Regiment's reconnaissance company entered the compound. Shortly afterwards they were joined by two T-72B tanks of the 141st Independent Tank Battalion. These reinforcements brought welcome relief to the Russian peacekeepers blockaded inside the base, and enabled them to hold the compound until late afternoon of August 9. The reconnaissance company and soldiers of the 10th Independent Special Force Brigade's 107th Special Task Squad, who were among the peacekeepers, held the perimeter of the base. They prevented the Georgian troops from taking the compound by storm. Soldiers of the reconnaissance company at the compound also acted as spotters for Russian artillery.

In Znaur district of South Ossetia, Georgia's 43rd Light Infantry Battalion resumed an offensive during the night. Joined by a small force of reserves, it began to advance towards the district center of Znaur, which it had failed to take the previous day. To the east of Tskhinvali, the 3rd Infantry Brigade also resumed an offensive, moving towards Dmenis and Tliakan. In the center, the Georgians continued to form a combined force which was to make a second major attempt to take Tskhinvali by storm.

This time round, the Georgians were moving much more deliberately and cautiously in all directions, with long delays whenever they encountered fortified positions and South Ossetian resistance. It took the 2nd Infantry Brigade until 1200 to occupy the now deserted village of Khetagurovo, which had been abandoned by the advance Russian force. On that occasion, the Georgians left a reinforced company to hold the village.

In the morning of August 9, the Russian Air Force lost three combat aircraft within only a few hours. At about 0900, a Russian Tu-22M3 heavy bomber was shot down by Georgian Air Defenses over the Sachkhere district of Georgia while on a combat mission. The plane belonged to the 52nd Guard Heavy Bomber Aviation Regiment based in Shaykovka. Two members of its crew, Maj Nesterov and Maj Pryadkin, were killed. Maj Malkov was injured and then taken prisoner by the Georgian forces. The commander, Lt Colonel Koventsov, went missing after ejecting from the plane. Only a short time later, at about 1000, a Russian Su-24M frontline bomber was shot down from a Georgian man-portable SAM system in the area of Shindisi. The crew of the plane, which belonged to the 923rd State Flight Test Centre in Akhtubinsk and

was on a mission to suppress Georgian artillery, had ejected before the crash. But Col Rzhavitin was killed during landing, and the commander of the crew, Col Zinov, was injured and taken prisoner. Almost simultaneously, a Russian Su-25SM attack aircraft of the 368th Attack Aviation Regiment was shot down over Tskhinvali. The plane, which had already been damaged during a raid on a Georgian convoy, was apparently hit by friendly fire. The pilot, Col Kobylash, managed to eject to safety over the Georgian villages of the Bolshoy Liakhvi gorge, and then reached Russian troops on foot. Such an unexpected spate of losses forced the Russian command to reduce the use of combat aviation on August 9 until the causes of the incidents could be analyzed.

Nevertheless, Russian bombers and ground attack aircraft continued individual sorties during the day. At 1100, four long-range Tu-22M3 bombers dropped about a hundred unguided 250 kg bombs on the Kopitnary airfield near the city of Kutaisi. The bombers flew transverse to the direction of the landing strip during the raid and managed to hit it in three separate places. That took the airfield completely out of action. Some of the airfield's parking lots and taxi lanes were also damaged. At 1130, during a bombing raid on a Georgian military base situated in Sukhishvili Street in the city of Gori, several bombs missed their target. Three five-storey apartment blocks about 100 meters away from a military facility were seriously damaged. Some 14 Georgian civilians were killed, in the worst incident of its kind during the entire war. The base of an Independent Combined Tank Battalion, which was the target of the raid, also sustained serious damage after fire broke out in the ammo depot.

At about 1300, Georgian Mi-24 attack helicopters took advantage of a relative lull in the Russian air raids and conducted their first sortie. They attacked the positions of the South Ossetian Defense Ministry's 4th Battalion near the village of Gudzabar and the asphalt plant on the outskirts of Tskhinval. The helicopters fired machine guns and unguided rockets, then safely returned to their makeshift base near Kaspi. But they failed to inflict any damage on the South Ossetian or Russian forces, and the mission did not have any effect on the outcome of the war.

Meanwhile, Georgian forces had almost finished regrouping near Zemo-Nikozi for another attempt to storm the city, but Russian intelligence was unaware of those plans. The Commander of the North Caucasus Military District's 58th Army, Lt Gen Anatoliy Khrulev, therefore decided to take advantage of the fact that Tskhinval was in the hands of the South Ossetian militia, and the Zarskaya detour road was free. He ordered a Russian motorized rifle battalion to enter the city, reach the Russian peacekeepers' Southern compound, lift the Georgian blockade, take defensive positions on the southern outskirts of Tskhinval and wait for the arrival of reinforcements. At about 1400, part of the strength of the 135th Motorized Rifle Regiment's battalion tactical group left its positions along the Zarskaya road and headed for Tskhinval. The force

consisted of the 1st Motorized Rifle Battalion's second and third companies. It was also joined by Khrulev himself and part of the 58th Army HQ's operational group on three armored personnel carriers.

At exactly the same time, 1400, Georgian artillery resumed its shelling of Tskhinvali ahead of another attempt to storm the city. On the far approaches to the city, the Russian convoy came under artillery fire, losing one BMP infantry fighting vehicle and three GAZ-66 trucks of the mortar battery, but continued onwards. Near the village of Tbet it found two Georgian T-72 tanks, side numbers 110 and 125, which the Georgians had abandoned the previous day, and blew them up. At around 1500, the Russian convoy entered the city from the west, while the Georgians were already pouring into Tskhinval from the south, along the road from the village of Nikozi. The Georgian force consisted of the 21st and 41st Light Infantry Battalions, an Independent Light Infantry Battalion, part of the strength of the 2nd Infantry Brigade's tank battalion and other army units.

On the edge of the city, the Russian convoy encountered the Georgian 2nd Infantry Brigade's reconnaissance company. Both sides were taken by surprise, and both took casualties in the ensuing brief and extremely short range exchange of fire. Three Russian soldiers were killed, and the bodies of at least eight Georgian soldiers were later found at the scene. The commander of the 58th Army, Gen Khrulev, was injured, along with several Russian journalists who accompanied him. The Georgian reconnaissance company pulled back after taking heavy casualties, and the Russian convoy continued onwards along the city streets towards the peacekeepers' South compound.

Meanwhile, the advancing Georgian troops made another attempt to take Tskhinval by storm. They attacked from the direction of Zemo-Nikozi, to the south of the city. As on the previous day, the Russian peacekeepers' southern compound was in their way. Georgian tanks approached it and started firing at the half-destroyed barracks from a close distance. Most of the peacekeepers were taking cover in the barracks' basement. The building was soon in flames, smoke started to seep into the basement, and the peacekeepers found themselves in a desperate situation.

Only 400 meters away from the compound, in the Shankhay suburb of Tskhinvali, the head of the Russian convoy consisting of the 135th Motorized Rifle Regiment's 1st Battalion ran into the main Georgian force, which was armed with tanks and other heavy armor. The battle began at 1530. The Russian convoy immediately lost four infantry fighting vehicles to Georgian fire. About a quarter of the convoy managed to withdraw back into the countryside. The rest found themselves blockaded in the city and encircled by the Georgian forces. The Russian troops were forced to take up all-round defensive positions and fight back. The companies eventually got separated into separate platoons led by

junior commanders. However, most of the battalion's equipment was rescued: the soldiers took it out of sight from the streets and into the backyards.

The part of the convoy that was able to pull back from the city along the Zarskaya road soon came under tank fire from the Khetagurovo village, which had been taken by the Georgian forces. It lost another two BMP-1 infantry fighting vehicles and one BRDM-2 armored reconnaissance and patrol vehicle. The road was now blocked.

At about 1500, a Russian Su-25 attack aircraft of the 368th Attack Aviation Regiment was shot down near Djava, close to the Gufti bridge, in yet another friendly fire incident. It was hit from a Russian ZSU-23-4 Shilka self-propelled air defense artillery system covering the Gufti bridge. The plane went down not far from the bridge itself, near the Ossetian village of Itrapis. The pilot, Major Vladimir Edamenko, was killed.

At 1530, units of the Russian Army's Spetsnaz and a company of the Vostok Battalion, hardened in the Chechen wars, rushed to the rescue of the 135th Motorized Rifle Regiment's blockaded 1st Battalion. Russian artillery batteries and the mortar battery of the 135th Regiment's 1st Motorized Rifle Battalion opened heavy fire at the Georgian troops, while the Russian attack aviation was redirected to pound Georgian positions around the city.

In the ensuing artillery duel, the Russian artillery units suffered their first losses. They had taken up positions along the Zarskaya road near the village of Galuanta. The site was convenient but in plain view of the Georgian forces. The deputy commander of the 693rd Motorized Rifle Regiment's self-propelled howitzer battery, Maj Tarasov, died from a shrapnel wound. Seven trucks of one of the regiment's mortar batteries, which were parked in close proximity along the road, were also destroyed. Sergeants Belousov and Gorkovoy were killed when the 135th Motorized Rifle Regiment's mortar battery came under fire. Several other soldiers were injured.

However, Russian artillery spotters had already deployed by that time, and set up communication lines with the reconnaissance company that had broken through to the Russian peacekeepers' compound the previous night. Their information enabled the Russian artillery batteries to improve their accuracy. Georgian troops soon found themselves under continuous heavy and accurate shelling from Russian artillery deployed along the Zarskaya road, as well as self-propelled howitzers and MLR systems positioned further back near Djava. The shelling constrained and demoralized the Georgian troops. The HQ of the Georgian 41st Light Infantry Battalion was hit, which significantly impaired its command and coordination system. All of that contributed to preventing the Georgian troops from destroying the Russian battalion blockaded in the Shankhay suburb, or seizing the peacekeepers' southern compound, which that battalion had been trying to reach.

The Georgian attacking force soon buckled under the strain of Russian shelling and closer-quarter firefights on the streets of Tskhinvali with the Ossetian troops, the Russian army battalion and the Spetsnaz. After suffering significant losses, by 1700 the Georgians had begun to pull back from the city. At least 20 Georgian soldiers were killed during the firefight in the city, including the Commander of the 41st Light Infantry Battalion, Maj Shalva Dolidze. More than 100 soldiers were injured. By 1900, the city was almost completely abandoned by the Georgian Army. During that second and last attempt to take Tskhinvali by storm, they had made even smaller inroads into the city than on August 8, taking only the southwestern outskirts and then falling back only a few hours later. By 1900, the 43rd Light Infantry Battalion, which had taken Znaur only a few hours previously, panicked and abandoned that district center as well.

Following the Georgian withdrawal, the blockade of the Russian peacekeepers' southern compound was finally lifted. At about 1900, the 2nd "Peacekeepers" battalion of the 135th Motorized Rifle Regiment withdrew from the base, having separated into several smaller groups. It was joined by the Spetsnaz squads, one tank of the 141st Independent Tank Battalion, which had run out of ammo, the crew of the second tank, which had been damaged during the battle, and the 135th Motorized Rifle Regiment's reconnaissance company, which had all been sent to the peacekeepers' rescue. Of the Russian servicemen who were in the compound during the conflict, 14 had been killed – most of them when the compound was pounded by Georgian tanks in the morning of August 8.

By 1900, the Georgian force that had crossed into South Ossetia from the direction of Perevi on the remote western border and positioned itself near the village of Sinaguri was hit by a Russian missile strike. The Georgians were hit by at least one Tochka-U (SS-21) short-range ballistic missile armed with a cluster warhead. They immediately withdrew back into Georgia and did not attempt another attack on that direction for the rest of the conflict.

By 2000, the 503rd Motorized Rifle Regiment's battery of the 2S3 Akatsiya 152 mm self-propelled howitzers had deployed along the Zarskaya road and started shelling the Georgian troops. By 2100, Georgian artillery had managed to locate the rocket battery of the 19th Motorized Rifle Division's 292nd Combined Artillery Regiment, which had been firing at the Georgian positions since August 8 from a site just a few kilometers away from Djava. One Russian soldier was injured when the battery came under Georgian fire, and the battery was forced urgently to change its position. The injured private Anton Shcherbakov was the Regiment's only combat loss during the entire war.

By nightfall, the 135th Motorized Rifle Regiment's 1st Battalion, which had sustained serious losses during its attempt earlier in the day to relieve the Russian peacekeepers, had withdrawn from Tskhinvali. Up to 15 of its soldiers were killed

and dozens injured when it came under attack on the Zarskaya road and then battled the Georgian forces on the streets of Tskhinvali. After the battalion's pullout, the city was left abandoned by both the Russian and the Georgian forces. For the rest of the day and during the night it was controlled by the local militia. Only a few small groups of Russian special task forces and about a company and a half of the 693rd Motorized Rifle Regiment were still active in the city and its outskirts. They had been rushed into Tskhinvali after the street battles began earlier in the day. To the east of the city, battalions of the Georgian 3rd Infantry Brigade had again withdrawn first to Eredvi, and then deeper into Georgia to the town of Tkviavi.

By nightfall of August 9, the Georgian forces had again lost almost all of their gains in South Ossetia made earlier in the day. What is more, they had even begun pulling back from the South Ossetian border. All that remained under Georgian control were the Ossetian village of Khetagurovo and the approaches to the village of Tbet, held by units of the Georgian 2nd Infantry Brigade. The Georgian command had left the Abkhaz border completely bare and thrown all available army units into battle in South Ossetia, but still failed to achieve a military success or inflict any significant damage on the Russian forces. Georgia's own troops, however, had sustained heavy losses and were quite exhausted. The government in Tbilisi therefore asked the United States for help in arranging an emergency airlift back to Georgia of the 2,000 soldiers of the Georgian 1st Infantry Brigade serving in Iraq.

On August 9, the Russian Air Force flew 28 combat missions to support the peacekeepers. That number was significantly lower than on the previous day due to the loss of several planes in the morning.

Abkhazia

Close to midnight, Russian troops in the area of Ochamchira in Abkhazia launched two Tochka-U short-range ballistic missiles at Georgia's main Naval base in the port of Poti. The Russian Tochka-U battalion had secretly been brought into Ochamchira back in the autumn of 2007. The missiles, which were armed with cluster warheads, hit the territory of the Naval base and the adjacent civilian container terminal. Five Georgian Navy sailors were killed and more than 30 injured. There was a similar number of casualties among the civilians in the container terminal. The port's infrastructure sustained only very minor damage, but the missile strike still caused major disruption. Those of the Georgian Navy ships that had their crews on board and were sound enough technically to put to sea began urgent preparations to sail for the port of Batumi.

Simultaneously with the missile strike at Poti, at 0017 Russian aviation raided the 2nd Infantry Brigade's base in Senaki, which was being used as an assembly point for the reserves from western Georgia. More than a thousand

reserves were at the base during the bombing raid. Seven of them were killed and dozens injured. As a result, the orders for the reserves to assemble at the base were rescinded, and those who had already arrived were turned back home. Several bombs also landed near the railway station in the city itself, killing civilians and causing damage to several building and the railway track.

At 0530, a Russian Navy squadron arrived in the area of Ochamchira. It included two large tank landing ships, the *Tsezar Kunikov* and the *Saratov*, a guided missile corvette, the *Mirazh*, an anti-submarine corvette, the *Suzdalets*, and two ocean minesweepers, the *Zheleznyakov* and the *Turbinist*. The two landing ships were carrying a battalion-size tactical group of the 7th Airborne Assault Division's 108th Airborne Assault Regiment, which had boarded in Novorossiysk – over 600 servicemen and about 120 vehicles. The ships remained in the outer harbor of Ochamchira awaiting further orders.

By the morning of August 9, the Abkhaz Defense Ministry had decided to launch an offensive in the Kodori gorge. At 0700, Abkhaz troops began amassing near the villages of Lata and Zemo-Lata ahead of the assault. After midday, the Abkhaz Army began an operation to force the Georgian forces out of the Kodori gorge. They opened fire from artillery and MLR systems, and launched several air raids using Mi-24 and Mi-8 helicopters. They also used L-39 jet trainers as light attack aircraft to drop bombs and launch unguided rockets, delivering their first air strike at the Georgian positions at 1430. By 1500, the Abkhaz Army had deployed all its command posts. The central command post was in the village of Tsabal, the backup post in Sukhumi, and the forward posts near Zemo-Lata and in Ochamchira.

In the afternoon of August 9, Turkey made a delivery of several Nurol Ejder armored personnel carriers, which Georgia had bought before the war. They had been loaded onto open flatbed trucks and taken from Batumi to Tbilisi via Kobuleti, Kutaisi and Gori. The sight of those unusual-looking six-wheeled APCs being hauled along the Georgian motorways gave birth to rumors that NATO was bringing in its hardware into the country to give Georgia military assistance in the conflict with Russia. Another wave of rumors was triggered after the Georgian Navy ships had arrived at the outer harbor of Batumi from their vulnerable base in Poti, which had suffered a Russian missile strike during the night. The ships remained in the outer harbor for several hours without entering the port itself. The sight of that military flotilla, which included Georgian landing ships, appearing near the civilian port of Batumi gave rise to speculation that Turkey had sent its Marines to aid Georgia.

At 1600, Russia made an official announcement declaring the coast of Abkhazia out of bounds for all shipping, and said the security zone would be patrolled by the Russian Navy. At 1640, the Russian Black Sea Fleet's flagship, the *Moskva* guided missile cruiser, and the *Smetlivyy* destroyer left the Sevastopol

harbor and headed for Abkhazia. At 1912, several Georgian Navy boats that had left Poti and entered the security zone while heading in the direction of Ochamchira were attacked by the *Mirazh* and the *Suzdalets*, which were covering the Russian LSTs. The Russian corvettes launched two 4K85 Malakhit (SS-N-9) anti-ship missiles and two 9M33M2 Osa-MA2 (SA-N-4) missiles. The Georgian boats turned back and headed in the direction of Poti. Later on, the Russian command said that one of the Georgian boats was sunk in that incident, but there has been no independent confirmation of that statement, and the Georgians have not admitted any losses. The circumstances of the episode remain unclear.

As for the Russian large tank landing ships, it turned out that they could not enter the Ochamchira port because it was too small, and its navigation channel had been allowed to silt up. The troops they were carrying were therefore forced to land on a beach near Ochamchira later that afternoon.

August 10

South Ossetia

The artillery duel between the Russian and Georgian forces continued through the night, as did Georgian shelling of the Zarskaya detour road, which the Russian forces relied on for troop movements. Russian aviation continued its night-time raids. More bombs were dropped on the landing strip of the Tbilisi aviation plant and a communication center near the village of Urta, in Zugdidi district.

During the night, units of the Russian 42nd Motorized Rifle Division started entering South Ossetia after a 300 km march from its bases in Chechnya. Meanwhile, the Russian Spetsnaz, a battalion tactical group of the 76th Airborne Assault Division's 104th airborne assault regiment, and the Vostok Battalion conducted a clean-up operation in the villages of the Georgian enclave to the north of Tskhinvali. They also cleaned up a stretch of the Zarskaya road leading to the city. Their task was to ensure unimpeded entry of a large Russian force into Tskhinvali the following day.

At 0700, units of the 503rd Motorized Rifle Regiment started entering the South Ossetian capital from the west. The stretch of the Trans-Caucasus Motorway that passes through the villages of the Georgian enclave had also been cleaned up by the Russian forces by daybreak. At 1030, armor and equipment of the 42nd Motorized Rifle Division took that shortest route to Tskhinvali. At about midday on August 10, a T-62M tank of the Division's 71st Motorized Rifle Regiment was hit in the eastern part of the city. The tank's commander, Second Lieutenant Neff, was killed. The circumstances of the incident are unclear. That was the second tank lost by the Russian army during the conflict.

The operation to take Tskhinvali under Russian control continued through the day. The forces that entered South Ossetia on August 10 included the

42nd Motorized Rifle Division's 70th and 71st Motorized Rifle Regiments, the 50th Self-Propelled Artillery Regiment, the 417th Independent Reconnaissance Battalion and various logistics units. The division deployed a total of almost 4,500 soldiers in the republic, 29 T-62 and T-62M tanks, 40 self-propelled artillery pieces and more than 250 APCs and infantry fighting vehicles. The large forces being brought into Tskhinvali caused huge traffic jams on the Trans-Caucasus Motorway near Djava, leading to hours of delays and holding back the deployment of the Russian troops. The arrival of the 42nd Motorized Rifle Division, two battalion tactical groups of the 76th Airborne Assault Division and the 19th Motorized Rifle Division's 503rd Motorized Rifle Regiment had almost doubled the Russian troop numbers in South Ossetia. Russia now had more than 10,000 soldiers in the republic – which was about as many as Georgia had brought to bear against South Ossetia.

By midday, the Russian forces had set up a makeshift helipad at a convenient spot to the west of Djava, near the village of Ugardanta, and brought about 10 attack and transport helicopters of the 487th Helicopter Regiment from Budennovsk. That gave the Russian forces in South Ossetia much better air support. A field hospital was deployed near the helipad.

By 1400, the last units of the Georgian Army had withdrawn from South Ossetia and crossed back into Georgia. Several units of the 2nd Infantry Brigade began fortifying their positions in the Georgian villages near the border, to the south and southeast of Tskhinval. Other Georgian forces positioned themselves in the villages between Tskhinvali and Gori. Due to the disruption of the chain of command and communications, as well as signs of panic in the ranks, the Georgian command was unable to organize the construction of makeshift fortifications along the border, or take any other measures to defend Georgian territory against possible attack. At 1730, Georgia made an official announcement that it had ended hostilities and withdrawn all its troops from the conflict zone.

Nevertheless, exchanges of artillery fire continued between the Georgian and Russian forces. Russia carried on with its air raids against targets between Gori and Tskhinvali, as well as deep inside Georgian territory. At 1905, a civilian air traffic radar in the Tbilisi International Airport was destroyed by an anti-radar missile. At 1910, Russian aviation conducted a second raid against the landing strip of the Tbilisi Aviation plant.

Close to midnight, Georgia resumed its shelling of Tskhinvali. It was, however, less intense than in the previous days. Nevertheless, at 2300 Georgian shells hit the positions of the 71st Motorized Rifle Regiment's 2nd Motorized Rifle Battalion deployed to the east of Tskhinvali, in the area of the Prisi hills. Three Russian soldiers were killed and 18 injured.

Late at night on August 10, the remaining units of the 693rd Motorized Rifle Regiment entered Tskhinvali from the Zarskaya detour road and joined

the regiment's battalion-strength tactical group, which was rushed into South Ossetia in the first hours of the conflict. The newly arrived forces included 22 T-72 tanks of the regiment's tank battalion. They and the T-62 tanks of the 42nd Motorized Rifle Division had significantly increased the assault capability of the Russian troops in South Ossetia.

There were no major clashes between the Georgian and Russian or South Ossetian forces throughout the whole day. The Georgian army made no more attempts to launch an attack. Instead, it withdrew into Georgia and tried to take up fortified positions in the border areas. Only artillery was still at work. Before nightfall, large Russian forces entered Tskhinvali without any resistance to speak of, and also took up positions around the city, to the east and west of it. Also on August 10, Russian Mi-8 helicopters crossed deep into Georgia and landed several special task force squads. They took up positions on strategic heights around Gori and near Poti.

Abkhazia

By 0630, the battalions-size tactical group of the 7th Airborne Assault Division's 108th Airborne Assault Regiment, brought by sea from Novorossiysk, had landed on the beach in Ochamchira and assembled near the Teplichnyy factory some 8 km northeast of the city. By 0800, the battalion-size tactical group of the 31st Independent Airborne Assault Brigade had been airlifted from its base in Ulyanovsk to the Babushary airfield. A total of four battalion-size tactical groups of the Airborne Assault Troops had been airlifted to Abkhazia by midday of August 10. Meanwhile, the main strength of the 7th Airborne Assault Division had begun to arrive by rail from Novorossiysk.

By 1000, all Abkhaz reserves had been mobilized and attached to the front-line army units. Following the mobilization, the numerical strength of the Abkhaz forces stood at 9,000 people. During the day, Abkhaz artillery and aviation continued to pound Georgian positions in the Kodori Gorge. During the period of 1200-1300, they launched four air raids against the Georgian forces in the gorge. By 1800, units of the Abkhaz Army had crossed into the Arms control zone and took up positions along the river Inguri, which marks the border with Georgia.

In late afternoon, the Russian command announced that the Russian force in the republic now consisted of 9,000 soldiers – most of them airborne assault troops - and 350 armored vehicles. The Russian troops had next to no heavy armor such as tanks or self-propelled artillery (apart from a small number of 120 mm 2S9 Nona-S airborne self-propelled gun-mortars). To some extent, the Abkhaz Army's armor made up for this weakness of the Russian contingent.

By 1945 on August 10, the *Moskva* guided missile cruiser and the *Smetlivyy* destroyer had arrived at Novorossiysk from Sevastopol and dropped anchor in the

outer harbor. Both remained there until the end of the conflict. At 2010, units of the 108th Airborne Assault Regiment took under their control the bridge over the river Inguri on the Abkhaz-Georgian border. Late at night, after negotiations with the local administration and representatives of the Georgian Interior Ministry, Russian troops crossed into Georgia's Zugdidi District. They spent the night on the territory of an abandoned Russian peacekeepers' base in the village of Urta.

August 11

South Ossetia

During the night, Russian aviation continued air raids against Georgian targets and conducted an operation to disable the Georgian air defense system. At 0030, an anti-radar missile destroyed a 36D6-M military radar station in Shavshebi near Gori. The radar was vitally important to Georgia as it controlled the air space in the conflict zone. At 0400, another anti-radar missile destroyed a powerful civilian radar on Mount Mkhat near Tbilisi, which was also integrated into Georgia's united airspace control system. Another Russian strike targeted the Georgian Air Force command center. Georgia's mobile air defense systems were forced to shut down so as to avoid being hit by Russian missiles. At 0500, Russian aviation conducted a bombing raid on the Shiraki airfield, damaging the landing strip. At 0610, the Independent Combined Tank Battalion's base in Gori was bombed for the second time during the conflict. At 0715, a Russian Mi-24 attack helicopter raided the Senaki airfield and used anti-tank guided missiles to destroy two Georgian helicopters on the ground, an Mi-14BT and an Mi-24V.

In Tskhinvali, the night was relatively calm, despite sporadic shelling by Georgian batteries near Gori. More Russian troops continued to arrive into South Ossetia and the area around Tskhinvali itself. In order to prevent Georgian shelling of South Ossetian territory, the Russian command decided to launch a counterattack and push the Georgian troops away from the South Ossetian border so as to create a buffer zone. In order to put that plan into action, the Russian forces began assembling two regiment-strength tactical groups for the offensive.

One of the groups assembled to the east of the river Liakhva. It included a battalion-size tactical group of the 76th Airborne Assault Division's 234th Airborne Assault Regiment and the 42nd Motorized Rifle Division's 70th Motorized Rifle Regiment, which had arrived from Chechnya (minus most of its artillery and one motorized rifle battalion). The 693rd Motorized Rifle Regiment was chosen to lead the assault at the center, along the western bank of the Liakhva. By 1100, almost all of the regiment's strength, including the tank battalion, had assembled just outside Tskhinvali. Although units of the 693rd regiment were some of the first to enter South Ossetia on August 8, and then spent three days fighting the Georgian forces, they had taken very few casualties - only two killed and less than 10 injured.

The assault was to be led by the battalion tactical group of the 76th Airborne Assault Division's 104th Airborne Assault Regiment. The group included about 300 soldiers, 19 BMD-1 airborne armored vehicles, four 120 mm 2S9 Nona-S self-propelled gun-mortars, and three BTR-D armored vehicles fitted with ZU-23-2 air defense systems.

The group began its advance from the Tskhinvali-Tbet area at about 1030. The troops were ordered to reach the line between Variani village and the Variani collective farm by nightfall to create a buffer zone and put an end to Georgian shelling of Tskhinvali and the surrounding territories. Initially the convoy took the Tskhinval-Tbet-Khetagurovo-Avnevi route, but Russian reconnaissance then found fortified positions of the Georgian Army in the Georgian village of Avnevi. The 104th Airborne Assault Regiment's Battalion Tactical Group, which had the van, made its way across the countryside between the villages of Avnevi and Zemo-Nikozi, moving deeper into Georgian territory. It came under fire from Georgian positions in the area of Avnevi, but moved at full speed away from the village and was soon out of range of Georgian fire. Without encountering any further resistance it soon reached its destination, some 15 km away from the South Ossetian border.

A convoy of the 693rd Motorized Rifle Regiment which followed the van took the road via the Georgian village of Zemo-Khviti. At 1430 it was ambushed in the center of the village by a small Georgian force, presumably soldiers of the 2nd Infantry Brigade and some reserves. The Russian force lost one T-72 tank (side number 321) of the Regiment's Second tank company, and two BMP-2 infantry fighting vehicles (side numbers 350 and 355) of the 2nd Battalion's Fifth company. Five servicemen (Lt Molchan and privates Burdenko, Kusmartsev, Makeev and Pasko) were killed, including the entire crew of the tank, and about 10 were injured. The Russian convoy got separated into two parts. The head of the convoy, which included the tank company and the motorized rifle company, had already passed the village and continued onwards. The rest of the convoy halted and began surrounding the village. In coordination with special task forces, including a company of the Vostok Battalion, they conducted a clean-up operation in Zemo-Khviti and the surrounding villages.

After 1200, the 234th Airborne Assault Regiment's battalion group began to advance along the left bank of the Liakhva. Its strength was similar to that of the 104th Regiment's group: 300 soldiers, 22 BMD-2 airborne armored vehicles, four 2S9 Nona-S self-propelled gun-mortars, and two ZU-23-2 air defense artillery systems mounted on BTR-D chassis.

At about 1500, there was another friendly fire incident near the Georgian village of Eredvi. The Russian convoy advancing into Georgia to the east of the Liakhva was attacked by a Russian Su-25 attack aircraft of the 461st Krasnodar Attack Aviation Regiment. A fuel tanker was hit, and several servicemen

injured. Russian soldiers returned fire from man-portable SAM systems. One of the missiles damaged the plane's right engine, which burst into flames. The aircraft was barely able to return to its base.

Upon entering the village of Variany, soldiers of the 104th Airborne Assault Regiment found a large Georgian logistics base there. That forward base supplied the entire Georgian force in the conflict zone and stored large amounts of weapons and ammo. In the ensuing battle, the Russian paratroopers seized the base.

Once the Russian forces had begun their offensive, the last units of the Georgian 2nd Infantry Brigade still holding their positions near the South Ossetian border began to withdraw towards Gori. A convoy of the brigade's engineers company, with 50 servicemen and about a dozen vehicles, was pulling back from the village of Kelktseuli. Eventually it reached the Tskhinvali-Gori motorway, unaware of the fact that it was following the Russian convoy heading ever deeper into Georgian territory along the same road. Near Shindisi, the Georgians bumped into two Russian BMD-1 airborne armored vehicles of the 104th Airborne Assault Regiment. One of them had suffered engine failure, and another was left behind to provide technical assistance while the rest of the Russian force moved on. The Russian paratroopers were the first to react. They opened fire from their own rifles, RPG's and the BMD-1 guns, scattering the Georgian convoy. Several Georgian soldiers were killed on the spot. The rest took up positions in the buildings of the railway station. The main strength of the Russian convoy was tied up in the battle for the logistics base in Variani and could not come to the aid of the two vehicles which it had left behind. The shootout between the dozen Russian paratroopers and the soldiers of the Georgian engineers company lasted more than half an hour, until the van of the 693rd Motorized Rifle Regiment (a tank company and a motorized rifle company) arrived at the scene after being radioed for help. The Russian tanks and armor quickly suppressed Georgian resistance. More than ten cars and trucks of the Georgian convoy were destroyed in the battle, 17 Georgian soldiers were killed and several taken prisoner. There were no fatalities among the Russian troops.

At about 1700, the Georgian command undertook one last attempt to slow down the advance of the Russian troops into Georgia. All six of the Mi-24 attack helicopters took off from the makeshift helipad near Kaspi and attacked the Russian convoys. In the area between Pkhvenisi and Dzerevi, they managed to destroy at least two Russian trucks. The helicopters then safely returned to their base. The Russian side claimed that one of them was damaged by a 23 mm ZU-23-2 air-defense system mounted on a BTR-D chassis, which was part of the 104th Airborne Assault Regiment's battalion tactical group. That air raid was the Georgian Air Force's most successful operation against the Russian troops during the entire conflict – but it failed to slow the Russian advance into

Georgia to any perceptible degree. The Georgian helicopters were soon moved to another base closer to Tbilisi, and took no more part in the hostilities.

At 1630, Mikhail Saakashvili, who was on a visit to Gori, was forced to leave the city in all haste after the appearance of the Russian Su-25 jets. Half an hour later, by 1700, a large Georgian army group assembled in the city began urgent retreat. Most of it was pulling back towards Tbilisi, and a small group towards Kutaisi. Some of the troops dispersed, moving along minor roads or taking cover in the surrounding forests, individually and in small groups. The Russian army and aviation did not attempt to engage the retreating troops or attack them from the air.

By nightfall, a small Russian force of the 104th Airborne Assault Regiment's battalion tactical group and the 693rd Motorized Regiment took up defensive positions near Variani. They had no information about the opposing Georgian forces, and the main Russian force was left far behind, near the South Ossetian border. The Russian van therefore expected a massive Georgian counterattack. The paratroopers and motorized rifle soldiers dug up trenches and kept large amounts of weapons and ammunition seized at the Georgian logistics base close at hand. But the night passed with few incidents. The remaining combat-ready Georgian army units had already retreated towards Tbilisi and were busy fortifying their positions on the approaches to the capital, in the area of Mtskheta. On the opposite bank of the Liakhva, the 234th Airborne Assault Regiment's battalion tactical group of Russian paratroopers spent the night near the village of Mevgrekisi.

Throughout the day, more Russian troops continued to arrive in South Ossetia. By nightfall of August 11, the Russian army group deployed in South Ossetia and in the border districts of Georgia consisted of 14,000 soldiers, about 100 tanks, up to 100 self-propelled artillery pieces, more than 40 MLR systems, up to 400 infantry fighting vehicles and 200 armored personnel carriers.

Abkhazia

In the morning, another two battalion-size tactical groups and the artillery strength of the Russian 7th Airborne Assault Division crossed into Georgia's Zugdidi District. In the city of Zugdidi, the Russian command ordered the local police to surrender their weapons.

The Abkhaz Government gave an ultimatum to the Georgian soldiers and policemen in the Kodori Gorge to lay down their weapons and leave the gorge. By 1200, the Abkhaz armed forces had assembled an assault group of commandos to seize the gorge and disarm any Georgian troops still remaining there.

After midday, a convoy of the Russian 7th Airborne Assault Division's 108th Airborne Assault Regiment, accompanied by Georgian patrol police and a UN monitoring mission in Georgia, entered the Georgian 2nd Infantry Brigade's

base in the city of Senaki. The base had been abandoned by regular army units and the reserves. On the Senaki airfield, the Russian troops blew up a Georgian Mi-24V attack helicopter. The Russian troops also found four hidden T-72 tanks of the 2nd Infantry Brigade (side numbers 206, 207, 208 and 209). Two of the tanks were blown up on the spot and another two towed to Abkhazia. In addition, the Russian soldiers seized two Buk-M1 SAM launch vehicles, another two reload vehicles plus several missiles.

Another group of Russian paratroopers, which included a reinforced company of the 7th Airborne Assault Division's 247th Airborne Assault Regiment, left Zugdidi at 2000, took a detour road via the Zugdidi-Khudoni-Tobari-Saken route and blocked the exit from the Kodori Gorge. The Georgian army units and police forces in the gorge were now surrounded. Realizing this, they began to lay down their arms. Some of them discarded their uniforms, donned plain clothes and headed for Georgian territory in small groups, having abandoned all their heavy weaponry. They were not impeded by the Russian troops at the checkpoint on the road leading out of the gorge. By 2100, a reconnaissance squad of the Russian commandos reached the city of Poti on BMD vehicles. After reconnoitering the area, the squad returned to Zugdidi.

August 12

South Ossetia

In the morning, Russian troops began taking under their control Georgian territory and settlements between Gori and Tskhinvali. They did not encounter any resistance from the Georgian army. By 1100, the battalion tactical groups of the 693rd Motorized Rifle Regiment and the 104th Airborne Assault Regiment had reached the commanding high point near the Gori television transmitter. There the Russian commandos seized several 100 mm MT-12 Rapira anti-tank guns abandoned by the Georgian Artillery Brigade's anti-tank battalion, and deployed them to repel a possible counterattack. From this convenient vantage point, the Russian group's artillery controlled the Tbilisi-Batumi motorway and railway line, as well as the city of Gori and all the military bases in it. Russian troops had also reached the northern outskirts of Gori and blockaded it from the northeast and northwest by cutting off the main roads, but did not enter the city itself.

Close to midday, the Russian troops launched two Iskander (SS-26) short-range ballistic missiles armed with cluster warheads at targets in Georgia. One of them hit the airbase in Marneuli. Later on, the Georgian government claimed that the missile actually targeted the nearby Baku-Supsa oil pipeline. The second missile struck the central square of Gori, used as the main assembly point by Georgian forces in the town the previous day. But when the missile landed, the Georgian reserves and servicemen had already left. The missile strike killed eight civilians and a Dutch TV cameraman.

Shortly after noon, Russian President Dmitriy Medvedev announced that the operation to force the Georgian government to peace was over. However, he also ordered the suppression of any pockets of Georgian resistance if necessary. By then, Georgian artillery had already fallen silent. Russian artillery delivered its last strike at about 1400, using MLR systems. The last Russian airstrike was made at about the same time. At 1500, the Russian Armed Forces officially ended combat action.

The Georgian Army had mostly withdrawn before the advancing Russian forces by nightfall of August 11, so there was a large neutral zone between the two armies. Russian troops took advantage of the situation to take the Tbilisi-Gori motorway under their control. They also found large stocks of weapons, military equipment and ammunition at three large Georgian army bases in Gori.

Abkhazia

During the night on August 12, Abkhaz forces launched several more air raids on Georgian positions in the Kodori Gorge. At 0600 they began a ground assault operation. At 0900, Abkhaz aviation delivered an air strike near the Adjara village. Later in the day the Abkhaz Army's Mi-8 helicopters landed troops deep in the gorge, behind the defensive lines of the Georgian Interior Ministry forces. Abkhaz soldiers then occupied the villages of Verkhnee Adjara and Nizhnee Adjara, which form the administrative center of the Kodori Gorge. Since most of the Georgian army and police forces there had already surrendered their weapons and left the area, the Abkhaz troops reached the border with Georgia at the upper end of the gorge at 2030 without encountering any resistance, thereby restoring Abkhaz control of the gorge.

Late in the afternoon on August 12, a squad of the Airborne Troops' 45th Independent Airborne Reconnaissance Regiment entered the Georgian port of Poti. It blew up six Georgian Navy and Coast Guard ships and boats abandoned at their moorings by the Georgians, including both of the Georgian Navy's fast attack craft (missile), the *Tbilisi* and *Dioscuria*, which formed the core of the Georgian naval combat capability. The operation to blow up the *Dioscuria* was not a complete success – the boat remained afloat, and had to be blown up again on August 19.

August 13 to the beginning of Russian troop withdrawal

On August 13, a Russian convoy took the Gori-Tbilisi road to reach South Ossetia's remote Leninogorsk district, which had remained out of contact with the rest of the republic since the beginning of the hostilities. The Georgians initially mistook that Russian troop movement for preparations to storm Tbilisi. The Russian troops formed the garrison of that remote district and held it until the arrival of South Ossetian forces, thereby restoring South Ossetian control of that disputed territory. Also on August 13, Russian troops took the city of Gori.

By August 14, the Georgian troops had used the respite to restore their combat capability to some degree. Several Georgian army units and large Interior Ministry forces were brought to the edge of the buffer zone occupied by Russian troops. Fearing a counterattack, the Russian reconnaissance units which were evacuating trophies from the Georgian military bases destroyed up to 20 Georgian T-72 tanks they had seized, along with several BMP-2 and BTR-80 vehicles. Meanwhile, Georgian police tried to enter the city of Gori, but the Russian forces at the checkpoints refused to let them in. Tensions flared up for a brief period, but weapons were not used.

Following the arrival of international mediators, over the period of August 15-16 Russia and Georgia negotiated and signed a ceasefire agreement. On August 18, the Russian command announced the beginning of a phased withdrawal of Russian troops from Georgia.

In the following days, Russian forces in Georgia continued to seize military trophies and remove them to Russia. They also dismantled equipment and partially demolished buildings and structures at the Georgian military bases in Gori, Senaki, Poti and the Kodori Gorge. They blew up the landing strip and aircraft hangars at the airbase in Senaki. Russian squads entered the Naval base in Poti almost every day to empty the warehouses of the Georgian Navy and Coast Guard. They also confiscated the Georgian high-speed rigid hulled inflatable boats. The Russian forces took many more spoils during that post-war period than they did during the actual hostilities.

Georgia had suffered a heavy defeat during the short campaign. More than 2,000 of its soldiers and police officers had been killed or injured. That defeat was seriously compounded during the post-war period, when the Georgian army lost more equipment than during the war itself. The Russian and South Ossetian forces captured 65 Georgian main battle tanks; more than 20 BMP infantry fighting vehicles; two Cobra armored vehicles; about a dozen air defense systems (including the loader vehicles); dozens of mortars and various artillery pieces, including two Dana 152 mm self-propelled gun-howitzers and one 2S7 Pion 203 mm self-propelled gun. Most of them were seized after the end of hostilities. Georgia also lost dozens of cars and trucks. Thousands of small arms pieces and other kit were captured or destroyed. Many army bases were seriously damaged, including the bases of the 1st Infantry Brigade, the Artillery Brigade and the Independent Combined Tank Battalion in Gori, the 2nd Infantry Brigade's base in Senaki, and the Navy and Coast Guard Naval bases in Poti.

Present and Future of the Georgian-Russian Conflict. The Military Aspect

Vyacheslav Tseluiko

In August 2008, the Georgian army failed to justify the pre-war expectations of many experts and crumbled before the Russian onslaught. Many have jumped to the assumption that Georgia can never come out on top in a war with Russia by the very nature of things. The assumption is superficial. It takes into account neither the specifics of the military and political situation at the time, nor the recent developments.

Careful analysis is required to understand how the still unresolved conflict between Russia and Georgia might pan out, including the possibility of another armed confrontation. That analysis should look into the balance of power between the two sides, their resources and positions - before the Five Day War, at present and in the near future.

Post-war transformation of the Georgian army

The pre-war development of the Georgian armed forces is the subject of a separate essay in this book, so only a few things need to be pointed out.

First, a comparison of the numbers and structure of the Georgian army before and after the war. By the summer of 2008, the Georgian armed strength was

32,000 people, including 22,000 in the Army, which consisted of five infantry brigades, an artillery brigade, an engineers brigade (which was still being formed), a special operations group, seven independent battalions (a combined tank battalion, a motorized infantry battalion, medics, military police, communications, radioelectronic reconnaissance, and logistics) and an air defense battalion.¹ The 5th Infantry Brigade was not yet fully formed (its 53rd Light Infantry Battalion was due to finish the 12-week basic training course on October 3, 2008).² The bulk of the strength (2,000 servicemen) of Georgia's best-trained 1st Infantry Brigade was serving in Iraq.

At present, according to the Georgian Defense Ministry budget reports, the numerical strength of the Georgian armed forces is 37,800 people.³ Other sources put the figure at 36,600 people, including 36,200 servicemen.⁴ The Army strength is currently 23,000 servicemen.⁵ The official figure is 20,500, but that does not include some of the recently formed units, such as the Independent Anti-Tank Battalion.⁶ Unlike in August 2008, the entire strength of the Georgian armed forces is now on Georgian territory, but plans are afoot to send a 900-strong force (the 31st Light Infantry Battalion) to Afghanistan.⁷ Meanwhile, the relatively fresh 4th and 5th Infantry Brigades have become more capable thanks to training in the post-war period.

An important recent addition is the new 2nd Artillery Brigade. Its formation began in the autumn of 2008; its core is made of the Khoni group of the Gori Artillery Brigade (the latter has been re-designated as the 1st Artillery Brigade). In November 2008, servicemen of the new 2nd Artillery Brigade took part in a two-week exercise at the Orpolo training range, together with the artillery battalions of the 3rd and 5th Infantry Brigades.⁸

Notably, the new 5th Infantry Brigade and 2nd Artillery Brigade are both based in the west of the country, close to Abkhazia, where Tbilisi already has the 2nd and 3rd Infantry Brigades plus an independent light infantry battalion. During the war in August 2008, Russian commandos were able to raid this part of the country unimpeded, and seize the Georgian military bases in Poti and Senaki. A repeat of that scenario is now much less likely. Georgian command even believes that it has more than enough troops near the Abkhaz border, which is why the 5th Infantry Brigade has been relocated to the Gori District. That means that there are now three infantry brigades and one artillery brigade stationed near Tbilisi. These forces can rapidly be deployed against the Russian and Ossetian troops in South Ossetia.

On the minus side, the former Independent Combined Tank Battalion in Gori has been disbanded, and plans to upgrade the existing engineers company to a brigade have been cancelled. However, the Georgian army now has an independent anti-tank battalion.⁹

Meanwhile, the number of cadets trained at the Krtsanisi military training center has been on the rise in the post-war period. Before the war and in the

second half of 2008, there were 500-650 servicemen taking basic training courses there at any one time. But the number of cadets taking part in the graduation ceremony on May 8, 2009 was as high as 832.¹⁰ The rise in the numbers of cadets trained at Krtsanisi may have been caused by the need to train servicemen for the new Georgian army units and/or to compensate for the soldiers leaving the armed forces. It is likely that the number of servicemen taking courses at other training centers has also increased, and that the National Guard bases in Kodjori, Mukhrovani, Telavi and/or Senaki are now involved in training recruits or active reserves.

The latter development is directly linked to plans for a reform of the Georgian military reserve system, which proved completely useless in battle during the Five Day War. The reasons for that failure included insufficient numbers of commanding officers, poor professional training and low morale of the reserves. The absence of a combat-ready reserve capable of standing in for regular army units during secondary operations or just guarding the rear was one of the key reasons for Georgia's defeat in August 2008. Tbilisi did not have enough regular troops to fight on both fronts (in South Ossetia and Abkhazia) at the same time. The 2nd and 3rd Infantry Brigades were tied up in South Ossetia; the freshly formed 5th Infantry Brigade still had not reached its full strength, and some of its units had to be rushed to South Ossetia too. All of this resulted in the loss of the Kodori Gorge, which the Georgians were forced to evacuate once they had realized the garrison was being surrounded by the Russian units entering Zugdidi District. Russian troops were also able to seize the Georgian military bases in Senaki and Poti.

These failures during the Five Day War forced the Georgian government to launch a major overhaul of the reserve system. Information about the exact details is scarce. It appears though that the three-pronged structure of the reserve (with the so-called individual component, active component and the National Guard) has been replaced with a new system consisting of the regular reserve and the territorial forces.¹¹ The first component (also called "first-class reserve") will be made of at least two brigades (based in Telavi and Senaki). They are manned by former regular army servicemen who have retired in the past five years, primarily those who have also been trained under the American "Train and Equip" program.¹² Many of the currently serving soldiers (including the veterans of the Spetsnaz and the elite 1st and 2nd Infantry Brigades) have the term of their contracts expiring in the coming months. Those of them who will choose not to renew the contract will be enlisted into the two reserve brigades. It is expected that at the initial stage, this component of the reserve will include 2,000 former servicemen. It is possible that the number of the army-type reserve brigades will be increased at some point. But the term of the service contract in the Georgian army is fairly long, so it will be quite a while before there is enough of the retired

servicemen to form another reserve brigade. The plan is therefore also to enlist volunteers who have not served in the army after they take several months of military training courses. The total duration of the training program all first-class reserves are required to take should be 200 days, including 45 days of individual training and the remaining 155 as part of a military formation up to a battalion in size.¹³ The regular reserve may also include conscripts, if Georgia decides to increase the numbers drafted each year.

It can be expected that once the first two reserve brigades have been formed, they will become a force the Georgian command will really be able to count on – especially if they take refresher training courses with heavy emphasis on combined arms operations and sabotage. In terms of their professionalism and training, they will compare quite favorably to the Russian conscript soldiers, as well as any fresh professional service recruits, be they Russian or Georgian.

The territorial component of the new Georgian reserve system will most likely be consist of the old active reserve and the National Guard reserve. Its key tasks will include guarding key infrastructure and defending sensitive facilities from saboteurs or small groups of hostile forces. Very little can be expected from territorial reserves in terms of their fighting ability. But they will still be able to take on some of the lesser tasks and free up regular troops for more important duty.

In the bottom line, the Army component of the Georgian armed forces has gained one artillery brigade and one infantry brigade since August 2008. If the two army-type reserve brigades being formed now are added to the tally, the number of the new Georgian infantry brigades created since the end of the war will soon rise from one to three. In other words, we are talking about a 50-100 per cent increase in the Army's strength, if the combat-ready reserve is taken into account.

Of course, there is still the issue of arming the new brigades. But the problem is not insurmountable. There is no international arms embargo on Georgia; deliveries continue to be made on the previously signed contracts, and the country can also count on foreign aid.

Apart from the growing numerical strength, the Georgian Army has also become better trained following a change of emphasis in its training program. Before the war, the main focus was on low-intensity conflicts and operations as part of coalition forces. Now, much more attention is being paid to combined-arms operations, as suggested by recent exercises conducted by the Georgian army.^{14,15,16} These events have focused on defense against tanks and armor, which may suggest that defensive operations are now the top priority for the Georgian command. That may be because completing the reform of the Georgian army is going to take more time. Defensive preparations could therefore be meant to deter Russia from launching a pre-emptive attack before the Georgian army becomes a serious threat to Russian policy in the Caucasus. The scale of Georgia's preparations for defense against a large-scale assault can be illustrated

by a recent Georgian newspaper report. The paper said a conflict had broken out between an officer of the 5th Infantry Brigade and a group of privates who had to spend the previous three months building fortifications.¹⁷ But offensive operations are also included in the scenario of some military exercises, including Shield 2009, a month-long event that ended on July 30, 2009. It involved an assault by a battalion-size tactical group backed by cannon and rocket artillery, tanks, aviation, air defense and special task forces.

In June 2009, Georgia further expanded its military training capability by setting up a tank training center in Akhaltsikh, using the expertise of the Krtsanisi school's tank training department. The first group of servicemen, a mechanized company of the 1st Infantry Brigade, started the course in Akhaltsikh on July 1, 2009, and completed it on July 30.¹⁸

It must also be taken into account that back in August 2008 the bulk of the fighting was done by the relatively fresh recruits of the 4th and 5th Infantry Brigades, while the veteran 1st Brigade was serving in Iraq. Now that brigade has returned back to Georgia, and soldiers of the 4th and 5th Brigades have had two years to improve their skills.

Georgia's Air Force lost large amounts of equipment in August 2008, including: three Mi-24 attack helicopters and one Mi-14BT; three An-2 aircraft; five OSA SAM system vehicles; two launchers and two loaders of the Buk-M1 SAM system, and possibly a Spyder-SR SAM system vehicle; several radars, including the 36D6-M station near Gori and the P-180U station near Poti. For obvious reasons, all the SAM vehicles were seized by the Russian ground troops rather than being destroyed from the air.

Russian aviation was not very effective in suppressing the Georgian air defenses. Nevertheless, those defenses completely failed to protect not just the whole territory of the country (a task which they were not equipped for in any event) but even the key military facilities (such as the army and naval bases) or Georgian troop deployments. The miscalculations made before the war (in other words, insufficient funding of the air defense system) became one of the main reasons for Georgia's military defeat. The Georgian government is well aware of this, and bolstering the country's air defense capability has become a priority in recent military policy papers.¹⁹

Practical implementation of those plans depends on a whole number of factors, including the availability of resources, the willingness of other countries to sell air defense systems to Georgia, and prospects for receiving such systems as part of foreign military aid programs. Even in the worst-case scenario for Georgia, its air defenses will be bolstered by new deliveries on pre-war contracts (signed with Ukraine, Israel and Poland). And under the best-case scenario – especially if hopes for foreign aid come to fruition – Georgia's air defense capability may actually improve in leaps and bounds. That will significantly reduce the vulnerability to

Russian aviation of Georgian troops and, to some extent, Georgian territory as well. Meanwhile, one indication of Georgia's efforts to beef up its air defenses is the increase in the numerical strength of the Georgian Air Force (which includes air defense units) from 1,813 people in 2008 to 2,971 in 2009.²⁰ Since the number of aviation units has remained the same, the growth must have come from air defense troops.

Nevertheless, the lack of fighter aviation leaves the Georgian air defenses fairly exposed. Even if Georgia manages to obtain a few fourth-generation fighters, proper training of pilots will take a long time, and Russia will still have an overwhelming superiority in numbers. At the very best, the putative Georgian fighter jets might force Russia to divert for a time its latest Su-27SM and MiG-29SMT front-line fighters from ground attack missions.

Meanwhile, recent reports suggest the possibility that the Georgian Air Force might actually cease to exist as a separate service, and all its personnel and equipment will be transferred to the Army. If these plans are implemented, the acquisition of fighter jets by Georgia becomes unlikely. What is more, the country's only squadron of attack aircraft could be disbanded, and its Su-25 planes sold off. That move would be similar to what Macedonia did to its Air Force a few years ago.

The Georgian Navy, which was only marginally useful to begin with, lost both of its fast attack craft (missile), the *Tbilisi* and the *Dioscuria*, in August 2008. The boats formed the core of the Navy's combat capability. As a result, the Navy ceased to exist as a separate service in October 2008. Its remaining boats were transferred to the Coast Guard. But it cannot be ruled out that coastal defense units armed with anti-ship missiles and/or artillery systems will be created as part of the Army.

The Five Day War put in stark relief numerous deficiencies in the training of Georgian officers – especially senior commanders. Some of them have been sacked and sent into retirement or ordered to take additional training after the war. Regular clean-ups in the top military command (during which not only professionalism but also personal loyalty to the Saakashvili regime are taken into account) have continued during the post-war period. Georgia has also rolled out a new senior officer training program. It includes 10-week courses for battalion commanders and brigade HQ chiefs (the first 16 officers completed the course in late 2008)²¹ and short two-week courses in Krtsanisi for commanders of brigades and smaller units.²² The length of the existing Captain Career Courses has been increased to 23 weeks. The number of officers enrolled at any one time has also risen.^{23,24}

On the whole, Georgian officers have become better trained since August 2008. But the country's political leadership still meddles on a grand scale in military appointments. As a result, professional qualities often become secondary to considerations of political loyalty to the regime. On the other hand, the importance

of that loyalty has been demonstrated very clearly by the mutiny in May 2009 of the Mukhrovani tank battalion, which was subsequently disbanded.

Georgia's defense spending has shot up since Mikhail Saakashvili came to power.^{25,26} It peaked in 2007-2008 at 1,495m and 1,545m lari, respectively, rising sharply from 369m in 2005 and 685m in 2006. But it must be taken into account that the 2008 figure includes spending to the tune of 138m lari on the rebuilding of military infrastructure damaged during the war. Also, more money was spent on army upkeep in 2008 than in the previous year due to the rise in the number of servicemen and the size of their pay. The Defense Ministry's 2009 budget stood at 897m lari, and the 2010 figure has been set at 749.5m.²⁷

Georgia's spending on military procurement programs also peaked in 2007-2008. Deliveries on the contracts signed during those two years continued in 2009, i.e. after the end of hostilities in August 2008. Georgian soldiers had not been fully trained by the time the war began in the use of the new weapons delivered under the contracts. Some of those weapons were stored in warehouses and seized by the Russian army as spoils of war, including several upgraded T-72 tanks, a number of BMP-1U infantry fighting vehicles in Gori and a Buk-M1 SAM battery in Senaki.^{28,29} The Georgian army was therefore unable to make the full use of all its newly acquired weapons.

Procurement spending fell in 2009 compared to the two previous years. But it is only in the post-war period that the spending spree of 2007-2008 was actually converted into greater fighting ability of the Georgian army, with deliveries still continuing on many of the contracts signed before the war. That includes the purchase of the Turkish Ejder armored personnel carriers.³⁰ It is only now that soldiers are being trained in the use of the new weapons. It is therefore safe to say that the Georgian armed forces (with the exception of the Navy) have become better equipped since August 2008, despite all the losses sustained during the war. Large amounts of hardware were lost back then, but it was only a small fraction of the total. The category of equipment in which Georgia had suffered the greatest losses, percentage-wise, was tanks. But even here, most of the units lost were the older T-72 tanks bought second-hand from Eastern Europe.

On the whole, there is little doubt that Georgia has not only restored its fighting ability since the end of the war, but actually increased it quite substantially compared to August 2008. Nevertheless, the post-war reform of the Georgian army is not yet complete. More time is needed to finish the creation of a combat-capable reserve, give the troops more experience in classic combat operations rather than the counterinsurgency warfare they had been focusing on in the past, and train them in the use of the new equipment. It is therefore not before 2010 or even 2011 that Georgia can consider another attempt to restore its territorial integrity – provided of course that the government in Tbilisi is realistic about its chances. At present, that government is interested in preventing a

resumption of large-scale hostilities, and its main emphasis for now is on defense. If and when Georgia decides that its army is strong enough to repel an assault by troops of the Russian North Caucasus Military District (with reinforcements sent from other districts), it may choose to start a small war on the territory of South Ossetia and Abkhazia. A Georgian offensive would be especially likely in those districts of the two republics where the Russian military presence is not very well established, such as Kodori, Gali and Leningori (Akhlagori). Hostilities there could then lead to further escalation of the conflict.

Post-war reform of the Russian army in the context of confrontation with Georgia

The post-war reform of the Georgian army has already improved its fighting ability in classic warfare. Meanwhile, the positive effects of Russia's comprehensive army reform will take more time to materialize. For now, the Russian army has actually become weaker than in was in August 2008 in many respects, especially in terms of its numerical strength.^{31,32}

The North Caucasus Military District will shoulder the brunt of the Russian military effort in any conflict with Georgia, so it deserves to be the focus of this study. Changes in the numerical strength of the district (as well as the whole Army) are linked to the transition to a new brigade structure, with the old divisions being abolished and the numbers cut across the entire armed forces. The old composition of the North Caucasus district included three combined-arms divisions and five independent brigades. The new one will comprise: two military bases (the 4th in South Ossetia and the 7th in Abkhazia, both the size of a brigade, with the possibility of stationing some of their manpower in Maykop and Vladikavkaz); nine independent motorized rifle, mountain motorized rifle and mountain reconnaissance brigades; and the 8th Independent Motorized Rifle Mountain Brigade, formed from the rump of the former 2nd Taman Motorized Rifle Division and now being transferred from the Moscow Military District to Borzoy in Chechnya.^{33,34} There have also been reports of the experimental 100th Reconnaissance Brigade being formed in Mozdok.

In the other Russian military districts, many of the divisions from which the new brigades are being formed are skeleton-strength formations. But in the North Caucasus Military District, most of the existing divisions maintained permanent-readiness status and were fully manned. That is why the transformation (i.e. downsizing) of the North Caucasus divisions into brigades has led to an actual overall reduction in the number of tank and motorized rifle battalions, despite the arrival of the additional brigade from the Moscow Military District. To illustrate, there was a total of 65 such battalions in the North Caucasus Military District divisions and brigades in August 2008. By the end of 2009, that number was expected to fall to 40 as part of the reform.

Considering the nature of the situation in the ethnic autonomies of the Russian North Caucasus, the reduction in the number of tank battalions and especially motorized rifle battalions stationed there has some serious repercussions. These units play a stabilizing role in the autonomous republics. Their presence keeps a lid on illegal armed formations there, and acts as a deterrent for militants hoping to overrun and take under their control entire towns. Those militants know that they will be torn to pieces in the event of a confrontation with heavily armed regular troops. Defense Ministry formations also act as back-up for the lightly armed Interior Ministry and FSB forces, including the Border Guards, providing artillery support and armor when the need arises.

Now that the conflict between Georgia and its former autonomies has degenerated into a Georgian-Russian conflict, it is quite likely that tensions in the Russian North Caucasus will increase due to Georgia's direct or indirect support for the militants. That support can come in the form of unimpeded transit of people, weapons and resources via Georgian territory. Tbilisi may also choose to turn a blind eye to any attempts by the militants to recruit supporters or set up bases in Georgia.

The remote Russian border guard stations in Ingushetia, Chechnya and Dagestan are especially vulnerable to attacks by militants operating from Georgian territory. The proximity of the targets on the territory of those autonomies to Georgia potentially enables militants to attack using heavy infantry weapons and in large formations, then quickly withdraw back to Georgia.

The threat of an escalation in the North Caucasus, with the militants becoming ever bolder, means that the pressure on the Russian army units stationed in the autonomies, especially the reconnaissance and combat formations, is bound to increase. Slashing the numbers of combat battalions as part of the reform might therefore have adverse effects on stability in the ethnic autonomies; it will reduce Russia's freedom of maneuver in deploying the newly formed brigades stationed there in other areas. As a result, the North Caucasus Military District's ability to send reinforcements to the aid of the Russian forces deployed in Abkhazia and South Ossetia may be limited.

On the other hand, the increase in the number of combat support and logistics units should make the new brigades more autonomous, which is quite important in this particular theater. But far from all the new North Caucasus Military District brigades will actually be able to make use of that advantage in practice. The list of brigades that can definitely be spared for action in Georgia without any restrictions is very short. It includes the successor brigades of the 20th Motorized Rifle Division based in Volgograd – the 20th Independent Motorized Rifle Brigade and the 56th Independent Airborne Assault Brigade – as well as the 205th Independent Motorized Rifle Brigade from Budennovsk. But all three of those brigades are quite far away from Georgia, especially the ones in Volgograd.

There problem, therefore, is that Russia may have a lot of armed strength in the North Caucasus Military District, i.e. quite close to Abkhazia and South Ossetia. But much of that strength may be largely unavailable for combat action in the two republics or in Georgia itself if, for example, Russian troops are tied up fighting militants in the ethnic autonomies. There are other brigades which are not constrained in the same way - but they are stationed relatively far from the conflict zone and will take much longer to deploy. The Russian government is well aware of this. Its solution is to compensate for the falling troop numbers by their greater fighting ability. One key element of that strategy is the rearming of the North Caucasus troops using newly procured weapons and some of the better equipment released as part of the ongoing army restructuring in other parts of Russia. The older T-62 tanks and early T-72 versions are being replaced by the T-72B/BM/BA and T-90A models. The district's fleet of light armor now has some new BMP-3 and MT-LB 6MA vehicles. Apart from better specifications, all this equipment is also relatively new and therefore in a much better technical condition. That will reduce the non-combat losses, which plagued the 19th and 42nd Motorized Rifle Divisions during the lengthy marches from their bases to South Ossetia in 2008.

As the number of combat units is growing in the Georgian army and falling in the Russian North Caucasus Military District, reinforcements might have to be brought in from elsewhere in Russia. Troops from the Moscow and Volga-Urals Districts would be the quickest to arrive. But there are two problems.

First, troop numbers in those two districts have also been cut as part of the reform, including the tank and motorized rifle battalions (though some of the disbanded units were skeleton-strength formations anyway). And the 8th Independent Motorized Rifle Mountain Brigade has already been relocated from the Moscow district to Chechnya. The two districts' ability to send reinforcement to the Caucasus is therefore limited.

And second, the troops would have to be brought in by rail. If they are to arrive before it is too late, they will need to receive their marching orders well in advance - which would be problematic if it is Georgia who initiates the hostilities. Airlifting these troops, with all their heavy armor, would be difficult - and all the available transports will in any case be taken up by the airborne assault forces being rushed to the conflict zone.

A more rational solution would therefore be to keep enough heavy armor at the warehouses in the former Georgian autonomies. This equipment could then be used to field additional combined-arms brigades manned by personnel airlifted from other districts. The solution is especially practical in Abkhazia, with its two suitable airfields. And it is in Abkhazia that the shortage of "heavy" troop formations is especially obvious, since most of the Russian brigades stationed in the area are relatively lightly armed. Unless more tanks,

self-propelled artillery and MLR systems are brought in well in advance, their shortage may become a real problem in the event of another war.

The ongoing Russian military reform has not affected just the Army. The Russian Air Force has seen some restructuring as well. That includes the decision to disband many aviation formations whose fighting ability was limited by the venerable age of their aircraft and a shortage of trained pilots. These units have now been transformed into airbases. The new airbases are relatively small, but they are much better equipped and staffed, and therefore more useful in battle.

Nevertheless, the overall number of aircraft in the Russian Air Force has been declining as old Soviet-made planes are being decommissioned. That trend has, if anything, accelerated in 2009. The remaining aircraft are forced to take up the slack, and will therefore reach the end of their service life sooner than they would have otherwise.

But there have also been some positive changes in the Russian Air Force since 2008, which will be quite relevant in the event of another war with Georgia:

- The Russian Air Force now has forward airbases (including helipads) in Abkhazia and South Ossetia. That will improve its ability to support ground operations. The helipad in Djava, however, is vulnerable to Georgian artillery, especially if cluster warheads are used. The problem can be addressed by building reinforced concrete hangars.
- Helicopter units in the North Caucasus have taken first deliveries of the latest Mi-28N and Ka-52A attack helicopters. The new machines are much more capable than the old Mi-24's. Nevertheless, the currently available versions are not quite ready for prime time. Their engines are not powerful enough for mountainous terrain, and their onboard defensive-aids suites are fairly limited. The North Caucasus units have also received the Mi-8MTV-5 and Mi-8AMTSh utility helicopters.³⁵
- The level of training in the Air Force has also improved.

Nevertheless, the effect of all those positive changes on the Air Force's fighting ability is largely predicated on the level of financing. Against the backdrop of the world financial crisis, this problem is becoming especially serious.

The negative developments since August 2008 also include a significant reduction in the numbers of ground attack aircraft stationed near the conflict zone. The number of the Su-24 frontline bombers in the North Caucasus district units was expected to fall from 93 to 54 by the year's end. That could have serious adverse effects on the Russian aerial interdiction capability in the region, and the Air Force's ability to deliver air strikes against military and civilian infrastructure targets in Georgia. On the other hand, some of those

tasks can be performed by the new MiG-29SMT multirole fighters, which were turned down by Algeria and are now being delivered to the Russian Air Force instead. But that will require proper training of their pilots.

On the whole, it is safe to conclude that Russia's tactical capability has gone up since the Five Day War, while its operational capability has gone down. That last circumstance requires greater use of short-range attack missile systems such as *Tochka* and *Iskander*.

The effectiveness of the Russian Air Force in any new conflict will largely depend on the state of Georgian air defenses. If Georgia bolsters its air defense system in numbers as well as in quality compared to August 2008, Russian aviation may find it much less easy to operate in the Georgian airspace, and suffer greater losses. That will be especially likely in the event of a protracted war.

Apart from the reform of frontline and army aviation, the ongoing cuts in military transport aviation will also have serious effects on the outcome of a possible Russian-Georgian conflict. These cuts will affect Russia's ability rapidly to deploy reinforcements and keep the ground troops in the conflict zone well supplied. It is quite likely that military transport aviation will only have enough capacity to airlift the airborne assault troops stationed in the Moscow and Leningrad military districts. Ground troops will have to resort to rail transport.

Changes in the Russian naval strength do not impinge directly upon the conflict since Georgia's own Navy has ceased to exist as a separate armed service. Nevertheless, it is worth noting that the 77th Marines Brigade, which is attached to the Caspian Flotilla, may lose part of its strength. That would weaken Russia's military strength in Dagestan.³⁶

Another thing to consider is the effect of the ongoing military reform on personnel structure. Deep cuts have been made in the officer corps; warrant officers have been abolished almost entirely; and the number of conscripts have risen following the reduction of the term of conscription service to just one year.

Reductions and reorganizations in the officer corps have caused a certain degree of disruption. Although the measures themselves are entirely justified, their effect in the short term will be to weaken the Russian army. Motivation of the remaining officers may also be affected by bleaker prospects for career growth. Unless that motivation is bolstered by better pay and perks, the ongoing problem with commanding officers in the Russian army will continue unabated. The transition period also opens up lots of opportunities for cronyism, which could lead to professional soldiers leaving the army and being replaced by people whose moral and professional qualities are not up to standard.

The nearly complete abolition of warrant officers will, in the short term, reduce the Russian army's fighting ability, until the voids are filled by properly trained sergeants or civilian staff, where possible. Since the sergeant training

program is only just now gaining momentum, it will be a while before this particular negative consequence of the reform is overcome.

Meanwhile, reducing the length of conscription service to one year also has a number of repercussions. On the plus side, Russia's reserve of trained soldiers will now grow at a faster rate. But the usefulness of this effect is not that great, since the number of military formations that will rely on the reserve of former conscripts during mobilization is being slashed.

On the minus side, there is a whole range of consequences. The length of active service has been reduced. More conscripts will now have to be drafted to compensate for the shorter duration of conscription service, including people with poor health, insufficient level of education and even criminal record. Also, the conscript servicemen will now have less incentive to remain in the army as professional soldiers.

The bottom line is that the personnel reform in the Russian army will substantially reduce its fighting ability in the short term. Another escalation of the Georgian-Russian conflict may come well before this reform starts to yield the expected results.

On the whole, the positive trends in the Russian army during the post-war period have not yet begun to outweigh the negative ones. The army's fighting ability may not have deteriorated compared to August 2008, but it certainly has not improved, either.

Possible effects of the Nagorno-Karabakh conflict on the balance of power between Georgia and Russia

Any assessment of the shifting balance of power in the region must take into account the effects of the conflict between Armenia and Azerbaijan over the breakaway Azeri autonomy of Nagorno-Karabakh. Azerbaijan has embarked on a large arms procurement program in recent years³⁷, destabilizing the existing status quo. Alarming, the country has not submitted any official reports to the UN Register of Conventional Arms since 2007. That suggests that it may have already breached the ceilings on the numbers of heavy weapons established in the Conventional Forces in Europe (CFE) treaty. Some unofficial sources confirm that suspicion.

At a military parade on June 26, 2008, Azerbaijan trotted out some of its latest hardware. The list includes: Smerch and Israeli-made IMI Lynx MLR systems (the latter system was armed with long-range and high-accuracy EXTRA rockets); 2S7 Pion 203 mm self-propelled guns; Tochka (SS-21) short-range ballistic missile systems; UAVs; and MiG-29 fighters bought from Ukraine. The addition of the latest Israeli-made weapons to the powerful and relatively modern Soviet-designed systems in the Azeri arsenals is a major milestone in the country's rearmament program.

Thanks to a large disparity in the two countries' export revenue, tax revenue and spending levels, Azerbaijan may very soon achieve clear superiority over Armenia in the fighting ability of its army. Armenia is no longer able to afford this arms race on its own. Russia, which is Yerevan's ally and fellow member of the Collective Security Treaty Organization (CSTO), must therefore provide adequate support. And merely handing down to the Armenian some of the obsolete weapons of the Russian troops stationed in the country will no longer be enough.

Two relatively simple and effective ways are available to neutralize the Azeri threat to Armenia. The first is to supply the country with sufficient numbers of modern weapons (either completely new or of the more recent Soviet designs). Some of those weapons could be sold at a discount or even given as a gift of aid. The second is to beef up the Russian military contingent in the republic by rearming it and increasing its numbers. That would release the Armenian troops currently guarding the border with Turkey and Georgia to focus on Azerbaijan. The Russian troops in Armenia can also provide direct military assistance if things go badly for Yerevan.

Both of these options will have very direct effects on the balance of power in the Georgian-Russian conflict. A rearmed and therefore more capable Armenian army would theoretically pose a threat to Georgian interests in Djavakhetia and to the civilian and military facilities south of Tbilisi.

In practice, the Armenian army would probably focus on Azerbaijan and desist from any hostile actions against Georgia. But the Russian troops stationed in Armenia could under certain conditions take part in military action against Georgia. They can be used in Djavakhetia to support the ethnic Armenian separatists, or to attack Tbilisi from the south. That would enable the Russian forces to surround the Georgian capital, seize the main Georgian airbase in Marneuli and approach other airbases on the southern fringes of Tbilisi. The distance from the Armenian border to Marneuli is only 35 km, and to Tbilisi 65 km.

It is therefore very relevant for the purposes of this discussion that as part of the ongoing military reform, Russia intends to station a permanent-readiness force at its 102nd Military Base in Armenia. That force will be made of two independent motorized rifle brigades (the 73rd and 76th).

If the Russian troops stationed in Armenia are bolstered in terms of their numbers and equipment to neutralize the imbalance between the Armenian and Azeri armies, that will also give Russia additional capability against Georgia from the south. Georgia would be forced to react by relocating troops to cover Tbilisi and Marneuli, thereby reducing its armed strength near the Ossetian and Abkhaz borders. And in the event of a large-scale Russian offensive against the capital Tbilisi, Russian troops in Armenia can make a significant contribution to the operation.

Positional gains and losses

As a result of the war, Georgia lost the following territories: the Kodori Gorge in Abkhazia, or the so-called Upper Abkhazia; the Bolshoy Liakhvi enclave in South Ossetia, also called the Liakhvi Corridor (a stretch of the Trans-Caucasus motorway to the north of Tskhinvali); villages of the Malyy Liakhvi (to the east of Tskhinvali); villages of the Proni Gorge (to the west of Tskhinvali); Akh'algori District (the Georgian-controlled part of the former South Ossetian autonomy's Leningori District) in the east; and villages in the Perevi area in the west of South Ossetia. Russia lost a military base in Zugdidi District, western Georgia.

The military and political importance of all those territories to the two sides varies, and will be discussed in more detail.

Contrary to popular belief, Upper Abkhazia (Kodori Gorge) was not a convenient foothold for launching an offensive against Sukhumi, for a whole number of reasons. The narrow mountain road along the river Kodori is not adequate for large troop movements. Abkhaz troops had strong defensive positions in the area of Tsebelda-Abtkel, which any attack against Sukhumi from that direction would have to overcome first. Supplying a large attacking force in the gorge would be very difficult. Setting up air defenses and communications in that terrain would also be a problem. Finally, the attackers would be trapped in the gorge in the event of Russian or Abkhaz forces breaking through to Djvari and thereby cutting off the Georgian troops from the rest of Georgia. The threat of just such a scenario was one of the key reasons why the Georgian garrison abandoned its positions in Kodori in August 2008.

On the other hand, the Kodori Gorge was a military asset for Georgia as a staging post for reconnaissance and sabotage operations. That is what the gorge essentially was under President Shevardnadze. Meanwhile, the vulnerability of the gorge in the event of a large-scale attack meant that the territory was a "suitcase without a handle" for Georgia. Its defense would require a lot of troops, of which the Georgians did not exactly have a surfeit, and posed a serious risk of the Georgian garrison being trapped and picked apart at leisure by the opposing force. This is why militarily the loss of Kodori has actually been a boon for Georgia. It now has a much more manageable line of attack or defense; troops previously tied up holding the gorge have been released for more important operations; and the adversary has been drawn into an area where serious losses can be inflicted upon it in a small war using the Svan refugees, who know the gorge very well.

For Russia and Abkhazia, the Kodori Gorge is a political gain. It is also an opportunity to prevent this area from being used as a base for saboteurs targeting not just Abkhazia but also Karachayev-Cherkessia. On the other hand, the Defense Ministry and Border Guard Service formations in Kodori are in a fairly vulnerable position. The mountainous and forested terrain here is

very convenient for guerrilla warfare. Communications with the coastal areas of Abkhazia are vulnerable, and the nearest supply bases are quite far away. Also, stationing troops for garrison duty in the Kodori Gorge weakens the Russian contingent in the main coastal areas of Abkhazia.

Meanwhile, the loss of the Russian base in Georgia's Zugdidi District has its upsides and downsides for Moscow. On the plus side, Russia no longer has to worry about the peacekeepers' main compound and its outposts being attacked by the 2nd Infantry Brigade in Senaki. By itself, the Russian battalion in Zugdidi would be a liability in the event of another war. But compared to the Russian garrisons in Kodori, Leningori or Perevi, the Zugdidi base was in a much better position. Reinforcements could reach it very quickly from Gal District and the coastal regions, and air support could be provided from Gudauta.

In our opinion, any advantages of the Russian withdrawal from Zugdidi District are far outweighed by the disadvantages. These include the loss of a foothold near Mount Urta, which overlooks the Senaki-Zugdidi motorway and the Georgian positions along the lower Inguri. That foothold could be used to harass Georgian troops moving along the motorway; it was an excellent vantage point for artillery spotters, and a base for reconnaissance and sabotage squads. On the whole, Russia's loss of military presence in Zugdidi District makes it easier for Georgia to deploy its forces on the border with Abkhazia, as well as to assemble and supply troops that can be used against the Russian and Abkhaz forces in Kodori.

In other developments since August 2008, the Russian Air Force now has a home station in Gudauta, and the Russian Black Sea Fleet in Ochamchira. They will now be able to provide greater support for ground operations in the region, and it will take less time to deploy additional aviation and naval forces in Abkhazia during a threat period or actual hostilities.

In Ossetia, Russia's greatest gain has been the Georgian enclave of Bolshoy Liakhvi (the Liakhvi Corridor). It has halved journey time between Djava and Tskhinvali by opening the shorter route via the Trans-Caucasus Motorway instead of the Zarskaya detour road. Djava itself, which is crucial for the defense of South Ossetia, is now much less vulnerable, and Tskhinvali is safe from attack from the north. For Djava, the Liakhvi Corridor was a major threat as a staging post for a Georgian attack. It could also be used as a base for lightly armed Georgian forces that could act as artillery spotters, set up ambushes, lay landmines and attack the local military base (especially the vulnerable helipad) using heavy infantry weapons and mortars. It must be said that the ethnic cleansing of the Georgian population in the enclave conducted by the Ossetians after the war has substantially reduced the threat to communications between Djava and Tskhinvali posed by Georgian reconnaissance and sabotage teams.

The fact that the ethnic Georgian villages in Malyy Liakhvi and the Proni Gorge are now under South Ossetian control has eased communications between

Znaur and Leningori Districts. These newly occupied positions also make it easier to defend Tskhinvali and the overlooking high points from the northeast and northwest. On the whole, Georgia's loss of control of its enclave villages near Tskhinvali has substantially strengthened the positions of the Russian and Ossetian troops in the area. It has also made it easier to move troops between Tskhinvali and Djava, and to bring in reinforcements from Russia.

On the other hand, the military advantages of stationing Russian garrisons in the Perevi village and Leningori (Akhlagori) District of South Ossetia are hard to discern. Both of these garrisons are largely cut off from the rest of the Russian forces due to poor communications infrastructure. The roads here become next to impassable during heavy rain or snow, and are always vulnerable to sabotage because of the mountainous forest-covered terrain and close proximity of the Georgian border. Even using Border Guard Service troops to patrol the Ossetian border in this area will not be much help in preventing infiltration from Georgia. The stretch of the border here is far too long to be held reliably by the small number of Russian border guards to be stationed in South Ossetia.

Perevi does not have any strategic importance and can be abandoned, if need be. But Leningori can be quite useful to Russia under certain circumstances.

To begin with, the distance from Leningori to Tbilisi is just over 50 km, and the road is in a fair condition. Theoretically, the town can be used to mount a ground offensive against the Georgian capital, or to shell it using long-range artillery and rocket systems.

Second, the main communications between Tbilisi and Gori (and the rest of western Georgia) pass near Leningori District borders and can be harassed from there.

Third, an attack from Leningori against Dusheti District to the east can be helpful in the event of troop movement against Tbilisi from Vladikavkaz, along the Military Georgian Road.

Fourth, Leningori can be a useful staging post for reconnaissance and sabotage missions against Georgian communications and military targets near Tbilisi.

The Georgian government is well aware of all this, and restoring Georgian control of this area is high on its list of priorities. Theoretically, there is a whole number of circumstances that make achieving this goal militarily plausible.

The proximity of the Russian garrison in Leningori to Tbilisi poses a number of problems for Russia. Georgia can quickly assemble an attacking force to retake the area. At some point it may well decide that the threat posed by Leningori is serious enough to attempt pre-emptive action. Such a development would be all the more dangerous to the Russian garrison since it is separated from the nearest reserves in Tskhinvali by 75 km of a dirt road winding across mountainous and forested terrain along the border with Georgia. To illustrate,

the distance from the Russian-Ossetian border to Tskhinvali is 62 km along the Trans-Caucasus motorway, and about 75 km if one leaves the motorway to enter Tskhinvali from the Zarskaya detour road. Out of those 75 km, only just over 30 is unsurfaced road. That means that the Leningori garrison is even farther away from the main Russian forces in South Ossetia than the Russian peacekeepers in Tskhinvali were from reinforcements at the Russian end of the Roki tunnel in August 2008. The problem becomes especially serious in spring time, when weather makes the Tskhinvali-Leningori road a real trial. Work is under way to improve the road surface, but that is expensive and time consuming. And it fails to address the remaining problems – namely, distance and vulnerability of communications to Georgian attack. The troops in Leningori could well end up being cut off from the reserves, and unable to retreat to Tskhinvali. Russia is well aware of this and has been working to improve transport communications between the district and the rest of South Ossetia. The ongoing work to improve the surface of the Tskhinvali-Leningori road has already made this road usable all year round. There are also plans to build a helipad near the town of Leningori.

Another weakness of the Leningori garrison is that it can be attacked not just from the south, along the river Ksani, but also from Dusheti District from the east. There is also a certain degree of vulnerability from the southwest and from the north. In other words, reliable defense from all those directions requires a large concentration of troops.

The distance from Leningori to Tskhinvali or Djava also makes it difficult to provide artillery cover to the garrison there. In the event of resumed hostilities in that area, the burden of providing cover for the Leningori troops will fall on ground attack aviation and helicopters stationed near Djava. The helipad, however, is vulnerable to Georgian long-range artillery and may be put out of action. Meanwhile, the Georgian troops attacking Leningori will be covered not just by theater air defenses but also by the Tbilisi air defense system.

Another vulnerability of the Russian troops in the district is that most of its population are ethnic Georgians. That makes it easier for the Georgian command to conduct reconnaissance and sabotage operations.

The obvious conclusion here is that the Russian military presence in Leningori has its advantages as well as disadvantages. Leveraging the advantages would require the presence of a much larger force, ideally the size of a motorized rifle brigade. That would also address a whole number of threats which a larger garrison need not fear. A small Russian force in Leningori is not really an asset in the event of another war, but rather a liability. It is vulnerable and could well be overrun at the very early stages of the conflict.

On the other hand, apart from the cost and logistical difficulties of stationing large numbers of Russian troops in Leningori, such a move may

provoke Georgia into action. It would increase the vulnerability of Tbilisi and the nearby communications. The Georgian response might range from creating additional regular army or National Guard formations in this area to attempts at retaking the district by force.

The decision taken in view of all the conflicting considerations has been to station forces equivalent to a reinforced motorized rifle company and some artillery in Leningori District. That appears to suggest that the command of the Russian 4th Military Base does not expect much of this garrison. Its primary task is to provide artillery support to the border guard outposts in the event of armed incidents with Georgia. The garrison will not be able to hold Leningori town on its own if a war breaks out. Neither is it likely to be able to cover the deployment of a large force from the 4th Military Base if Georgia decides to retake the territory by force.

The official size of the Russian troop contingent in South Ossetia, 3,700 servicemen, is not enough reliably to hold the territory, especially since that territory is now larger than in August 2008. The insufficient size of the local reserves is a risk for the remote Russian garrisons, especially the one in Leningori. And if Russian troop numbers in South Ossetia fall even below that level, the Defense Ministry will simply have to evacuate the remote garrisons. That would essentially mean the return of the territories in question to Georgia, since the Ossetians are unable to hold them on their own. All these concerns have become especially pressing since South Ossetia has announced plans to cut the size of its armed forces. Reductions will be achieved by reforming the Ossetian army; also, some of its soldiers will sign up for service in the Russian army as part of the Russian 4th Military Base in the republic. As a result, the Russian Defense Ministry, Interior Ministry and FSB forces in South Ossetia will have to shoulder some of the burden previously borne by the Ossetian troops. The fact that some Ossetian soldiers will now be serving in the Russian army will translate into a mere change of color of their chevrons. Russian troop numbers will grow on paper compared to August 2008, but not in practice.

Conclusions

The Georgian armed forces have restored and increased their fighting ability since the end of hostilities in August 2008. Georgian troops that were serving in Iraq have now returned home. New brigades have been formed, and some of the old ones have completed their initial training. Deliveries have been made on arms contracts signed back in 2007-2008. The military training system has been reformed, with a change of emphasis from counterinsurgency operations to fighting the Russian army. Georgia has also launched the reform of its military reserve system. On the minus side is the large Georgian commitment in Afghanistan and the current financial difficulties.

Meanwhile, the ongoing reform of the Russian army is having a serious impact on its capabilities in the event of another war with Georgia. The number of tank and motorized rifle battalions in the North Caucasus Military District has fallen. The old personnel structure is now in disarray. The number of attack aircraft stationed near Georgia has been cut – although the new air bases in Abkhazia and South Ossetia and the new helicopters now being delivered to the armed forces will help to provide air cover to ground operations in the region. Russia's ability to rush in reinforcements from other parts of the country and airlift airborne troops has been sapped by recent cuts in military transport aviation. On the other hand, the ongoing rearmament of the North Caucasus Military District troops should offset the falling numerical strength to some degree.

The balance of power in the Russian-Georgian conflict is also being shifted by the growing military disparity between Armenia and Azerbaijan. That disparity means that Russia will need to bolster the Armenian army and its own military presence in the country. On the plus side, a larger Russian force in Armenia can be used in the event of another war with Georgia to attack Tbilisi and Marneuli from the south and/or via Djavakhetia and then Adjara.

As a result of the Five Day War, Georgia has lost strategic footholds near Tskhinvali. Those footholds could make it easier for Georgian troops to storm the city, attack Djava and then reach the Roki tunnel. In Abkhazia, Georgia has lost a convenient hideout for sabotage teams in the Kodori Gorge. But that loss has also freed up Georgian forces for more important operations and removed the constant threat of the Kodori garrison being surrounded and destroyed. For its part, Russia has lost its positions in Georgia's Zugdidi District, which it could use to slow down Georgian deployment along the Inguri river, as well as to host artillery spotters and special task force squads. One of the most important changes compared to August 2008 is that Russia is now in control of Leningori (Akhalgori) District of South Ossetia, populated mostly by ethnic Georgians. That is both an opportunity for Russia and a potential threat for the Russian garrison holding the district. There is also the larger question of how reliable Russia's defenses are in South Ossetia, given that its contingent in the republic is not large, and some of the forces are dispersed around the far-flung and semi-isolated territories.

The war in August 2008 obviously has not resolved the conflict between Georgia and Russia. Neither has it weakened either side to the point of inability to resume hostilities, with a fair chance of success. There is a clear risk of another escalation (and a transformation of the conflict from Georgian-Ossetian to Georgian-Russian format). For now, that conflict remains dormant. But it still carries a great risk of instability, which could push one of the sides to start another war, until there is a clear resolution one way or the other.

In the short term, the balance of forces could shift very noticeably in Georgia's favor. Russia might therefore be interested in the resumption of

hostilities in the near time frame so as to demilitarize Georgia by crushing its armed forces and possibly forcing a change of leadership. Georgia, meanwhile, is interested in maintaining the status quo at this stage, pending the completion of its military reform and rearmament program. Once that is achieved, Georgia might well initiate new hostilities.

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Russian Air Losses in the Five Day War Against Georgia

Anton Lavrov

The extent of Russian air losses was one of the biggest surprises of the Five Day War with Georgia in August 2008. The loss of several Russian aircraft during such a short conflict with a much less powerful adversary was taken to suggest that Georgia's air defenses had proved exceptionally effective. However, a closer analysis of the circumstances leading to the downing of the Russian planes paints a different picture.

Georgian statements on Russian air losses conflict with official Russian reports. According to the deputy chief of General Staff, Col. Gen. Anatoly Nagovitsyn, Russia lost four aircraft, including three Su-25 attack aircraft and one Tu-22M3 long-range bomber. Meanwhile, Georgian President Mikhail Saakashvili said on August 12 that 21 Russian planes had been destroyed¹. The Georgian media have shown footage of the wreckage of just one Russian plane.

Russian MoD officials have not provided any further information concerning the air losses. Moreover, they have never officially acknowledged the loss of two Su-24M frontline bombers. However, media reports and unofficial sources have provided enough information since the end of the war to fill in most of the blanks.

The first Russian air loss was an Su-25BM flown by Lt. Col. Oleg Terebunsky of the 368th Attack Aviation Regiment (Budennovsk airbase). The plane was shot down over the territory of South Ossetia near the Zarskiy pass, between Djava and Tskhinvali. It was hit by a volley of several MANPAD missiles fired by Russian servicemen at about 1800 on August 8². An operator of the Russian state television channel Vesti filmed the burning plane going down, and then its wreckage. The footage was shown on Russian television as the downing of a Georgian plane³. It appears that the plane was taken for a hostile one and brought down by friendly fire because it was one of the very first Russian sorties during the war. Neither the Russian units rushing into South Ossetia, nor the South Ossetians themselves had been informed that Russian aviation was now involved in the conflict. Moreover, four Georgian Su-25's had conducted a bombing raid in the area just a few hours previously⁴, so there was reason to believe they might return for another raid.

Lt. Col. Terebunsky managed to eject to safety. He came under heavy small arms fire from South Ossetian and Russian forces during the descent, but landed successfully. He was quickly found by the South Ossetian militia, identified, handed over to the Russian troops and then evacuated.

The first and greatest success of the Georgian air defense system occurred more than 24 hours after hostilities broke out. Early in the morning of August 9, it shot down a Russian Tu-22M3 long-range bomber of the 52nd Guards Heavy Bomber Aviation Regiment (Shaikovka airbase) over the village of Karbauli in Georgia's Sachkhere District⁵ (about 50 km northwest of Gori). Contrary to early media reports, the plane was not a reconnaissance aircraft. During a bombing raid on the base of a Georgian infantry brigade, a group of Tu-22M3 bombers were following the same route back home as they did to reach the target. According to unofficial sources, they dropped from the usual altitude of 12,000 m to 4,000 m, for unknown reasons. An anonymous Russian military source claims that the aircraft came under fire from a Georgian Osa-AK/AKM (SA-8B) SAM system. A few hours earlier, several Georgian Buk-M1 (SA-11) SAM systems had arrived from Senaki to the area where the plane was lost. These systems are also well capable of taking down an aircraft of that type. Whatever the missile was, it caused major damage, and the bomber lost all onboard electricity systems. One of the crewmen, second pilot Maj. Vyacheslav Malkov, ejected and was taken prisoner by the Georgians. He had a compression fracture of three vertebrae and a broken arm following hard landing. He was taken to a village hospital and then transferred to a Tbilisi clinic. On August 19 Malkov was exchanged for several Georgian war prisoners. The commander of the Tu-22M3, Lt. Col. Aleksandr Koventsov, ejected after Malkov and disappeared without a trace. Search teams later discovered the wreckage of his ejection seat, but his body was not found.⁶ Later on, Georgia handed over to Russia a tissue sample of an unidentified body.

DNA analysis found a 95-per-cent match with Koventsov's mother. Additional tests will be held to establish whether the body is indeed that of the missing pilot. A few weeks after the war, a search party found the wreckage of the plane with the bodies of the remaining crew in an inaccessible and sparsely populated area of South Ossetia, near the border with Georgia. The crewmembers were Maj. Viktor Pryadkin (navigator) and Maj. Igor Nesterov (weapons systems operator).

That same morning, at 1020 on August 9, Georgian air defense forces shot down another Russian plane. This time it was an Su-24M frontline bomber of the 929th State Flight Test Center (Akhtubinsk airbase).⁷ It was flying in a formation of three bombers, on a mission to raid Georgian artillery positions⁸ near Shindisi village (between Gori and Tskhinvali). After the completion of the first approach, the plane was hit in full view of numerous Georgian eyewitnesses. Footage of the plane being struck and then going down in flames was recorded by mobile phone cameras and soon made available on the Internet.^{9,10} According to one eyewitness,¹¹ two surface-to-air missiles missed the plane, but the third found its target. Polish media reports claim that the plane was hit from a Polish-made Grom 2 MANPAD system¹².

The missile strike caused a major fire on board. The crew ejected, but a fragment of the burning plane damaged the parachute of the navigator, Col. Igor Rzhavitin, who was killed when he hit the ground. The commander, Col. Igor Zinov, suffered serious burns and a concussion of the spine. He was taken prisoner and brought first to the Gori military hospital, and then to Tbilisi, where he was put in the same ward with Maj. Malkov. On August 19 the two were exchanged for Georgian prisoners. The Su-24M crashed in a residential backyard in the village of Dzerevi, without causing any casualties or damage on the ground. The wreckage was filmed and shown on Georgian television on the same day.¹³ Photographs were later published in the Georgian magazine *Arsenal* and in several foreign media outlets.¹⁴

Just a few minutes later, at 1030 on August 9, an upgraded Su-25SM attack aircraft was shot down. It was piloted by Col. Sergey Kobylash, commander of the 368th Attack Aviation Regiment. A pair of attack aircraft, in which he was the lead, was raiding a Georgian convoy moving along the Gori-Tskhinvali road, south of Tskhinvali. At the conclusion of his first approach, the left engine of Kobylash's plane was hit by a MANPAD missile. Kobylash had to break off the attack and headed towards the base along with the wingman. A short while later, flying over the southern edge of Tskhinvali at an altitude of 1000m, the plane took a hit from another MANPAD system. The missile destroyed the remaining right engine, and the plane was left without thrust. The pilot tried to take the aircraft as far as possible from the front line in gliding mode so as to eject over friendly territory. He ejected north of Tskhinvali and landed in South Ossetia, in one of the villages of the Georgian enclave in the

Bolshoy Liakhvi gorge. He was quickly picked up by a Russian Mi-8 combat search and rescue helicopter of the 487th Independent Helicopter Regiment (Budennovsk). He did not sustain any injuries during the ejection or landing.¹⁵ It remains unclear who shot down Colonel Kobylash's Su-25SM. There were no Georgian forces in Tskhinvali when his plane took the second missile hit – but there was a large concentration of them in the nearby villages. On the other hand, about half an hour after the plane crashed, the South Ossetians announced that they had shot down one of a pair of Georgian attack aircraft that were on a mission to bomb Tskhinvali.¹⁶ According to the Georgians, however, they had ceased all air raids by August 9.¹⁷ It therefore seems likely that it was the South Ossetians who shot down Kobylash's already damaged plane after taking him and his wingman for hostiles.

August 9 was the worst day of the campaign for Russian aviation, with a loss of four planes. The fourth loss that day was an Su-25BM attack aircraft piloted by Maj. Vladimir Edamenko of the 368th Attack Aviation Regiment. His wingman, Capt. Sergey Sapilin, described the circumstances of that mission to REN-TV.¹⁸ Their pair of attack aircraft was assigned to provide close air support to Russian convoys traveling from Djava to Tskhinvali. Right after they passed the Caucasian ridge and entered the airspace of South Ossetia, the crew saw several MiG-29 fighters approach. Unable to determine whether the approaching MiGs were Russian, they took evasive maneuvers as a precaution. As it turned out, the MiGs were indeed friendlies; they turned away once they had visually identified the attack planes. Almost immediately after that, over territory controlled by the Russian forces near Djava, Maj. Edamenko's wingman received an automated warning that his aircraft was being tracked by a radar from the ground, and then immediately saw the burning Su-25BM of his lead going down in a nose dive.¹⁹ Edamenko did not respond to radio calls; nor did he make any attempt to eject from the plane, which suggests that he was either severely injured or already dead. The aircraft hit the ground and exploded; Maj. Edamenko was killed. The chief of the Russian Army's air defense service, Maj. Gen. Mikhail Krush, later announced that a "Georgian Su-25KM" had been destroyed by a Russian air defense system²⁰. It appears that he was in fact referring to Edamenko's plane.

Between 1500 and 1600 of August 9, NTV correspondent Aleksandr Viktorov saw a Russian ZSU-23-4 Shilka self-propelled air defense gun system, which was covering the Gufti bridge, open fire at an unknown air target. Wreckage of an Su-25 was later found in the area, on the bank of the Bolshoy Liakhvi river near the village of Itrapis some 1.6 km away from the bridge. Russia said the wreckage was the "Georgian attack aircraft" shot down during the campaign. On September 5, this wreckage was blown up by Russian Emergencies Ministry specialists because it contained large numbers of damaged unguided rockets. Russian journalists

who visited the scene later on found markings on the debris identifying the plane as belonging to the Russian Air Force.

The aircraft in question appears to have been Edamenko's plane, since all Georgian planes had been grounded after Russian air defense systems were brought into South Ossetia. The fact that the plane was not identified as a friendly by the Russian fighters and the air defense system that shot it down may suggest that its 'friend-or-foe' identification system was not working properly.

The sixth and last Russian aircraft lost during the campaign was shot down at the very end of the hostilities, at 1100 of August 11. It was an Su-24M frontline bomber. According to unofficial sources in aviation circles, the plane belonged to the 968th Testing and Training Combined Aviation Regiment of the 4th Pilot Combat Training Center in Lipetsk²¹. A convoy of Russian troops heading from Tskhinvali towards Gori mistakenly identified the Su-24M as a hostile and fired several MANPAD missiles. The plane went down several kilometers west of Tskhinvali, on South Ossetian territory.^{22,23} The crew ejected to safety and were evacuated. The wreckage fell in inaccessible mountainous areas of South Ossetia.²⁴

Well after the end of combat operations, on the night of August 16-17, an Mi-8MTKO utility helicopter belonging to the Border Guards of the Russian FSB (12th Independent Air Regiment of the FSB) crashed in South Ossetia. During a night landing at a makeshift helipad at the village of Ugardanta near Djava, it collided with another helicopter on the ground (an Mi-24 of the 487th Budennovsk Helicopter Regiment), overturned and burnt down. Both helicopters were destroyed by fire and the resulting detonation of ammunition on board. The mechanic of the Mi-8MTKO, Senior Warrant Officer Aleksandr Burlachko, was killed, and three other members of the crew suffered severe burns.²⁵

A total of four Russian Air Force servicemen died during the actual hostilities in August 2008:

- Major Vladimir Edamenko – 368th Attack Aviation Regiment.
- Major Igor Nesterov – 52nd Guards Heavy Bomber Aviation Regiment.
- Major Viktor Pryadkin – 52nd Guards Heavy Bomber Aviation Regiment.
- Colonel Igor Rzhavatin – 929th State Flight Test Center.
- Senior Warrant Officer Aleksandr Burlachko (12th Independent Air Regiment of the FSB) died in the helicopter accident after the end of combat operations in South Ossetia.
- Col. Igor Zinov (929th State Flight Test Center) and Maj. Vyachelav Malkov (52nd Guards Heavy Bomber Aviation Regiment) were downed and taken prisoner. They were later exchanged for Georgian prisoners.
- Lt. Col. Aleksandr Koventsov (52nd Guards Heavy Bomber Aviation Regiment) is listed as missing in action.

Russia lost a total of six aircraft during combat operations of the Five Day War, including one Su-25SM, two Su-25BM, two Su-24M and one Tu-22M3.

Of these, two aircraft are known to have been downed by hostile fire, three were probably hit by friendly fire, and the sixth case is uncertain. The wreckage of five aircraft fell within the borders of South Ossetia. Only one, the Su-24M of the 929th State Flight Test Centre, fell in Georgia. Aside from the aircraft that were destroyed, several more Su-25 planes were seriously damaged, though they all managed to return to base. Damage to three Su-25SM of the 368th Attack Aviation Regiment was officially confirmed by Vladimir Babak,²⁶ chief designer of the Sukhoi Design Bureau, and Yakov Kazhdan, director of the 121st Aircraft Repair Plant.²⁷ Two of these planes were piloted by Capt. Ivan Nechayev and Lt. Col. Oleg Molostov. It has also been reported that another plane, an Su-25 of the 461st Attack Aviation Regiment (Krasnodar) also sustained damage during the war.²⁸ The plane was piloted by Maj. Ivan Konyukhov. All of those aircraft were hit by MANPAD missiles. Konyukhov's plane appears to have been hit by Russian troops in another friendly fire incident on August 11. There have been no reports of other types of aircraft or helicopters sustaining damage during combat operations.

With six downed or damaged Su-25 aircraft, the Budennovsk 368th Attack Aviation Regiment suffered the heaviest losses of equipment. It lost at least one in every four of its aircraft, including the recently upgraded Su-25SM aircraft, with some of its best-trained pilots, including the regiment's commander.

Initial assessments of the effectiveness of Georgia's air defense system were clearly exaggerated. They were based solely on the numbers of Russian aircraft lost, with no regard for the causes of those losses. Even though Georgia's air defense forces possessed such effective SAM systems as the Buk-M1, the Osa-AK/AKM and the Spyder-SR, as well as a significant number of MANPADs,²⁹ they were unable to protect Georgian troops or territory. During the first day of the war, on August 8, Georgia's air defense system was still intact, and it had radar control of the entire Georgian territory, the separatist provinces and the surrounding areas. Nevertheless, it failed to down even a single Russian aircraft that day, during which Russia's military aviation flew dozens of sorties, raiding targets not just in the theater of combat operations but deep in Georgian territory as well, using almost exclusively unguided weapons. For example, Marneuli, the main Georgian airbase located more than a hundred kilometers from the conflict zone or from the border with Russia, close to Tbilisi and the Armenian border, was raided three times on August 8. The small groups of Su-25 and Su-24M aircraft that conducted the raids met with no resistance.³⁰ The two (or at the very most, three) aircraft downed by Georgia's air defenses were all hit in the morning of August 9. From noon on that day and until the end of the war, the Georgian forces were unable to destroy a single Russian aircraft.

During the entire war, Georgian air defenses managed to score only one hit against a Russian aircraft from mobile air defense systems. The MANPAD systems proved more useful, scoring at least three (but no more than six) hits, including one near-miss that did not cause any serious damage to the armored Su-25.

The fact that at least half the Russian aircraft losses were friendly fire incidents came as something of a shock. It has demonstrated that the system of coordination, command and control of the Russian troops on the battlefield is in a dire state. In the absence of any real coordination between the Army and the Air Force, the two services were essentially waging two separate wars. Pilots were not fully apprised of the situation on the ground. They were receiving inaccurate and out of date intelligence. According to the commander of the 368th Attack Aviation Regiment, Col. Kobylash, at the start of the hostilities the pilots did not even have any detailed information on the structure and strength of the Georgian air defenses.³¹

Russian ground forces also lacked information about the situation in the air, and were not sure until the end of combat operations whether the Russian Air Force had achieved air superiority. Although the Georgian Su-25 attack aircraft conducted just one sortie in the early morning of August 8 and did not take to the air again for the rest of the war,³² Russian aircraft were frequently taken by Russian and Ossetian forces for hostiles. They were fired upon even before they could be identified accurately, and in the absence of any signs of aggression on their part (although there is some evidence of friendly fire incidents in which the pilots were the attackers.³³) As a result, the Russian forces and Ossetian militia fired at least 10 MANPAD missiles at Russian aircraft during the war. They also used infantry combat vehicles guns, anti-aircraft machine guns mounted on tanks, and handheld automatic weapons.³⁴ There were also reports of problems with the 'friend-or-foe' identification system,³⁵ which was used only haphazardly when firing MANPADs. All these factors had contributed to such a high number of Russia aircraft losses to friendly fire incidents.

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² Milkavkaz.net message board // www.milkavkaz.net/forum/viewtopic.php?p=26078#26078.

³ Shown on Vesti television on August 8 [http://www.youtube.com/watch?v=YLLiOp_tv30].

⁴ Interfax (<http://www.interfax.ru/politics/news.asp?id=25736>).

⁵ "Nedelia s Mariannoy Maksimovskoy," 21.02.2009 - REN-TV [<http://www.youtube.com/watch?v=s50BabE2B9Q>].

⁶ *Ibid.*

⁷ Pilot Igor Rzhavitin, who died in Ossetia, served with the 929th State Flight Testing Center of the Russian Air Force // RIA "Novyy region", www.nr2.ru/center/190689.html.

⁸ Pozdeev L. Fourth in the history of Revda // *Oblastnaya gazeta* (Yekaterinburg), October 18, 2008, www.oblgazeta.ru/home.htm?st=5-1.sat&dt=18.10.2008.

⁹ www.youtube.com/watch?v=P5Mh2DeC2JE.

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- ¹¹ Georgian weekly "Kviris palitra" №38/2008.
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State of the Georgian Army by the End of Hostilities

Anton Lavrov

After Russia announced the end of hostilities at about noon on August 12, 2008, its troops proceeded to dismantle Georgian military infrastructure in areas under Russian control. For more than two weeks, they also continued seizing Georgian weapons and military equipment for removal to Russia. It is during this period that Georgia sustained the bulk of its material losses during the conflict. These losses need to be separated from those suffered during the actual combat operations so as to get a clearer picture of the scale of the conflict and the damage done during the fighting.

Personnel

According to official Georgian reports, some 170 Georgian servicemen were killed or went missing in action during the war. Another 1,964 servicemen (including reserves and police officers) were injured. Georgian Interior Minister Vano Merabishvili testified at a parliamentary committee hearing that 14 policemen had been killed and 227 injured. The bulk of the Interior Ministry's losses were sustained during the storming of Tskhinvali on August 8. The Georgian media, human rights organizations and opposition parties have not found any proof since

the end of the war that the government has been trying to hide the true scale of the losses, so the official figures can be trusted.

The high ratio of injuries to fatalities (12 to 1) is the result of the widespread use of modern individual protective gear (body armor and helmets) in the Georgian army. Most of the injuries were shrapnel wounds sustained as a result of Russian artillery shelling, bombing raids and the use of cluster munitions. Individual protective gear is very effective against shrapnel, substantially reducing the likelihood of serious injury. The Georgian medics and evacuation teams also did very well. There is a civilian clinic in Gori, in the direct vicinity of the conflict zone; there is also a large and well equipped military hospital in the city. Tbilisi itself is only 70 km away from Gori, and the capital's hospitals were able to treat large numbers of casualties. Dozens of civilian ambulances and teams of paramedics were mobilized to assist in evacuating the injured. They were able quickly to bring the casualties from the battlefield directly to the city hospitals. As a result, only about 2 per cent of the injured later died from their wounds.

The breakdown of MoD permanent losses is as follows:

- Air Force – 5 dead.
- Navy – 5 dead.
- 1st Infantry Brigade – 7 dead.
- 2nd Infantry Brigade – 34 dead and missing in action.
- 3rd Infantry Brigade – 13 dead.
- 4th Infantry Brigade – 58 dead and missing in action.
- 5th Infantry Brigade – 5 dead.
- Engineers Brigade – 4 dead.
- Special Operations Group – 1 dead.
- Independent Combined Tank Battalion - 26 dead and missing in action.
- Independent Light Infantry Battalion – 2 dead.
- Army Logistics Service – 1 dead.
- National Guard (reserves) – 9 dead.

Among the Army formations, the 4th Infantry Brigade, which bore the brunt of the fighting during the battle for Tskhinvali on August 8-9, suffered the heaviest losses. Its 42nd Light Infantry Battalion, which came under a Russian air raid near Dubovaya Grove on the edge of the city, lost more than 100 people (dead and injured) in that episode alone. The 41st Light Infantry Battalion, which was involved in all the Georgian attempts at taking the city by storm, reported similar numbers of casualties. Half of the losses in the 2nd Infantry Brigade were sustained on August 11, when its engineering company was retreating and bumped into Russian paratroopers rushing into Georgia. The brigade also lost many men during the battles for the border villages and the

storming of Tskhinvali on August 9. Almost all the losses of the Independent Combined Tank Battalion were sustained on August 8 during the battle in Tskhinvali and its suburbs, where the battalion lost at least seven tanks. The rest of the Georgian army units had very little direct contact with hostile forces, and most of the soldiers they lost fell foul of the Russian shelling and air raids. Some 39 Georgian servicemen were taken prisoner.

Georgia mobilized some 15,000 National Guard reserves to join the operation against South Ossetia. But all of them had been released to go back home towards the end of hostilities, after their assembly points were targeted by Russian air raids. Only a small group from Gori took part in combat action, so there were very few casualties during actual contact with the hostile forces. The National Guard took its heaviest casualties during a Russian air strike against a military base in Senaki on the night of August 8-9, in which seven reserves were killed.

The Georgian army group (excluding the Interior Ministry and the reserves) that took part in the military action against South Ossetia lost up to 15 per cent of its personnel (dead and injured). That is quite a lot for such a short conflict. But not all the units were hit equally hard. The 2nd and 4th Infantry Brigades and the Independent Combined Tank Battalion came out of the war much the worse for wear. But the 1st Infantry Brigade battalions, which were urgently brought in from Iraq, and the 3rd Infantry Brigade were relatively unscathed. The Artillery Brigade lost only a few men to injuries. Neither were there any losses to speak of among the elite units such as the Special Operations Group, the Military Police Battalion (which included many former Special forces soldiers) and the Independent Light Infantry Battalion, the successor of Georgia's Marines. Nevertheless, even in the units that had suffered relatively minor losses, the situation was compounded by fatigue; many individual soldiers and small groups got separated from their retreating units and were left behind in the conflict zone – or simply deserted. Some 1,700 criminal prosecutions were launched after the war against deserters.

Centralized command of the infantry brigades had been lost by the end of combat operations. Brigade-level command and control system was also in disarray. The commanders of the 41st and 53rd Light Infantry Battalions had been killed. Commanders of several other battalions had been injured. Battalion-level chain of command was, however, largely intact, although some of the battalions got separated into individual companies, which acted independently and had little communication with each other. Disruption of the command and control system led to problems with coordination during the retreat from the South Ossetian border, with some soldiers panicking and leaving their weapons behind.

Georgian morale suffered a severe blow when in the absence of accurate information, wild rumors started to spread that thousands of soldiers and

reserves had been killed, the 4th Infantry Brigade completely destroyed, and that huge numbers of Russian troops were pouring into Georgia to take Tbilisi by storm. By nightfall of August 11, morale among the Georgian troops had also been sapped by the increased intensity of Russian CAS air raids, especially after the Mi-24 attack helicopters were brought to bear.

Armor

The armor category in which the Georgian forces suffered the heaviest losses during combat operations was tanks. At least ten Georgian T-72's were destroyed in and around Tskhinvali. Most belonged to the Independent Combined Tank Battalion and the Combined Tank Battalion of the 4th Infantry Brigade. Six of them were taken out by Ossetian forces, one by the Russian peacekeeping battalion, and one by helicopters. The remaining two were abandoned by the Georgians and then blown up by the Russian troops. Most of the losses happened during the battle for Tskhinvali on August 8. Four more T-72 tanks were taken as spoils of war in Tskhinvali and used in combat operations by the Ossetian forces. An additional four were seized by Russian soldiers at the 2nd Infantry Brigade's base in Senaki on August 11.

During the street battles in Tskhinvali, the Georgians also lost two BMP-2 infantry fighting vehicles to hostile fire. Another two BMP-2's of the 4th Infantry Brigade's Combined Tank Battalion were seized by the opposing forces. Late in the afternoon on August 11, another BMP-2 of the 2nd Infantry Brigade burnt down during Georgian retreat along the Gori-Tbilisi motorway. A Turkish-made Cobra light armored vehicle belonging to the Interior Ministry was hit in Tskhinvali on August 8 and then seized by the Ossetians, who also managed to capture another two Cobras undamaged.

Artillery

Georgian artillery was positioned in the direct vicinity of the conflict zone. Russia had complete superiority in the air, and Russian artillery specifically targeted Georgian battery positions. Nevertheless, only two pieces of Georgian self-propelled artillery have been confirmed as lost in combat. Pictures have been released of the Georgian Artillery Brigade's two 152 mm Dana self-propelled gun-howitzers which were hit after having been being deployed for firing and burnt down. Another six Dana units of the same brigade were abandoned late in the afternoon of August 11 on the Gori-Tbilisi motorway after running out of fuel or developing mechanical faults during the Georgian army's retreat. However, on August 12 the Georgians managed to evacuate them to safety. The Russian troops managed to capture only two Dana gun-howitzers: one was found at a military base in Gori, the other abandoned at a firing position just outside the city. Another 20 towed artillery pieces and 120 mm mortars

belonging to the infantry brigades were abandoned by the Georgians near the village of Khetagurovo, in Gori and in the Kodori Gorge. All 20 were later captured by Russian or Ossetian forces. The Georgian Artillery Brigade hid five 203 mm 2S7 Pion self-propelled guns at a secluded spot near Gori as it was retreating. Another such gun, which was non-operational, was abandoned at the Artillery Brigade's base in Gori. However, these artillery pieces were not found by Russian troops until after the end of combat operations.

Aviation

The confirmed losses of the Georgian Air Force stand at three transport planes and four helicopters. Out of that number, three An-2 light transport aircraft were destroyed during a Russian air raid against the Marneuli airbase on August 8. Two helicopters, an Mi-14BT and an Mi-24V, were destroyed when the Senaki base was raided on August 11. Another Mi-24, which may have been damaged in combat, crashed during an emergency landing. One more Mi-24V was burnt down on the ground by Russian troops when they seized the Senaki airfield on August 11. The Georgian air losses were relatively small because all the Georgian combat aviation (the Su-25 attack aircraft) took to the air only on August 8. After that, all the attack aircraft and trainers were spread around airfields, hidden and camouflaged. All have survived the war and remain in Georgian hands. Georgian Mi-24 attack helicopters flew only a few occasional sorties and were grounded in the late afternoon on August 11.

Air Defense

On August 10-11, the Russian Air Force conducted an operation to disable the Georgian air defense system. By the end of the hostilities, Russian anti-radar missiles had destroyed a 36D6-M fixed military radar at the Shavshebi village near Gori, and two civilian air traffic control radars at the Tbilisi airport and near the Sea of Tbilisi, on Mount Mkhata. A bombing raid on August 8 also damaged a civilian radar at Kopitnari airport. And on August 11, a reconnaissance team of the Russian airborne troops destroyed a P-180U military radar near Poti. All these radars, military and civilian alike, were part of an integrated Georgian airspace monitoring system used by the military. By the time the hostilities ended, the system had been seriously damaged. Some of its main radars had been disabled, and some switched off to prevent them from being hit by anti-radar missiles.

It appears that none of Georgia's mobile air defense systems was lost to enemy fire. Most of them were withdrawn deep into Georgia. Two Buk-M1 SAM system launch vehicles, two transport-loaders and several 9M38M missiles were abandoned at the military base in Senaki and seized by Russian troops on August 11. Up to five Osa-AK/AKM SAM system vehicles were seized near Gori.

Navy and Coast Guard

The Georgian Navy and Coast Guard do not appear to have lost any ships by the end of August 11. A civilian hydrographic survey boat sank in Poti on the night of August 8-9 after the port was struck by two Russian Tochka-U short-range tactical ballistic missiles. All the military ships and boats that were sound enough to put to sea and had their crews on board were relocated from the Poti naval base to the port of Batumi, where they were moored at the passenger port and the Coast Guard docks. At the deserted Poti naval base, the Georgians left only their two fast attack craft-missile, the *Tbilisi* and the *Dioscuria*, the *Ayety* Coast Guard patrol ship, and three Coast Guard and Navy patrol boats (*P-204*, *P-205* and the *Tskhaltubo*). It is not clear why exactly they were abandoned. In all likelihood, all of them were non-operational. The Russian forces did not attempt to destroy the ships and boats that had been left in Poti or relocated to Batumi. The Poti naval base sustained minor damage after being hit by two Tochka-U missiles with cluster warheads on the night of August 8-9, but was still entirely usable.

According to the Russian command, a Georgian military boat was sunk in a naval clash on August 9. Attempts to confirm this by studying the post-war composition of the Georgian fleet and records of any losses among the Navy personnel have yielded no result. There is also uncertainty regarding Georgian media reports that another survey boat was sunk in the open sea during the conflict.

Damage to military infrastructure

The main targets of Russian air raids outside the conflict zone during combat operations were airfields and military bases. The landing strips of the airfields in Marneuli, Senaki, Kopitnari, Shiraki, Vaziani and the Tbilisi aircraft plant were all damaged during these air raids. The bombing missions were conducted mostly by Su-24M frontline bombers using unguided bombs. More than 60 such bombs were dropped on Kopitnari. Its landing strip was seriously damaged in three separate places, which made the airfield completely unusable for planes. More than 30 bombs failed to explode and had to be disarmed by engineers before the airfield could be put back into operation in late September. It is not clear if the bombs failed to go off due to malfunctions or whether their detonators were deliberately configured in such a way as to make the use of the airfield impossible for a long time after the actual air raid.

The base of the 2nd Infantry Brigade and the airbase in Senaki sustained only minor damage during the bombing raids, although the Senaki runway was damaged as well. Just as in Kopitnari, many of the bombs failed to explode - more than 40 of them, weighing 250 kg or more, were left lying at the airbase and around it. The Marneuli airbase was raided thrice on August 8. It sustained damage to the runway, the parking lots and the barracks. The bases of the 1st

Infantry Brigade in Gori, the 4th Infantry Brigade in Senaki and the Independent Combined Tank Battalion in Gori were also raided. But only the tank base in Gori suffered serious damage, which was bad enough to put it out of action. The other raids were not massive or accurate enough, and many of the bombs failed to detonate. As a result, the Georgian military infrastructure was not seriously damaged by the air raids, which failed to destroy the weapons, equipment and supplies stored at the military bases. By the time combat operations ended on August 12, two Georgian bases – the Army base in Senaki and the Interior Ministry base in Variani – had been seized by Russian troops along with all the equipment and military supplies abandoned by the Georgians.

Conclusions

The losses of Georgian armor during the actual combat operations turned out to be only moderate: up to 20 tanks and other armored vehicles in total. There are several explanations for that. First, there was not a lot of close contact between the Russian and Georgian troops. The Georgian army was largely passive from August 10 onwards. And the Russian aviation more or less failed at the task of destroying Georgian armor and artillery positioned just behind the front line or traveling in convoys. Also, the Georgian army did not have that much armor to begin with. Its core was made up of light infantry moving around in large trucks and pick-ups. It lost less than 10 APCs, infantry fighting vehicles and armored trucks, but the losses of non-armored vehicles were in the dozens.

Georgia's heaviest losses during the actual combat operations were not in equipment but in personnel. One of the greatest problems the Georgian army had come to face by August 12 was low morale and disruption of the command and control system. But for all these problems, which were made worse by a certain degree of general disorganization, up to half of the Georgian ground troops needed only a brief respite to restore their fighting ability. Very soon they took up defensive positions at convenient natural strongholds around Tbilisi and prepared themselves for organized resistance. As of August 12, despite all the losses, the Georgian Army and Interior Ministry troops in eastern and central Georgia still had about as many soldiers, tanks and artillery as the Russian forces deployed in South Ossetia. The Russian forces had a substantial superiority only in APCs and infantry fighting vehicles.

Considering all of the above, the Russian command's decision to continue "demilitarizing" Georgia after August 12 appears entirely justified from a military point of view. Russian troops briefly occupied large swathes of Georgian territory and several towns (including Gori) to seize Georgian military facilities and confiscate, remove or destroy large numbers of Georgian weapons. When President Dmitry Medvedev ordered the armed forces to end combat operations at midday on August 12, he could have also ordered the troops to stay put rather

than advance deeper into Georgia, seizing Gori, Senaki, Poti, etc. But that would undoubtedly have enabled the Georgians to keep their pre-war arsenals and military stocks almost in their entirety. The country would have emerged from the war that it had itself started without any significant material losses.

The Georgians would have been able to keep their 203 mm 2S7 Pion self-propelled guns, dozens of their upgraded T-72 tanks and BMP-1U vehicles in Gori, and their largest military boats in Poti. The Georgian army would still have been in possession of hundreds of anti-tank missiles and MANPAD systems, and tens of thousands of artillery shells stored at the military bases in Gori, Senaki and the Kodori Gorge. Had the Russian troops delayed their move into Gori by so much as 24 hours, a symbolic Georgian force would immediately have returned to the military bases in the city. Having just signed a truce, Russia would not have broken it just to seize those bases. As early as August 12 or the day after, the Georgians were already able to evacuate the six Dana self-propelled gun-howitzers they had abandoned right outside Gori. And by August 13-14, Georgian army units and police had already returned to the “front line” in some areas; some of them even stationed themselves immediately next to the Russian checkpoints.

Post-war Deployment of Russian Forces in Abkhazia and South Ossetia

Anton Lavrov

After the end of hostilities in the Five Day War in August 2008, even before the Russian troops were pulled out of Georgian territory, Russia announced the recognition of the two Georgian separatist provinces, Abkhazia and South Ossetia, as independent states. Since the Georgian leadership had not abandoned its intention to bring the two breakaway regions back into the fold – using force if necessary – the only way to guarantee the existence of the two newly recognized republics was to station Russian troops on their territory. Under the agreements they have signed with Moscow, Russia has been given a free 99-year lease of several tracts of land for its new military bases in South Ossetia, and a 49-year lease in Abkhazia.

Initially, the number of troops to be permanently stationed at each of the new Russian bases was set at 3,800. But the new situation following the recognition of the two republics has allowed Russia a lot of freedom of maneuver in this regard – it can for example send additional troops to each of the two republics if it perceives an increased threat of a Georgian attack. That freedom is especially important in the case of South Ossetia, where troop movement is restricted by poor roads and the bottleneck of the Roki tunnel. Apart from the Russian

Army units, the FSB's Border Guard Troops will have 1,000 to 1,500 people in each of the two republics.

In the absence of any external controls, the real numbers of Russian troops in the two republics were higher than initially stated in the first few months after the war. Apart from the units of the newly formed 4th and 7th Military Bases of the Russian Army, Russia has sent additional engineer troops, air force and air defense units, as well as additional artillery, including the 944th Guard Self-propelled Artillery Regiment of the 20th Motorized Rifle Division (permanent base in Volgograd) and several 9P140 Uragan 220mm MLR systems. In addition, various army special task force units are now stationed in Abkhazia and South Ossetia.

Russian military bases in Abkhazia

In the event of a Georgian attack, the Russian and Abkhaz troops in Abkhazia will have to defend a fairly long 60km stretch of the land border, which follows the course of the small river Inguri. The terrain here is flat, and geographically this stretch is quite easy to defend. In addition, the republic's capital, most of its largest towns and the key military bases are situated well away from the border, so they are not facing a threat of a surprise Georgian shelling or land invasion. The Kodori Gorge stretch of the border with Georgia can be held by a relatively small force, because the terrain there makes the use of heavy equipment impractical. The rest of the Abkhaz-Georgian border lies along inaccessible mountainous terrain where Georgia will not be able to deploy any large forces or heavy armor, which makes defending this stretch from a large-scale invasion all the more easy.

After the Five Day War, the 131st Independent Motorized Rifle Brigade of the 58th Army became the core of the new Russian 7th Military Base in Abkhazia. The brigade was previously stationed in Maykop. It had earned itself a sad reputation after sustaining heavy casualties in the storming of Grozny in January 1995, during the First Chechen War. Units of the 131st Brigade had been on peacekeeping duty in Abkhazia for several years even before the conflict with Georgia. But after the Five Day War the entire brigade was moved into the republic and stationed there permanently. The redeployment began as early as mid-August 2008, and had been largely completed by late September 2008. The old Soviet military airfield at Bombora, near the town of Gudauta, was chosen as the site of the base. On November 17, 2008, the Abkhaz parliament allocated 150 hectares (370 acres) of land there for the new Russian military base.

Tents, rows of equipment and warehouses sprang up right beside the runway. Gudauta is situated at a significant distance (more than 100 km) from the border with Georgia along the Inguri river. This is why in the first few months after the war, one of the battalions of that base held reinforced defensive

positions in the direct vicinity of the border in Abkhazia's Gal District. Apart from the resources of the Russian base itself, two separate Russian engineer battalions and a separate engineer and positioning company were used to build the defenses there – but those units were pulled out of Abkhazia in 2009. Another company of the brigade was on constant duty in Kodori Gorge.

By late February 2009, the tank battalion of the 131st Independent Motorized Rifle Brigade, which was previously equipped with the T-72B main battle tanks, had been completely rearmed with the latest T-90A's of the 2008 model. And since the numerical strength of the battalion has also changed, the number of its tanks now stands at 41. Such a large number of modern tanks makes the Russian brigade more than a match for Georgia's upgraded T-72s, even though the Georgians have a numerical advantage. The only remaining problem is giving the personnel full training in the operation and maintenance of the new equipment. Starting from April 2009, the new tanks have become a large part of the brigade's training program.

The Russian base in Abkhazia was one of the first in the Russian Army to be equipped with tactical unmanned aerial vehicles (UAVs). Its reconnaissance battalion now has the Strekoza systems, which have a range of up to 15 km. This new compact Russian system can shoot high-quality color video and transmit it in real time. The new Dozor armored reconnaissance vehicles (based on the KamAZ-43269 Vystrel armored vehicles) are used to move the system around, but the UAVs can actually fit into a backpack.

Apart from tanks, the base has more than 150 BTR-80 armored personnel carriers. These should eventually be replaced with the BTR-80A version, which has better firepower. The base also has two battalions of the 2S3 Akatsiya self-propelled 152mm howitzer, one battalion of the BM-21 Grad 122 mm MLR systems, Osa-AKM (SA-8B), ZSU-23-4 Shilka and 2S6M Tunguska (SA-19) air defense systems, etc.

In the fall of 2008, Russia began integrating the Abkhaz territory into its own air defense system. In November 2008, Russia sent to Abkhazia several S-300PS (SA-10B) SAM systems of one of the air defense missile regiments in Moscow region. It has also deployed radar units equipped with the latest Fundament automation sets. Two S-300PS battalions have been stationed near the town of Gudauta and the village of Agudzery. They provide reliable air defense for Abkhazia and the Russian bases on its territory. They give Russia full control of the skies not just over Abkhazia, but also over large swathes of western Georgia. Russia also still has Tochka-U (SS-21) short-range ballistic missiles in Abkhazia.

Immediately after recognizing the independence of Abkhazia, Russia announced plans to build a naval base there. The port Russia has chosen for that purpose is Ochamchira, which used to host a brigade of Coast Guard and

training ships of the Soviet Navy. This small port can be used by ships of up to 85 meters in length. The navigation channel used to be 12 meters deep, but it has been allowed to silt up over the years, and its actual depth now is only 5 meters. The channel and the harbor will need to be dredged, a few sunken hulks will have to be lifted and some of the land infrastructure will have to be restored. But once that is done, the port will be quite usable as a permanent base for three to five small-size ships of the Russian Black Sea fleet, such as missile corvettes and ASW corvettes of the Navy, and up to 10 Coast Guard patrol boats of the FSB Border Guard Service. Such a force could reliably protect the Abkhaz coast. In August 2009, Russia began dredging the Ochamchira port, with an expected completion date in 2010.

In May 2009, the Russian Defense Ministry said that troop numbers at the Russian military base in Abkhazia could be reduced by redeploying up to half of them to the existing permanent bases in Russia. A ministry representative cited failure to resolve some of the practical problems of stationing Russian troops in Gudauta. The soldiers have been living in tents all this time. And although the climate there is fairly mild, high humidity, sea winds and frequent rain make living in tents quite uncomfortable during the cold season. In the winter of 2008/2009, the problem was compounded by unreliable supplies of firewood and electricity blackouts. Although contracts had been signed with Abkhaz companies for regular deliveries of firewood, the soldiers were forced to cut down trees around the base to stay warm. It was not until August 2009 that Russia began assembling prefabricated living quarters at the compound. The possibility of reducing troop numbers was considered, then rejected. Soldiers had to spend the winter of 2009/2010 living in tents, as before.

Russian military bases in South Ossetia

South Ossetia is harder to defend than Abkhazia. Its capital Tskhinvali, the republic's largest town, is within the range of not only Georgian artillery and mortars, but even small arms fire. Leningori District of South Ossetia is isolated, and linked to the main part of the territory by just one narrow mountain road. An average drive to Leningori takes 4-6 hours. The road also becomes nearly impassable in winter and during heavy rain. In June 2009, a section of the road collapsed after heavy rains, cutting off all traffic for several days. The Russian troops in the district had to rely on helicopters for all their supplies.

South Ossetia itself is linked to Russia by just one hard-surface road with a single lane in each direction. The road passes through the Roki tunnel, which acts as a bottleneck. During the cold season, the road is often blocked by avalanches for a day or more. That makes bringing in reinforcements from Russia difficult. Meanwhile, there are several good roads linking South Ossetia to Georgia. The Georgians can therefore bring their troops in quickly and

easily from their nearby bases – which is exactly what happened during the Five Day War.

That is why Russia, in accordance with the commitments it has undertaken, is forced to keep a contingent of troops in South Ossetia that can hold off for a time any possible Georgian aggression on its own, until the arrival of reinforcements and/or other measures to stop the aggression. Immediately after the end of the war, a decision was made to deploy the Russian 4th Military Base in the republic. The core of the new base is the 693rd Independent Motorized Rifle Brigade, which was formed from the 693rd Motorized Rifle Regiment of the 19th Motorized Rifle Division previously stationed near Vladikavkaz. The regiment was merged with another battalion of the disbanded 135th Motorized Rifle Regiment of the same division. It was also given one MLRS battalion, and the new brigade's manpower has been brought up to the required numbers.

The base now has 41 T-72B(M) tanks, over 150 BMP-2 armored infantry fighting vehicles, two 2S3 Akatsiya self-propelled 152mm howitzer battalions, one BM-21 Grad 122 MLRS battalion, Buk-M1 (SA-11) and 2S6M Tunguska air defense systems, and other weapons. Most of its equipment has been repaired and upgraded. Just as the Russian base in Abkhazia, the 4th Base in South Ossetia has been given Strekoza UAVs, which are now being used to monitor the border.

Three small military compounds were chosen as the main sites for the 4th Base. Their construction had started even before the war – they were supposed to host the Russian and North Ossetian peacekeeping forces. The first site, Compound No 47/1, is situated on the northwestern outskirts of Tskhinvali. By the time the war began, the compound was almost complete, but not yet connected to water or electricity, and the buildings lacked interior finish. During the war, it stood empty and suffered very little damage. It wasn't targeted by either side, though a few stray Georgian shells and mortars landed on its territory.

Work on the site resumed after the war, and proceeded so briskly that much of the compound – including the barracks, apartment blocks and support facilities, hangars for some of the equipment and the helipad – was finished and handed over to the new owners by February 2009. Work continued at the base throughout 2009 so that it could meet all the new requirements. More construction is scheduled for 2010. But the compound has one serious disadvantage: it is located just a two miles from the Georgian border, so in the event of new hostilities, the Russian personnel and equipment stationed there may come under sudden massive shelling from deep within Georgia.

The second site is located less than a mile west of Djava, near Ugardanta village. Apart from Compound No 47/2, it hosts the Russian contingent's main missile, artillery and engineering warehouses. A hard-surface heliport big enough for 10-15 helicopters was built close by immediately after war. The heliport has a store of fuel and ammunition, which makes it possible for Russia

to transfer additional helicopters quickly to South Ossetia in case of an attack, and put them to good use in combat operations. That operational capability would have come very handy in the first few days of the 2008 war.

A common problem of the new Russian military compounds in South Ossetia was their lack of capacity – they were designed to house a limited peacekeeping contingent, not an entire motorized rifle brigade. The lack of space in the barracks had to be addressed by bringing in bunk beds. Neither were the peacekeepers supposed to have nearly as much equipment as the brigade has brought with it, so there were not enough hangars. The problem has been resolved by stationing about half of the personnel of the 4th Military Base in Vladikavkaz, with rotations every six months. All the equipment remains in South Ossetia, in a refurbished former industrial facility on the edge of the military compound in Tskhinvali and at the Djava base.

Construction work at the South Ossetian bases continued throughout 2009 to increase their capacity. It has been announced that starting from February 1, 2010, personnel temporarily stationed in Vladikavkaz has been brought back to South Ossetia. All personnel will now be permanently stationed at the two military compounds in Tskhinval and Djava. Work continues at both compounds to improve the existing facilities and build new ones.

Meanwhile, the small groups of Russian forces in the remote Leningori, Znaur and Djava districts have been housed in tents for more than a year now, with minimal comforts, sometimes experiencing shortages of basic supplies. One indication of the difficult living conditions in those garrisons is that there have been several cases of desertion of Russian soldiers to Georgia. Quick-assembly prefabricated living quarters are now being set up to address the problem to some degree.

The 4th Military Base also has large numbers of troops stationed in Leningori District. Because of its isolated location and vulnerability, Russia has been forced to station an augmented motorized rifle company there, in the village of Kancheviti. The company is armed with tanks, artillery, multiple launch rocket systems and air defense systems. Additional reinforcements are brought in when the ongoing tensions threaten to escalate.

Developing the transport infrastructure of the republics

Defending South Ossetia is going to be very difficult without reliable transport communications with Russia. That is why improving the transport infrastructure of the republic has become a key priority. The goal here is to make sure that reinforcements from Russia can be brought in quickly as and when they are needed, and that the Russian forces stationed throughout the republic are well supplied at all times. It has been decided that the Trans-Caucasus Motorway, which is often impassable during winter, should be made operational all year

round. Under a new program, in the next few years three new tunnels will be built along the route, six kilometers of anti-avalanche galleries, and several mudflow gaps. Several bridges will be reinforced. Work has also begun to refurbish the strategically important Roki tunnel, which connects the republic with Russia.

The program also includes the completion of a new gravel-surfaced mountain road linking Leningori District to the rest of South Ossetia – work on it had begun even before the war. The surface of the roads damaged by troop movements during the war has now been restored. Hard surface has been laid all along the previously unsurfaced Zarskaya detour road. Engineers are also looking for a suitable site in South Ossetia to build an airfield that could receive military transports.

The existing transport communications between Russia and Abkhazia are far more reliable. Apart from a motorway, there is a railway branch and two large airfields that can receive heavy transports, including An-124 and An-22 aircraft. The Abkhaz ports on the Black Sea can be used to bring in troops and supplies. Russia has signed an agreement with the Republic of Abkhazia under which the local railways and the Sukhumi airport will be run by Russian operators for the next 10 years. The Russian Railways Company, which will run the Abkhaz railways, has announced a big repairs program that includes extensive track repairs and a complete restoration of the track electrification system. That will increase the capacity of Abkhaz railways and speed up troop movement.

The Sukhumi Airport was used in August 2008 to bring in Russian paratroopers and military supplies. The plan now is that if needed, it will also be used to host a temporary or permanent Russian air group that will include fighters, fighter-bombers and helicopters. The transfer of the airport to Russian control will allow its capacity to be increased, and the necessary conditions (including stores) created for the Russian Air Force to use it as a base. The Gudauta airfield is not suitable as an air base because it now hosts key facilities of the 7th Military Base. The helicopters of the 55th Independent Helicopter Regiment (Korenovsk), which were temporarily based there to support the Russian ground operations, were taken to their permanent base in 2009. But they can be brought back to Gudauta if the need arises.

Reinforcing the borders

Russia has announced a medium-term goal of making the Russian border with Abkhazia and South Ossetia as transparent as the borders between the EU nations are. But to make sure that these newly recognized republics do not become a gap in Russia's defenses, their own borders with Georgia will inevitably have to be upgraded into proper state borders and equipped to Russian standards.

In January 2009, Russia began unilateral demarcation and delimitation of the South Ossetian and Abkhaz borders with Georgia. For South Ossetia, it is

using the line of the administrative border defined in documents dating to 1921. Georgia says this is illegal, and refuses to recognize these borders. Nevertheless, on April 30, 2009, Russia signed agreements with the Republic of Abkhazia and the Republic of South Ossetia on joint efforts to guard and defend their borders. Under the terms of the agreements, Border Troops of Russia's FSB service will be permanently stationed along the Abkhaz and South Ossetian border with Georgia to ensure the two republics' territorial integrity. Russian border troop numbers will not be included in the tally of Russian Defense Ministry forces. The Russian border guards will help train Abkhazia's and South Ossetia's own border troops, and the arrangement will remain in place until those local troops can take over. But there are no deadlines for Russian border troops withdrawal, so potentially they can stay there indefinitely.

Two new departments have been set up in the Border Guard Service under the Russian FSB – one for the Republic of Abkhazia, the other for the Republic of South Ossetia. The Abkhazia department will be in charge of a 160 km stretch of land border and about 200 km of sea border. For this purpose, 20 frontier posts and a Coast Guard unit will be created in the new republic, with 1,500 border guards. Another 20 or so frontier posts will be set up in South Ossetia, with over 1,000 border guards.

On May 1, 2009, immediately after the agreements were signed, Russia began the deployment of its border guards along the new republics' frontier with Georgia. The first stage of the deployment in Abkhazia was completed by the end of May, and in South Ossetia by the middle of June. At present, the border guards are stationed in temporary outposts. But it is expected that by the end of 2011, those will be replaced by permanent outposts of the same type that have been built in large numbers in Chechnya, Ingushetia, Dagestan and other regions in the south of Russia. These outposts are autonomous; they provide comfortable living conditions for the personnel even on the most isolated stretches of the border, and enable remote monitoring of the frontier with the help of technology. The most isolated outposts will be supplied with the help of a newly built network of helipads.

In South Ossetia, apart from Tskhinvali itself, there will be Russian border guard stations in Artsevi, Akhmadzhi, Balaani, Balta, Vakhtana, Velit, Grom, Djava, Disev, Dmenis, Edis, Znaur, Kveysa, Largvis, Leningor, Muguti, Orchasan, Sinagur and Tsinagar. That means that the border patrols will cover not just the areas which are easy to reach from Georgia, but also the remote mountainous stretches along the entire perimeter of the republic's border.

It became obvious in 2009 that Abkhazia's maritime borders also need to be guarded, and shipping in this area of the Black Sea needs to be reliably protected. Commercial shipping between Abkhazia and Turkey has been on the rise since the war ended. Georgia believes that this is against the law, and that all ships

calling at the Abkhaz ports without Georgian vetting are smugglers. Tbilisi has been trying to put an end to all such trade. In 2009, the Georgian Coast Guard seized more than 20 civilian ships heading to or from Abkhazia. The ships were escorted to Georgian ports, where in some cases their owners were ordered to pay large fines. In the worst such cases, the cargo or even the ships themselves were confiscated, and crew members sentenced to prison terms.

In order to forestall Georgian attempts to impose a maritime blockade on Abkhazia, Russia has decided to form a squadron of up to 10 patrol ships and boats, which will be stationed in the port of Ochamchira. Among them will be large ships of the Russian Coast Guard as well as modern high-speed boats. The formation of the squadron began in September 2009, when the *Novorossiysk*, a Project 12412 (Pauk class) patrol ship, was sent to Abkhazia. The first two Project 12150 (Mangust class) and Project 12200 (Sobol class) high-speed small patrol boats arrived in Ochamchira on December 12, 2009. In the spring of 2010 they were joined by two more such boats, both newly built. The rest of the ships and boats will follow by the end of 2010, and the upgrade of the Ochamchira base to host the squadron will be completed by 2012.

Since the beginning of Russian patrols of the Abkhaz coast, attempts by the Georgian Coast Guard to seize civilian ships have ceased. Neither have there been any violations of the Abkhaz maritime borders.

Large Russian coast guard patrol ships are very well equipped in terms of their firepower. They carry AK-176M 76 mm artillery and AK-630 30 mm rapid-fire guns, as well as fairly advanced fire control systems. That gives them complete superiority over any Georgian patrol boats, whose most powerful weapon is an aged 37 mm cannon. As for the Russian high-speed boats, their main objective is to repel any raids by Georgia's new Turkish-built Coast Guard boats, which are fast but lightly armed. They act as a rapid response instrument whenever there is a threat to commercial shipping in the area. In addition to stationing its ships in Abkhazia, the Russian Coast Guard is also working to set up an integrated radar monitoring system in the Abkhaz territorial waters and the adjacent marine space.

Apart from serving the main purpose of guarding the border, the stationing of Russian border troops in the two republics has great military significance. The Russian border guards deployed there are well equipped and well trained professional soldiers. They are armed with modern small arms, mortars, light armored vehicles, attack helicopters and modern surveillance technology, including UAVs, thermal imagers and radars. The overall number of Russian border guards stationed in Abkhazia and South Ossetia will eventually reach 2,500 people. Once they are fully deployed, they will keep Georgian border areas under surveillance, intercept Georgian spies and saboteurs, and in the event of a new Georgian attack on the two newly independent republics they

will serve as the first line of defense, preventing a rapid advance of Georgian troops into Abkhaz and South Ossetian territory.

Combat training

The Russian troops sent to Abkhazia and South Ossetia after the Five Day War had limited opportunities for combat training. During the first few months they had to put most of their energies into settling in at their new bases, which left them very little time for training. In Abkhazia, where a large peacekeeping force had been stationed even before the war, and where much of the Soviet-built infrastructure remains intact, that initial stage was easier and quicker. But in South Ossetia, it dragged on until early spring of 2009.

Once the initial problems faced by the large new force at its new bases were sorted, the troops faced a new difficulty: there were no firing ranges around which they could use for combat training. And whereas shooting ranges were quickly set up for small arms training, finding a suitable place for tank and artillery fire proved a much more formidable task. It took the local authorities quite a while to allocate tracts of land for these purposes. The small size of the firing ranges and of the republics themselves made it difficult to conduct a full-scale exercise involving more than one company, especially if live shooting was involved. Some types of exercises involving tanks, artillery and air defense systems required the personnel and equipment to be brought to the firing ranges of the North Caucasus Military District in Russia itself, which limited the combat effectiveness of the Russian troops in Abkhazia and South Ossetia. The situation was especially difficult in South Ossetia. Tanks had to be brought all the way to the Tarskoye firing range in North Ossetia for live firing. The problem had been resolved only by late 2009. Both of the Russian bases can now hold company and battalion-level exercises with live firing on the territory of the two new republics.

In late June – early July 2009, the Russian armed forces held their traditional annual operational and strategic exercise ‘Caucasus 2009’ on the training ranges of the North Caucasus Military District. The Russian troops deployed in the newly recognized republics also took part; one of the scenarios of the exercise was using the forces of the North Caucasus Military District to help those troops. But although military commanders said they would make use of the experience of the previous year’s war, and of the new brigade structure of command, the scenario of ‘Caucasus 2009’ was not much different from ‘Caucasus 2008’. The Russian forces and equipment that took part were about the same as in the previous years. The exercise itself was held simultaneously on several far-flung ranges, which meant that coordination between the brigades and other units involved in it was not part of the practical scenario. Large-scale redeployment of troops of the North Caucasus Military District and operations to bring large

reinforcements to the district from other parts of Russia were not included in the practical part of the training event. Neither did the scenario include actual deployment of those troops in the two newly recognized republics themselves to bolster Russian troop numbers there.

The Russian forces in Abkhazia and South Ossetia took only a limited part in 'Caucasus 2009' – they participated mainly in the command staff exercises. Part of the reason for that was Russia's unwillingness to take large troop numbers too far away from the border with Georgia. The armed forces of the two newly independent republics were not involved in the exercise, and neither was all the new Russian equipment in the region, not even those armaments that the troops here received the previous year – not in large numbers anyway. That suggests that troops had not yet been adequately trained in the use of the new weapons by the time the exercise was held.

The conscript soldiers who took part in the war in August 2008 and gained some combat experience have all been demobilized by now. Many of the experienced professional soldiers have also left the army, largely because the Russian Defense Ministry has failed to honor its initial promises regarding bonuses for service in the two republics, and the difficult living conditions at the Russian military bases in Abkhazia and South Ossetia. Also, as part of the ongoing military reform, the ministry has decided to limit the proportion of professional soldiers in the overall manpower of the bases. As a result, the proportion of soldiers serving under contract at the 7th Military Base in Abkhazia has fallen to 20 per cent (the rest being conscripts). The situation at the South Ossetia base is similar, although the proportion of professional soldiers there is a bit higher. As of the spring of 2010, only a few dozen soldiers who took part in the 2008 war with Georgia are still serving there. As a result of numerous structural reorganizations, most of the middle and high-ranking commanding officers who were involved in the war have also been replaced.

By way of compensation, the intensity of combat training has been ramped up at the two bases started from the second half of 2009. The 7th Military Base has held four battalion-level exercises in less than a year. There are also regular company and platoon-level training events, both in Abkhazia and South Ossetia. The emphasis during the exercises is on repelling an assault by the Georgian regular army. Inspections held by the Defense Ministry commissions have concluded that the Russian troops in the two republics meet all the combat readiness standards. Both of the brigades can deploy within an hour of receiving their orders.

It is therefore safe to say that a certain increase in the fighting ability of the Russian troops stationed in the two republics has been achieved since the end of the war. That is despite the fact that most of the soldiers who had obtained real combat experience during the war with Georgia (which was admittedly very

brief) have now left the army. The Russian troops are now better trained than those which took part in the Five Day War.

Significance of the two bases

The overall number of troops stationed at the Russian bases in Abkhazia and South Ossetia is not much higher than the size of the Russian peacekeeping forces there before the Five Day War. Only in South Ossetia has there been a notable increase, from 1,000 soldiers (including the North Ossetian peacekeeper battalion) to 3,500. As for Abkhazia, Russia had a 3,000-strong peacekeeping force there even before the war, including a large part of the 131st Motorized Rifle Brigade's strength.

Nevertheless, there has been a radical increase over the past two years in the fighting ability of the Russian forces stationed in the two republics. That increase has resulted from the arrival of large numbers of heavy weapons, which the Russian troops were not allowed to have under their peacekeeping mandate. Dozens of Russian tanks (including the latest T-90A's) and heavy self-propelled artillery now stationed in Abkhazia and South Ossetia leave the Georgian army no chances of crushing the Russian garrisons and seizing large territories before Russia can send reinforcements.

By themselves, the two Russian military bases will not be able to repel a large-scale offensive of the much larger Georgian army, which can also be strengthened by the reserves. But they can hold their ground long enough for the reinforcements to arrive from Russia, using the much improved transport infrastructure, and launch a counteroffensive. The situation for Georgia is compounded by the fact that this time around it will not be able to use almost all available strength against just one of the two republics, as it did during the Five Day War. It will inevitably have to commit a substantial part of its forces to deal with the Russian base in the other republic.

Russia's decision to station its forces in the two newly independent states has reduced the risk of small conflicts. The Georgian government is well aware that even a limited military operation against Abkhazia or South Ossetia can trigger a very rapid and decisive response by the Russian troops stationed there. These troops will no longer be constrained by their peacekeeping remit, or limit themselves to just "forcing Georgia to peace". In the worst-case scenario, if the clashes degenerate into a new large conflict between Russia and Georgia, the troops at the Russian bases can always count on reinforcements being rushed in from Russia.

The base in South Ossetia, which is by far the more vulnerable of the two, can count on reinforcements from North Ossetia and the neighboring Russian regions. As part of the military reform, the former 19th Motorized Rifle Division stationed in Vladikavkaz has been transformed into the 19th Independent Motorized Rifle Brigade, which maintains permanent combat readiness. It is

now taking deliveries of new weapons, including T-90A main battle tanks and BMP-3 armored infantry fighting vehicles. In the event of a new conflict, this brigade will be the first of the Russian reserve forces to be brought into South Ossetia. That will require less than 24 hours.

Other troops of the North Caucasus Military District which can be used in South Ossetia are also receiving new and upgraded equipment. The obsolete T-62 tanks of the 17th and 18th Independent Motorized Rifle Brigades have been replaced with the T-72B's. The two successor brigades of the former 42nd Motorized Rifle Division, both stationed in Chechnya, are also receiving the new upgraded MT-LB 6MB multipurpose tracked armored vehicles with improved firepower. The 20th Independent Motorized Rifle Brigade stationed in Volgograd, the successor of the former 20th Motorized Rifle Division, has also been rearmed with the BMP-3 vehicles and T-90A tanks. The 6971st Airbase in Budennovsk (created through the merger of the former 368th Attack Aviation Regiment and the 487th Independent Helicopter Regiment) has recently received another batch of the upgraded Su-25SM attack aircraft and 10 new Mi-28N attack helicopters. It has been announced that an order has been placed for a 2010 delivery of 22 Mi-8AMTSh assault landing and attack helicopters to the former 55th Independent Helicopter Regiment in Korenovsk, which is now part of the 6970th Airbase in Krymsk. The regiment was also due to receive several new Ka-52A attack helicopters as soon as they entered mass production. As part of a solution to problems with reconnaissance during the Five Day War, the new experimental 100th Reconnaissance Brigade is now being formed in Mozdok. It will be equipped with Israeli-made IAI Searcher II medium-size UAVs and other technical reconnaissance equipment.

The situation on the borders of South Ossetia and Abkhazia has become much quieter since the Russian troops were brought in. Cross-border exchanges of fire between Georgia and the two new republics it is refusing to recognize have become much less frequent and violent. Not a single civilian has been killed in such exchanges since the end of the war. The Georgian rhetoric against Abkhazia and South Ossetia has also become much less shrill. The government in Tbilisi now prefers not to talk about returning its two breakaway republics by force, or to name any specific time frame for bringing them back into the fold. Nevertheless, Georgia has not abandoned plans for regaining its lost territories. The threat of another armed conflict with Russia therefore still remains unabated.

Russian and Allied Losses

Anton Lavrov

Casualties in the Russian Armed Forces

Less than a month after the end of combat operations, the Georgian Defense Ministry published an official list of the Georgian servicemen and reserves killed or missing in action.¹

That list is fairly detailed. Apart from the names of the casualties, it also states their rank and regiment. The list was later amended and revised on a regular basis as tests were conducted on unidentified bodies and as new information was becoming available about those missing. Careful study of the list suggests that it is complete and accurate.

In total contrast, the Russian MoD still has not published any such list. It has released the overall figures of the Russian losses, but gave no further details. The South Ossetian and the Abkhaz authorities have not been any more forthcoming. In fact, there has not been any official information regarding even approximate figures of the losses among the South Ossetian militia or the volunteers who had come to the conflict zone from Russia.

The absence of an official MoD list of the Russian losses has been compounded by conflicting information given by various officials. The number of Russian

soldiers killed during the war has been put at anywhere between 48 and 74 people. At present, 67 is believed to be the final official figure. Its source is a special inquiry committee of the Russian Prosecutor-General's office.² It includes all those who died during combat operations on August 8-12 and during the post-war period, before the beginning of the Russian troop pullout. Unfortunately, the committee has released the overall figure but not the actual names of those killed.

By collecting post-war reports about the Russian servicemen who died during the war, researchers have compiled an unofficial list of 65 names.³ The information came from Russian national and local media sources, recollections of the eyewitnesses, official documents made available since the end of the war, and other sources. The list identifies 65 Russian servicemen who died in the period of August 1-31, 2008 in the South Ossetian and Abkhaz theaters of operations. After careful study of all the available sources, researchers have been able to establish not just the names of those killed but also the circumstances of their deaths, in most cases. That information has been used to conduct detailed analysis of permanent Russian losses during the conflict.

The following is the chronological breakdown of the Russian losses:

Period	Russian servicemen killed
August 1-7	0
August 8	15
August 9	17
August 10	7
August 11	14
August 12	2
August 13-31	7
Unknown	3
Total	65

During the first day of the war, on August 8, most of the Russian servicemen killed were the peacekeepers at the Southern (Upper) Compound, which came under Georgian attack in the very first hours of the conflict. A total of 14 Russian peacekeepers died there, including 10 soldiers of the 2nd Battalion of the 19th Motorized Rifle Division's 135th Motorized Rifle Regiment. The remaining four were soldiers of the army Spetsnaz attached to the battalion before the war. Three of them were from the 22nd Independent Special Force Brigade, and one from the 10th Independent Special Force Brigade. Contrary to numerous Georgian reports, the small vanguard Russian force that entered South Ossetia on August 8 did not in fact come under heavy artillery fire. Neither did it take part in any fighting on that day, apart from a few medium and long distance exchanges of fire. As a result, only one member of that force died on August 8. He was a serviceman of the 135th Motorized Rifle Regiment's 1st Battalion.

The key event of the second day of the war on August 9 was the Russian forces' first attempt at taking Tskhinvali. Eleven Russian servicemen were killed when a Russian convoy moving towards the city came under heavy shelling, and during the subsequent street battles in Tskhinvali. Also, five Russian military pilots were killed that day when four Russian aircraft were shot down.

The third day of the war, August 10, was relatively quiet, without any heavy battles. But three servicemen of the 42nd Motorized Rifle Division's 71st Motorized Rifle Regiment were killed in a single episode when Russian troops came under Georgian artillery fire. Another three died in several road traffic accidents as large numbers of Russian troops were moving along a narrow mountain road.

On August 11, the Russian forces began a counteroffensive, advancing deep into Georgian territory. There were several small clashes with Georgian troops. Nevertheless, the losses that day were much heavier than the day before. Several more soldiers died in road accidents. Five servicemen died from non-combat causes when active combat operations were already over; another two died in hospital from their injuries.

Of the 67 casualties recognized by the Russian MoD, many died from causes other than hostile fire. The inquiry committee of the Russian Prosecutor-General's office has established that only 48 Russian servicemen were killed as a result of hostile action. The rest died in accidents involving mishandled firearms, friendly fire incidents and road accidents.

The number of lives claimed by road accidents was especially high. Troops were rushing into the conflict zone along narrow mountain roads, often at night, which contributed to the sorry statistics. To illustrate, out of the 30 injured servicemen of the 429th Motorized Rifle Regiment, only two cases could

be attributed to hostile fire. The rest received their injuries, including broken limbs, head injuries and concussions, on the road. Out of the nine soldiers of the 292nd Combined Artillery Regiment who were injured, eight were hurt in a single road accident. Meanwhile, the units that had been well prepared for mountainous terrain, such as the 70th, 71st, 135th and 693rd Motorized Rifle Regiments, did not suffer any serious non-combat losses.

Sixteen of the Russian servicemen killed during the war were officers, two were warrant officers, and the remaining 44 sergeants and privates. Of the eight senior officers killed during the conflict, five (a colonel, a lieutenant colonel and three majors) served in the Air Force. All of them died when their planes were downed.

Rank	Number killed
Colonel	1
Lieutenant Colonel	1
Major	6
Lieutenant	8
Warrant Officer	2
Sergeants	17
Lance Corporal	1
Private	26
Unknown	3

The breakdown of the losses by regiment is as follows:

Regiment	Servicemen killed
135 th Motorized Rifle Regiment	21
71 st Motorized Rifle Regiment	7
693 rd Motorized Rifle Regiment	6
503 rd Motorized Rifle Regiment	4
108 th Airborne Assault Regiment	4
10 th Independent Special Task Force Brigade	3
136 st Independent Motorized Rifle Brigade	3
52 nd Guards Heavy Bomber Aviation Regiment	3
104 th Airborne Assault Regiment	2
22 nd Independent Special Force Brigade	2
70 th Motorized Rifle Regiment	2
217 th Paratroops Airborne Regiment	1
368 th Attack Aviation Regiment	1
429 th Motorized Rifle Regiment	1
45 th Independent Airborne Reconnaissance Regiment	1
50 th Self-Propelled Artillery Regiment	1
929 th State Flight Test Center	1
12 th Independent Air Regiment of the FSB	1
Unknown	1

Of all the Russian regiments that took part in the war, the 135th Motorized Rifle Regiment of the 19th Motorized Rifle Division suffered the heaviest losses. A total of 21 of its servicemen were killed during combat operations, most of them in just two separate episodes.

The 135th Motorized Rifle Regiment's 2nd Battalion was on peacekeeping duty in the conflict zone when the war broke out. The battalion's servicemen at the peacekeepers' Southern Compound in Tskhinvali were the first to come under Georgian attack on August 8. Most of the losses there were sustained in the first few hours of the conflict. A total of 10 servicemen were killed at the compound, and more than 40 injured. Nevertheless, the battalion remained an effective fighting force. Its soldiers took only a brief respite after leaving the compound on August 9; after the end of hostilities they continued peacekeeping duty in South Ossetia and in the established buffer zone on Georgian territory.

The 1st Motorized Rifle Battalion of the 135th Motorized Rifle Regiment was one of the two main battalion-strength tactical combat groups that entered South Ossetia on August 8, only a few hours after the Georgian assault began. The battalion sustained its heaviest losses on August 9, as it was trying to enter Tskhinvali to lift the blockade of the Russian peacekeepers' compound, where the same regiment's 2nd Battalion was stationed. Upon entering the city, the 1st Battalion encountered a much larger Georgian force: the Georgian Army had just launched its second major attempt to take Tskhinvali. The battalion was drawn into a street fight, where it lost several infantry fighting vehicles and scores of soldiers, eight of whom were killed. After that episode, the battalion was withdrawn from Tskhinvali and did not sustain any more losses.

Another large battle in which several Russian soldiers were killed took place in the village of Zemo-Khviti on August 11. The 693rd Motorized Rifle Regiment lost five soldiers in one fell swoop, including the entire three-man crew of a destroyed T-72B tank. Apart from those incidents, there were no more episodes during the war in which more than three Russian servicemen were killed.

Direct fire (small arms, armor-mounted guns and anti-tank weapons) was the single biggest cause of death, claiming 25 people. Another 15 soldiers were killed by Georgian artillery, mortars and MLR systems. The latter category of Georgian weapons claimed three soldiers of the 71st Motorized Rifle Regiment on the night of August 10-11. There was also a lot of non-combat losses as a result of several road accidents. Six people died when several Russian planes and helicopters were either shot down or crashed. One of these six died in a friendly fire incident. At least two Russian soldiers were killed in accidents involving firearms after the end of combat operations.

The breakdown of the fatalities by cause of death is as follows:

Cause of death	Servicemen killed
Direct fire	25
Indirect fire	15
Road accident	9
Unknown	8
Air incidents	6
Other	2
Total	65

About 250 Russian servicemen received injuries in August 2008. According to the inquiry committee of the Prosecutor-General's office, only 162 of those cases were combat losses inflicted by the adversary. The rest were mostly head injuries and broken bones, confirming reports of the large number of road accidents during troop movement into South Ossetia. The day-by-day distribution for injuries is similar to that for fatalities.

Two Russian servicemen were taken prisoner over the course of combat operations. Both were members of the crew of the Russian bombers shot down over Georgia on August 9. Another four Russian soldiers were taken prisoner by the Georgians in two separate incidents in the first several days after the war. In both incidents, the servicemen lost their way and drove into Georgian-controlled territory by mistake. All the Russian servicemen were released in August 2008 in an "all-for-all" prisoner swap with Georgia.

Four Russian soldiers were missing after the war ended. Two of them were later found at their permanent living addresses in Russia.⁴ Colonel Koventsov, the commander of the Russian Tu-22M3 bomber shot down over Georgia, was initially listed as missing. But his body was eventually identified after Georgia handed over to Russia tissue samples of a body found on Georgian territory. To date, only Sergeant Ledzhiev remains missing.

Military equipment

The Russian command has not released any official information about the losses of military equipment during the war. Independent calculations have been made using the available images and footage, as well as media reports and the recollections of eyewitnesses. Russia lost three main battle tanks during combat operations: one T-72B(M), one T-72B and one T-62M.⁵ All of them were lost to hostile fire. There were much greater losses in the light armored vehicles category - at least 20 such vehicles were destroyed. Known losses include at least nine BMP-1 vehicles, three BMP-2, two BTR-80, one BMD-2, three BRDM-2A and one MT-LB.⁶ Russia sustained no losses in artillery, MLRS or air defense systems.

Apart from armor, there were also serious losses in cars and trucks. In the Southern Compound of the Russian peacekeepers, which came under heavy artillery and tank fire on August 8, almost the entire fleet of cars and trucks (at least 20 vehicles) was destroyed. During battles on August 9, Georgian artillery destroyed ten GAZ-66 trucks of the mortar batteries belonging to the 135th and 693rd Motorized Rifle Regiments. The trucks were all parked in close proximity on the roadside. Two Ural-4320 trucks were lost on August 11 during an air raid by Georgian Mi-24 attack helicopters. Several other trucks were damaged in serious road accidents.

Six Russian planes were lost during combat operations, including three Su-25, two Su-24M and one Tu-22M3 aircraft. After the end of combat operations, two helicopters (an Mi-8MTKO and an Mi-24) were destroyed in a single air crash. The Russian Navy suffered no combat losses to hostile fire in either manpower or equipment during the war.

South Ossetian and Abkhaz losses

South Ossetia's regular armed formations included forces of the Defense Ministry, the Interior Ministry, the Committee for State Security (KGB) and the State Guards. A large number of reserves also took part in combat operations. These forces bore the brunt of the fighting with the Georgian regular army during the first two days of the war, on August 8 and 9.

According to official information released by the South Ossetian Prosecutor's Office, 37 members of the republic's armed services died during the war. In the period from August 1 until the end of combat operations, 27 servicemen of the South Ossetian MoD were killed and 69 injured.⁷ The 10 remaining fatalities were officers of the Interior Ministry. But apart from the government forces, there was also a large number of South Ossetian reserves and militia involved in the fighting. No separate figures of losses among them have been released to date – they were included in the overall count of South Ossetian citizens who died during the war, which makes it difficult to produce an independent tally. Based on all the available information, the losses among the South Ossetian

reserves can be estimated at about 50 people. The overall number of South Ossetian combatants killed during the war is therefore about 90 people. Most of these losses happened on August 8-9 in and around Tskhinvali.

The South Ossetian losses of equipment included two BMP-2 vehicles. One T-55 tank was hit from a grenade launcher; its driver was killed. Nevertheless, the tank remained operable and mobile.

The number of casualties among the unorganized volunteers who came to the aid of the South Ossetians is even more difficult to estimate than the South Ossetian losses. There is information that 10 to 15 Russian residents were killed during combat operations - most of them were from North Ossetia. Only a few dozen volunteers had arrived in the republic by the time the war broke out on August 8. And when combat operations began, the Russian authorities substantially restricted access to the conflict zone for civilians. The influx of volunteers had picked up only by August 10, when the restrictions were eased. But by then, most of the fighting was over, and the Georgian army had withdrawn from South Ossetia. That is why the arrival of the North Caucasian and Cossack volunteers had very little effect on the course of the war. Neither did they take any significant losses.

In Abkhazia and the neighboring Georgian districts, there was no direct contact between the Abkhaz and Georgian forces during the war. There was no combat action in the south, along the river Inguri. In Kodori Gorge, the Georgian forces withdrew without coming into contact with the Abkhaz troops after several days of shelling and air raids by the Russian and Abkhaz aviation. As a result, the Abkhaz forces lost only one serviceman during the conflict.⁸ He was killed in a friendly fire incident during a clean-up operation in the upper Kodori Gorge on August 12. Another two soldiers were injured in the same incident. The Abkhaz forces suffered no losses in military equipment.

¹ <http://www.mod.gov.ge/2008/list/sia-E.html>.

² <http://www.sledcomproc.ru/interview/6925/>.

³ <http://sites.google.com/site/afivedaywar/Home/losslist>.

⁴ <http://www.rian.ru/incidents/20100326/216525188.html>.

⁵ <http://sites.google.com/site/afivedaywar/Home/rutanklosses>.

⁶ <http://sites.google.com/site/afivedaywar/Home/ruaiflosses>.

⁷ <http://osinform.ru/13107-jurijj-tanaev-za-nami-stoit-velikaja-rossija.html>.

⁸ <http://www.fontanka.ru/2008/08/14/103/>.

Known Deliveries of Military Equipment to Georgia in 2000-2009

Prepared by **Mikhail Barabanov**

Type	Number	Supplier	Year
T-72A/B Main Battle Tank	110	Ukraine	2005 - 2009
T-72M1 Main Battle Tank	71	Czech Rep.	2005 - 2006
T-55AM2 Main Battle Tank	11	Czech Rep.	2000
BMP-2 Armoured Infantry Fighting Vehicle	52	Ukraine	2004 - 2005
BMP-1U Armoured Infantry Fighting Vehicle	15	Ukraine	2008
BTR-80 Armoured Personnel Carrier	30	Ukraine	2004 - 2005
BTR-70DI Armoured Personnel Carrier	58	Ukraine	2008 - 2009
Nurol Ejder Armoured Personnel Carrier	76	Turkey	2008 - 2009
Otokar Cobra Armoured Personnel Carrier	100	Turkey	2007 - 2008

Type	Number	Supplier	Year
Rafael Wolf Armoured Vehicle	10	Israel	2008
MT-LB Armoured Multipurpose Vehicle	7 or 14	Ukraine	2006
BTS-5B Armoured Recovery Vehicle	6	Ukraine	2007
203 mm 2S7 Pion Self-Propelled Gun	5	Ukraine	2007
152 mm 2S3 Akatsiya Self-Propelled Howitzer	12	Ukraine	2004 - 2005
152 mm Dana Self-Propelled Howitzer	24	Czech Rep.	2003 - 2006
122 mm D-30 Towed Howitzer	42	Czech Rep.	2001 - 2006
122 mm/160 mm GradLAR/LAR-160 MLRS	4 or 8	Israel	2007 - 2008
122 mm RM-70 MLRS	6	Czech Rep.	2004
262 mm M-87 Orkan MLRS	5 (unconfirmed)	Bosnia & Herzegovina	2007 or 2008
120 mm Towed Mortar	14	Bulgaria	2004
	25	Czech Rep.	2005
	15	Bosnia & Herzegovina	2006
82 mm Mortar	25	Bosnia & Herzegovina	2006
60 mm Mortar	50	Bosnia & Herzegovina	2006
	30	Bulgaria	2007
	60	Greece	2008
23 mm ZU-23-2M Twin Anti-Aircraft Gun	12	Bulgaria	2005
9K37M1 Buk-M1 (SA-11) Self-Propelled SAM System	2 batallions	Ukraine	2007 - 2008
9K33M3 Osa-AK/AKM (SA-8B) Self-Propelled SAM System	up 18 launchers	Ukraine	2006 - 2008

Type	Number	Supplier	Year
Rafael Spyder-SR Self-Propelled SAM System	4 launchers	Israel	2008
Grom 2 Man-Portable SAM System	30	Poland	2007
Su-25K Attack Aircraft	12 4	Czech Rep. Bulgaria	2004 2005
L-39C Trainer Aircraft	12	Ukraine	2006 - 2007
Mi-24V/P Attack Helicopter	7 1	Ukraine Uzbekistan	2005 2004
Mi-8MTV Utility Helicopter	2	Ukraine	2005
Bell 212 Utility Helicopter	6	USA	2007 - 2008
Bell UH-1H Utility Helicopter	10 2	USA Turkey	2000 - 2001 2001
36D6-M (Tin Shield) Air Surveillance Radar	2	Ukraine	2005
Kolchuga-M Passive Electronic Monitoring Radar System	5	Ukraine	2005 - 2008
Mandat Land-based Electronic Warfare System	1	Ukraine	2008
Aeronautics Defense Aerostar Unmanned Aerial Vehicle System	1 system	Israel	2005
Elbit Hermes 450 Unmanned Aerial Vehicle	5	Israel	2006
Elbit Skylark Unmanned Aerial Vehicle	18	Israel	2006 - 2007
La Combattante II Class Fast Attack Craft (Missile)	1	Greece	2004
Point Class Patrol Boat	2	USA	2000 - 2002
MRTP 33 Class Patrol Boat	2	Turkey	2008 - 2009
MRTP 21 Class Patrol Boat	1	Turkey	2009
Project 106K (Vydra Class) Small Landing Ship	2	Bulgaria	2001

Russian Armed Forces in Georgia (by the end of August 12, 2008)

In South Ossetia

58th Army

19th Motorized Rifle Division

- 135th Motorized Rifle Regiment (2 MR battalions, incl. one as PK)
- 429th Motorized Rifle Regiment (2 MR battalions, 2 tank companies)
- 503rd Motorized Rifle Regiment (2 MR battalions, 1 tank company)
- 693rd Motorized Rifle Regiment (3 MR battalions, 1 tank battalion)
- 481st Air-Defense Missile Regiment
- 292nd Self-propelled Artillery Regiment
- 141st Independent Tank Battalion
- 239th Independent Reconnaissance Battalion
- 1493rd Independent Engineer Battalion
- 344th Independent Maintenance Battalion

42nd Motorized Rifle Division

- 70th Motorized Rifle Regiment (2 MR battalions, 1 tank company)
- 71st Motorized Rifle Regiment (3 MR battalions, 1 tank battalion)
- 50th Self-propelled Artillery Regiment
- 417th Independent Reconnaissance Battalion
- “Vostok” Battalion (one company)
- “Zapad” Battalion (one company)

76th Air Assault Division

- 104th Air Assault Regiment (one battalion)
- 234th Air Assault Regiment (one battalion)

98th Airborne Division

- 217th Airborne Regiment (two battalions)

10th Independent Spetsnaz Brigade (four companies)

22nd Independent Spetsnaz Brigade (one company)

45th Independent Reconnaissance Spetsnaz Regiment (one company)

Total: 16,000 soldiers, 130 MBT, 105 SP-Gun, 40 MRL, 400 IFV, 400 APC, 60 AIFV

In Abkhazia region

15th Independent Motorized Rifle Brigade (as PK, without heavy equipment)

- 43rd Independent Motorized Rifle Battalion

131st Independent Motorized Rifle Brigade (as PK, without heavy equipment)

- 526th Independent Motorized Rifle Battalion
- 558th Independent Motorized Rifle Battalion

7th Air Assault Division

- 108th Air Assault Regiment (two battalions)
- 247th Air Assault Regiment (two battalions)
- 1141st Artillery Regiment

31st Independent Air Assault Brigade (two battalions)

45th Independent Reconnaissance Spetsnaz Regiment (one company)

Total: 6,500 soldiers, 20 SP-Gun, 100 APC, 100 AIFV

Georgian Armed Forces (by the end of 12 August, 2008)

1st Infantry Brigade

11th Light Infantry Battalion
 12th Light Infantry Battalion
 13th Light Infantry Battalion
 14th Armored Battalion
 Artillery Battalion
 Logistics Battalion

2nd Infantry Brigade

21st Light Infantry Battalion
 22nd Light Infantry Battalion
 23rd Light Infantry Battalion
 24th Armored Battalion
 Artillery Battalion
 Logistics Battalion

3rd Infantry Brigade

31st Light Infantry Battalion
 32nd Light Infantry Battalion
 33rd Light Infantry Battalion
 34th Armored Battalion
 Artillery Battalion
 Logistics Battalion

4th Infantry Brigade

41st Light Infantry Battalion
 42nd Light Infantry Battalion
 43rd Light Infantry Battalion
 44th Armored Battalion
 Artillery Battalion
 Logistic Battalion

5th Infantry Brigade

51st Light Infantry Battalion
 52nd Light Infantry Battalion
 53rd Light Infantry Battalion
 54th Armored Battalion

1st Artillery Brigade

Self-propelled Artillery Battalion
 MRL Battalion
 MRL Battalion

Independent Armored Battalion
 Independent Light Infantry Battalion
 Independent Air-Defense Battalion
 Independent Engineer Battalion
 Independent Signals Battalion

Total: 18,000 soldiers, 120 MBT, 30 SP-Guns, 40 MRL, 80 Guns, 120 AIF and APC

The Authors

Mikhail Barabanov. Graduated from the Moscow National University of Culture, then worked for the Moscow City Government. An expert on naval history and armaments. Science editor of the *Eksport Vooruzheniy* (Arms Exports) magazine since May 2004. CAST researcher and Editor-in-Chief of the *Moscow Defense Brief* magazine since 2008.

Anton Lavrov. Graduated from the Tver State Technical University. An independent military analyst and one of the most prominent independent Russian researchers of the 2008 Russian-Georgian War.

Ruslan Pukhov is director of the Centre for Analysis of Strategies and Technologies (CAST) since 1997. In 1996 he graduated from the School of International Information of MGIMO University under the Russian Foreign Ministry. In 1996-1997 – postgraduate student of the French-Russian Master d’Etudes Internationales Sciences Po – MGIMO. In 1996-1997 – researcher for the Conventional Arms Project of the Center for Policy Studies in Russia (PIR Center). Since 2007 Member of the Public Advisory Board of the Russian Defense Ministry.

Vyacheslav Tseluiko. Graduated from the Physics and Technology faculty of the Kharkiv Karazin National University, where he is now a Research Associate at the Political Science department. Specializes in non-governmental armed formations and regular armed forces of the former Soviet republics. In 2008 defended a PhD thesis on “Destatization of the military sphere by non-governmental armed formations in the modern world”.

About CAST

The Center for Analysis of Strategies and Technology was founded in 1997. It is a private research center specializing in the restructuring of Russia’s defense industry, the national arms procurement program and the Russian arms trade. CAST is also involved in studies of the Russian army reform and armed conflicts in the former Soviet republics. The center publishes the *Eksport Vooruzheniy* (Arms Exports) magazine in Russian and *Moscow Defense Brief* in English.