

Sustainable Armor Capability for Small Powers: The Case of Georgia in the August War

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In the late afternoon of August 7th 2008, Major Z.J.¹ turned off his computer, and prepared to leave his work at the General Staff of the Georgian Armed Forces (GAF) in Tbilisi. He had trouble deciding whether he should cover the eighty kilometers that separated him from his hometown of Gori on such a muggy evening. Perhaps he would stay in Tbilisi after all and watch the inauguration of the Olympic Games. Elsewhere in the GAF, there were no such dilemmas; Maj. R.B. was on duty in the 4th Brigade in Avnevi, and Maj. B.A., of the 1st Brigade, was patrolling the Iraqi sands. For these three men and nearly ten thousand others, these were the last hours of relative calm at the end of what had been a busy week. Georgian troops, responding to mortar and small arms fire of unexpected intensity, had moved up to the South Ossetian, and had been conferring with the Russian peacekeepers² in the restive province since the 2nd, date at which the 58th Army had just returned from its annual “North Caucasus” exercise.³ The Russian peacekeepers told the Georgians that they could no longer “control the South Ossetians.”⁴

Maj. Z.J.’s phone rang as he closed his office door. He was told that the GAF was on alert level three (mid-range in a five level gradation, with 5 being normal readiness level, and 1 all-out war). This was unusual. At 0300 on the morning of the 8th of August, he was woken up; “we’re at level one. Your presence is required at the Gori command center immediately.”⁵ Only then did he learn that a Georgian artillery brigade located on the outskirts of Gori had been attempting to delay an alleged Russian advance towards the South Ossetian capital Tskhinvali with its “Grad” batteries. Georgia was now at war.

This is an attempt at establishing the facts as to how Georgia’s armored capability fared against what emerged to be as the Russian 58th Army’s 19th Motor Rifle Division (MRD) which descended upon Tskhinvali through the Roki tunnel.⁶ The purpose of this essay is to shape a case study to inform small power policy-making on the procurement and employment of a sustainable armored capability defined as “main battle tanks” (MBTs). Consequently, the study is aimed at personnel already familiar with the

situation in Georgia and with the employment of armor in general. The events described in this case study have been pieced together from three separate interviews with three serving Georgian officers who have participated in the conflict, and with discussions with South Ossetian eye-witnesses and other experts. Their recollections have been corroborated to the greatest extent possible from open sources. The Russian point of view, to which the author had no similar access, is represented from media analyses. The intent is not to assign blame for the beginning of hostilities. To avoid appearing tendentious, the essay is limited to the armored and related action that took place between the 7th and the 12th of August in Tskhinvali. An article in *Aviation Week & Space Technology* spells out the nature of this confrontation as a “flawed fight: Georgians anticipated no response and Russian pilots expected no opposition.”⁷ The hypothesis of this paper is that the quality of employment of armor by both sides is dependent upon the quality of operational art on the one hand, and on concepts of readiness and capability on the other.

Georgia is one of the many post-Soviet republics having inherited Soviet operational art concepts, and yet, as a western-leaning country, which also tries to integrate new concepts into its doctrine. Has a clash of war fighting concepts something to do with the quality of operational art displayed in Tskhinvali? The second question to be answered has to do with whether the GAF was “ready and capable”. Readiness and capability are notions that offer a theoretical basis buttressing force generation and armor employment. The first part of this essay covers a chronological case study, and the second part compares the performance of armor with the doctrine, and with a theory of capability and readiness. The result is an analysis that combines the facts of the case study with the ideals of the doctrine.

1. Tskhinvali battle case study

Late in the evening of August 7th, an independent Georgian artillery battalion opened fire from the outskirts of the strategic town of Gori, some 30 km south of Tskhinvali. The “Grad” multiple rocket launchers were laying their fire at the limit of their range, between the town of Djava and on a string of villages loyal to Tbilisi.⁸ Other batteries targeted the town of Khetagurovo due west of Tskhinvali. It is likely that this latter fire was preparing the passage for Georgia’s 4th Brigade, located in the village of Avnevi.

From the latitude of Gori, the GAF can use three roads to meet a force coming from the Roki tunnel, through which the 19th MRD fed the 135th, 503rd and 693rd motor rifle regiments (MRRs). All three roads lead through the very center of Tskhinvali, where the Russian peacekeeping mission has its headquarters. On the western side of Tskhinvali, Georgia's 4th Brigade can move to the center of Tskhinvali from the west by route 23 and quickly end up behind the South Ossetian presidential palace after crossing the railroad tracks. From the south, the separate tank battalion and the 1st Brigade's tank battalion that would see most of the action in the following day can best move from Gori up route P54 and make a short western detour by the villages of Kvemo Niqozi and Niqozi. Further to the south east, P2, which is actually the main road, allows an outflanking by the east of the whole town, if any tank column is so adventurous to engage onto the narrow roads leading up to Kheiti, Mamita and Dzartsemi. Otherwise, a left turn from that road into town some five kilometers in the city (near the football stadium) allows a junction with P23 and P2 on the way to the Roki Tunnel, and the Russian peacekeepers' headquarters.

In the night of the 7th to the 8th, the Georgian armed forces' 4th Brigade's 42nd infantry battalion maneuvered from the village Avnevi through Khetagurovo, accompanied by fourteen T-72 tanks and four BTR-80 armored infantry fighting vehicles belonging to the 1st Brigade's tank battalion. This tank battalion, commanded by Major D., had orders to move in the direction of the north western edge of the city of Tskhinvali on route P23. Very soon after proceeding, the tank column engaged enemy vehicles. Four cars (evidently South Ossetian fighters) equipped with SPG-9 anti-tank guns were destroyed close to the village of Tbeti, no doubt helped by the improved night-vision capability of the Georgian T-72. Dawn would neutralize this advantage. As the 4th Brigade continued towards its assigned position, Major D. received the order to turn right into the city, at the level of the railway station. This separated the tanks from the infantry units of the 4th Brigade, which made the tanks vulnerable to South Ossetian fighters. That day would be murderous for Major D.'s force; his tank battalion lost five tanks and crews between the railroad tracks and the city's north western edge, at the latitude of the Russian peacekeepers' headquarters. More likely than not, this damage was caused by South Ossetian infantry, but the action of Russian peacekeepers cannot be discounted.⁹

While most of the 42nd battalion remained west of the city, in the open, one of its infantry companies pushed through to find itself with its back to the

Russian peacekeepers' headquarters, and face to what possibly became in the afternoon the left flank of the Russian 693rd MRR. This meant that this infantry company, which had moved up to contact without tank cover, had become unwittingly surrounded.¹⁰ The independent tank battalion was sent from Gori to help it disengage.¹¹ Proceeding along route P54, it passed through the Nigozi villages, then swung back to cross the railroad tracks on the south west corner of Tskhinvali. "I don't know why they did this, but they went directly into the town. This was a mistake" says Maj. Z.J. The independent tank battalion moved nevertheless some four kilometers into the city. Meanwhile, the Russian 135th MRR was maneuvering towards the north western heights above Tskhinvali, north of the village of Tbeti. The separate Georgian battalion became engaged by infantry close to the peacekeepers' headquarters, and lost four tanks and crews in the process to anti-tank guided missiles (ATGMs). It is doubtful that the loss was inflicted from Russian tactical air forces. UN satellite sources show that sorties were concentrating mainly on targets located deep in the Georgian rear.¹² It is also unlikely that those weapons were launched from vehicles of the 19th MRD, as it would only come within range of Tskhinvali in the afternoon of the 8th of August, and sources report little to no vehicle-to-vehicle contact. More likely, South Ossetian fighters or Russian peacekeepers did them in.

At noon on the 8th of August, the 2nd Brigade deployed from its base in Senaki.¹³ This brigade's task was to control the access to the Georgian interior from Abkhazia, Georgia's other separatist province. When the GAF understood the magnitude of the opposition, they had no choice but to commit every unit available. Indeed, in the north west of Tskhinvali, a fierce battle was raging. Meanwhile, Major D. had managed to move the remaining tanks of his armored battalion (attached to the 1st Brigade) to defend the western plains of Tskhinvali. His position was in the shade of the pine grove, possibly between the 135th and the 693rd MRRs which were materializing above Tskhinvali. Shortly after noon, Major D. was alerted to an imminent air strike. He ordered everyone out of their tanks, but as they were in the open, the Su-24 dropped anti-personnel cluster munitions on the area, wounding the Major in the leg.¹⁴ Although wounded, Major D. ordered the tanks back, and he was rescued by civilians who took him to an aid station. The 19th MRD arrived in the suburbs of Tskhinvali in the afternoon of the 8th of August.¹⁵ The intensity of artillery fire, the presence of Georgian infantry, the traumatic experience of the battle of Grozny thirteen years before and doctrine compelled the Russians to bypass the city.

Most of the Russian-Georgian contact was composed of infantry engagements. And most if not all tank destruction occurred at the hands of infantry. According to Maj. R.B., some hits were scored on Russian tanks. He recalls how a friend “used no less than four rockets to destroy a single tank.” The first two hit the glacis, but did no damage save clearing the infantry that was riding on the vehicle at that moment. The third knocked out a track, and the tank became immobilized. The fourth hit between the turret and the chassis which made the tank erupt.¹⁶ Another friend decommissioned a tank by dropping a hand grenade down the open hatch.¹⁷

By the evening of the 8th of August, the three motor rifle regiments were attacking the Georgians in and around Tskhinvali. The 135th was already to the west, the 693rd was pouring below Tamarasheni (north) and the 503rd was possibly by-passing the city from the east.¹⁸ The Russians were taking deliberate care not to enter Tskhinvali itself with their armored equipment. The plain on the west of the city would allow the Russians to fan out and dislodge the traffic jam in their rear. Some one hundred and twenty T-72 MBTs, one hundred and ninety BMP-3s and ninety-five BTR-80s¹⁹ were deploying against Georgia’s twenty remaining tanks and infantry vehicles. Still, the GAF felt it owned the day, having repulsed the South Ossetians and dislodging the Russian peacekeepers to the northern edge of the city.

At the end of the day, the Georgians declared a cease-fire which lasted until the morning of the 9th of August. To say that either side controlled Tskhinvali at this time is exaggerated. The Georgians had prevailed because the intensity of the fighting was dropping in the city itself, and because the Russians remembered the lessons of Chechnya. They were avoiding Tskhinvali and enveloping the Georgian forces at the same time. The cease-fire allowed the independent tank battalion to migrate back to its baseline in Gori. There is also evidence that the tank battalion of the 4th Brigade was also returning to south western positions. On the 9th of August, there was no action in the capital itself. According to Maj. Z.J., the Russian Air Force happened over a more or less deserted Tskhinvali, and dropped bombs on targets inside the city, but the pilots possibly mistook elements of the 503rd for Georgian troops.²⁰ This accounts for some fires that were detected by UN satellites on the main street of Tskhinvali.²¹

The Georgian skies filled with airplanes searching frantically for artillery positions and other tactical targets. Until then the Russian Air Force had been concentrating on targets deep in the Georgian rear. According to Maj.

R.B., batteries were so well concealed that the Russian air force did not score any hits.²² In the north of Tskhinvali, fighting resumed, and a Georgian reconnaissance platoon performed a successful ambush wounding Major General Khrulëv, the 58th Army's commanding officer, near the village of Khermeti.²³ The Russians were slowly making their way south on the eastern edge of the city. Russians suffered casualties in the village of Argvitsi, probably as they attempted to repulse the 3rd Brigade on the Prisi heights.²⁴ During the day, the 2nd Georgian Brigade which had been ordered to the area with a twelve hour delay arrived south of Tskhinvali.

On the 10th and 11th of August, 1966 troops from the 1st Brigade arrived in Gori from Iraq to be reunited with Major D.'s tank battalion.²⁵ It seemed to Maj. B.A. that the sky was swarming with airplanes. "All one had to do was point a man-portable air defense system (MANPAD) skyward and pull the trigger for the missile to find a target"²⁶ he claims. As a method of armored force protection, Georgia developed original air defenses. Pairs of infantrymen would patrol the theatre on recreational vehicles, one driving, while the other would engage targets with his MANPAD. One of the tasks of these "motorcyclists" would be to protect the Georgian tank formations which had been positioned in a crescent all around the southern tier of the city.²⁷

These "motorcyclists" have acquitted themselves of their task successfully, no tanks having been lost to air during the battle of Tskhinvali. But there are several explanations for this. The first is that the Russians were initially conducting air operations in the rear of the GAF. The second is obviously the generous provisions of air-defense arsenal that the Georgians have procured. The third may be doctrinal. Apparently Russian pilots do not have a flight mission when they leave their base; they are guided by forward air controllers (FACs) to their targets. Since the FACs were stuck in traffic several kilometers behind, pilots had to communicate with friendly (but inexperienced) elements on the ground by cellular phone.²⁸ Finally, Georgian sources say that Americans re-assigned a satellite whose data was being tapped by the Russians. Giving it a 500 meter discrepancy, this accounts for Russian errors in targeting (including the hits on civilian structures) and explains why civilian communications were left untouched.²⁹

Time was running out for the GAF. The unilateral cease-fire offers of the 8th and 10th of August had been offerings that the Russians had no reason of taking. Lulls in fighting allowed the 693rd and 503rd to complete the

encirclement of the city. Apart from a lone contact near the stadium (allegedly between two tanks), where the Georgians prevailed, there was no contact in Tskhinvali for the remainder of the battle. By the 11th, the Russian 20th MRD had taken advantage of the departure of the 2nd Brigade from Senaki to enter Georgia from Abkhazia, the 76th Airborne troops from Pskov Oblast had arrived, the “Vostok” (east) and “Zapad” (west) battalions from Chechnya were already south of Tskhinvali, and the Black Sea Fleet had sunk the Georgian navy practically at anchor. While the few remaining close air support aircraft from Georgia were making their last run on the descending Russians, the Georgians were overwhelmed, and at noon began a general retreat towards the city of Mtskheta, the north western suburb of Tbilisi. The battle of Tskhinvali was over, and the battle of Tbilisi was expected to begin. On the morning of the 12th of August, at 0859, Russian President Medvedev declared an end to military operations.³⁰

2. A clash of ideas or materiel?

Did superiority in ideas or superiority in material decide the outcome of the battle of Tskhinvali? Operational art is the fusion of materiel with military concepts of operation. To a significant extent those concepts also transferred to the newly-independent republics that emerged out of the collapse. This section traces the sources of Russian military doctrine and shows how Russian ideas became intermingled with the western concepts that Georgia began to adopt in the mid-2000s.

Soviet operational art has endured through years of strategic and social upheaval and remained as Russia became the successor state to the dissolving USSR. The Soviet General Staff Academy taught that military strategy was defined by

...a system of scientific information about the characteristics of contemporary wars, the forms and types of their execution, the structure of Armed Forces and the preparation of the state for war. It also includes the field of practical action of the political leadership and the high military command with respect to the preparation of the Armed Forces and their deployment to foil enemy aggression and achieve political aims in war.³¹

Military strategy, it teaches, must never be divorced from political consideration, and that the political forces deploy resources for the development, training and maintenance of the military. Technically speaking, this means that the process of strategic formulation must be reconciled with

factors of capability, readiness and sustainment. Changes to this systematization were successfully resisted by the leadership of the Armed Forces as the Soviet Union was collapsing. A text signed by the hand of an alarmed Igor Rodionov in 1991 insisted that military doctrine should continue to be formulated by the higher military and political leadership so that “consequently, its tenets concern the activities of various ministries, departments and installations dealing with the development and practical implementation of both... domestic and foreign policy.”³² In fact, current Russian minister of defense Serdyukov gave the strongest indication of continuity when he said “there is no reform at all going on... We are simply restoring order in everything... Years passed during which nothing was done... These issues were simply left in the background.”³³

Russia’s current foreign policy is specific about protecting “compatriots” abroad or Russian-speaking populations. The fate of Russian minorities has become systematically securitized. Any country where Russian citizens or sympathizers are living is thus put on notice.³⁴ Following from a political strategic analysis, Russia’s *Defense White Paper* outlines the possible trends of future warfare. In 2003, it put considerable emphasis on the factor of asymmetric warfare, but this asymmetry had a distinctive conventional flavour, as reliance on precision-guided munitions, tactical air forces, missiles, and the need to keep conflicts as short as possible was established.³⁵ Following this exercise, the operational level of planning considers the “location and composition of probably enemy groupings of armed forces and mobilization” as well as “physical and geographic conditions.”³⁶ From these documents and plans follow the development and application of power “using forms and methods corresponding to the situation and ensuring rapid superiority over the opponent.”³⁷

The Soviets, and now the Russians, have built their concepts of military operations around the operational maneuver groups. Operational Maneuver Groups (OMGs) use the MRD as core unit. The MRD is the expression of the form and method to ensure rapid superiority over an opponent. In Russia more than anywhere else, military history is critical in conceptualizing doctrine at the tactical, operational and strategic levels.³⁸ Historical success has legitimized the permanence of the motor rifle division and is indicative of the validity of the operational concepts for which the MRDs are designed. Organizational inertia prevented change in the formulation of doctrine, and so logically, no change in the composition and operational use of a motor rifle division can be expected. The most enduring military operational

concept is that of “deep battle” fathered by Marshal Mikhail Tukhachevskii.³⁹ Deep battle retains historical legitimacy and permanence in great part because technological innovation has enabled its full application through the decades;

The tank and the airplane of the 1930s unfettered the offence and made blitzkrieg and deep operations supreme... ATGMs in the 1970s seemed to reinvigorate the defense, while operational and tactical maneuver concepts secured to restore the power of the offence.⁴⁰

Deep battle is a concept ahead of anything the West could produce until the introduction of “Air-Land Battle” espoused by the US Field Manual 100-5 in the early nineteen-eighties.⁴¹ The concept was shelved because Stalin’s cult of personality and the period of massive nuclear retaliation made it dangerous to apply. De-Stalinization and the advent of tactical nuclear weapons pulled *deep battle* out of obscurity.⁴² The organization and administrative processes that enabled this re-birth seem to have changed little even today.

The Russia-Georgia war employed fractions of combined arms for a group strike in depth, using surprise, and exploiting a high tempo of operation designed to avoid critical losses. If this description is accurate, then the MRD is the correct indicator to analyze.⁴³ The Mechanized Division is the ancestor of the modern MRD. A look at the table of strength shows stability in personnel but an increase in importance of mobility as the years go by (more tanks, less artillery).⁴⁴ Deep battle replaces a wide frontal assault with strikes all along the enemy’s tactical and operational depth, using the simultaneous effects of combined arms. Essentially, deep battle means that war should be waged in the enemy’s rear regardless of whether one’s posture is offensive or defensive.⁴⁵

The deep battle concept operates thus;

The security zone [covering force area] is overcome by forces of the first echelon formations [divisions] after powerful air and artillery strikes of the most important objectives to the entire depth of enemy defenses. Forward detachments from each division destroy covering and security subunits [battalions and companies] of the enemy and secure important objectives and areas in the forward defensive positions. Their operations are supported by artillery fire and air strikes in cooperation with operations by tactical air assault forces.⁴⁶

The Russian Federation implemented deep battle in the fashion described above during the August War. This essay does not discuss the preceding *maskirovka* operations inherent to deep battle, but the order of battle presented to the Georgians along with near-overwhelming air strikes deep in the rear was severely impeded by the terrain correspond to the schematics found in Colonel David Glantz' work on *deep battle*. The organization of an MRD prompts the use of tanks in the first echelon at every level of command, and the Russians developed tactics that did not require the support of a second echelon.⁴⁷ This does not exclude the presence of other echelons, as the force has to proceed on account of terrain along usable avenues of ingress.⁴⁸ Nevertheless, the end result speaks for itself. In 1991, Zakharov accurately predicted that air power would have predominance in future deep operations. Operations would see a shift at all levels to combined arms action "based on massed, grouped, concentrated strikes by different combat arms."⁴⁹ Zakharov also insisted on the need for "simultaneity", but this aspect could not be performed owing to difficulties in terrain. This partly explains the lack of simultaneity between the air and ground forces when the Russians invaded South Ossetia. The most compelling indication that the MRD applied deep battle principles in Tskhinvali is based on an observation Zakharov made that "the time is logically arriving when the period of irreversibility will be so small that it will be impossible to avert enemy actions, without stepping on the path of aggression oneself."⁵⁰ This predicament would seem true for both belligerents in the August war, especially if one presumes a high degree of continuity of policies and concepts from the USSR to Russia on the one hand, and from the USSR to Georgia on the other.

Georgia's force structure is testimony to this continuity. A dramatic increase in defense spending, which culminated in the astronomical sums of the 2007 and 2008 (thirty per cent of the total *Government's* budget) denote ambition and intention.⁵¹ They also denote comfort with Russian and Soviet principles of organization much more than with western methods. Tables 1 and 2 in Appendix demonstrate how Georgia has been trying to match the overall strength of a motor rifle division. The celerity and amplitude of this effort has correspondingly alarmed Russia which vowed to act militarily if its interests were threatened. The two countries were approaching the apex of conventional "brinkmanship".⁵²

Georgia's force development follows and exceeds the formulation of the *Strategic Defence Review 2007*. Planning and force generation seemed aimed at

securing a solution to Abkhaz and South Ossetian separatism, which the document considered to be a more imminent threat than foreign invasion.⁵³ Simultaneously, the desire to attract NATO seems to have been confused with the development of a massive capability. In both cases, the solution to separatist claims and NATO membership, force procurement seems to have been the fruit of dubious logic. Maj. Z.J. said that the force structure itself was meant as a deterrent, which is why the modern GAF resembled a force that was also capable of matching the 19th MRD. He also added that the sight of a large force structure would somehow convince the South Ossetians and Abkhazians that Georgia was a capable guarantor of security to the populations of those two provinces. According to this logic, the separatists would have no incentive to seek shelter in Russia.⁵⁴

A comparison of force structure at the regimental level in 2000 and in 2008 shows Georgia's tendency toward matching Russia's local superiority.⁵⁵ The quality of the arms procured speaks volumes about the perception of threat. Georgia procured a significant portion of its tank force between 2003 and 2007, but it also purchased significant anti-air weaponry.⁵⁶ The force generation was therefore organized around two poles; mobility and air defense.⁵⁷ The positioning of new military bases was determined by the domestic conditions in the country. While this reflected the concerns of the Georgian *Strategic Defense Review*, the purchase of anti-air and anti-tank weaponry can only be associated with a foe having these capabilities.⁵⁸

Independent republics are able to now develop their own doctrine, but there is evidence that this process did not take place until very recently in Georgia.⁵⁹ Georgia has adopted a system of defense and strategic planning that is recognized by NATO. The family of documents (the *Threat Assessment Document*, the *National Military Strategy*, the *Strategic Defense Review*, etc.) that supports the formulation of national strategy and by extension military doctrine is no less systematic than that of the Soviets' or today's Russia, but it is contradictory. The contradiction does not stem from varying priorities from one document to another, as Vyacheslav Tselyuko suggests, but from the force structure that these threats generate. If separatism is the main threat, or, as the *Strategic Defense Review* suggests, terrorism, why procure air defense in such large quantities? In Georgia, as in many countries aspiring to NATO membership, the production of strategy documents is less a matter of security planning than administrative obligation to Brussels.

In consequence, political decisions about how and where to employ the armed forces have been aimed at making Georgia an attractive partner to NATO and large powers. The decision to send the infantry component of the 1st Brigade to Iraq is a political decision that has contradictory domestic implications, because deterrence is thereby depleted, and the capability suffers in its readiness levels to meet actual threats. Unless the Georgian government really believed the threat assessment of its *Strategic Defense Review*, the force structure it funded betrayed other intentions. Georgia lost the engagement in Tskhinvali because the amount of materiel it deployed was not available to match the 19th MRD. The GAF deployed against South Ossetian separatists, but as Maj. Z.J. confides, was “taken completely by surprise by the arrival of the Russians.”⁶⁰ When a NATO intelligence official was asked whether any unusual Russian movement had been detected prior to the invasion of South Ossetia, the answer was “none whatsoever. And that’s the honest truth.”⁶¹

Georgia demonstrated a doctrinal gap in the combined employment of armor and infantry. With the 2nd Brigade in Senaki deploying twelve hours late, the 1st Brigade’s infantry in Iraq, the 4th Brigade with only four tanks, and the 5th Brigade unready, the Georgian forces advanced in Tskhinvali with infantry divorced from armor. The 42nd infantry battalion, for example, proceeded into town without protection. The 1st Brigade’s armored battalion proceeded to the north west of Tskhinvali on the 8th of August without infantry. The separate tank battalion that was sent to dislodge the 42nd battalion from Gori had no infantry support. But these conditions are still acceptable against an opponent without apparent strategic reserves. We will not insist on the failures of analysis or intelligence that failed to account for the involvement of the Russians. The manner in which the GAF was sent into battle comes directly from the fact that its doctrine was based on faulty assumptions. In consequence, operational decisions that informed the employment of armor followed logically from these flawed assumptions. The forces that met in the mountains of South Ossetia owe their size (and the resulting asymmetry) to the coherence (or lack thereof) of policy. Russian employment of force in a given way and in a given area can be traced back to coherent political objectives. Georgian force generation and employment can be traced back to a set of competing and discordant objectives. On the one hand, Georgia’s participation in expeditionary missions secures advantages from large powers. On the other hand, doctrine is aimed at securing NATO membership. Finally, deployment was not aimed at the appropriate threat although the overall structure of that force was sufficient.

In other words Georgia suffered a defeat because of the weakness of its military concepts from the strategic to the operational level. Caught between its Soviet planning heritage and the attraction of misunderstood and misapplied western concepts, the GAF could not prevail over an opponent with a clear purpose and intent.

3. Asymmetrical readiness and sustainability

Upon the involvement of the Russians, the escalation of the size and mass of the GAF is the attempt not only to match the size and mass of the local challenger, but also to establish “net military readiness” at the operational level.⁶² This escalation is also indicative of a desire to ensure a supply of capability so that potential power can become actual power when the demand calls for it.⁶³ Regardless of the size, a capability is not effective if it is not ready, and readiness cannot translate into *duration* if there is no sustainability. In other words, it is not because the 19th MRD and the GAF have the same number of tanks or the same strength that they can perform equally well. The preceding section has shown that a confusion of strategic vision has divided the GAF along several competing missions, and provided a doctrine that was inapplicable to a force structure that was Russian or Soviet in inspiration. This section explains the consequences on readiness and sustainability of the GAF.

Definitions of readiness are vague and deficient. Some call it the “ability of forces and systems to enter into combat without unacceptable delay.” Others confuse it with capability as the “capacity to perform a mission when directed” or the “ability to fight with little or no warning.”⁶⁴ Little thought is given to the indicators that help us define and measure readiness and distinguish it from capability. Readiness concerns the mixture and matching of doctrine, force structure, training and materiel. Soviet definitions equate readiness with capability itself, or, more generally, include the qualitative with the quantitative aspects of a capability.⁶⁵

When experts discuss readiness among themselves, their usage of the term tends to be much more focused and technical. This professional usage refers not to capability in general, which includes the desired size and type of forces, but to the status of whatever forces do exist... Are they [forces] well-oiled, in fighting trim... or do they need time to be... supplied with essentials, repaired or retrained?⁶⁶

The analyst and force planner are confronted with questions of logistics (supplies and repair) and training. The confusion of terms only grows by the fact that logistics is considered synonymous with sustainability.⁶⁷ On the other hand, readiness indicators such as mission capable rates and average time of repair associate training with readiness.⁶⁸ Not only are readiness and capability often confused, but this confusion extends to understandings of sustainability. There is a need to distinguish the “immediate availability [capability and/or readiness] of a unit from the amount of time it can continue to fight once engaged [sustainability].” Betts adds that “a force that could fight spectacularly on the first day but would collapse on the second is no more ready... than is one that could not fight as well but could fight longer.”⁶⁹ This describes the predicament of the Georgian armored battalions in evident fashion. But if the immediate capability (the size and mass) of the GAF armored battalions was identical to that of the Russian MRD, how do we account for the outcome? Where is the asymmetry, or rather, how did the asymmetry develop? A proper definition of readiness therefore encompasses sustainability as an object of a given capability. Readiness can be defined as the *application of resources for the generation of a force structure capable of a sustained response in time, for the duration of a threat.*

Russian/Soviet readiness of the Armed Forces at the operational and strategic levels involves the development of a technical base of combat power with modern weapons. It requires high standards of training, the development of military sciences and continuous troop control.⁷⁰ Georgia benefited from much of the same features, but the “military sciences” were clearly lacking because of a lack of historical experience and, as highlighted in the previous part, a mismatch of missions and force structure. The GAF was unable to reconcile what it had inherited from the Soviet past with western methods and systems.

The Russian conception of sustainment differs from that of the west. The sustainment plan must conform to the type of force available. Soviet or Russian equipment is not designed to be sustained in the same way as western equipment. The GAF could not prevail because its force structure was Soviet/Russian and the sustainment plan was western. Russian conceptions of readiness recognise the relation between availability of forces and availability of time. Georgia had forces available, but had no time to bring them to bear (no pun intended). Even if *all* the GAF had been available at the right time, the outcome would have been the same even with the natural advantages conferred by the defense. It is when immediacy

converts into duration that sustainability becomes crucial. The difference between the Russian and western conceptions of sustainability is measured by the difference between effectiveness and efficiency. Whereas American and NATO concepts of sustainability seek to generate capability in the duration at the lowest cost, Russians focus on duplication of capability (large forces) to *replicate immediacy*.⁷¹

During the Cold War, US and NATO forces allocated more personnel to equipment maintenance than the Soviet Union. In other words, the tooth-to-tail ratio favors the Russians.⁷² In keeping with the dental analogy, a Russian force descending on an objective can be compared to a shark's rows of teeth. Each row is fragile, but when teeth are broken, another row eventually rolls into position as replacement. A modern western army prefers to go to the dentist instead. To summarize, Russian sustainability can be equated with repetitive readiness based on the replacement of units rather than their maintenance.⁷³ This is true for individual vehicles as well as for whole units. The Russians ensure the sustainment of *effort* rather than the maintenance of *units*.⁷⁴ The question of supply and repair therefore becomes

... the active prosecution of the battle, the provision of the proper equipment and the maintenance of supplies and reserves, the careful structuring of forces, the skilful choice of operations, and the skill with which [fighting] can be conducted that...most contributes to an army's ability to sustain itself in battle.⁷⁵

The Russian method has its merits, because it avoids the problem of duration altogether by reproducing "structural readiness" (mass times speed) constantly.⁷⁶ It is the operational and tactical calculations in the volume of fire (and the corresponding quantity and quality of capability) that sustain the effort. Donnelly illustrates his point with an algorithm taken from a *Voennyi Vestnik* article where the number of tanks is calculated relatively to a certain number of anti-tank guided weapons (ATGWs) per kilometer of front. He believes the results to be a percentage of chance of survival, but I believe that the percentage resulting from the algorithm pertains to the fighting power of that unit. An armored formation of twenty tanks per kilometer of front facing the density of five ATGW per kilometer of front will retain seventy-five per cent of its fighting power, whereas a doubling of the density of ATGW for the same threat will ensure that the tank unit will see its fighting power depleted to ten per cent. Donnelly says that western computations of the same period correspond to Soviet statistics.⁷⁷ Russians applied these principles in full knowledge of the terrain in which their tank

units would be deploying, and of the overall capability of the Georgian forces. Echelons are therefore a system of sustainment as much as a concept of operations. Glantz writes that a “single echelon offensive is designed to attain swift victory” against an unprepared foe.⁷⁸ The order of the echelons is seldom uniform because the way the Russian forces present themselves is dependent on the forces they expect to fight and terrain.⁷⁹

Georgia’s tank forces did not acquit themselves of their mission because many units were structurally unready. In addition to the structural unavailability, training was inadequate. Despite a one-year program⁸⁰ to train tank crews in Israel, it is unreasonable to believe that some two hundred crews had become proficient with their equipment to the point of being sent into battle. “During the years of Shevardnadze”, explains Maj. Z.J., “we slept.” Up until 2000, Georgian forces regularly received their military training and education in Russia and in 1998, there was a mutiny in the Georgian forces to protest against low salaries.⁸¹ Since 2002, American assistance with the Global “Train and Equip” Program (GTEP) enabled Georgian officers and soldiers to become acquainted with western principles of organization and concepts of operation.⁸² Many other countries, including the Baltic States, have provided advice for the formulation of Georgia’s security documents and NATO membership. But all these efforts were ill-adapted to Georgia’s reality. “We basically copied American field manuals” laments Maj. Z.J. “Only now are we starting to write our own doctrine”. Even worse, the GAF sought training advice with Defensive Shield, a military consulting firm headed by Israeli General Gal Hirsh, responsible for the failed Lebanese operation in 2006.⁸³

A demand-driven sustainability system cannot exist against an able opponent that wages deep battle, because a system based on force protection will create and require duration for sustainment while the opponent operates more rapidly.⁸⁴ The asymmetry is therefore one of supply and type. Supply depots located in the rear are usually the first objects of attention of air power, as the Georgians discovered when their ammunition warehouses in Gori were targeted. Thankfully, the shallowness of the front helped the Georgians recover vehicles and re-supply troops during combats, but often this meant taking units momentarily out of combat rather than moving up supplies up to the first line. Later, the rout would be so complete that a large quantity of equipment had to be left behind because it could not be moved.

The Georgians lacked operational readiness because the status of their equipment left much to be desired. The equivalent of ninety per cent of a tank battalion had fallen victim to engine failures between 7 and 10 August. As Betts said, the quality of a sustainability concept, if it is to ensure readiness, must match the quality of the equipment procured.⁸⁵ Equipment and force structures not designed for the duration cannot be sustained in a western manner.⁸⁶

Conclusion: Whither tank armies for small powers?

The Battle of Tskhinvali is revealing for what it tells us about Russian concepts of operation. There is evidence to believe that *deep battle* remains an important concept in the Russian arsenal. The case study developed remains partial in many respects; first it is difficult to get a complete and accurate picture from both sides of the conflict, and second many critical elements of the battle plans have been left out for want of space. The missions of the Russian and Georgian air forces would be interesting to analyze. In the end, this essay exists as a sacrificial lamb to other analysts who will uncover new data about the first European interstate war of the twenty-first century.

The first conclusion is that an effective air defense can be efficiently procured. Air force operating and training costs are prohibitive for many small countries, and, increasingly, for big ones as well. This limitation has led Georgia to develop original techniques to defend its armored force. The mobility of an air defense force can create defense in depth, which is a concept that the Russians were probably not expecting. In any case, more research needs to be done on that particular aspect of the conflict.

An armored force is ideal to provide direct fire in a blocking action, but the GAF abandoned this and other advantages by calling for too many cease-fires at inopportune moments. Even without these significant interruptions in combat, a much larger follow on force would have been needed to bring tempo to a counter offensive but confusion about political goals had meant that the forces were unavailable on time. The near absence of tank-on-tank contact during the Battle of Tskhinvali shows that a tank is not needed to kill another tank. As someone said, “a tank is not a tank. It is how you use it.” The paraphrase could be a “tank is not what it looks like, it is what it does.”⁸⁷ The Georgians have committed a critical sin in attempting to copy western models. On the other hand, the experience should perhaps lead NATO powers to question their rationale of force generation and

employment. Tselyuko boasted that western methods which the Georgians learned were not so superior to the Russians' needs to be heeded.

Georgian armor failed because of inadequate preparation and incoherent purpose. The Georgians even before they set out to write their own doctrine, must develop their own system of risk estimate, security concepts and national military strategy. The tool must be shaped according to the goals sought. The question remains, *is an armored capability needed for national defense?* But it should be answered along the lines of "this is what I need done for national defense." The Georgian brigades were conceived with an organic tank complement, yet, infantry and tank were used independently too often, making the tank look like a capricious toy to the lone infantryman, but in reality, it was a tomb worth millions of dollar for nearly a dozen Georgian crews in the battle of Tskhinvali. The dominant figure of the battle of Tskhinvali is the infantryman with his anti-tank weapon. Half of the Georgian tanks committed to that battle ended up tipping their hats. One third remained on the sidelines because of mechanical failures. Three quarters of the armored capability was captured or destroyed by the Russians in less than ninety-six hours after the battle. If not the screams of burning men, then the amount of money expended by Georgia in the purchase should give pause to think for small countries.

If the defense of the nation requires the psychological comfort of armor with adequate mobility, the dilemma will not change. Mobility will have to be assured with a long tail, and there is no guarantee that ideas of "inventory on wheels" or lower combat weights⁸⁸ will be any match for what the Russians can align.

This research has shown that the Georgians had conceptually procured for the two goals of armored mobility and air defense, but the dominant feature of the battle of Tskhinvali was the infantryman. Getting the individual soldier to contact was the key operation to sustain. The amalgamation of tank and lorry is impractical once contact is made, because a pause in advance has to be made to allow the infantryman to dismount and fan out before advance (at the pace of a person on foot) can be allowed to resume. If Georgian (and for that matter Russian) planners had focused solely on the sheer *speed* and the mobility in *general*, there is reason to believe that the preferred armored vehicle would not have been the tank, but the army infantry fighting vehicle, or the land attack vehicle; wheeled, fast, and able to deliver soldiers to the front in relative comfort while fighting.

Small states that have the loyalty of their constituencies should not have to resort to a breakthrough capability, and the Georgian case proves this, with the ease that the tank battalions had in advancing to contact (even when bisecting territory allegedly controlled by South Ossetians). With the infantryman as king of the battle against tanks (which may not always be true in the future), the center of gravity of a small power has to do with its people, and their fighting capability. A tank “wastes” talent insofar as tank-killing capability is concerned. A tank can only kill another tank if and only if it is within range, and then, only one at a time. With up to four individuals in each vehicle, there are at least three who should be tank-killers who are occupied by their tank-management specialty. The tank cannot be concealed while maneuvering. On the contrary, the infantryman is only impeded by the ammunition he can carry. The more foot soldiers are out there, the more tank-killing (and airplane-killing) power there is. For small countries, the ultra-specialization that comes with high technology capital investment such as tanks and high performance airplane is an investment in manpower that the government cannot afford. That does not change the premium put on mobility, which is even more acute in armies of small sizes, such as Georgia’s and a number of newly- or re-independent states. The need is not so much of armor but to develop the sort of mobility that brings anti-tank capability to bear in such rapidity as to “create” a form of immediacy and strategic depth by trading space for time. Once the capability is put into action, every ounce of strength has to be deployed in an offensive function, and in a tank, the individual functions are passive most of time; from the time it takes to bring the weapon to contact, to the activities of the men serving the tank (the driver, tank commander, weapon loader are undoubtedly *active*, but their function is not *always* equal to the soldier in a killing trade). Small countries who depend so much on manpower must consider *people* as weapons. This line of thinking means less emphasis on armor and technology and more emphasis on the multiplication of force through the weaponization of the individual.

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Interview subjects

Mr. A.P., a citizen of Tskhinvali, South Ossetia/Georgia

An unnamed American (CIV), NATO Intelligence Division

Mr. Bruce Jones (UK A, ret.) an independent analyst working in Tallinn, Estonia

Major B.A. (GEO A), a member of the 1st Brigade

Major R.B. (GEO A), a member of the 4th Brigade

Major Z.J. (GEO A), a member of the Georgian General Staff

APPENDIX A: Force structure comparison

Table 1: Georgia-Russia regimental force structure comparison 2000

Georgian Motor Rifle Brigade	Russian Motor Rifle Regiment
ca. 2100 personnel	Ca. 2170 personnel
Headquarter company	Headquarter company
Motor rifle battalion	Motor rifle battalion
Infantry battalion (in trucks)	Motor rifle battalion
N/A	Motor rifle battalion
Artillery battalion	Artillery battalion
Tank battalion	Tank battalion
Scout company	Reconnaissance company
Engineer company	Engineer company
Signals company	Signals company
Air defense battalion	Air defense battery
Anti-tank battery	Anti-tank battery
Logistical complement	Logistical battalion
Total land forces size: 12600 pers.	Total land forces size: 80000 plus
Division size: N/A	Division size: 12400-13000 pers.

Sources: *Jane's World Armies 2000*, <http://warfare.ru>

Table 2: Georgia-Russia regimental force structure comparison 2008

Georgian Motor Rifle Brigade	Russian Motor Rifle Regiment
ca. 3205 personnel	ca. 2400 personnel
Headquarter company	Headquarter company
Infantry battalion (in APCs and IFVs)	Motor rifle battalion
Infantry battalion (in APCs and IFVs)	Motor rifle battalion
Infantry battalion (in APCs and IFVs)	Motor rifle battalion
Artillery battalion	Artillery battalion
Tank battalion	Tank battalion
Scout company	Reconnaissance company
Engineer company	Engineer company
Signals company	Signals company
Air defense battalion SEPARATE	Air defense battery
Anti-tank battery	Anti-tank battery
Logistical complement	Logistical battalion
Total land forces size: 17900 pers.	Total land forces size: 80000 plus
Division size: N/A	Division size: 13000 pers.

Sources: Military Balance 2008, Military Balance 2009, <http://warfare.ru>, Ministry of Defense of Georgia, *Strategic Defense Review 2007*.

APPENDIX B: Endurance of the Soviet MRD structure

Table 3: The shift towards mobility in the strength numbers of a typical MRD with Georgian force structure comparison

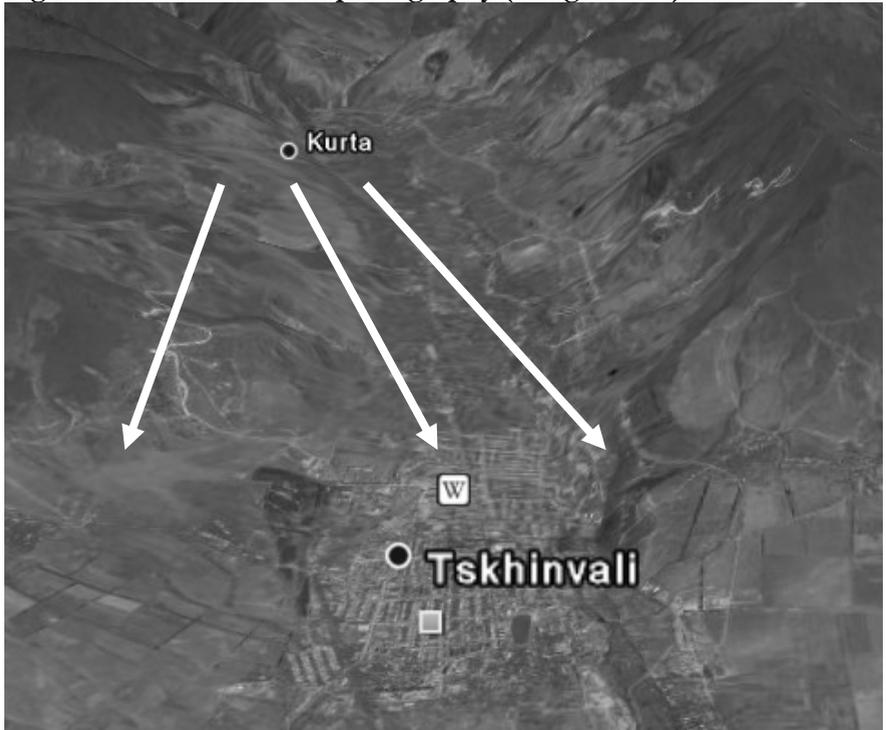
1946 Mechanized Division	12500 men
	197 tanks
	63 self-propelled guns
1954 Mechanized Division	15415 men
	294 tanks
	55 self-propelled guns
1958 Motorized Rifle Division	13150 men
	227 tanks
	10 self propelled guns
1961 Motorized Rifle Division	13767 men
	241 tanks
	10 self-propelled guns
1963 Motorized Rifle Division	11013 men
	218 tanks
	NO self-propelled guns
1968 Motor Rifle Division	10500 men
	188 tanks
	NO self-propelled guns
1987 Motor Rifle Division	12890 men
	272 tanks
	NO self-propelled guns
1999 Motor Rifle Division	13000 men
	265 tanks
	NO self-propelled guns
2008 Motor Rifle Division	11240 men
	242 tanks
	NO self-propelled guns
2008 Total for GEORGIA	14000 men (Army regular)
	183 tanks

Sources: Glantz, *Soviet Military Operational Art...*, 163-212, Jane's World Armies 2000, *Military Balance 2008*, Stockholm International Peace Research Institute Arms Trade Register 2007, and <http://warfare.ru>. The

number of Georgian tanks is calculated based on the evidence provided by the International Institute of Strategic Studies, the warfare.ru site, and SIPRI data on international trade.

APPENDIX C: Photographic evidence

Figure 1: Tskhinvali aerial photography (GoogleEarth)



Above: Tskhinvali and the Kurta region. The large dark green feature in the south east (below the “h” of Tskhinvali) is not the soccer stadium, it is the water basin. Part of the 135th MRR came it through Tamaresheni, directly to the north, but also from the mountain road to the north west (the white line snaking in above the pine grove). The red arrows indicate the probable avenues of advance of the 135th, 693rd, and 503rd MRDs (left to right, respectively)

¹ The author is grateful for the three interview sessions held with three officers of the Georgian Armed Forces (GAF) and their patience in explaining the sequence of events. The author is also grateful to the Russian and South Ossetian officials who have provided support and advice, and, to the limit of their authority, offered to confirm the data presented here. As these individuals are still serving in their respective forces and agencies, they are referred to by their initials in this paper. The author is also grateful for the generosity of Lieutenant General (ret.) Michel Maisonneuve, Lieutenant Colonel Michel Beauvais, Colonel Kristian Ekroll (NO A), Major Brian Boyce (USMC) and Bruce Jones in sharing their expertise.

² Interview February 27 Maj. Z.J.

³ “Russia begins exercises in volatile N. Caucasus Region”, *RIA Novosti*, 5 July 2008, Online English version, www.rian.ru/russia/20080705/113174665.html Ironically on the sixty-fifth anniversary of the Battle of Kursk.

⁴ Interview February 27 Maj. Z.J., corroborated by Marie Jégo *et al.*, “Spécial Crise géorgienne: Autopsie d’un conflit”, *Le Monde*, 31 août-1er septembre 2008, 13. “Marat Koulakhmetov, le commandant de la ‘force de paix’ mixte, reçoit le négociateur [Temur Yakobashvili, minister for re-integration] géorgien. Au cours de la conversation, il lui dit son ras-le-bol des séparatistes ossètes, devenus incontrôlables.” Author’s trans.: “Marat Kulakhmetov, commanding officer of the ‘peacekeeping force’, receives the Georgian negotiator, Temur Yakobashvili. During the conversation, he confides in him that he is fed up with the Ossetian separatists who have become out of control.”

⁵ Interview February 13, Maj. Z.J., Maj. B.A., Maj. R.B.

⁶ The exact timing of the crossing of the tunnel is disputed. Some sources indicate that Russian troops were already in Georgia by the evening of the 7th. See Mark Smith, *Russian Chronology July-September 2008*, 08/27, Shrivenham: Advanced Research and Assessment Group, November 2008, 63. Smith mentions that on 7 August “the president of Abkhazia, Sergey Bagapsh, says that a Russian military battalion from NCMD [North Caucasus Military District] has entered South Ossetia.”

⁷ David A. Fulghum, Frank Moring, Jr., and Douglas Barrie, “Georgians anticipated no response and Russian pilots expected no opposition”, *Aviation Week & Space Technology*, 1 September 2008, 23.

⁸ A former high official of the Ministry of Foreign Affairs of Georgia, speaking at a conference sponsored by the Austrian National Defense Academy’s Peace and Conflict Institute (IFK) 4 March 2009, spoke of the “Sanakoyev Project” where Dmitri Sanakoyev was “installed” by Tbilisi in that region to balance against Russia’s Eduard Kokoity in Tskhinvali. Although many ethnic maps declare that

area as being controlled by forces loyal to Tbilisi, there is wide acknowledgement that Sanakoyev's legitimacy is heavily challenged.

⁹ Email message from Maj. R.B., 21 March 2009. This message pertains to a conversation held between Maj. R.B. and Major D. (1st Brigade), wounded midday 8 August 2008 on the western side of the capital. A.P., a Tskhinvali resident, noted two burnt out tanks on the eastern side of the railroad tracks passed the western village of Tamarasheni (Note that there is a second village called Tamarasheni, north of Tskhinvali). This information was shared with the author 4 March 2009, in a private discussion at a conference on Georgia hosted by the Austrian National Defense Academy's Peace and Conflict Research Institute (IFK), Vienna, Austria, held 3-5 March 2008.

¹⁰ February 13 interview with Maj. Z.J., Maj. B.K. and Maj. R., corroborated again by Maj. Z.J. February 27. I say unwittingly, because the negotiations held with the Russian peacekeepers between August 2 and 7 did not suggest that they would take sides in the conflict.

¹¹ Some accounts suggest that this may have been the mechanized element of the 5th Brigade, but by the admission of Maj. Z.J., the 5th Brigade is merely a "paper unit" and was not capable at that moment. This is supported by the fact that Bruce Jones, an independent expert working in Estonia, forwarded to the author an unclassified presentation made by the Georgian Ministry of Defense in early 2008, where four of the five Brigades are clearly identified and located, but where the fifth is missing. The report that a mechanized battalion from the 5th Brigade can be read in Marina Perevozkina, "Eto ne konflikt – eto voina", *Nezavisimaia Gazeta*, 8 August 2008, www.ng.ru/politics/2008-08-08/1_war.html Author's translation: "According to Anatolii Barankevitch, Georgia is preparing for major aggression. 'Right now, not far from here [Tskhinvali] is the mechanized battalion of the 5th Georgian Brigade.' Others [units] are headed in our direction."

¹² UNOSAT

http://unosat.web.cern.ch/unosat/freeproducts/Georgia/Russia_ConflictAug08/UNOSAT_GEO_Tskhinvali_Damage_Overview_19Aug08_HighRes.pdf.

¹³ Email of 29 January 2009, from the Defense Attaché Office, Tbilisi, Georgia, of a NATO power.

¹⁴ The model of the airplane is ascertained credibly thanks to Bruce Jones. A PowerPoint slide, corroborated by the Georgian Ministry of Defense, identifies the airplane positively. The identification of the airplane is made easier by the infrequency of air missions over Tskhinvali that day, according to A.P., a Tskhinvali resident contacted in Vienna, 4 March 2009. Interview of 13 March 2009, Maj. R.B.

¹⁵ <http://warfare.ru/?linkid=2227&catid=321&comd=lang> I have not been able to verify the authenticity or the exact origin of the information from this site.

¹⁶ 13 February 2009 interview with Maj. Z.J., Maj. R.B., and Maj. B.A. This is not uncommon and a critical factor in procurement and anti-tank force generation; RAdm Sir Anthony Buzzard, "The Possibility of Conventional Defense", *Adelphi Paper*, 6, December 1963, 8. Evidence of Russian losses to anti-tank guided munitions and other man-portable anti-tank weapons is discussed in <http://warfare.ru/?linkid=2227&catid=321&comd=lang>

¹⁷ Conversation March 30, Maj. R.B., Maj. B.A.

¹⁸ This order of battle can be deduced from piecing several sources together. The identification of the units is provided by Sergey Vasilev, "Podarivshinie Tskhinvali zhizn", *Krasnaia Zvezda*, 14 August 2008, www.redstar.ru/2008/08/14_08/3_01.html, Sergey Bogdanov, "Tsena mira", *Krasnaia Zvezda*, 11 August 2008, www.redstar.ru/2008/08/11_01/1_01.html, Mikhail Barabanov, "The August War between Russia and Georgia", *Moscow Defense Brief*, 3:13, 12 September 2008, www.mdb.cast.ru/mdb/item3/article1/?form=print. The "Warfare.ru" site mentions only a few losses in tanks for the Russian armed forces, but identifies the location of the destruction of one T-72 belonging to the 693rd in Zemo Nigozi, a village south by south west of Tskhinvali, while other sources put the 135th above the western village of Tbeti. This leaves the 503rd unassigned, and this must have been the unit proceeding east of the city and the river. <http://warfare.ru/?linkid=2227&catid=321&comd=lang>

¹⁹ "Russian Federation", *Jane's World Armies 2000*, Issue 6, December 1999, and James Hackett, ed., *The Military Balance 2008*, (London: Routledge, February 2008), 219-220, corroborated by Mikhail Barabanov, "The August War between Russia and Georgia"...

²⁰ Aleksander Khrolenko, "Khornika prinuzhdenija k miru", *Krasnaia Zvezda*, 11 August 2008, www.redstar.ru/2008/08/11_08/2_01.html. Evidently a cease-fire is worthy of the name only if all sides abide by it, otherwise, it is merely the cessation of combat by one side. Khrolenko refers to this situation cryptically; "Boi na okrainakh Tskhinvali to zatikhaiut, to vozobnoblajutsja." Author's translation: "Combats on the outskirts of Tskhinvali at some times die down, at others, become louder."

²¹ UNOSAT

http://unosat.web.cern.ch/unosat/freeproducts/Georgia/Russia_ConflictAug08/UNOSAT_GEO_Tskhinvali_Damage_Overview_19Aug08_HighRes.pdf

²² This is disputed by Mikhail Barabanov, “The August War between Russia and Georgia”... but James Hackett, ed., *The Military Balance 2009*, London: Routledge, February 2009, 177, proves otherwise. In February 2009, Georgia had a total of two-hundred and thirty-six pieces of artillery, and in the detail, there is no difference between the 2008 and the 2009 data. The February 13 interview session with Maj. Z.J., Maj. R.B. and Maj. B.K. suggests a lot of air activity over Tskhinvali, but Konstantin Makienko, “Air Farce: The Russian Air Force didn’t perform well during the conflict in South Ossetia” *Russia & CIS Observer*, 4:23, November 2008, www.ato.ru/rus/cis/archive/23-2008 says that on the 9th there was next to no activity. While a Tskhinvali resident told the author (4 March 2009, Vienna, Austria) that there were never more than two or three airplanes over Tskhinvali at any given time, sources from the Georgian Ministry of Defense suggest otherwise.

²³ Aleksander Khrolenko, “Khronika prinuzhdenia k miru”...

²⁴ Sergey Vasilev, “Podarivshinie Tskhinvali zhizn”...

²⁵ Corroborative notes from Maj. B.A. 16 March 2009.

²⁶ 13 February interview with Maj. Z.J., Maj. R.B., and Maj. B.A. Georgian sources claim up to nineteen victories over Russian aircraft, all from ground fire. While the Russian Defense Ministry will acknowledge the loss of four aircraft, Mikhail Barabanov, “The August War between Russia and Georgia” claims that the overall losses were one Tu-22M3 *Backfire*, one SU-24MR *Fencer E*, and four Su-25 *Frogfoot*. Said Aminov, “Georgia’s air defenses in the war against South Ossetia”, Moscow Defense Brief, 3:13, September 2008, www.mdb.cast/mdb/3-2008/item3/article3/?form=print claims the same numbers but adds a possible three additional victories. Therefore the total verifiable could be as high as seven to ten airplanes shot down. Russian authorities blame the Buk-M1 surface to air missile for some of the losses, and this is corroborated by Georgian sources. See Konstantin Makienko, “Air Farce...”

²⁷ 13 February, 27 February and 12 March interviews with Maj. Z.J., Maj. R.B. and Maj. B.A.

²⁸ William P. Baxter, *The Soviet Way of War*, (London: Brassey’s Defense Publishers, 1987), 151, 192-193. The use of cellular phones is corroborated by notes from a presentation made at the Fall Atlantic Council of Canada conference 4 November 2008, Cadieux Auditorium, Ministry of Foreign Affairs of Canada, Ottawa.

²⁹ 12 March interview Maj. R.B.

- ³⁰ Viktor Khudoleev, "Voiska zadatshu vypolnili", *Krasnaia Zvezda*, 13 Aug. 2008, www.redstar.ru/2008/08/13_08/1_03.html and Mark Smith, *Russian Chronology July-September...77*.
- ³¹ Ghulam Dastagir Wardak, ed., *The Voroshilov Lectures: Materials from the Soviet General Staff Academy, Vol. 1: Issues of Soviet Military Strategy*, (Washington, DC: National Defense University Press, 1989), 55.
- ³² I. N. Rodionov, "On Several Tenets of Soviet Military Doctrine", in Harold S. Orenstein (trans.) and David M. Glantz, eds., *The Evolution of Soviet Operational Art, 1927-1991: The Documentary Basis, Vol. II: Operational Art 1965-1991*, London: Frank Cass, 1992, 336, and David M. Glantz, "The Intellectual Dimension of Soviet (Russian) Operational Art" in Brian J. C. McKercher and Michael A. Hennessy, eds., *The Operational Art: Developments in the Theories of War*, Westport CT: Praeger, 1996, 125, and Willard C. Frank Jr. and Philip S. Gillette, *Soviet Military Doctrine from Lenin to Gorbachev 1915-1991*, Westport, CT: Greenwood, 1992, 2.
- ³³ Mark A. Smith, *Russian Chronology, April-June 2008*, 08/25, Shrivenham: Advanced Research and Assessment Group, September 2008, 16.
- ³⁴ Marcel De Haas, *Putin's External and Internal Security Policy*, 05/05, Shrivenham: Conflict Studies Research Center, February 2005, 4-6.
- ³⁵ Marcel De Haas, *Putin's External and Internal Security Policy*, 6.
- ³⁶ Wardak, *The Voroshilov Lectures... 96-97*.
- ³⁷ Mary C. Fitzgerald, "The Soviet Image of Future War: The Impact of Desert Storm" in Willard C. Frank Jr. and Philip S. Gillette, eds. *Soviet Military Doctrine from Lenin to Gorbachev 1915-1991*, Westport CT: Greenwood, 1992, 373. Quoting Vorobeve.
- ³⁸ David. M. Glantz, *Soviet Military Operational Art: In Pursuit of Deep Battle*, London: Frank Cass, 1991, 2-3. The importance of military history is directly related to Marxist notions of the inevitability of the victory of the socialist camp over the imperialists. Because history moves in a pre-determined way which is obscure to those unaware of their condition of alienation and exploitation, Soviet victories are interpreted as evidence of the rectitude of history and Marxist thought. For more on the impact of history in Soviet and Russian thinking, see Peter H. Vigor, "The Function of Military History in the Soviet Union", in Carl Reddel, ed., *Transformation in Russian and Soviet Military History: Proceedings of the Twelfth Military History Symposium USAF Academy 1986*, Washington, DC: United States Air Force Academy, 1990. and Chris Donnelly, *Red Banner*, London: Brassey's, 1989, 219-221.
- ³⁹ Richard Simpkin, *Deep Battle: The Brainchild of Marshal Tukhachevskii*, London: Brassey's, 1987. Albert and Joan Seaton, *The Soviet Army from 1918 to the Present...*

80-81 disagree as to the wisdom of Tukhachevskii, especially in tactical matters. There is no doubt however of his penchant for mobility.

⁴⁰ Glantz, “The Intellectual Dimension ...”, 141-142.

⁴¹ Richard Simpkin, *Deep Battle: The Brainchild of Marshal Tukhachevskii*, (London: Brassey’s, 1987), 249-270, Glantz, *Soviet Military Operational Art...*, 253 and Robert Leonhard, *The Art of Maneuver*, (Novato, CA: Presidio, 1994), 159-165.

⁴² Glantz, *Soviet Military Operational Art...*, 208.

⁴³ A. N. Zakharov, “Development Trends of Armed Struggle” in Harold S. Orenstein (trans.) and David M. Glantz, eds., *The Evolution of Soviet Operational Art, 1927-1991: The Documentary Basis, Vol. II: Operational Art 1965-1991*, (London: Frank Cass, 1992), 345, 348-349.

⁴⁴ See Appendix B: The Endurance of the Soviet MRD Structure, Table 3: The Shift towards Mobility...

⁴⁵ Albert and Joan Seaton, *The Soviet Army 1918 to the Present...* 95, Glantz, *Soviet Military Operational Art...*, 15-25, and Glantz, “The Intellectual Dimension...”, 141-142.

⁴⁶ Glantz, *Soviet Military Operational Art...*, 225, and Zakharov, “Development Trends of Armed Struggle”, 347. Zakharov foresaw the predominance of air assets and the reduction of duration of the initial phase of war so as to avoid “irreversibility” (a critical loss of troops).

⁴⁷ *Ibid.*, 209.

⁴⁸ William P. Baxter, *The Soviet Way of Warfare*, (London: Brassey’s Defense Publishers, 1987), 94-95. Historically and practically, having more than two echelons is the least desirable, but photographic evidence of the Russians snaking their way to Tskhinvali shows that this must be done when the conditions dictate it. This situation is clearly an example of how the operational tempo must not be allowed to develop gaps. This is partly why one could find such concentrated masses of armor as potential targets all along the Djava road. See Simpkin, *Deep Battle...*, 261.

⁴⁹ Zakharov, “Development Trends of Armed Struggle”, 347.

⁵⁰ *Ibid.*, 354-355.

⁵¹ Presentation at the Austrian National Defense Academy, March 4 2009, also “Oboronnye raskhody Grusii v 2008 godu uvelitchatsa do \$1 mlrd”, *RIA Novosti*, 5 July 2008, www.rian.ru/society/20080705/113192732.html, James Hackett, ed., *Military Balance 2009...* 176. Vyacheslav Tselyuko traces the difference between

planned spending and actual spending. When Georgia would say in its *Strategic Defense Review 2007* that defense spending would be 3.9 per cent of GDP, the actual spending in 2007 was 8 per cent. See Vyacheslav Tselyuko, “Force Development and the Armed Forces of Georgia under Saakashvili”... and Ministry of Defense of Georgia, *Strategic Defense Review 2007*, Tbilisi, December 2007, 93.

⁵² Peter W. Schulze, “Geopolitischer Machtpoker am Kaukasus”, *Sozial Wissenschaftliche Schriftenreihe: Konflikt am Kaukasus*, Wien: Internationales Institut fuer Liberale Politik, Feb. 2009, 13.

⁵³ Ministry of Defense of Georgia, *Strategic Defense Review 2007*, 66-67, 77.

⁵⁴ Conversation with Maj. Z.J. 30 March 2009.

⁵⁵ See Appendix A: Force Structure Comparison, Table 2: Force Structure Comparison Georgia-Russia, 2008.

⁵⁶ Vyacheslav Tselyuko., “Force Development and the Armed Forces of Georgia under Saakashvili”... Vitalii Denisov, “Kto vooruzhal Grusiju”, *Krasnaia Zvezda*, 11 August 2008, www.redstar.ru/2008/08/11_08/3_04.html

⁵⁷ Ministry of Defense of Georgia, *Strategic Defense Review 2007*, 71, 74, 78.

⁵⁸ Luc Mampaey, *Les pyromanes du Caucase: les complicités du réarmement de la Géorgie*, Notes d'Analyse du GRIP, 26 septembre 2008, 6. www.grip.org/bdg/pdf/g0908.pdf Mampaey, citing the UN Register on Conventional Arms, lists the purchase of seventy-four T-72 MBTs, ninety-six surface-to-air missiles for the BUK-M1 system, a hundred MANPAD missiles, and some thirteen thousand anti-tank guided missiles.

⁵⁹ Willard C. Frank Jr. and Philip S. Gillette, *Soviet Military Doctrine ... 2*. This author was defense advisor to the Ministry of Defense of Estonia 2000-2001, and can testify to the overbearing influence of western advisors in strategic and security concept formulation. Strictly speaking, there is very little indigenous thought about military doctrine in former Soviet Republics. This predicament continues even today; Maj. Z.J. confided to the author that Georgia's employment of armor formations was purely reactive, and no Georgian doctrine was developed for the contingency of August 2008 save for the copying of field manuals. The Office of the Defense Attaché of a NATO power in Tbilisi believes that Soviet concepts were more readily recognizable in the way the GAF handled its forces. (Email of 29 January 2009).

⁶⁰ Interview 13 February, Maj. Z.J., Maj. R.B., and Maj. B.A.

⁶¹ Private conversation with an officer belonging to NATO's Intelligence Division, 24 September 2008, Rome, Italy, on the occasion of the 55th Anciens Seminar of the NATO Defense College.

⁶² Richard K. Betts, *Military Readiness: Concepts, Choices, Consequences*, Washington, DC: Brookings Institution Press, 1995, 40.

⁶³ *Ibid.*, 28.

⁶⁴ Richard K. Betts, *Military Readiness*, 25.

⁶⁵ *Ibid.*, 26, and Wardak, *The Voroshilov Lectures...*, 177.

⁶⁶ *Ibid.*, 26.

⁶⁷ Chris Donnelly, "The Soviet Use of History for Operational Analysis: Establishing the Parameters of Force Sustainability", in Carl Reddel, ed., *Transformation in Russian and Soviet Military History: Proceedings of the Twelfth Military History Symposium USAF Academy 1986*, Washington, DC: United States Air Force Academy, 1990, 244.

⁶⁸ Betts, *Military Readiness...*, 26.

⁶⁹ Betts, *Military Readiness...*, 37.

⁷⁰ Wardak, *The Voroshilov Lectures...*, 185-186.

⁷¹ Betts, *Military Readiness...*, 156.

⁷² Baxter, *The Soviet Way of Warfare*, 246-247.

⁷³ *Ibid.*, 116.

⁷⁴ John Stone, *The Tank Debate*, Amsterdam: Harwood Academic Publishers, 2000, 164.

⁷⁵ Donnelly, "The Soviet Use of History..." 250.

⁷⁶ Betts, *Military Readiness...*, 40.

⁷⁷ Donnelly, "The Soviet Use of History..." 267-269.

⁷⁸ Glantz, *Soviet Military Operational Art...*, 229-230.

⁷⁹ Baxter, *The Soviet Way of Warfare*, 94-95.

⁸⁰ 13 March interview, Maj. B.A.

⁸¹ "Georgia", *Jane's World Armies*, Issue 6, December 1999, N. pg.

⁸² US Department of Defense News Release, *Georgia "Train and Equip" Program Begins*, 217-02, 29 April 2002.

⁸³ Benjamin Barthe, "Israël embarrassé par sa coopération avec l'armée géorgienne", *Le Monde*, 31 août-1^{er} septembre 2008, 6. Also Luc Mampaey, *Les Pyromanes du Caucase...*, 4.

⁸⁴ Stone, *The Tank Debate*, 134, and Patrick Wright, *Tank*, New York: Viking Press, 2000, 433, 442.

⁸⁵ Betts, *Military Readiness...*, 158.

⁸⁶ Stone, *The Tank Debate*, 136.

⁸⁷ Wright, *Tank*, 442.

⁸⁸ Stone, *The Tank Debate*, 167-169.