

Russian Airpower in the Second Chechen War

**A Monograph
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Abstract

RUSSIAN AIRPOWER IN THE SECOND CHECHEN WAR by MAJOR Robert D. Evans, USAF, 62 pages.

The Second Chechen War, which began on 23 September 1999 with massive Russian air strikes, bore little resemblance to the inconclusive campaign that had ended just three years earlier. In the earlier conflict, Russian Air Force operations concentrated on achieving control of the air, directly supporting Russian ground forces, and attacking rebels in the foothills and mountains of southern Chechnya. Aside from the very brief initial campaign against the Chechen Air Force, Russian airpower played a minor supporting role to ground forces during the First Chechen War, achieving only limited tactical successes. During the Second Chechen War, Russian commanders used airpower extensively, with mixed results. By examining the use of Russian airpower in the Second Chechen War, the author identified implications for the United States Air Force conducting small-scale, high-intensity operations. The monograph examines the background to the Chechen wars and the use of airpower in the First Chechen War to set the stage for the analysis of the Russian use of airpower during the Second Chechen War. The author considered if Russian Air Force employment concepts and equipment, used during the Second Chechen War were adequate, feasible, and acceptable, by western standards. When measured against the criteria, the employment of Russian airpower in the Second Chechen War yielded mixed results. Russian Air Force employment concepts were adequate, successfully accomplishing all military objectives. However, airpower failed in its most important objective, reducing Russian ground force casualties. Russian Air Force employment concepts and equipment were unable to accomplish the mission, within allowable constraints, making them infeasible. Finally, the failure to comply with international laws of war, and consider the effect of the air campaign on the political end state made the Russian use of airpower in the Second Chechen War unacceptable. The author's analysis of the Russian use of airpower in the Second Chechen War yielded three implications for the U.S. Air Force conducting similar operations. First, airpower may limit ground force casualties in deliberate attacks against an enemy vulnerable to air attacks. However, conventional airpower cannot reduce ground casualties in guerrilla warfare, or street fighting. Secondly, bombing campaigns aimed at destroying industrial infrastructure have significant adverse effects on the end state and post-conflict operations. Finally, aircraft must be capable of conducting precision attacks in all weather conditions.

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CHAPTER ONE

INTRODUCTION

Under no circumstances should events in the Chechen Republic be considered combat operations in the classic sense.¹

Major General Yevgeny Nikitenko
Deputy head of the Russian General Staff's Military Science Directorate

To the people living in the war ravaged villages scattered along the border between Chechnya and Dagestan, 23 September 1999 began like any other day. They could neither see, nor hear, the Russian warplanes approaching from the northwest with their deadly cargo and grimly determined crews. With the concentration of a surgeon, the weapon systems officer (WSO) peered intently into the eerie glow of his radarscope. It was difficult to determine the exact location of his target among the bright radar returns of the structures and built-up areas of the Chechen village of Shali, near the Dagestan border. To his left, the pilot scanned the ground rapidly unfolding in front of their supersonic Su-24 Fencer fighter-bomber, searching for the tell tale trace of a deadly Stinger shoulder-fired surface-to-air missile. Seeing nothing, his thoughts turned to the approaching target run. He armed the weapon release system, turned toward the final attack heading and prompting his WSO, grunted "*adna minutka*," one minute to go.

As the sleek jet bore down on the target, the WSO continued to fine-tune his radar, turning down the gain and refining the aiming crosshairs. Confident of his aiming, he gave the pilot clearance to release. With grim satisfaction, the pilot depressed the pickle button, whispering under his breath, "*sbros*," bombs away. As the bombs rippled from the pylons mounted under the Fencer's wings, the jet shook gently from side to side, as if grateful of the burden suddenly lifted.

¹ Benjamin S. Lambeth, *Russia's Airpower in Crisis* (Washington: Smithsonian Institute Press, 1999), 134.

Below and far behind the streaking fighter, explosions rocked the ground as glass shattered and smoke rose from the rubble. The airmen, now safely out of the target area, silently pondered their first combat mission since the First Chechen War ended in 1996. Perhaps this time things would be different.²

The Second Chechen War, which began with air strikes in early September 1999, was indeed different. Taking a lesson from the NATO air campaign against Serbia earlier in the year, Russian Prime Minister Vladimir Putin hoped to win a quick victory in the renegade republic without the massive loss of Russian soldiers that marred the first conflict. Disagreement and a lack of coordination between commanders characterized the earlier Chechen War. Colonel General Eduard Vorobyov, first deputy commander of the Russian Ground Forces, demonstrated remarkable foresight early in that struggle when he warned the Chief of the General Staff, General Mikhail Kolesnikov that “the operation is unprepared and can not be executed because of deficiencies in means and forces.” He added, “bad weather reports mean that constant and effective air support for the troops [is] virtually impossible.”³ Lack of coordination between ground and air forces, combined with poor weather conditions marginalized Russian airpower in the First Chechen War.

² The author based the fictitious introductory vignette on a variety of factual sources. The Russian Air Force began bombing targets sporadically in and around Chechen villages near the Dagestan border on 7 September 1999. *North Caucasus Conflict: A Day-by-day Timeline*, Center for Defense Information (Washington), Internet, <http://www.cdi.org/issues/Europe/sept.html>. accessed 9 January 2001. On 23 September 1999, the Russian Air Force began a massive air campaign against Chechnya. Russian news agencies reported on 30 September 1999 that targets included a brick factory in Shali and oil refinery northeast of Grozny. *Russia: Prime Minister Says Combat Operations Underway in Chechnya*, Radio Free Europe/Radio Liberty, 30 September 1999, Internet, <http://www.rferl.org/nca/features/1999/09/F.RU.990930163527.html>. accessed 12 December 2000. The Chechen rebels possess several man-portable air defense missile systems including the Stinger (U.S.), Javelin (Great Britain), Igla-1 and Strela-2 (Russia). Operators often fired the missiles in salvos, which the aircrew could detect by the flash of flame, cloud of dust, and missile trace. If the aircrew did not detect the initial launch, the missile was extremely difficult to acquire visually. Andrey Smolin and Viktor Kolomiyets, “Only Mountains are Worse than Mountains,” *Armeyskiy Sbornik*, no. 3/00 (1 March 2000): 45-46, FBIS-CEP20000508000179, 8 May 2000.

³ Pavel Felgenhauer, “The Chechen Campaign,” Internet, <http://nsa.nps.navy.mil/Publications/Tsyppkin/Chechnya/fel.html>. accessed 21 November 2000, 7.

During the Second Chechen War, Russian commanders used airpower extensively, with mixed results. On September 22, 1999, following aerial bombardment of Chechnya's capital city of Grozny, in which warplanes hit the airport, an oil refinery, a TV tower, and the area surrounding Chechen President Aslan Mashkadov's residence, Russian Prime Minister Putin denied that he was planning any large-scale [ground] offensive. Putin continued to play down reports of a looming ground invasion, saying, "we will not thoughtlessly put our boys under fire."⁴ Russian Duma Deputy Alesei Arbatov, echoed the Prime Minister's thoughts a week later, commenting that, "threatening an invasion and carrying out air raids are okay... A blockade and pinpoint strikes might help. A ground war will not."⁵

Although NATO's air campaign against Serbia's President Slobodan Milosevic may have strongly influenced the Russian leadership, the initial air campaign against the Chechen separatists had many skeptics in the world press. Russian human rights activist Sergei Kovalyov warned that, "What we, in effect, are trying to do now is combine NATO's methods with Milosevic's philosophy. That is very dangerous."⁶ The bombings of early September 1999 were just the first chapter in a conflict that would see Russian airpower applied in virtually all of the classic missions, including strategic attack, counterair, interdiction, and close air support.

By examining the use of Russian airpower in the Second Chechen War, the author identified implications for the United States Air Force conducting small-scale, high-intensity operations. Written accounts have characterized these conflicts as small-scale contingencies, military operations other than war, and military operations in urban terrain (MOUT). Many authors and researchers have postulated that future combat operations will increasingly take place in and around urban terrain. Major General Robert Scales, the former Commandant of the U.S. Army

⁴ "North Caucasus Conflict: A Day-by-day Timeline," Washington: Center for Defense Information, Internet, <http://www.cdi.org/issues/Europe/sept.html>. accessed 9 January 2001.

⁵ *Russia: War Clouds over Chechnya, Foreign Media Reaction Daily Digest*, October 1, 1999, Washington: United States Information Agency Washington, Internet, <http://www.fas/man/dod101/ops/war/1999/10/www9801.htm>. accessed 14 January 2001.

⁶ Ibid.

War College, wrote that the American military is likely to confront such situations in the next century.⁷ The thirty-first Commandant of the U.S. Marine Corps, General Charles Krulak put it this way, “The future is not the son of Desert Storm, but the stepchild of Somalia and Chechnya.”⁸ Such statements should provide powerful motivation for military professionals preparing for an uncertain future.

The Russian involvement in Chechnya is of particular interest because it involves modern, well-equipped forces against an outnumbered, but resolute, opponent in urban terrain. The Second Chechen War provides an excellent backdrop in which to evaluate the performance of a modern air force conducting combat operations against an opponent in and around urban terrain. Surprisingly, researchers have written very little on the extensive use of Russian airpower in Chechnya. One of the most useful pieces is *Air Operations in Low Intensity Conflict: the Case of Chechnya*, written by Timothy Thomas, an expert on the Russian military employed by the Foreign Area Studies Office at Fort Leavenworth. Mr. Thomas identified several important problems faced by the Russian Air Force in the First Chechen War.⁹ In this monograph, the author took the next step by developing lessons from the Second Chechen War and identifying implications for further study. Specifically, the author considered if Russian Air Force employment concepts and equipment, used during the Second Chechen War were adequate, feasible, and acceptable, by western standards. From this analysis, the author determined implications for the U.S. Air Force.

The author analyzed Russian Air Force employment concepts and equipment using criterion outlined in Joint Publication 5-0, *Doctrine for Planning Joint Operations*. These criteria are adequacy, feasibility, and acceptability. Adequacy determines whether the aspect under

⁷ Robert H. Scales, *Future Warfare* (Carlisle Barracks: Strategic Studies Institute, 1999), 178.

⁸ The USMC MOUT Homepage, Internet, <http://www.geocities.com/Pentagon/6453/usmcmouta.html>, accessed 23 December 2000.

⁹ Timothy L. Thomas, “Air Operations in Low Intensity Conflict: the Case of Chechnya,” *Airpower Journal* (Winter 1997): 51-59. Another excellent source is Benjamin S. Lambeth, “Russia’s Air War in Chechnya,” in *Russia’s Airpower in Crisis* (Washington, D.C.: Smithsonian Institution Press, 1999)

consideration satisfies the requirement and accomplishes the mission. Feasibility determines whether the aspect accomplishes the mission within constraints. Finally, acceptability determines whether the aspect complies with the laws of war, and is worth the cost in lives, material and time.¹⁰

BACKGROUND TO THE CHECHEN WARS

The strategically vital regions of Chechnya and Dagestan have seen centuries of conflict along ethnic and political fault lines.¹¹ The most recent conflict has its roots in the Second World War. Soviet political oppression cut short a brief period of tranquility and sparked guerrilla uprisings following the formation of the independent Mountainous Soviet Republic of the Russian Soviet Federated Socialist Republic in 1921. Discord and conflict over the newly independent states in the Caucasus region continued into the Second World War. In June 1942, the rebel government of Israilov and Sheripov appealed to the Chechen people to welcome the advancing Germans hoping that they would recognize the independent Chechen Republic. The Stalinist leadership used this act to justify the complete deportation of the Chechen and Ingush people to eastern Russia. This virtually guaranteed that the Chechen people, particularly those

¹⁰ Joint Chiefs of Staff, *JP 5-0 Doctrine for Planning Joint Operations* (Washington, D.C.: GPO, 1995), I-13.

¹¹ Chechnya is strategically vital to Russian for two reasons. First, Russian access routes to both the Caspian Sea and Black Sea pass through Chechnya. Second, vital Russian oil and gas pipelines with Kazakstan and Azerbaijan pass through Chechnya. The imperialist Russian Army fought the well-organized and determined fighters of Shamil's Islamic proto-state in the Caucasus until 1864. Russian victory did little to quell the passions. Shortly after the Bolshevik revolution in May 1918, the Republic of the North Caucasus declared independence starting a brutal war against the Tsarist forces. The war split the Chechen people, with those living in the northern plains fighting along side the anti-Bolshevik army. Chechens from the Bolshevik-backed mountainous regions to the south fought bitterly against General Denikin's Tsarist Army. The Red Army entered Chechnya after General Denikin's defeat in early 1920. The revolt that followed, this time against the Bolsheviks, lasted until fall 1921. The congress that convened in January 1921, declared the formation of the Mountainous Soviet Republic of the Russian Soviet Federated Socialist Republic. In the years that followed, Chechnya, Ingushetia and several other regions became independent. Emil A. Payin and Arkady A. Popov, *Chechnya*, Internet, http://isqkc.org/chechnya_rand.htm accessed 17 January 2001, 2.

living in the mountainous Islamic region, would never accept Russian control. The roots of the current Chechen conflict were firmly established.¹²

Although many Chechens returned to their homeland, which became the autonomous Chechno-Ingush Republic in 1957, their memories of deportation and humiliation at the hands of the Russians became lore, passed from one generation to the next. Amid growing struggle between Russian and Soviet leadership, Moscow had little reaction to the November 1990 “Declaration of State Sovereignty of the Chechen-Ingush Republic,” proclaiming a sovereign state equal in status to the then-Soviet republics. The following summer, the National Congress of the Chechen People, led by retired Air Force General Dzhokhar Dudayev, proclaimed itself the supreme authority of the Republic of Chechnya.¹³ General Dudayev quickly seized control and formed a national guard. After an illegitimate presidential election declared Dudayev the winner, Russian President Boris Yeltsin issued a decree on 7 November 1991, declaring a state of emergency in the Chechno-Ingush Republic and removing Dudayev from power. Although the Russian parliament rejected the decree, it caused an explosion of anti-Russian sentiment in Chechnya and dramatically increased the number of people that supported Chechen independence. The stage was now set for the First Russian-Chechen War.¹⁴

¹² Emil A. Payin and Arkady A. Popov, *Chechnya*, Internet, http://isqkc.org/chechnya_rand.htm accessed 17 January 2001, 2.

¹³ General Dudayev (also spelled *Dudaev*) was a former Soviet Strategic Aviation pilot who flew nuclear bombers for many years. “First Chechnya War 1994-1996,” Federation of American Scientists, Military Analysis Network, Internet, <http://www.fas.org/man/dod-101/ops/war/chechnya1.htm> accessed 14 January 2001, 1.

¹⁴ Emil A. Payin and Arkady A. Popov, *Chechnya*, Internet, http://isqkc.org/chechnya_rand.htm accessed 17 January 2001, 5.

CHAPTER TWO

THE FIRST CHECHEN WAR

The army totally ignored local conditions, religion, and customs. No one planned the operation. It was started 'Russian style' in the off chance that it would work.¹⁵

Lieutenant General Aleksandr Lebed

A civil war erupted in the Chechen Republic after Dudayev's government declared full independence in 1993. Several attempts to overthrow the Dudayev regime, covertly backed by Russia, failed in 1993 and 1994. Russia formally entered the war on December 10, when Russian armor, pro-Russian Chechen infantry and internal security troops invaded Chechnya. Yeltsin's administration in Moscow hoped for a quick victory and reestablishment of a pro-Russian government; The Chechen fighters had other plans.¹⁶ In the two years that followed the Russian invasion of Chechnya in 1994, the fighting killed tens of thousands of people and displaced hundreds of thousands more. The Russian military suffered enormous losses as untrained soldiers fought street battles against a well-led and organized foe.¹⁷

Russian Air Force operations in the First Chechen War comprised three phases. Typical of western air campaigns, the first objective was to gain control of the air and prevent any interference to ground operations. Next, the Russian Air Force provided direct support to Russian

¹⁵ Benjamin S. Lambeth, *Russia's Airpower in Crisis* (Washington: Smithsonian Institute Press, 1999), 139.

¹⁶ The Russian government increased the pressure on Dudayev's secessionist government, accusing it of repressing political dissent, corruption, and involvement in international criminal activity. In response to increasing violence by Russian-backed opposition, Dudayev declared martial law, imposing severe restrictions on travel. Russia's actions against the Chechen Republic became more overt and by December 1994, Russian military forces were actively working to topple the Dudayev regime. "First Chechnya War 1994-1996," Federation of American Scientists, Military Analysis Network, Internet, <http://www.fas.org/man/dod-101/ops/war/chechnya1.htm> accessed 14 January 2001, 1-2.

¹⁷ By the Interior Ministry (MVD) official count, Russian losses were 1,867 troops killed in action, 6,481 wounded and 36 held prisoner by the Chechen rebels. Chechen sources have claimed over 4,000 Russian casualties, adding that 6,000 Chechen civilians died in the fighting. Western reporting at the end of 1995 put to total as high as 20,000 killed. By any account, the First Chechen War was tremendously costly in human terms. Benjamin S. Lambeth, *Russia's Airpower in Crisis* (Washington: Smithsonian Institute Press, 1999), 129-130.

ground forces conducting operations in urban terrain. Finally, as the fighting progressed into the mountains and countryside, the Russian Air Force conducted independent operations against rebel bases while continuing to support federal ground forces. Improved weather conditions and open terrain permitted precision attacks, making airpower most effective in this final phase. First, the Russian Air Force needed to neutralize the small but potentially dangerous Chechen air threat.

In 1992, following their hasty withdrawal from Chechnya the Russian forces left General Dudayev a considerable stockpile of military hardware. Scattered between three military airfields were some 260 Russian aircraft of various types, including Mig-17 fighters and ground-attack jets.¹⁸ Although only an estimated forty percent of his aircraft were combat-ready and trained pilots were scarce, Dudayev's rag-tag air force began preparing for combat in November 1994. Russian Su-24MR reconnaissance jets detected Chechen rebels fuelling L-29 Delfin and L-39 Albatros jet trainers for possible attack missions. Like many western jet training aircraft, ground crews could easily configure the L-29 and L-39 with wing stations capable of carrying bombs and rocket pods. Other indications that Dudayev intended to use his air force were the preparation of alternate landing strips along highways and road segments. Despite his planning and preparation, General Dudayev's air force never entered the fight.¹⁹

In the first phase of Russian Air Force involvement in Chechnya, pilots attacked the Chechen airfields of Khankala, Kalinovskaya, and Grozny North. Unprotected by capable air defenses, the unrevetted aircraft proved no challenge for Russian Su-25 Frogfoot attack jets. Using bombs and rockets, a relatively small number of Russian jets destroyed or neutralized the entire Chechen Air Force in three days, causing very little collateral damage to runways and other airfield facilities.

¹⁸ Written accounts vary as to the exact number of each type of aircraft abandoned by the Russian Air Force in Chechnya. However, sources agree that significant numbers of Czech-built L-39 Albatros jet combat trainers and older L-29 Delfins were left behind. Other aircraft included Mig-15 and Mig-17 fighters, An-2 transports and Mi-8 helicopters. All of the Delfin and Albatros combat trainers were equipped with universal stores racks for suspending two pods of UB-16 NAR unguided aircraft rockets or up to 250 kg of bombs. Vyacheslav Kondratyev, "The Awesome Sky over Chechnya," *Krylya Rodiny* (January 1996): 1-5, FBIS-UMA-96-055-S, 20 March 1996, 28. Benjamin S. Lambeth, *Russia's Airpower in Crisis* (Washington: Smithsonian Institution Press, 1999), 121.

¹⁹ Benjamin S. Lambeth, *Russia's Airpower in Crisis* (Washington: Smithsonian Institution Press, 1999),

A former Russian bomber commander, General Dudayev must have been displeased to lose his meager air force before he could use it. With chilling defiance, he wired a note to the Commander of the Russian Air Force, his former colleague General Deinekin: “I congratulate you and the Russian VVS on another victory in achieving air superiority over the Chechen Republic. Will see you on the ground.”²⁰ The initial success of Russian airpower was short-lived as ground troops began their assault on the Chechen capital of Grozny.

The second phase of Russian Air Force involvement in Chechnya began, when Russian ground forces advanced toward Grozny on 11 December 1994. The supporting infantry, poorly trained and led, was unable to keep up with the Russian armor. The tanks advanced more rapidly than the infantry and, unprotected, became easy targets for the Chechen guerrillas fighting from well-concealed positions in the urban fortress. Major General Yevgeny Nikitenko, the deputy head of the General Staff’s Military Science Directorate admitted that planners had “miscalculated” the scale and intensity of the rebel resistance. He further implied that if given another chance, Russian troops would enter Grozny only after “massive bombardment” by Su-24s and Su-25s to “destroy the mini-army that Dadayev had set up.”²¹ This lesson figured heavily in Russian plans for the Second Chechen War. However, the slaughter did not result entirely from disorganized troops and bad tactics. Severe weather and a general lack of coordination between air and ground units significantly hampered close air support during this phase.

Starting a campaign when forecasters expected weather conditions to severely restrict flying operations was a serious failure of Russian military planning. Colonel General Yevgeny

121-124.

²⁰ VVS is an abbreviation for *Voyenno-vozdushniye sily*, Military Air Force. Some authors have criticized the initial effort to destroy the Chechen air force on the ground, believing instead that air operations should have focused on the destruction of Chechnya’s administration and military command and control facilities, communications hubs, and key elements of the infrastructure. The author disagrees. The Chechen Air Force posed a credible threat to Russian operations and its rapid destruction, in three days with only a handful of aircraft, did not prevent the Russian Air Force from conducting the other missions cited. See Timothy L. Thomas, “Air Operations in Low Intensity Conflict: the Case of Chechnya,” *Airpower Journal* (Winter 1997): 51-59. Benjamin S. Lambeth, *Russia’s Airpower in Crisis* (Washington: Smithsonian Institute Press, 1999), 122-124.

²¹ Benjamin S. Lambeth, *Russia’s Airpower in Crisis* (Washington: Smithsonian Institute Press, 1999), 134.

Podkolzin, the Russian airborne commander, conceded that, “it is impossible to send your aviation up. Or if it does get airborne, it has to stay at high altitude, which naturally makes it hard to fulfill its missions.”²² Because of the seasonally bad weather, inexperienced Su-24 Fencer aircrews bombed from medium altitude, through the clouds, with dismal results. The poor accuracy of blind bombing, even when using radar offsets or inertial systems, combined with the ill-defined front line trace of the Russian troops may have resulted in friendly-fire casualties.²³ However, commanders could not blame all instances of fratricide on the North Caucasus weather.

Coordination problems between ground and air units, amplified by outdated communications and navigation equipment, made close air support a risky proposition. Chechen rebels benefited from excellent intelligence and made a special effort to hunt down Russian Forward Air Controllers, or *avianavodchiki*. When the weather did allow close air support, Chechen direction-finding units quickly located forward air controllers and targeted them with artillery.²⁴

The lack of coordination between air and ground units, coupled with miserable flying weather made Russian air support for the assault on Grozny almost completely ineffective. Despite this, after a hard-fought battle lasting over a month, the Chechen capitol city of Grozny fell to Russian federal forces on 5 February 1995. After a brief ceasefire, the war entered a new phase as the fighting intensified in the hills and on the plains.²⁵ In this next phase, Russian airpower would finally swing the balance in a ground battle.

The third phase of Russian Air Force involvement in the First Chechen War was in many ways the most successful. Clear weather allowed Russian Su-25 Frogfoot attack jets to support the army’s drive across the Ardon River to Gudermes and Shali. In response, the Chechens established new positions along the Argun River to defend the villages of Gudermes, Argun and

²² Benjamin S. Lambeth, *Russia’s Airpower in Crisis* (Washington: Smithsonian Institute Press, 1999), 135.

²³ David A. Fulghum, “Chechnya Cripples Russian Aviation,” *Aviation Week and Space Technology*, 7 August 1995, 20-21.

²⁴ Benjamin S. Lambeth, *Russia’s Airpower in Crisis* (Washington: Smithsonian Institute Press, 1999), 127.

²⁵ “First Chechnya War 1994-1996,” Federation of American Scientists, Military Analysis Network, Internet, <http://www.fas.org/man/dod-101/ops/war/chechnya1.htm> accessed 14 January 2001, 1-2.

Shali. Russian Federation forces used the time provided by a brief ceasefire to regroup and resupply, hoping for favorable spring weather for another offensive. The offensive came on the night of 21 March 1995 following air attacks on the rebel reserves massing near the villages of Shali, Atagi, Mesker Yurt, and Shaami Yurt.

Federal forces completely encircled the rebel held city of Argun. The rebels attempted to break the blockade of Argun on 22 March 1995, supported by tanks from Shali and Gudermes. Ground attack aircraft and army helicopters effectively halted the rebel counteroffensive before it could begin. Using *Shturm* air-to-ground missiles, the Russian pilots destroyed nine tanks and armored vehicles and used unguided rockets to complete the defeat of the infantry. After suffering huge losses, Dudayev's rebels retreated from the city. Federal forces, this time with effective air support, seized Argun on 23 March 1995.²⁶

The Chechens were unable to fight in the open against the well-supported Russian troops and fled to the mountains in the south. General Dudayev transferred his headquarters to the mountain village of Vedeno, a fortified stronghold of Iman Shamil between 1845 and 1859. After another brief cease-fire, Federal forces captured Vedeno. The Russian Air Force supported the attack on Vedeno with precision bombing and close air support. Using laser-guided bombs, Su-24s destroyed the rebel headquarters and radio station.²⁷ A month later, in mid-June, the mountain village of Shatoi fell. These actions effectively divided the Chechen separatists into isolated pockets, scattering them into the hills where further resistance became unorganized and ineffective.²⁸ On 30 July 1995, the Government and forces loyal to Chechen President Dudayev

²⁶ Vyacheslav Kondratyev, "The Awesome Sky over Chechnya," *Krylya Rodiny* (January 1996): 1-5, FBIS-UMA-96-055-S, 20 March 1996, 33.

²⁷ First and second generation laser-guided bombs, like the ones used by the Russian Air Force, are released ballistically, like normal free-fall bombs, then corrected to the target using semi-active laser guidance to compensate for minor release errors and winds. This type of non-proportional laser guidance was first used to guide bombs by American forces during the Vietnam War. More modern laser-guided bombs, such as the U.S. Paveway III series, use proportional guidance techniques and autopilots and are much more accurate. Vyacheslav Kondratyev, "The Awesome Sky over Chechnya," *Krylya Rodiny* (January 1996): 1-5, FBIS-UMA-96-055-S, 20 March 1996, 34. Duncan Lennox, ed., *Jane's Air-Launched Weapons*. (Surrey, UK: Jane's Information Group, 1999).

²⁸ Pavel Felgenhauer, "The Chechen Campaign," Internet,

signed a military protocol calling for a cease-fire, the disarming of rebel formations, the withdrawal of most federal troops, and the exchange of prisoners.²⁹

In June 1996, all major military operations in Chechnya ceased and Russian forces partially withdrew from populated areas captured earlier. In August 1996, leaders signed the Khasavyurt Accords, an agreement postponing the decision on Chechen independence for five years. Russia declared victory against General Dudayev's separatist Chechen regime. The price was high, and measured in Russian blood. The once-mighty Russian military had suffered a humiliating victory, highlighting problems with interagency coordination, command and control, and training. Furthermore, the war failed to provide a permanent solution to the problem of Chechen independence. Rebels continued to harass federal troops in the region and returned to the capital city of Grozny. Almost immediately, Russia's victory began to sour.³⁰

Following the signing of the Khasavyurt Accords in August 1996, Russia promised substantial aid to rebuild the war-ravaged economy of the Chechen Republic. Chechen president Aslan Maskhadov vowed to combat crime and terrorism, and committed to fighting manifestations of national and religious enmity. In the months that followed this tenuous agreement, neither side honored its obligations. The ethno-political and humanitarian situation deteriorated even further as radical elements rose to power in the vacuum created by the broken promises. Chechnya became a hotbed of criminal activity.³¹ Between 1996 and 1999, criminal gangs kidnapped over 1300 people in Chechnya. Many were Russian conscripts, but the lot included some notable Russian figures.

<http://nsa.nps.navy.mil/Publications/Tsyarkin/Chechnya/fel.html>. accessed 21 November 2000, 10-12.

²⁹ On 24 April 1996, a precision attack by the Russian Air Force killed Chechen President Dzhokar Dudayev. While talking on a satellite field telephone, Russian sources detected his transmissions and transmitted the coordinates to a SU-25 attack jet, armed with precision-guided weapons. Such an attack seems beyond the capabilities of the Russian Air Force, however, Chechen sources confirmed Dudayev's death in an air attack. Timothy L. Thomas, "Air Operations in Low Intensity Conflict: the Case of Chechnya," *Airpower Journal* (Winter 1997): 54. Also "First Chechnya War 1994-1996," Federation of American Scientists, Military Analysis Network, Internet, <http://www.fas.org/man/dod-101/ops/war/chechnya1.htm> accessed 14 January 2001, 3-4.

³⁰ *Ibid*, 6.

³¹ "Second Chechnya War 1999-???", Federation of American Scientists, Military Analysis Network,

THE SECOND CHECHEN WAR

In March 1999, outlaws kidnapped the leading Russian envoy to Chechnya, Russian Interior Ministry General Gennady Shpigun, from the Grozny airport, in Chechnya's capital city.³² This action prompted the deployment of additional Interior Ministry troops in preparation for a counter-terrorist operation in the North Caucasus region. Perhaps fearing attacks by Russian forces, Islamic extremists in Chechnya seized the initiative with a series of incursions into Dagestan.³³

On 7 August 1999, hundreds of armed Islamic fighters crossed the border to capture several villages in Southern Dagestan. Days later, the council of Islamic leaders declared Dagestan's independence and called for all Muslims in Dagestan and Chechnya to fight until they had driven all of the infidels out. Russian Prime Minister Vladimir Putin predicted that Russian forces would drive the insurgents out within two weeks. By 25 August 1999, Russian troops supported by artillery and air strikes had made good on his promise. The next day, Federal forces took the fight into Chechnya, as Russian warplanes bombed villages suspected of aiding the fleeing rebels. With the situation growing more intense, Russia's Defense Minister assumed full control over military operations against the Islamic militants in Dagestan on 4 September 1999. The next day a force of Islamic extremists seeking an independent state, estimated to be 2,000 strong, drove into Dagestan, capturing key villages along the Chechen border. Federal troops stepped up their efforts and successfully regained some of the captured terrain. Russian soldiers were again dying in the Caucasus in an unpopular military intervention.³⁴

A series of heinous bomb attacks on civilian targets in Russia quickly changed the Russian public opinion concerning armed intervention in Chechnya. In the span of a week, three

Internet, <http://www.fas.org/man/dod-101/ops/war/chechnya2.htm> accessed 14 January 2001, 2-3.

³² Ibid, 3.

³³ Smith suggested that the Chechens, and in particular Shamil Basayev, had become aware of Federal plans to invade Chechnya and planned the incursions to interrupt or delay Federal preparations for invasion from the north and east. M.A. Smith, "The Second Chechen War: The All Russian Context," in *The Second Chechen War*, ed. Anne C. Aldis (London: Conflict Studies Research Centre, 2000), 12-13.

³⁴ "Second Chechnya War 1999-???", Federation of American Scientists, Military Analysis Network, Internet, <http://www.fas.org/man/dod-101/ops/war/chechnya2.htm> accessed 14 January 2001, 4-5.

apartment buildings in Moscow and Volodonsk lay in rubble with 277 people killed. Although investigators found little evidence supporting the claim, Russian authorities blamed the carnage on Islamic militants.³⁵ The Chechen military leader, Shamil Basayev, denied any connection and blamed the bombings on Russian intelligence.³⁶ Almost overnight, an outraged Russian public changed their tone, now strongly supporting a major military operation in Chechnya. Thus, on the eve of a major election, Prime Minister Putin's approval rating reached an all time high.³⁷

By 22 September, Russian troops had surrounded Chechnya. The next day, the Russian Air Force unleashed a massive air campaign against Chechnya, the first major combat actions of the Second Chechen War. On 1 October 1999, Russian Prime Minister Vladimir Putin signaled the start of sustained land operations when he declared the authority of Chechen President Aslan Maskhadov and his parliament illegal. The Second Chechen War had begun. This time, there would be no rush to failure.³⁸

The overall conduct of the Second Chechen War differed from the first in four key ways. First, in the second conflict, Russian military commanders enjoyed almost unlimited authority over the conduct of the operations. Political leaders promised to restrain from frequent moratoriums and cease-fires and allow the military commanders to make independent decisions concerning the momentum of the offensive and deadlines for specific objectives. Secondly, Russian armed forces would enjoy a significant numerical advantage this time. At the start of the 1999 campaign, the Russian armed forces arrayed against the Chechen troops rapidly built to almost 100,000 men. Thirdly, senior leaders in the Russian military reorganized the North Caucasus Military District to dramatically improve joint operations and unity of effort. Finally, in

³⁵ Ralph Peters, "The Russian Way of War," *The Wall Street Journal*, 13 December 1999, A-34.

³⁶ Thomas Valasek, "Interview with Shamil Basayev: Chechen Commander of the Eastern Section of the Chechen Front," *Jane's Defense Weekly*, 6 October 1999, Internet. <http://www.cdi.org/issues/Europe/basayev.html>. accessed 3 March 2001, 1.

³⁷ M.A. Smith, "The Second Chechen War: The All Russian Context," in *The Second Chechen War*, ed. Anne C. Aldis (London: Conflict Studies Research Centre, 2000), 4-7.

³⁸ "Second Chechnya War 1999-???", Federation of American Scientists, Military Analysis Network, Internet, <http://www.fas.org/man/dod-101/ops/war/chechnya2.htm> accessed 14 January 2001, 6-7.

contrast to the headlong “rush to battle” of the earlier conflict, the Russian military entered the Second Chechen War with a definite plan.³⁹

The first step in the Russian Government’s plan to eradicate terrorism in the North Caucasus region and prevent Chechnya from leaving the Federation was to isolate the rebels. The initial phase had three objectives: to destroy the rebels and create a security zone in the northern part of Chechnya; to isolate Chechnya economically; and to minimize losses to the advancing Russian forces.⁴⁰ In all three objectives, the Russian leadership turned to joint operations, with airpower opening the campaign. The Russian Air Force played a prominent role in the Second Chechen War. After the debacle of the First Chechen War, the Russian airmen had much to prove.

³⁹ Timothy L. Thomas, “A Tale of Two Theaters: Russian Actions in Chechnya in 1994 and 1999,” Foreign Military Studies Office, Internet, <http://call.army.mil/call/fms/fmsopubs/issues/chechtale.htm>. accessed 14 January 2001, 2.

⁴⁰ Ibid.

CHAPTER THREE

THE RUSSIAN AIR FORCE IN THE SECOND CHECHEN WAR

Exactly the same tactics were deployed during Operation Desert Storm, in the bombing of the former Yugoslavia and in the various United States attempts to strike back at the world's most wanted terrorist – Osama bin Laden. Yet in the midst of war, even the most carefully planned military operations occasionally cause civilian casualties, and we deeply regret that.⁴¹

Vladimir Putin, Russian Prime Minister
14 November 1999

The Second Chechen War, which began on 23 September 1999 with massive Russian air strikes, bore little resemblance to the inconclusive campaign that had ended just three years earlier. In the earlier conflict, Russian Air Force operations concentrated on achieving control of the air, directly supporting Russian ground forces, and attacking rebels in the foothills and mountains of southern Chechnya. Aside from the very brief initial campaign against the Chechen Air Force, Russian airpower played a minor supporting role to ground forces, achieving only limited tactical successes. The Russian Air Force planned very few missions in advance, instead reacting to the whims of ground commanders, even if the target was insignificant. During the Second Chechen War, the Russian Air Force applied airpower on a much greater scale, with expectations to match.⁴²

The First Chechen War showed the limitations of the tactical application of airpower with insufficient planning and coordination. Although the successful joint operations late in the First Chechen War illustrated an effective use of airpower, they were not typical. In contrast, the second conflict witnessed a much broader application of Russian airpower and offered lessons on the operational and strategic use of air forces in small-scale contingencies. Russian Air Force

⁴¹ Prime Minister Putin made these remarks in an open editorial appearing in major U.S. newspapers after meeting with President Clinton in Oslo. Western media had been critical of Russian tactics in Chechnya. Vladimir Putin, "Why We Must Act," *New York Times*, 14 November 1999.

⁴² Venik, "Chechen War Chronicles, 30 October 1999" Internet,

involvement in the Second Chechen War differed from the earlier effort in the scope of operations, organization, level of effort, and planning.⁴³

During the previous war, Russian commanders employed the air force primarily in direct support of ground operations. Perhaps taking a lesson from the NATO air war against Kosovo, Russian commanders viewed initial air operations in the Second Chechen War as independent from ground forces. During subsequent phases, planners integrated air and ground operations into a coherent joint campaign plan. Tactical actions were largely independent and focused on achieving complementary effects. Consequently, air operations during the Second Chechen War depended less on ground maneuver and benefited from much more detailed planning. The organizational structure adopted for the Second Chechen War reflected the new role of Russian airpower.

The Russian Air Force organization for the Second Chechen War was built around units of the 4th Air Army, headquartered at Rostov-on-Don, with additional units from the Privolzhsky Military District. After the conflict began, Russian authorities formed a separate headquarters for the united Air Force and Air Defense combat group at Makhachkala, the Dagestani capital. Lieutenant General Valeriy Gorbenko, commander of the newly formed United Aviation Grouping in the North Caucasus, tightly controlled air operations from his headquarters and a combat management center. Mobile command and coordination posts assigned to front line ground troops ensured a close link between air and ground operations. By mid-September 1999,

<http://members.nbci.com/082499/aviation/chechnya/103099.htm> accessed 25 February 2001, 3.

⁴³ Lack of coordination and disunity of effort characterized Russian operations during the First Chechen War. Having learned from these mistakes, the Russian Armed Forces implemented wide-ranging changes. The most important change allowed combined command of army, air force, Ministry of Internal Affairs and other security forces in the North Caucasus Military District. Air assets from the Interior Ministry cooperated with army and air force aviation units, moving far beyond the basic procedures established during the previous war. Timothy L. Thomas, "A Tale of Two Theaters: Russian Actions in Chechnya in 1994 and 1999," Foreign Military Studies Office, Internet, <http://call.army.mil/call/fmso/fmsopubs/issues/chechtale.htm>. accessed 14 January 2001, 2.

over three-hundred Russian combat aircraft were under General Gorbenko's centralized command, twice the number deployed for the First Chechen War.⁴⁴

Operating from the nearby bases at Mozdok, Budyonnovsk, Kizlyar and Makhachkala, Russian Army attack helicopters and Air Force fighter-bombers flew 3,600 combat missions, including 450 close air support sorties, in the first ten weeks of the Second Chechen War. In comparison, Russian airmen flew only 5,300 combat sorties, consisting mainly of close air support, during the first thirteen months of the First Chechen War.⁴⁵ These figures illustrate the dramatic increase in the importance of aviation during the Second Chechen War and the trend towards a more independent application of Russian airpower. The majority of the sorties flown by Russian aircrews during the First Chechen War consisted of close air support and direct-support interdiction, and required very little detailed planning. In contrast, during the Second Chechen War Russian commanders chose to use airpower to achieve operational level effects, according to a detailed plan based on a comprehensive strategy.⁴⁶

Moscow's strategy for the Second Chechen War had three basic elements: seal Chechnya's borders and occupy parts of Chechnya to contain and isolate Chechen guerrillas; destroy rebel bases and key Chechen facilities through air strikes; and set up an alternative governing authority

⁴⁴ "Whirlwind over the Caucasus," Internet, http://members.nbci.com/_XMCM/082499/aviation/nws001/afm104.htm. accessed 24 February 2001, 2.

⁴⁵ "Whirlwind over the Caucasus," Internet, http://members.nbci.com/_XMCM/082499/aviation/nws001/afm104.htm. accessed 24 February 2001, 2. Beginning 2 August 1999, the Russian Air Force flew sorties only sporadically until 23 September 1999 when massive air and missile attacks opened the air campaign. The commander of the Russian Air Force, Colonel-General Anatoly Kornukov reported the numbers cited in the text during a press conference 17 November 1999. Venik, "Chechen War Chronicles, 17 November 1999" Internet, <http://members.nbci.com/082499/aviation/chechnya/111799.htm> accessed 25 February 2001, 1. The former commander of the Russian Air Force, General Deinekin, reported that the Russian Air Force flew 14,000 combat and combat support sorties during the First Chechen War. Benjamin S. Lambeth, *Russia's Airpower in Crisis* (Washington: Smithsonian Institution Press, 1999), 129. Between 29 November 1994 and late December 1995, the Russian Air Force flew over 9,000 sorties, more than 5,300 to conduct ground attack and bombing. Aerial reconnaissance sorties numbered 672 during this time. Vyacheslav Kondratyev, "The Awesome Sky over Chechnya," *Krylya Rodiny* (January 1996): 1-5, FBIS-UMA-96-055-S, 20 March 1996, 35.

⁴⁶ "Second Chechnya War 1999-???", Federation of American Scientists, Military Analysis Network, Internet, <http://www.fas.org/man/dod-101/ops/war/chechnya2.htm> accessed 14 January 2001, 6-12.

to challenge the legitimacy of Chechnya's existing government.⁴⁷ To support this strategy, the Russian military conducted operations in three phases. The plan was to first localize the conflict, then, rout bandit formations and finally, annihilate bandit units in the foothills and mountains.⁴⁸ The first phase began on 14 September 1999, when Russian Prime Minister Vladimir Putin announced the deployment of troops along Chechnya's borders to create a security corridor around the republic. Two weeks later, Russian forces entered Chechnya and rapidly advanced to occupy roughly a third of the republic, pausing at the Terek River. While Russian ground forces were moving across northern Chechnya, the Russian Air Force launched a massive strategic bombing campaign to destroy Chechnya's basic economic and governmental infrastructure.⁴⁹

RUSSIAN AIR FORCE EMPLOYMENT CONCEPTS

We lack weapons to defend ourselves against Russian air attacks. Our best weapon is the high morale of the Chechen population.⁵⁰

Shamil Basayev
Commander of the Eastern Section of the Chechen Front

The first phase of Russian Air Force Involvement in Chechnya began on 23 September 1999. Following weeks of intermittent air strikes against rebel positions inside Chechnya, the Russian Air Force launched an air campaign designed to isolate the Chechen rebels and reduce the risk to Russian forces operating in the theater. Mindful of the public relations disaster of the First Chechen War, Russian officials downplayed the ground offensive. Russian Defense Minister Igor Sergeyev said that he, "could not rule out the possibility of launching ground operations in

⁴⁷ Jeff Thomas, "Russia's Second Chechen War," (Washington: Center for Strategic and International Studies, 1999) Internet, <http://www.csis.org/ruseura/ex999.html>. accessed 23 December 2000, 1.

⁴⁸ Timothy L. Thomas, "A Tale of Two Theaters: Russian Actions in Chechnya in 1994 and 1999," Foreign Military Studies Office, Internet, <http://call.army.mil/call/fms/fmsopubs/issues/chechtale.htm>. accessed 14 January 2001, 3.

⁴⁹ Jeff Thomas, "Russia's Second Chechen War," (Washington: Center for Strategic and International Studies, 1999) Internet, <http://www.csis.org/ruseura/ex999.html>. accessed 23 December 2000, 2.

⁵⁰ Thomas Valasek, Interview: Shamil Basayev, Chechen Commander of the Eastern Section of the Chechen Front, *Jane's Defense Weekly*, 6 October 1999. Internet, <http://www.cdi.org/issues/Europe/basayev.html>. accessed 3 March 2001, 1.

the breakaway southern region. Until now, the military has favored an air war that would keep casualties to a minimum.”⁵¹

Using airpower extensively at the beginning of a military campaign is not a new concept. The coalition allied against Iraq applied it successfully during the 1991 war to free Kuwait, and NATO chose the airpower option to force Milosevic to withdraw from Kosovo in 1999. The Russian Air Force commander, General Anatoly Kornukov, proudly declared that there were “certain parallels” between the Russian air strikes in Chechnya and the NATO campaign in the Balkans. However, as military specialist Pavel Felgengauer pointed out, “Chechnya is not Yugoslavia... In Chechnya, nobody is in charge. You cannot bomb Chechnya into submission because there is nobody to submit.”⁵² Indeed, Russia was not fighting just one man, and consequently, their objectives were different.

The initial Russian air campaign against Chechnya had three objectives: to prevent further attacks by Chechen rebels, destroy the rebel support structure, and to isolate the rebels economically. To meet the first objective of preventing further rebel attacks, Russian combat aircraft attacked several rebel bases, destroyed seven bridges, and mined or destroyed over twenty kilometers of roads and paths used by the rebels. The second objective, closely related to the first, required Russian jets to attack the rebel’s material base. According to the commander of the Russian Air Force, aircrews hit seven supply bases, seven training camps and four weapon storage sites during the first week of air strikes. The last objective most closely resembled NATO’s aerial attacks against Belgrade in 1999. To cut the rebels off from their financial base, based largely on illegal gasoline trading, planners selected several industrial targets. To this end, Russian aircrews destroyed numerous small fuel processing plants and four oil refineries,

⁵¹ Ruslan Musayev, “Russia Prepared for Ground War against Chechnya, Airstrikes Continue for Fourth Day,” Associated Press, 27 September 1999. Internet, www.washingtonpost.com/wp-srv/Wpcap/1999-09/27/005r-092799-idx.html. accessed 28 January 2001.

⁵² General Anatoly M. Kornukov assumed command of the Russian Air Force on 20 January 1998. Michael R. Gordon, “Imitating NATO: A Script Is Adapted for Chechnya,” *New York Times International*, 28 September 1999, A3.

including the largest refinery in southern Russia, located in central Grozny. Additionally, aircrews targeted ten large oil storage facilities, one electrical power plant, and two weapons factories.⁵³ The scale and intensity of the initial attacks, unlike anything seen in the First Chechen War, shocked the world and prepared the way for Russian ground forces to advance towards the capital city of Grozny.

The second phase of the Russian operation in Chechnya, to rout rebel formations, also relied heavily on Russian airpower. During this phase, the Russian Air Force sought to isolate the rebels in the larger towns and cities, and create favorable conditions for the ground offensive. This phase began in early October 1999 as strategic targeting gradually gave way to interdiction and close air support. In order to isolate the rebel formations, the Russian Air Force continued its theater-wide bombing campaign against the rebel support base, while aggressively cutting supply routes.⁵⁴ The overriding goal of this phase was to limit Russian ground casualties. The Russian commanders planned to accomplish this through massive bombardment of rebel positions, using artillery, attack aviation, and jet combat aircraft. Planners designed these suppressive attacks to allow Russian ground forces to advance against little resistance.⁵⁵

Driving the rebels from Grozny was the centerpiece of phase two. This operation began in mid October with a three-pronged attack to isolate and then invest the capital city. In contrast to the ill-fated dash to the city center during the first war, this methodical and cautious assault relied heavily on artillery and airpower to reduce resistance and drive rebels away from the protection of the urban environment.⁵⁶ In fact, Russian officials did not talk publicly about clearing Grozny

⁵³ Targets also included the Grozny airport where the last remaining aircraft of the Chechen Air Force, an AN-2 Colt was destroyed. Venik, "Chechen War Chronicles, 29 September 1999 to 7 October 1999" Internet, <http://members.nbci.com/082499/aviation/index.htm>. accessed 25 February 2001.

⁵⁴ Venik, "Chechen War Chronicles, 29 September 1999 to 7 October 1999" Internet, <http://members.nbci.com/082499/aviation/index.htm>. accessed 25 February 2001.

⁵⁵ Timothy L. Thomas, "A Tale of Two Theaters: Russian Actions in Chechnya in 1994 and 1999," Foreign Military Studies Office, Internet, <http://call.army.mil/call/fmso/fmsopubs/issues/chechtale.htm>. accessed 14 January 2001, 3.

⁵⁶ G.D. Bakshi, "The War in Chechnya: A Military Analysis," Internet. <http://www.idsa-india.org/an-aug-300.html>. accessed 17 January 2001, 8.

until 21 October 1999.⁵⁷ Speaking in early February 2000, after Grozny had fallen to federal forces, the commander of the Combined Troop Grouping stated that the plan had been to blockade the city, rather than enter it. Bandits were to be destroyed from afar using aircraft and artillery. Acting Russian President Vladimir Putin denied the tactics, but underscored the objective when he said, “our aim is not to encircle the terrorists. Our aim is to destroy them and bring them to justice.”⁵⁸ The Russian Air Force played a key role in the destruction that came to symbolize the second Russian assault on Grozny.

During the encirclement of Grozny, Russian airpower mercilessly pounded suspected rebel positions inside the city with very little apparent concern for collateral damage. While western news media reported on the devastation in Grozny and other towns, the Air Force Commander in Chechnya defended his tactics. “We generally do not operate against villages; this is all a fabrication. We delivered several strikes on Grozny. But, there we used correctable aerial bombs whose probable deviation amounts to one meter. We delivered the strikes absolutely precisely.”⁵⁹ Russian officials downplayed reports of high civilian casualties and widespread destruction, citing their offers of free passage out of the city for all civilians. The Russian Air Force dropped leaflets into the city warning those who remained of the consequences.

This leaflet addresses such of Grozny’s defenders who retain common sense and see things as they are. You are encircled. All roads to Grozny are blocked. You are the losers with no chance to win. Your commanders are at a loss what to do next. Death is taking its toll in your ranks day in, day out. Resistance is pointless. The federal command is offering you your last chance... All who

⁵⁷ Timothy L. Thomas, “A Tale of Two Theaters: Russian Actions in Chechnya in 1994 and 1999,” Foreign Military Studies Office, Internet, <http://call.army.mil/call/fmso/fmsopubs/issues/chechtale.htm>. accessed 14 January 2001, 3.

⁵⁸ The Combined Troop Grouping, including army, MVD and other security forces, resulted from the extensive reorganization of the North Caucasus Military District following the First Chechen War. Ibid, 2. For an excellent analysis of the battle for Grozny, see Timothy L. Thomas, “Grozny 2000: Urban Combat Lessons Learned,” Internet <http://call.army.mil/fmso/fmsopubs/issues/grozny2000/grozny2000.htm> accessed 17 January 2001, 5.

⁵⁹ “Correctable aerial bombs” probably refers to Russian laser-guided bombs, similar to the U.S. Paveway II series. These weapons have a circular-error probable (CEP) of 3 meters. Boris Nikolayev, “In the Fiery Skies of Chechnya,” *Karmeyskiy Sbornik* (March 2000): 32-36, FBIS-CEP20000508000178, 8 March 2000, 2.

choose to stay in the city will be regarded as bandits and terrorists to be destroyed by air raids and artillery fire.⁶⁰

When the battle for Grozny began, an estimated 20,000 to 30,000 residents remained in the city; many huddled in basements, too old or afraid to leave the city.⁶¹

With Grozny completely cut off, ground forces moved into the suburbs in early December 1999. An attempt by Russian forces to break through rebel defenses failed and after a brief pause, heavy fighting resumed on the outskirts of Grozny. The final deliberate assault began on 17 January 2000. In the two weeks that followed, Russian Army and Air Force aircrews flew 2,160 combat sorties, including a high of 250 sorties on 24 January 2000.⁶²

Typical of the second phase of Russian Air Force involvement, these sorties reflected a shift in emphasis to close air support and interdiction directly supporting ground maneuver.⁶³ The Russian Air Force supported the ground assault by destroying rebel strong points, vehicles and communication facilities, including cellular relay towers. Experience in the First Chechen War taught the Russian military the value of cellular telephones in urban environments, where complex terrain severely degraded frequency-modulated communications. Under relentless bombardment from artillery and air strikes, isolated from outside support, and unable to communicate effectively, Chechen leaders ordered a general withdrawal from Grozny on 1 February 2000.⁶⁴

As Chechen rebels desperately fled the rubble of Grozny, seeking refuge in the foothills and mountains of southern Chechnya, the Russian Air Force shifted its focus to the third phase of the operation. Preparations to block rebel escape-routes into the southern mountains actually began

⁶⁰ "Chechen Chronicles," Moscow: Russian Information Center, 6 December 1999, Internet, <http://www.infocentre.ru>. accessed 17 December 2000.

⁶¹ Timothy L. Thomas, "Grozny 2000: Urban Combat Lessons Learned," Internet <http://call.army.mil/fms/fmsopubs/issues/grozny2000/grozny2000.htm>. accessed 17 January 2001, 3.

⁶² Venik, "War in Chechnya: Russian Air Force Losses," Internet. www.aeronautics.ru/chechnya/losses/index.htm. accessed 24 February 2001.

⁶³ Venik, "Chechen War Chronicles, 17 January 2000 to 25 January 2000" Internet, <http://members.nbci.com/011700/aviation/index.htm> accessed 25 February 2001.

⁶⁴ Timothy L. Thomas, "Grozny 2000: Urban Combat Lessons Learned," Internet <http://call.army.mil/fms/fmsopubs/issues/grozny2000/grozny2000.htm>. accessed 17 January 2001, 3-9.

long before Grozny fell to Federal forces. In January 2000, the Southern Group of Forces took up blocking positions along the border. Russian air strikes intensified, attacking rebel bases and ammunition supplies around the village of Shatoi. This village served as the main base for rebels defending the strategically important Argun gorge. Rebels escaping the towns and cities reduced by federal forces had to pass through this gorge, or the Vedeno gorge to the east, in order to reach the relative safety of the southeastern foothills.⁶⁵

Attacking small rebel formations and supply vehicles moving on mountain paths presented a significant challenge to Russian Air Force planners. Expanding on the “free-hunt” tactics used during the first phase of the operation, planners teamed reconnaissance and attack jets to locate and destroy mobile targets.⁶⁶ According to the Russian Information Center, the Gagarin Air Force Academy developed the new methods at the urging of Deputy Minister of Defense General Vladimir Toporov, based on experience in the Afghani and Chechen campaigns.⁶⁷ Earlier in the campaign, General Toporov praised Russian aircrews for doing in Chechnya what NATO air forces failed to do in Yugoslavia; destroy mobile military targets.⁶⁸

After forcing the rebels out of Grozny, the eastern and western groupings drove the fleeing rebels toward the gorges, against the anvil created by the Southern Group of Forces. The Russian Air Force attacked enemy positions deep in mountain gorges and caves using powerful fuel-air

⁶⁵ G.D. Bakshi, “The War in Chechnya: A Military Analysis,” Internet. <http://www.idsa-india.org/an-aug-300.html>. accessed 17 January 2001, 9.

⁶⁶ In the “free hunt” mission, Frogfoot pilots searched broad areas, often in front of advancing Russian troops, for targets of opportunity. Once the pilots detected a target, they employed cooperative tactics to destroy it while protecting each other from ground fire. Russian Frogfoot pilots destroyed numerous rebel targets during these missions and more importantly, they reduced the rebels freedom to maneuver. Venik, “Chechen War Chronicles, 30 October 1999” Internet, <http://members.nbci.com/103099/aviation/index.htm> accessed 25 February 2001.

⁶⁷ Russian Information Center Chronicles, 8 February 2000, Internet, <http://www.infocentre.ru>. accessed 17 December 2000.

⁶⁸ General Toporov made these remarks 21 October 1999 in reference to the low-altitude, seek-and-destroy tactics used by Russian pilots to acquire targets for visual attacks. Russian sources generally refer to these tactics as “free-hunt.” U.S. Air Force doctrine describes these missions as armed reconnaissance. See Department of the Air Force, *AFDD 2-1.3 Counterland* (Washington, D.C.: GPO, 1999), 27. Venik, “Chechen War Chronicles, 21 October 1999” Internet, <http://members.nbci.com/112199/aviation/index.htm> accessed 25 February 2001.

bombs.⁶⁹ By the end of February, Russian forces were in command of the strategically important Argun and Vedeno gorges, and had occupied Shatoi. The victories in what has been called the “Battle for the Gorges,” prompted Lieutenant General Gennady Troshev, Deputy Commander of the Russian Forces, to announce the successful completion of the five-month-old Chechen operation.⁷⁰ The fact that Russian forces are still fighting Chechen rebels in the southern foothills and mountains, a full year later, underscores the difficulty in winning unconventional wars. However, the situation as it existed at the end of February 2000 provided a logical ending point for the evaluation of Russian Air Force employment concepts in the Second Chechen War. Aerial Operations occurring after this date were minor in scale and involved employment methods typical of the final phase of the Russian strategy.

The first phase of the Second Chechen War saw Russian airpower used independently, for strategic bombing and theater-wide interdiction. While these missions continued during the second phase, the main effort shifted to supporting the ground forces in isolating the major cities and towns and destroying rebel formations. The Russian Air Force conducted suppressive air strikes, enabling maneuver-by-fire tactics by ground forces. According to Russian officials, Russian aircraft employed precision-guided weapons extensively in an effort to minimize collateral damage and civilian casualties. During the third phase of the Second Chechen War, the Russian Air Force once again realigned its efforts. Engaging an elusive enemy, fighting from well-protected bases in the mountainous terrain required a level of flexibility not previously seen from the Russian Air Force. Russian aircrews refined hunter-killer tactics as attack jets, working with reconnaissance assets, struck mobile and fleeting targets. In all phases, the Russian Air Force used appropriate employment concepts in an attempt to achieve the military objectives, at

⁶⁹ Aleksandr Drobyshevskiy, “Armed Forces Problems and Solutions: The Shield and Sword Are in Reliable Hands,” *Armeyskiy Sbornik* (April 2000): 10-13, FBIS-CEP20000629000307, 1 April 2000, 3.

⁷⁰ G.D. Bakshi, “The War in Chechnya: A Military Analysis,” Internet. <http://www.idsa-india.org/an-aug-300.html>. accessed 17 January 2001, 9.

acceptable cost within their capabilities. The controlling factor in this equation was Russian Air Force equipment, principally aircraft and weapons.

CHAPTER FOUR

RUSSIAN AIR FORCE EQUIPMENT IN THE SECOND CHECHEN WAR

No one fears the rebels. Now let them be the ones who fear. For the staff of the aviation grouping is now combat-oriented. They all want one thing—to eradicate this infection as soon as possible.⁷¹

Lieutenant General Valeriy Gorbenko
Commander of the North Caucasus United Aviation Grouping

The operational environment faced by the Russian Air Force in Chechnya called for fixed-wing aircraft capable of employing a wide variety of weapons. The air defense threat from anti-aircraft guns and shoulder-fired missiles limited the effectiveness of attack helicopters, especially over urban terrain. During the Second Chechen War, commanders relied increasingly on the more survivable fixed-wing aircraft. According to the commander-in-chief of the Russian Air Force, General of the Army Anatoliy M. Kornukov, “in analyzing the combat experience of employing aircraft in the North Caucasus, the conclusion can be drawn that the majority of fire missions during combat operations were performed by Air Force aircraft.”⁷²

Statistics show that during the First Chechen War, every tenth helicopter participating in the conflict was lost and every fourth was damaged.⁷³ Colonel General Vitaliy Pavlov, commander of Russian Army Aviation, recalled the lessons of the first Chechen War when he commented on the limited use of helicopters. “Only 17 percent of our resources (helicopters) were used for combat missions. After 6 January [1995] (when Russian troops entered Grozny), the use of flight

⁷¹ Boris Nikolayev, “In the Fiery Skies of Chechnya,” *Karmeyskiy Sbornik* (March 2000): 32-36, FBIS-CEP20000508000178, 8 March 2000, 5.

⁷² Russian forces used attack helicopters extensively over terrain controlled by Russian forces. According to information released by Russian Air Force officials on 12 April 2000, since the beginning of combat operations in the Northern Caucasus on 3 August 1999, Russian Air Force aircraft flew over 10,500 missions, while army aviation aircraft flew over 25,000 missions. Many of the army aviation sorties were flown by transport and combat-support helicopters. Venik, “Chechen War Chronicles, 12 April 2000,” Internet, <http://www.aeronautics.ru/chechnya/041200.htm>. accessed 28 March 2001.

Aleksandr Drobyshevskiy, “Armed Forces Problems and Solutions: The Shield and Sword Are in Reliable Hands,” *Armeyskiy Sbornik* (April 2000): 10-13, FBIS-CEP20000629000307, 1 April 2000, 3.

⁷³ Timothy L. Thomas, “Air Operations in Low Intensity Conflict: the Case of Chechnya,” *Airpower*

resources for purely combat missions was reduced even further.” Once Russian ground troops entered the city limits, aviation commanders were not prepared to risk their helicopters to sniper fire from roof and balcony positions. General Pavlov concluded, “Urban combat is not suited to helicopters.”⁷⁴

While the low altitude domain proved dangerous for helicopters, higher altitudes provided a sanctuary for fixed-wing aircraft. Without an air force, the Chechen rebels were unable to contest Russian control of the air, and Russian air superiority fighters were not required.⁷⁵ Russian aircraft could operate freely over Chechnya above the effective range of light-caliber anti-aircraft guns and shoulder-fired missiles. However, if forced to operate at low altitude to locate targets visually or avoid weather, aircraft became vulnerable to Chechen defenses.⁷⁶ In this respect, the Russian Air Force, like NATO in the 1999 Kosovo operation, never truly achieved air superiority.

The proximity of suitable airfields and relatively small theater of operations negated the need for long-range aircraft or air refueling tankers. The threat to low-flying aircraft, relative sanctuary above the defenses, and the proximity of suitable airfields suggested a reliance on Russian frontal, or tactical, aviation.

Russian commanders needed aircraft capable of navigating and locating targets in mountainous terrain, often in poor weather. A heavy bomb load would be required, with the capability to strike small targets accurately. Additionally, Russian aircraft would need to support ground troops operating in open, urban and mountainous terrain. It was a tall order, and no single Russian aircraft could answer the call. Instead, the commander of the combined air formation

Journal (Winter 1997): 55.

⁷⁴ Several Russian helicopters fell prey to ambushes, as Chechen defenders patiently withheld fire until their victims came within lethal range. “Army Aviation in Chechnya,” *Jane’s Defense Weekly*, 10 June 1995, 79.

⁷⁵ A regiment of Su-27 Flanker air superiority fighters and two An-50 Mainstay AWACS aircraft maintained constant surveillance to prevent aerial resupply of the Chechen rebels. David A. Fulghum, “Air War in Chechnya Reveals Mix of Tactics,” *Aviation Week and Space Technology*, 14 February 2000, 78.

⁷⁶ The author considers 10,000 feet the minimum safe altitude for tactical aircraft operating in an air defense environment like Chechnya.

deployed a combination of low-technology attack aircraft and sophisticated fighter-bombers.

According to Lieutenant General Valeriy Gorbenko,

Bomber aviation accomplished combat missions mainly in the mountain areas against guerrilla camps and against bandit bases. The ground attack aircraft carried out support of the ground troops during the entire operation and operated only against visually visible targets, they accomplished missions for the localization of the combat operations areas and to prevent transport movements of reserves, ammunition, and weapons by the enemy. And, of course, a large portion of the work was laid on their shoulders.⁷⁷

During the Second Chechen War, the Russian Air Force relied on two workhorses of the frontal aviation force, the Su-24 Fencer tactical bomber and the combat-proven Su-25 Frogfoot attack jet.

AIRCRAFT

The most plentiful fighter-bomber in the Russian Air Force inventory, the supersonic Su-24 Fencer, was widely used in the Second Chechen War. The upgraded Su-24M Fencer-D deployed for operations in Chechnya represented the second generation of this versatile strike aircraft. A new navigation and attack system, combined with a laser designator allowed the Fencer-D to deliver the most advanced precision guided weapons. The ability to fly in any weather condition and deliver precision-guided weapons made the Fencer-D a natural choice for operations in Chechnya.⁷⁸

During the Second Chechen War, Fencer crews used the jet's advanced attack systems to deliver a wide variety of ordnance. The primary weapons employed by the Fencer in Chechnya included free-fall bombs, cluster bombs and air-delivered mines. The Fencer crews used

⁷⁷ Oleg Finayev, "Lt-Gen Gorbenko Reflects on Air Operations in Chechnya," *Moscow Krasnaya Zvezda* (16 August 2000): FBIS-CEP20000815000272, 15 August 2000, 2.

⁷⁸ The Sukhoi design bureau began work on the Fencer during the late 1960's to provide the Soviet Air Force with a frontal bomber to deliver a wide range of air-to-surface munitions. The Fencer shares many design features with the contemporary U.S. built F-111, including variable-geometry wings, side-by-side cockpit seating, automatic terrain-following radar, and a long-range navigation system. Like the F-111, the Fencer is capable of penetrating hostile airspace at low-altitude at night or in adverse weather to deliver its ordnance. The F-111 is no longer in service with the USAF, replaced by the more capable dual-role F-15E Strike Eagle. Paul Jackson, ed., *Jane's All the Worlds Aircraft 1999-2000*, (Surrey, UK: Jane's Information

precision munitions less often, including laser-guided bombs, guided missiles and datalink-guided bombs.⁷⁹ A superb strike aircraft, the Fencer is poorly suited for close air support. High-speed level approaches and poor cockpit visibility make visual target identification and attack difficult for Fencer crews.

A normal Fencer attack sequence begins with the crew flying towards a known target, using the on-board navigation systems. The weapon systems officer then refines the target location using radar or infrared (IR) sensors. These sensors cannot detect targets hidden behind shadows caused by intervening terrain or obstacles. Small point targets, or aim points in complex urban environments are particularly difficult to detect. If the target is not identifiable on the sensor, the pilot can release the bomb on coordinates. The computer constantly updates the release point, based on the weapon's ballistic characteristics and the aircraft's flight data. However, without global positioning systems (GPS) updates to the aircraft navigation systems, this technique may result in significant miss-distances. This may explain the reports of Russian "carpet bombing."⁸⁰ Gusty winds and high altitude releases, typical in mountainous terrain, further degrade the accuracy of system deliveries. After the pilot gives consent by depressing the "pickle button," the aircraft's bombing computer releases the weapon.⁸¹

Proficient Fencer aircrews using computed deliveries should normally place bombs within 200 feet of the target in any weather.⁸² To improve the odds of destroying the target, the crew may release multiple weapons, singularly or in pairs, sequentially to form a "string" of bombs. Ideally, this pattern will intersect the target and one or more weapons will achieve the desired results. The remaining weapons, impacting off-target, may cause serious collateral damage.

Group, 1999), 424-426.

⁷⁹ Venik, "Chechen War Chronicles, 12 April 2000" Internet, <http://www.aeronautics.ru/chechnya/041200.htm> accessed 28 March 2001, February 2001.

⁸⁰ Pavel Felgenhauer, "Is Victory Really for the Good?" *The St. Petersburg Times*, 5 November 1999, internet, <http://www.sptimes.ru/archive/times/515/opinion/defense.htm> accessed 28 January 2001, 1.

⁸¹ Alternately, Fencer pilots could bomb manually, using visual references. Manual bombing is a demanding skill requiring substantial practice, and it is the author's opinion that Fencer pilots could expect very poor results using such techniques.

⁸² Paul Jackson, ed., *Jane's All the Worlds Aircraft 1999-2000*, (Surrey, UK: Jane's Information Group,

While the Su-24 Fencer is capable of delivering an impressive bomb load in any weather, it lacks the maneuverability and cockpit visibility required to operate closely with ground troops, or hunt for mobile targets. For these tasks, Russian commanders relied on the venerable Sukhoi Su-25 Frogfoot.

The Frogfoot saw extensive service during the eight-year war in Afghanistan, flying over 60,000 sorties.⁸³ Rugged, survivable and maneuverable, the Frogfoot is well suited to low and medium altitude operations in close cooperation with ground forces. The primary advantage of the Frogfoot for operations in urban terrain is survivability. Low flying helicopters proved extremely vulnerable to anti-aircraft guns, man-portable missiles and rocket-propelled grenades. The faster and heavily armored Frogfoot attacked with less warning and quickly exited the lethal envelopes of the short-range air defense systems. Russian commanders in Chechnya favored the Frogfoot over attack helicopters for close air support in urban terrain.

During the Second Chechen War, Frogfoot pilots normally attacked from 16,000 to 20,000 feet after visually acquiring the target.⁸⁴ Unlike the Fencer, the Frogfoot lacks a sophisticated bombing and navigation system and locating targets in poor weather is very difficult. Frogfoot pilots may fly at lower altitudes, close to the target area, in order to identify the target and features that will help them identify it from medium altitude. During subsequent passes, the Frogfoot pilot uses these visual cues to locate previously the identified targets and deliver his ordnance.

Frogfoot pilots used unguided rockets and bombs for most targets. For point targets, such as mortar positions and bunkers, the Frogfoot pilots employed laser-guided Kh-25ML (NATO AS-

1999), 425.

⁸³ The Frogfoot entered squadron service with the Soviet Air Force in the early 1980's. Similar in design and appearance to the U.S. built A-10 Warthog, the Frogfoot can carry over 3,000 pounds of ordnance at speeds over 500 knots. During combat action in Afghanistan, 23 Su-25s were lost and eight pilots killed. The maximum external load is 9,700 lbs, but 3,086 lbs is the normal maximum. By comparison, the A-10 can carry up to 9,500 lbs at a maximum speed of 420 knots. Paul Jackson, ed., *Jane's All the Worlds Aircraft 1999-2000*, (Surrey, UK: Jane's Information Group, 1999), 425-429.

⁸⁴ "Whirlwind over the Caucasus," Internet, http://members.nbci.com/_XMCM/082499/aviation/nws001/afm104.htm. accessed 24 February 2001, 2.

10 Karen) missiles, similar to the U.S. AGM-65E Maverick.⁸⁵ This missile requires the pilot to identify the target in his display before launching the weapon. The *Kayra* automatic tracking system then keeps the laser designator on the target. Frogfoot pilots also launched the larger TV and laser-guided Kh-29TE/L (NATO AS-14 Kedge) missiles against high-value targets.⁸⁶ Precision-guided weapons and medium altitude tactics allowed the Frogfoot to operate effectively in areas too dangerous for attack helicopters.

Although the Frogfoot proved highly effective at close air support, it was even more deadly in the “free hunt” mission. Operating in pairs, the Frogfoot pilots searched broad areas, often in front of advancing Russian troops, for targets of opportunity. Once the pilots detected a target, they employed cooperative tactics to destroy it while protecting each other from ground fire. Russian Frogfoot pilots destroyed numerous rebel targets during these missions and more importantly, they reduced the rebels freedom to maneuver. Surprisingly, Russian pilots did not use this tactic during the First Chechen War.⁸⁷ However, “free-hunt” missions were not without risk. Chechen rebels shot down a Frogfoot on an armed reconnaissance mission over the village of Tolstoy-Yurt on 3 October 1999.⁸⁸ Visually searching for targets was not only risky, it was sometimes futile.

The probability of finding and killing mobile targets increased when Russian planners teamed the attackers with reconnaissance jets. Operating as “hunter-killer” teams, reconnaissance jets located lucrative targets for pairs of Su-25 Frogfoot or Su-24M Fencers.⁸⁹ A Fencer variant,

⁸⁵ “Whirlwind over the Caucasus,” Internet,

http://members.nbci.com/_XMCM/082499/aviation/nws001/afm104.htm. accessed 24 February 2001, 2.

⁸⁶ Duncan Lennox, ed., *Jane’s Air-Launched Weapons*. (Surrey, UK: Jane’s Information Group, 1999).

“Whirlwind over the Caucasus,” Internet,

http://members.nbci.com/_XMCM/082499/aviation/nws001/afm104.htm. accessed 24 February 2001, 2.

⁸⁷ Venik, “Chechen War Chronicles, 30 October 1999” Internet,

<http://members.nbci.com/103099/aviation/index.htm> accessed 25 February 2001.

⁸⁸ Conducting armed reconnaissance missions to detect targets of opportunity requires air superiority or a willingness to accept increased risk. As of 5 November 2000, Russian Air Force losses included 3 x Su-25s (2 mechanical failure, 1 shot down), 2 x Su-24 (1 shot down, 1 crashed due to poor weather). During the same period, 10 helicopters were destroyed and 8 heavily damaged. “War in Chechnya: Russian AF Losses,” Internet. <http://www.aeronautics.ru/chechnya/losses/index.htm> accessed 24 February 2001.

⁸⁹ A Su-24MR crashed into a mountain in dense fog on 7 May 2000 while reportedly flying a

specially modified for reconnaissance, was the most widely used “hunter.”⁹⁰ The Su-24MR Fencer-E is fitted with side-looking multi-mission radar in the nose and an infrared reconnaissance system under the center fuselage. Other sensors include TV, panoramic and oblique cameras. Using a laser designator, the Fencer-E can pinpoint target locations and potentially guide weapons released from other aircraft. The aircraft can transmit data to ground stations using an onboard data link. Specialists can then comb this data for targets, and pass candidates to the operations center for immediate tasking.⁹¹

Destroying time sensitive targets was only one of the challenges faced by Russian Air Force commanders during the Second Chechen War. Airmen had to cope with low altitude air defenses, difficult terrain and poor weather. Most importantly, Russian leadership instructed planners to avoid collateral damage.⁹² To meet these demands, the Russian Air Force relied heavily on the sophisticated SU-24 Fencer fighter-bomber and the versatile SU-25 Frogfoot attack jet. These aircraft employed a wide variety of weapons, including laser-guided bombs and air-to-ground missiles.

AIR DELIVERED WEAPONS

Precision-guided weapons (PGM) can tremendously improve accuracy and reduce collateral damage. The Russian Air Force employed very few PGMs in the First Chechen War, perhaps saving them for use in a conventional theater. During the Second Chechen War, Russian aircrews

reconnaissance and target acquisition mission for a flight of several Su-25 ground attack jets. “War in Chechnya: Russian AF Losses,” Internet. <http://www.aeronautics.ru/chechnya/losses/index.htm> accessed 24 February 2001.

⁹⁰ Other Russian Air Force reconnaissance aircraft used during the Second Chechen War include the An-30B for aerial photography and mapping, the MiG-25RB and MiG-25RBSH, equipped with side-looking radar, and the Yakovlev Pchela-T photo/video unmanned aerial vehicle (UAV). “Military Aviation News,” November 1999. Internet. <http://military.topcities.com/news/nov99.htm> accessed 28 January 2001.

⁹¹ Paul Jackson, ed., *Jane’s All the Worlds Aircraft 1999-2000*, (Surrey, UK: Jane’s Information Group, 1999), 425. According to the Russian Information Service, the Gagarin Air Force Academy developed new methods for attacking recently located targets at the request of Deputy Defense Minister Vladimir Toporov. Russian Information Center Chronicles, 8 February 2000, Internet, <http://www.infocentre.ru>. accessed 17 December 2000.

⁹² Vladimir Putin, “Why We Must Act,” *New York Times*, 14 November 1999.

employed many more high-precision aerial weapons. On the surface, this suggests that Russia perceived that the threat of conventional war had receded or that sufficient quantities of PGMs were available for use in Chechnya, while maintaining a strategic reserve.⁹³ In reality, the increased use of precision-guided weapons reflects the shift in emphasis from unplanned close air support, characteristic of the First Chechen War, to strategic attack and theater-wide interdiction and a greater concern for collateral damage.

Russian PGMs used in the Second Chechen War, required clear weather and identifiable targets. In contrast, some modern U.S. weapons, aided by GPS, are capable of striking targets in any weather.⁹⁴ Russian Air Force tactics vary depending on the type of weapon used. Fencer aircrews delivering PGMs, used the procedures described above for system deliveries to locate targets, and if required cue the weapon's sensor. Target acquisition is dependent on terrain and environmental features. Targets in highly cluttered environments, such as urban areas, are more difficult to acquire than those in open terrain, like deserts. Smoke or clouds in the target area severely degrade laser and infrared-guided weapons.

Laser-guided bombs were the most commonly employed PGM in the Second Chechen War.⁹⁵ In its simplest form, the laser-guided bomb is nothing more than a standard bomb body with a four-quadrant laser detector attached to the front, with fins added for control and stability. The bomb uses laser energy reflected from the target to correct for minor release errors, caused by winds or aircraft systems. Laser-guided bombs are simple to employ, low cost, and relatively accurate. Most second-generation laser-guided bombs, including the Russian KAB-500L used in Chechnya, are capable of hitting within ten to fifteen feet of the target routinely.⁹⁶ If the air

⁹³ Michael Orr, "Better or Just Not So Bad? An Evaluation of Russian Combat Effectiveness in the Second Chechen War," in *The Second Chechen War*, ed. Anne C. Aldis (London: Conflict Studies Research Centre, 2000), 106-107.

⁹⁴ For example, the Joint Direct Attack Munition (JDAM) uses an internal inertial navigation system, aided by GPS to steer the weapon to its target in any weather. Susan H. Young, "Gallery of USAF Weapons," *Air Force Magazine*, May 2000, 158.

⁹⁵ Aleksandr Drobyshevskiy, "Armed Forces Problems and Solutions: The Shield and Sword Are in Reliable Hands," *Armeyskiy Sbornik* (April 2000): 10-13, FBIS-CEP20000629000307, 1 April 2000, 2.

⁹⁶ Data on the quantity of each weapon type employed in Chechnya is not available. "Russian Air-to-

defense threat dictates a standoff attack, or greater accuracy is required, more advanced weapons may be used.

Datalink-guided weapons, with either infrared or television sensors, are the most accurate precision-guided weapons, but require intensive mission planning and target study. Russian Fencer crews employed the television-guided Kh-59 (NATO AS-13 Kingbolt) against stationary targets in Grozny, Urus-Martan and other heavily defended areas in Chechnya.⁹⁷ Weighing almost 2,000 pounds, the Kingbolt was the largest air-to-ground missile used by the Russian Air Force in Chechnya. After release, the weapon transmits an image of the target area to the Fencer's weapon systems officer. From these images, the WSO can refine the weapons flight path. As the weapon gets closer to the target, small features and details become more apparent and the WSO is able to very precisely select the impact point. Similar U.S. weapons, such as the GBU-15 glide bomb and AGM-130 air-to-ground missile, can strike within a few feet of the intended target.⁹⁸

Russian aircrews used a variety of precision-guided weapons in Chechnya to destroy hardened targets and limit collateral damage. Unintended or collateral damage, especially in civilian population areas received acute media attention. Responding to a reporter's question, the commander of Russian air operations in Chechnya explained the use of airpower in urban areas.

We work on precise targets. Working on population points is categorically forbidden. We work with precision, guidable weapons on rebel fortifications and bases in population points. These are guided missiles and correctable aerial bombs. All operations are documented. Photo images are made of each strike. It is possible to account for each weapon application.⁹⁹

Ground Weapons," Internet, <http://www.aeronautics.ru/img001/airsurface.htm> accessed 15 February 2001.

⁹⁷ Venik, "Chechen War Chronicles, 12 April 2000" Internet, <http://www.aeronautics.ru/chechnya/041200.htm> accessed 28 March 2001, February 2001.

⁹⁸ Because of the longer release-range and time-of-flight, datalink-guided weapons are more affected by crosswinds. Aircrews must conduct detailed mission planning and target study to acquire the target when it passes into the weapon's narrow field of view. If the WSO fails to identify the target, substantial miss-distances are possible. The AS-13 Kingbolt was first displayed to the public at the Dubai Air Show in 1991, although development began in the 1970s. The Fencer uses the APK-9 datalink pod to transmit data between the AS-13 and the guiding aircraft. Duncan Lennox, ed., *Jane's Air-Launched Weapons*. (Surrey, UK: Jane's Information Group, 1999).

⁹⁹ Boris Nikolayev, "In the Fiery Skies of Chechnya," *Karmeyskiy Sbornik* (March 2000): 32-36, FBIS-

Taking a lesson from NATO, Russian commanders used cockpit video and post-strike photos to create the impression that planners were using all possible means to prevent collateral damage. The commander of the Russian Air Force even gave a NATO style briefing, waving his pointer as he narrated combat videos of Russian precision air strikes against Chechen targets, evoking comparisons in the press to NATO's former commander, General Wesley K. Clark.¹⁰⁰

Russian aircrews did use precision-guided weapons with great effectiveness, but never in sufficient quantity to eliminate unintended destruction. Although deadly against point targets, precision-guided weapons could not destroy fortified rebel hideouts sheltered within mountain ravines. For this task, the Russians turned to powerful thermobaric, or fuel-air bombs. The commander of the Russian Air Force denied that his forces used "enhanced-power munitions" in 1999. However, General Kornukov allowed that, "it was another matter when combat operations were shifted to mountainous areas of Chechnya. Such weapons are very effective against terrorists taking cover in caves, gorges and fortifications."¹⁰¹ To U.S. officials, Kornukov's promise to "bring hell on the rebels," suggested the use of 1,200-lb. Fuel-air explosives, referred to by the Russians as ODAB-500 weapons. These weapons dispense a cloud of fuel near the ground that mixes with the air. Ignition produces a heightened explosive effect.¹⁰² Fuel-air bombs provided the Russian Air Force with an effective means of destroying Chechen positions in mountainous terrain.

CEP20000508000178, 8 March 2000, 2.

¹⁰⁰ Michael R. Gordon, "Imitating NATO: A Script Is Adapted for Chechnya," *New York Times International*, 28 September 1999, A3.

¹⁰¹ Aleksandr Drobyshevskiy, "Armed Forces Problems and Solutions: The Shield and Sword Are in Reliable Hands," *Armeyskiy Sbornik* (April 2000): 10-13, FBIS-CEP20000629000307, 1 April 2000, 3.

¹⁰² "Russia's ODAB-500 PM Bomb," Internet <http://www.aeronautics.ru/nws002/janes014.htm> accessed 28 March 2001. For a more general description of fuel-air explosives, see Lester Grau, "A Crushing Victory: Fuel-Air Explosives and Grozny 2000," Foreign Military Studies Office, Internet, <http://call.army.mil/fmso/fmsopubs/issues/fuelair/fuelair.htm>. accessed 17 January 2001. David Fulghum, "Air War in Chechnya Reveals Mix of Tactics," *Aviation Week and Space Technology*, 14 February 2000, 78.

Russian aircraft, employing a wide variety of weapons, from unguided-rockets to fuel-air explosives, played a major role in all of the phases of the Second Chechen War. From strategic attack to close air support in urban terrain, the Russian Air Force performed all of the tasks assigned. However, was the Russian use of airpower feasible, acceptable and adequate to meet the objectives of the Second Chechen War?

CHAPTER FIVE

ANALYSIS AND IMPLICATIONS

Russian Air Force involvement in The Second Chechen War pitted modern, well-equipped forces against an outnumbered, but resolute, opponent. This conflict provided an excellent backdrop in which to evaluate the performance of a modern air force conducting joint combat operations against an opponent in and around urban terrain. By examining the use of Russian airpower in the Second Chechen War, the author identified three implications for the United States Air Force conducting small-scale, high-intensity operations in and around urban terrain. First, airpower may limit ground force casualties in deliberate attacks against an enemy vulnerable to air attacks. However, conventional airpower cannot reduce ground casualties in guerrilla warfare, or street fighting. Secondly, bombing campaigns aimed at destroying industrial infrastructure have significant adverse effects on the end state and post-conflict operations. Finally, aircraft must be capable of conducting precision attacks in all weather conditions.

The first phase of the Second Chechen War saw Russian airpower used independently, for strategic bombing and theater-wide interdiction. While these missions continued during the second phase, the main effort shifted to supporting the ground forces in isolating the major cities and towns and destroying rebel formations. The third phase of the Second Chechen War saw the Russian Air Force once again realign its efforts. Engaging an elusive enemy, fighting from well-protected bases in the mountainous terrain required flexible air interdiction. In all phases, the Russian Air Force adapted its employment concepts in an attempt to achieve the military objectives, at acceptable cost within their capabilities.

The author analyzed Russian Air Force employment concepts and equipment using criterion outlined in Joint Publication 5-0, *Doctrine for Planning Joint Operations*. These criteria are adequacy, feasibility, and acceptability. Adequacy determines whether the aspect under consideration satisfies the requirement and accomplishes the mission. Feasibility determines

whether the aspect accomplishes the mission within constraints. Finally, acceptability determines whether the aspect complies with the laws of war, and is worth the cost in lives, material and time.¹⁰³

ADEQUACY

The author judged the adequacy of Russian airpower in the Second Chechen War by how well it accomplished the objectives of the air campaign. While most air campaign objectives changed with each phase of the operation, one remained constant throughout the conflict. Commanders repeatedly stressed the importance of limiting Russian casualties, especially during operations in urban terrain.

Aversion to casualties helps explain why the Russian authorities chose to open the operation with an extensive aerial campaign, which they compared to NATO's action against Slobodan Milosevic earlier in the year. While Russian ground forces were moving into northern Chechnya, the Russian Air Force launched a massive bombing campaign to destroy Chechnya's basic economic and governmental infrastructure and isolate the rebels.¹⁰⁴ The first phase of the Russian air campaign against Chechnya had three objectives: to prevent further attacks by Chechen rebels, destroy the rebel support structure, and to isolate the rebels economically.

To meet the first objective of preventing further rebel attacks, Russian combat aircraft attacked several rebel bases, destroyed seven bridges, and mined or destroyed over twenty kilometers of roads and paths used by the rebels in the first week of the sustained air campaign.¹⁰⁵ Russian forces may have accomplished this objective before the air campaign actually began on 23 September 1999. No large-scale rebel attacks into Dagestan from Chechnya occurred after 5 September, when up to 2,000 gunmen crossed the border. Rebel leader Shamil Basayev

¹⁰³ Joint Chiefs of Staff, *JP 5-0 Doctrine for Planning Joint Operations* (Washington, D.C.: GPO, 1995), I-13.

¹⁰⁴ Jeff Thomas, "Russia's Second Chechen War," (Washington: Center for Strategic and International Studies, 1999) Internet, <http://www.csis.org/ruseura/ex999.html>. accessed 23 December 2000, 2.

¹⁰⁵ Venik, "Chechen War Chronicles, 29 September 1999 to 7 October 1999" Internet,

announced that he was pulling his fighters back from Dagestan on 12 September 1999.¹⁰⁶ By mid-September, the Russian troops, supported by air strikes, had routed the militants from several villages and controlled key terrain along the Chechnya-Dagestan border.¹⁰⁷ In conjunction with ground forces, Russian air force attacks on rebel bases, roads and bridges may have prevented the insurgents from massing to attack.

The second objective, closely related to the first, required Russian jets to attack the rebel's material base. According to the commander of the Russian Air Force, aircrews hit seven supply bases, seven training camps and four weapon storage sites during the first week of air strikes. While these strikes met with varying degrees of success, they were insufficient to destroy the rebel supply base. Russian air attacks may have had the effect of spreading out an already distributed supply system and increasing the risk of concentrating large amounts of material.

The last objective most closely resembled NATO's aerial attacks against Belgrade in 1999. To cut the rebels off from their financial base, based largely on illegal gasoline trading, planners selected several industrial targets. By 26 September 1999, Russian air strikes had destroyed Chechnya's oil refinery, a key component of the region's economy, and shutdown Grozny's gas distribution plant. Along with the oil infrastructure, Russian warplanes destroyed the regional communications network, including the television and cellular phone facilities.¹⁰⁸ The first phase of the Russian air campaign succeeded in preventing further attacks by Chechen rebels, destroying portions of the rebel support structure, and cutting the rebels off from a major portion of their financial base. In the process, it reduced much Chechnya's economic potential to rubble.

<http://members.nbci.com/082499/aviation/index.htm> accessed 25 February 2001.

¹⁰⁶ "North Caucasus Conflict: A Day-by-Day Timeline," Internet,

<http://www.cdi.org/issues/Europe/sept.html>. accessed 16 January 2001.

¹⁰⁷ "Second Chechnya War 1999-???", Federation of American Scientists, Military Analysis Network, Internet, <http://www.fas.org/man/dod-101/ops/war/chechnya2.htm> accessed 14 January 2001, 5.

¹⁰⁸ Amelia Gentleman, "Russia Steps up Raids on Grozny," in *The Observer*, 26 September 1999. Internet, <http://www.guardianunlimited.co.uk/Print/0,3858,3905886,00.html>. accessed 15 December 2000.

The second phase of the Russian operation in Chechnya, to rout rebel formations, also relied heavily on Russian airpower. During this phase, the Russian Air Force sought to isolate the rebels in the larger towns and cities, and create favorable conditions for the ground offensive. This phase began gradually in early October 1999 as strategic targeting gave way to interdiction and close air support. In order to isolate the rebel formations, the Russian Air Force continued its theater-wide bombing campaign against the rebel support base, while aggressively cutting supply routes.¹⁰⁹

The overriding goal of this phase was to limit Russian ground casualties.¹¹⁰ The Russian commanders planned to accomplish this through massive bombardment of rebel positions, using artillery, attack aviation, and jet combat aircraft. Planners designed these suppressive attacks to allow Russian ground forces to advance against little resistance.¹¹¹ While suppressive attacks may have limited Russian ground casualties in direct attacks against urban areas, they did little to reduce overall casualties.

The bloodiest fighting of the First Chechen War occurred during the month-long battle for Grozny. During the Second Chechen War, Russian troops took control of the capital with minimal losses after extensive bombardment. According to Lieutenant General Gennadiy Troshev, first deputy commander of the Combined Troop Grouping, only 100 men died from the Federal forces during the entire Grozny operation.¹¹² However, airpower did little to reduce the casualties caused by guerrilla attacks. By late January 2001, over 2,700 troops had lost their lives in the Second Chechen War, with an average of twenty soldiers dieing each week in guerrilla

¹⁰⁹ Venik, "Chechen War Chronicles, 29 September 1999 to 7 October 1999" Internet, <http://members.nbci.com/082499/aviation/index.htm> accessed 25 February 2001.

¹¹⁰ Michael Orr, "Better or Just Not So Bad? An Evaluation of Russian Combat Effectiveness in the Second Chechen War," in *The Second Chechen War*, ed. Anne C. Aldis (London: Conflict Studies Research Centre, 2000), 92.

¹¹¹ Timothy L. Thomas, "A Tale of Two Theaters: Russian Actions in Chechnya in 1994 and 1999," Foreign Military Studies Office, Internet, <http://call.army.mil/call/fmso/fmsopubs/issues/chechtale.htm>, accessed 14 January 2001, 3.

¹¹² Timothy L. Thomas, "Grozny 2000: Urban Combat Lessons Learned," Internet <http://call.army.mil/fmso/fmsopubs/issues/grozny2000/grozny2000.htm>, accessed 17 January 2001, 6.

attacks and mine explosions.¹¹³ The exact number of federal troops killed in the First Chechen War is unknown, but the official Russian Defense Ministry reports put the number under 3000.¹¹⁴ The Second Chechen War was no less bloody, despite the use of suppressive attacks

Russian Air Force objectives during the third phase of the air campaign were to block rebel escape-routes into the southern mountains, and destroy rebel bases. To prevent rebels from fleeing to the mountains, the Russian Air Force scattered mines along key road segments, destroyed bridges, and hunted convoys of rebels.¹¹⁵ Teaming reconnaissance aircraft with attack jets probably improved the chances of locating and destroying mobile targets. It is difficult to determine the success of Russian Air Force operations during this phase with the limited data available. However, the victories by air and ground forces in what has been called the “Battle for the Gorges,” prompted Lieutenant General Gennady Troshev, Deputy Commander of the Russian Forces, to announce the successful completion of the five-month-old Chechen operation.¹¹⁶

The Russian air campaign during the Second Chechen War followed from national strategy. Moscow’s strategy for the Second Chechen War was to contain and isolate Chechen guerillas, destroy rebel bases, and set up an alternative authority to govern Chechnya. The Russian military planned to support these objectives by localizing the conflict, routing bandit formations, and annihilating rebel units in the foothills and mountains. The Russian Air Force successfully accomplished its objectives in all three phases of the operation. However, it failed in its most important objective, reducing Russian ground force casualties.

¹¹³ Michael Wines, “Putin Scaling Down Chechen War Despite New Fighting,” *New York Times*, 23 January 2001. Internet, <http://ebird.dtic.mil/Jan2001/e20010123scaling.htm>. accessed 23 January 2001, 2. John Daniszewski, “Chechen Leader-In –Hiding Won’t Give Up the Fight,” *Los Angeles Times*, 23 January 2001, 1.

¹¹⁴ Pavel Felgenhauer, “The Chechen Campaign,” Internet, <http://nsa.nps.navy.mil/Publications/Tsyarkin/Chechnya/fel.html>. accessed 21 November 2000, 15.

¹¹⁵ Venik, “Chechen War Chronicles, 12 November 1999,” Internet, <http://members.nbci.com/111299/aviation/index.htm>. accessed 24 February 2001.

¹¹⁶ G.D. Bakshi, “The War in Chechnya: A Military Analysis,” Internet. <http://www.idsa-india.org/an-aug-300.html>. accessed 17 January 2001, 9.

FEASIBILITY

Russian Air Force employment concepts during the Second Chechen War were feasible if they accomplished the mission within constraints. Constraints on Russian Air Force operations and equipment in the Second Chechen War included environmental factors, such as weather, and the desire to avoid collateral damage. As Russian Air Force planners learned, these two constraints are often at odds.

Russian Prime Minister Vladimir Putin instructed his commanders to “avoid casualties among the general population,” and said: “We have nothing to gain by doing otherwise.” In a widely publicized statement explaining Russian actions in Chechnya, Prime Minister Putin stressed that, “The Chechen citizens, after all, are our citizens too. Our land and air forces strive to target only opposing armed forces. The whole reason we chose accurately targeted strikes on specifically identified terrorist bases was to avoid direct attacks on Chechen communities.”¹¹⁷ Prime Minister Putin’s stated intention to avoid collateral damage proved infeasible with the aircraft and weapons deployed to Chechnya.

The marginal flying weather in the region required the Russian Air Force to deploy aircraft capable of bombing through clouds with reasonable accuracy. The most capable aircraft available in sufficient numbers was the Su-24 Fencer. However, the Fencer was not equipped with advanced synthetic-aperture radar or satellite navigation systems, typical of advanced western aircraft, and was unable to accurately drop bombs from medium altitude.¹¹⁸ Recognizing this limitation, the Russian Air Force commander restricted such attacks within three kilometers of civilian areas.¹¹⁹ When the weather was clear, the Fencer and its stable mate, the Su-25 Frogfoot effectively employed a variety of precision-guided weapons.

¹¹⁷ Vladimir Putin, “Why We Must Act,” *New York Times*, 14 November 1999.

¹¹⁸ Paul Jackson, ed., *Jane’s All the Worlds Aircraft 1999-2000*, (Surrey, UK: Jane’s Information Group, 1999), 424-426.

¹¹⁹ Boris Nikolayev, “In the Fiery Skies of Chechnya,” *Karmeyskiy Sbornik* (March 2000): 32-36, FBIS-CEP20000508000178, 8 March 2000, 3.

Russian precision-guided weapons were well suited to the targets they attacked. However, the Russian Air Force did not employ them in sufficient numbers to reduce collateral damage to acceptable levels, by western standards.¹²⁰ While inventory considerations may have restricted the use of some precision weapons, weather may have been a bigger factor. None of the precision-guided weapons used by the Russian Air Force in the Second Chechen War were capable of adverse weather employment.¹²¹ The U.S. Air Force was similarly limited during the 1991 Gulf War. Since that time, however, the U.S. Air Force has developed several all-weather precision weapons.¹²²

Russian Air Force employment concepts during the Second Chechen War were unable to accomplish the mission within allowable constraints, and thus infeasible. Specifically, Russian aircraft and precision-guided weapons used in the Second Chechen War were unable to achieve allowable levels of collateral damage. Adverse weather and inventory concerns may have prevented the large-scale employment of precision-guided weapons. Outdated aircraft bombing and navigation systems prevented accurate blind bombing and made all-weather attacks in urban terrain infeasible.

ACCEPTABILITY

Compliance with international laws of war and the cost in personnel and equipment determined whether Russia's use of airpower during the Second Chechen War was acceptable. The Hague and Geneva Conventions, along with customary law establish definite rules regarding how combatants wage war. These customs and treaties describe four general principles of the law: proportionality, discrimination or distinction, unnecessary suffering, and military necessity.

¹²⁰ David A. Fulghum, "Air War in Chechnya Reveals Mix of Tactics," *Aviation Week and Space Technology*, 14 February 2000, 77.

¹²¹ Duncan Lennox, ed., *Jane's Air-Launched Weapons*. (Surrey, UK: Jane's Information Group, 1999).

¹²² *Ibid.*

The first two principles, proportionality and discrimination are particularly germane to Russian Air Force operations in Chechnya.

According to the law of war, “the loss of life and damage to property must not be out of proportion to the military advantage to be gained.” The principle of proportionality requires planners to “consider the collateral effects of the attack and must ensure that the military advantage to be gained by the attack outweighs the risk of death or damage to civilian life and property.” Furthermore, the most fundamental principle of the law of war, the principle of discrimination, requires that combatants must be distinguished from non-combatants. The rules regarding targeting, stemming from the law of war and the Hague Convention, prohibit the attack of undefended towns, dwellings, or buildings.¹²³

Numerous reports in the world news blamed the Russian Air Force for bombing civilian targets indiscriminately. Despite Russian Prime Minister Vladimir Putin’s insistence that, “the Russian armed forces have not carried out a single strike against populated areas,” Chechen casualties were in the hundreds.¹²⁴ Ilias Akhmadov, the Foreign Minister of the Unrecognized Chechen Republic of Ichkeria, lamented,

The most horrible thing is that Russian planes bombed, this evening, residential areas. That is a most sacrilegious thing. Everyday the Russian command declares that they are not bombing [the] Chechen population, that they are bombing places where terrorists are located. I can officially assure you that there is not on terrorists who suffered from those [strikes], even if they were here. Over four hundred people have been killed in the month of bombing raids, and one-third of those killed are women and children.¹²⁵

In late October 1999, the Chechen Health Ministry reported that Russian artillery and air strikes had killed 163 people and injured 380 in a 24-hour period. Madeleine Albright, the U.S. Secretary of State, expressing her deep concern, said, “while they (Russia) have had concerns

¹²³ Department of the Army, *Student Text 27-1, Military Law* (Fort Leavenworth: Command and General Staff College, 1999), 1-8,9.

¹²⁴ Maria Eismont, “Russia Seals Road Out of Chechnya,” *ABC News Online*, Internet, <http://more.abcnews.go.com/sections/world/dailynews/chechnya991023.html>. accessed 17 January 2001.

¹²⁵ “CDI’s Exclusive Interview with Ilias Akhmadov, the Foreign Minister of the Unrecognized Chechen Republic of Ichkeria, September 25, 1999,” *Center for Defense Information Newsletter* 3, no. 38 (30

about activities of terrorists, getting the civilian population involved in this, in this way does not lead to a resolution.”¹²⁶ In addition to the unacceptable civilian casualties, the Russian air campaign created a massive refugee crisis.¹²⁷ More than 160,000 people fled Chechnya in the first month of the Second Chechen War.¹²⁸

The Russian air campaign failed to adequately consider the impact of bombing on the desired end state. Moscow’s strategy called for the establishment of an alternate governing authority to challenge the legitimacy of Chechnya’s existing government. In order to succeed, the new power structure needed to gain the trust of the people, while providing security and basic services. Contrary to its goals, the air campaign may have created new enemies among the Chechen population Russia hopes to govern. “Every bomb which falls on Chechnya today produces tens of people who are capable of doing anything to fight Russians.”¹²⁹

The widespread destruction of basic infrastructure, including industrial and communications facilities, may have destroyed any trust the Chechen people had in Russian authority, and made economic revival almost impossible. A Russian official stressed the importance of resuming the full-scale production of oil following the conflict. According to Oleg Smirnov, of Russia’s fuel

September 1999): 1. Internet, <http://www.cdi.org/weekly/1999/issue38.html>. accessed 15 January 2001.

¹²⁶ Maria Eismont, “Russia Seals Road Out of Chechnya,” *ABC News Online*, Internet, <http://more.abcnews.go.com/sections/world/dailynews/chechnya991023.html>. accessed 17 January 2001.

¹²⁷ Several sources attribute the massive outflow of refugees directly to the Russian air campaign, including the Foreign Minister of the Unrecognized Chechen Republic of Ichkeria. “CDI’s Exclusive Interview with Ilias Akhmadov, the Foreign Minister of the Unrecognized Chechen Republic of Ichkeria, September 25, 1999,” *Center for Defense Information Newsletter* 3, no. 38 (30 September 1999): 2. Internet, <http://www.cdi.org/weekly/1999/issue38.html>. accessed 15 January 2001. See also “Second Chechnya War 1999-???” Federation of American Scientists, Military Analysis Network, Internet, <http://www.fas.org/man/dod-101/ops/war/chechnya2.htm>. accessed 14 January 2001, 7.

¹²⁸ Maria Eismont, “Russia Seals Road Out of Chechnya,” *ABC News Online*, Internet, <http://more.abcnews.go.com/sections/world/dailynews/chechnya991023.html>. accessed 17 January 2001. Estimates on the number of refugees range from 60,000 to 190,000. Jeff Thomas, “Russia’s Second Chechen War,” (Washington: Center for Strategic and International Studies, 1999) Internet, <http://www.csis.org/ruseura/ex999.html>. accessed 23 December 2000, 2. *Russia: Prime Minister Says Combat Operations Underway in Chechnya*, Radio Free Europe/Radio Liberty, 30 September 1999, Internet, <http://www.rferl.org/nca/features/1999/09/F.RU.990930163527.html>. accessed 12 December 2000.

¹²⁹ “CDI’s Exclusive Interview with Ilias Akhmadov, the Foreign Minister of the Unrecognized Chechen Republic of Ichkeria, September 25, 1999,” *Center for Defense Information Newsletter* 3, no. 38 (30 September 1999): 2. Internet, <http://www.cdi.org/weekly/1999/issue38.html>. accessed 15 January 2001. 1.

and energy ministry, “It’s the only way we can earn the money we need to revive Chechnya’s economy.”¹³⁰

While excessive and indiscriminate bombing may have worsened Russia’s position in Chechnya, the loss of aircraft and trained personnel also exacted a toll. From the beginning of combat operations on 3 August 1999 to mid-April 2000, the Russian Air Force lost seventeen aircraft, including four ground strike aircraft and nine helicopters. Eight were lost due to enemy action, the remainder to technical problems. Combat operations seriously damaged seven more aircraft, including one attack helicopter and six transport helicopters. Aircraft crashes during the Second Chechen War claimed the lives of twenty-eight servicemen, including eight pilots.¹³¹

The Russian use of airpower in the Second Chechen War was unacceptable. It did not comply with international laws of war, and failed to consider the effect of the air campaign on the political end state. The widespread destruction and apparent disregard for human lives, which characterized the air campaign, will leave deep scars in the Chechen population. Gaining the trust of the Chechen people and rebuilding the regional infrastructure may prove to be beyond Moscow’s capability.

When measured against the author’s criteria of adequacy, feasibility, and acceptability, the employment of Russian airpower in the Second Chechen War yielded mixed results. Russian Air Force employment concepts were adequate, successfully accomplishing all military objectives. However, airpower failed in its most important objective, reducing Russian ground force casualties. Russian Air Force employment concepts and equipment were unable to accomplish the mission within allowable constraints, making them infeasible. Finally, the failure to comply with international laws of war, and consider the effect of the air campaign on the political end

¹³⁰ Simon McGregor-Wood, “The Spoils of War,” *ABC News Online*, 3 April 2000. Internet, http://www.abcnews.go.com/sections/world/DailyNews/Chechnya000403_water.html. accessed 17 January 2001.

¹³¹ Venik, “Chechen War Chronicles, 12 April 2000,” Internet,

state made the Russian use of airpower in the Second Chechen War unacceptable. Russian Air Force employment concepts did not comply with international laws of war, and failed to consider the effect of the air campaign of the political end state.

The author's analysis of the Russian use of airpower in the Second Chechen War yielded three implications for the U.S. Air Force conducting similar operations. First, airpower may limit ground force casualties in deliberate attacks against an enemy vulnerable to air attacks. However, conventional airpower cannot reduce ground casualties in guerrilla warfare, or street fighting. Secondly, bombing campaigns aimed at destroying industrial infrastructure have significant adverse effects on the end state and post-conflict operations. Finally, aircraft must be capable of conducting precision attacks in all weather conditions.

If the future is indeed the stepchild of Somalia and Chechnya, as former Marine Corps commandant, General Charles Krulak postulated, then military planners would benefit greatly from a careful study of Russia's operations in the Caucasus¹³². Airpower planners and air force commanders should pay particular attention to the limits of airpower in small-scale, high-intensity conflicts against resolute opponents in difficult terrain. As General Charles Boyd, the former deputy commander of the U.S. European Command wrote soon after Operation Deliberate Force: "Despite its appeal to the amateur strategist, a reliance on airpower alone-the strike option-in this type of terrain with these kinds of targets has never held any real promise of conflict resolution."¹³³ If a key to success exists, it must surely be the thoughtful combination of all capabilities brought by a joint force, operating with a singularity of purpose.

<http://www.aeronautics.ru/chechnya/041200.htm>. accessed 28 March 2001.

¹³² The USMC MOUT Homepage, Internet, <http://www.geocities.com/Pentagon/6453/usmcmouta.html>, accessed 23 December 2000.

¹³³ Benjamin S. Lambeth, "Russia's Air War in Chechnya," in *Russia's Airpower in Crisis* (Washington, D.C.: Smithsonian Institution Press, 1999), 142.

APPENDIX 1 - MAP OF CHECHNYA¹³⁴



¹³⁴ “Chechnya Shaded Relief 1995, produced by U.S. Central Intelligence Agency,” The Perry-Castañeda Library Map Collection, The University of Texas at Austin, Internet http://www.lib.utexas.edu/Libs/PCL/Map_collection/commonwealth/Chechnya.jpg. Accessed 7 April 2001.

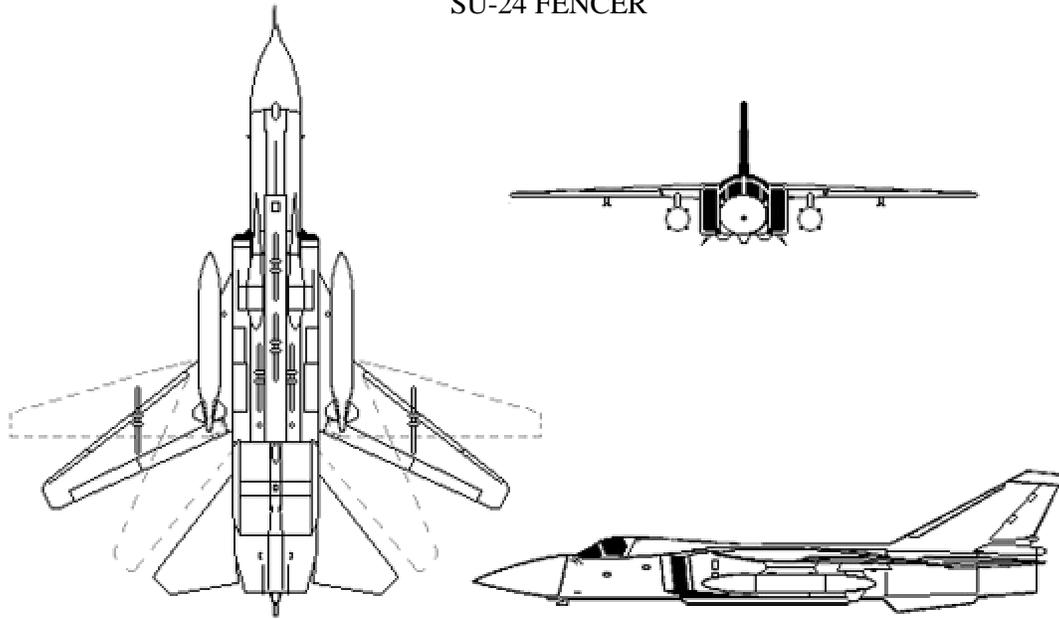
APPENDIX 2 - AIRCRAFT CHARACTERISTICS¹³⁵

	SUKHOI Su-25 Frogfoot-A	SUKHOI Su-24M Fencer-D
	Single-seat, twin engine ground attack aircraft designed for survivability in close air support	Two-seat (pilot/WSO), twin engine, variable geometry tactical bomber for ground attack/strike
Dimensions		
Length	50' 12"	80' 8"
Wing span	47' 2"	57' 10" (34' 0" swept)
Height	15' 9"	20' 3"
Weights		
Empty	20,959 lb	49,163 lb
Max internal fuel	6,285 lb	21,525 lb
Max external stores	9,700 lb (3,086 lb normal max)	17,857 lb
Max takeoff wt	38,800 lb	87,523 lb
Performance		
Max level speed	526 KT at S/L	712 KT at S/L Mach 1.35 at height
Service ceiling	22,960 ft 16,400 ft with max weapons load	57,400 ft
G Limit	+6.5 with 3,300 lb of weapons	+6.5
Combat radius		
	405 NM with 9,700 lb of weapons and two fuel tanks (lo-lo-lo)	174 NM with 5,500 lb of weapons (lo-lo-lo)
	675 NM with 9,700 lb of weapons and two fuel tanks (hi-hi-hi)	565 NM with 6,165 lb of weapons and 2 fuel tanks (hi-lo-hi)
Armament		
	Twin-barrel 30mm gun 3,000 rpm with 250 rounds, Unguided bombs, CBU 57mm – 330mm rockets Laser guided bombs Air-to-surface missiles (AS-7/10/14/17)	Unguided bombs, CBU 57mm – 330mm rockets TV/Laser guided bombs Air-to-surface missiles (AS-7/10/11/12/13/14/17)
Avionics		
	No INS or navigation computer, Kylon PS laser range-finder/target designator	Navigation/attack radar, terrain following radar, Doppler/INS, Kaira-24 Laser ranger/designator, bombing cmpr
Variants		
	SU-25 (Frogfoot-A) Current operational version for close air support and ground attack. (Export SU-25K)	SU-24 (Fencer-A/B/C) First generation strike/attack version, minor design changes, minor avionics improvements
	SU-25UB (Frogfoot-B) Two-seat tandem operational conversion and weapons trainer. (Export SU-25UBK)	SU-24M (Fencer-D/D mod) Second generation strike/attack version, major avionics upgrades
	SU-25UT (Frogfoot-B) same as SU-25UB without weapons capability	SU-24MK (Fencer-D mod) Export version with downgraded avionics
	SU-25UTG (Frogfoot-B) Naval version with tail hook	SU-24MR (Fencer-E) Tactical reconnaissance version of SU-24M
	SU-25T/TM (SU-39) Highly modified version with improved navigation and attack avionics	SU-24MP (Fencer-F) Electronic warfare/jamming/SIGINT version

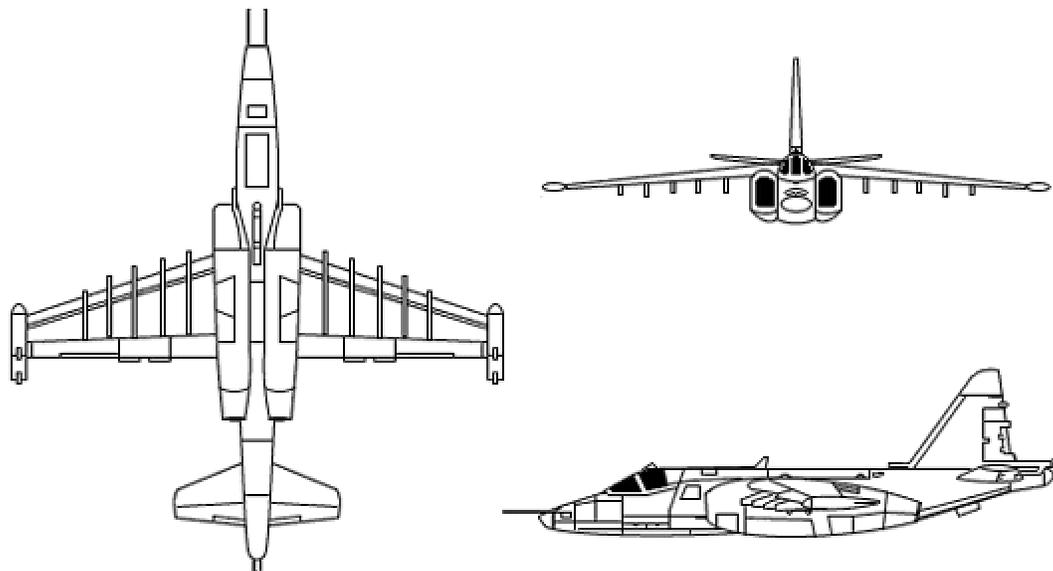
¹³⁵ Paul Jackson, ed., *Jane's All the Worlds Aircraft 1999-2000*, (Surrey, UK: Jane's Information Group, 1999), 424-429.

APPENDIX 3 - AIRCRAFT DIAGRAMS¹³⁶

SU-24 FENCER



SU-25 Frogfoot



¹³⁶ "Rest of World Military Aircraft," Federation of American Scientists, Military Analysis Network, Internet, <http://www.fas.org/man/dod-101/sys/ac/row/index.html>. accessed 14 January 2001.

BIBLIOGRAPHY

- “Army Aviation in Chechnya.” *Jane’s Defense Weekly*, 10 June 1995, 79.
- Aldis, Anne C., ed. *The Second Chechen War*. Camberley: The Conflict Studies Research Centre, 2000.
- Baev, Pavel. “Will Russia Go for a Military Victory in Chechnya?” *Program on New Approaches to Russian Security Policy Memo Series*, Oslo: International Peace Research Institute, February 2000.
- Bakshi, G.D. “The War in Chechnya: A Military Analysis,” Internet, <http://www.idsa-india.org/an-aug-300.html>. accessed 17 January 2001.
- Builder, Carl H. “Doctrinal Frontiers.” *Airpower Journal*, (Winter 1995): 6-13.
- Center for Defense Information. “CDI’s Exclusive Interview with Ilias Akhmadov, the Foreign Minister of the Unrecognized Chechen Republic of Ichkeria, September 25, 1999,” *Center for Defense Information Newsletter* 3, no. 38 (30 September 1999) Washington: Center for Defense Information. Internet, <http://www.cdi.org/weekly/1999/issue38.html>. accessed 15 January 2001.
- Center for Defense Information. “North Caucasus Conflict: A Day-by-day Timeline,” Washington: Center for Defense Information. Internet, <http://www.cdi.org/issues/Europe/sept.html>. accessed 9 January 2001.
- Chapman, William G. *Organizational Concepts for the Sensor-to-Shooter World: The Impact of Real-Time Information on Airpower Targeting*. Maxwell AFB, AL: Air University Press, 1997.
- Cullison, Alan S. “Moscow Mobilizes Its Air Force against Rebels on Southern Rim.” *Wall Street Journal*, 11 August 1999, A-14.
- _____. “Russian Air Force Bombs Locations around Chechnya.” *Wall Street Journal*, 24 September 1999, A-12.
- Daniszewski, John. “Chechen Leader-In-Hiding Won’t Give Up the Fight,” *Los Angeles Times*, 23 January 2001.
- Deale, Thomas H. “The Dichotomy of Air Force Doctrine and Training Involving Real-Time Targeting.” Thesis, School of Advanced Aerospace Studies, 1999.
- Dean, David J. *The Air Force Role in Low-Intensity Conflict*. Maxwell AFB, AL: Air University Press, 1986.
- Drobyshevskiy, Aleksandr. “Armed Forces Problems and Solutions: The Shield and Sword Are in Reliable Hands,” *Armeyskiy Sbornik* (April 2000): 10-13, FBIS-CEP20000629000307, 1 April 2000.

- Eismont, Maria. "Russia Seals Road Out Of Chechnya." *ABC News Online*, Internet, <http://more.abcnews.go.com/sections/world/dailynews/chechnya991023.html>, accessed 17 January 2001.
- Federation of American Scientists. "First Chechnya War 1994-1996." Washington: Federation of American Scientists. Internet, <http://www.fas.org/man/dod-101/ops/war/chechnya1.htm>, accessed 14 January 2001.
- Federation of American Scientists. "Second Chechnya War 1999-???" Washington: Federation of American Scientists. Internet, <http://www.fas.org/man/dod-101/ops/war/chechnya2.htm>, accessed 14 January 2001.
- Felgenhauer, Pavel. "Could Stalin Win this War?" *The Moscow Times*, 25 January 2001, 9.
- _____. "The Chechen Campaign." Internet, <http://nsa.nps.navy.mil/Publications/Tsyppkin/RusDef97/Felg.html>, accessed 21 November 2000.
- _____. "Is Victory Really for the Good?" *The St. Petersburg Times*, 5 November 1999, Internet, <http://www.sptimes.ru/archive/times/515/opinion/defense.htm>, accessed 28 January 2001.
- _____. "Russian Military Reform: Ten Years of Failure." Internet, <http://nsa.nps.navy.mil/Publications/Tsyppkin/Chechnya/Fel.html>, accessed 21 November 2000.
- Felker, Edward J. "Russian Doctrinal Reform in Light of Their Analysis of Desert Storm." Research paper, School of Advanced Airpower Studies. 1994.
- Finayev, Oleg. "Lt-Gen Gorbenko Reflects on Air Operations in Chechnya." *Moscow Krasnaya Zvezda* (16 August 2000): FBIS-CEP20000815000272, 15 August 2000.
- Finch, Raymond C. III. "Why the Russian Military Failed in Chechnya." Fort Leavenworth: Center for Army Lessons Learned. 1998.
- Fox, Kevin L. "Dynamic Retargeting: Are We Ready?" Research paper, Air Command and Staff College, 1999.
- Friedman, George and Meredith. *The Future of War: Power, Technology and American World Dominance in the Twenty-first Century*. New York: St. Martin's Griffin, 1998.
- Fulghum, David A. "Chechnya Cripples Russian Aviation." *Aviation Week and Space Technology*, 7 August 1995, 20-21.
- _____. "Air War in Chechnya Reveals Mix of Tactics." *Aviation Week and Space Technology*, 14 February 2000, 78.
- Gall, Carlotta and Thomas de Waal. *Chechnya: Calamity in the Caucasus*. New York: New York University Press, 1998.

- Gerber, David K. *Adaptive Command and Control of Theater Airpower*. Maxwell AFB, AL: Air University Press, 1999.
- Gentleman, Amelia. "Russia Steps up Raids on Grozny." *The Observer*, 26 September 1999. Internet, <http://www.guardianunlimited.co.uk/Print/0,3858,3905886,00.html> accessed 15 December 2000
- Glenn, Russell W. ed., *The City's Many Faces: Proceedings on the RAND Arroyo-MCWL-J8 UWG Urban Operations Conference*. Santa Monica: RAND Corporation, 2000.
- Gonzales, Harold T. *Tactical Support of Ground Forces in the Future*, Maxwell AFB, AL: Air University Press, 1990.
- Gorbenko, Valeriy. "In the Fiery Skies of Chechnya." *Armeyskiy Sbornik* (1 March 2000): 32-36, FBIS-CEP20000508000179, 8 May 2000.
- Gordon, Michael R. "Imitating NATO: A Script Is Adapted for Chechnya." *New York Times International*, 28 September 1999, A3.
- _____. "Few Grozny Residents Brave Escape Corridor From Their Besieged City." *New York Times*, 11 December 1999.
- Goure, Daniel, and Christopher M. Szara, eds. *Air and Space Power in the New Millennium*, Washington, DC: Center for Strategic and International Studies, 1997.
- Grau, Lester W. "A Crushing Victory: Fuel-Air Explosives and Grozny 2000." Fort Leavenworth: Foreign Military Studies Office, 2000.
- _____. "Changing Russian Tactics: The Aftermath of the Battle for Grozny." Fort Leavenworth: Foreign Military Studies Office, 1995.
- _____. "The Battle for Grozny and the Battle for Shugart-Gordon: Similarities and Differences." Fort Leavenworth: Foreign Military Studies Office, 1999.
- Hallion Richard P., ed. *Air Power Confronts an Unstable World*, London, UK: Brassey's, 1997.
- Hicks, J. Marcus. "Fire in the City: Airpower in Urban, Smaller-Scale Contingencies." Research paper, School of Advanced Airpower Studies, 1999.
- Hillen, John. "Peacekeeping at the Speed of Sound: The Relevancy of Airpower Doctrine in Operations other than War," *Airpower Journal* (Winter 1998): 6-16.
- Ignatieff, Michael. *Virtual War*. New York, NK: Metropolitan Books, 2000.
- Jackson, Paul, ed., *Jane's All the Worlds Aircraft 1999-2000*. Surrey, UK: Jane's Information Group, 1999.
- Judge, Paul Q. "Chechnya: Welcome to Post-Modern Warfare." *Time.com Europe*, 25 October 2000. Internet,

- <http://www.cnn.com/2000/WORLD/europe/10/25/chechnya.time/index.html> accessed 25 October 2000.
- Kaplan, Robert D. *Eastward to Tartary*. New York, NY: Random House, 2000.
- _____. *The Coming Anarchy*. New York, NY: Random House, 2000.
- Knezys, Stasys and Romanas Sedlickas. *The War in Chechnya*. College Station: Texas A&M Press, 1999.
- Komarov, Alexey. "Air Operations over Chechnya: Chechen Conflict Drives Call for Air Force Modernization." *Aviation Week and Space Technology* (February 14, 2000): 81.
- Kondratyev, Vyacheslav. "The Awesome Sky over Chechnya." *Krylya Rodiny* (January 1996): 1-5, FBIS-UMA-96-055-S, 20 March 1996, 28.
- Kornukov, Anatoliy M. "Russian Air Force Chief on Organization, Training, Current Operations." *Armeyskiy Sbornik* (1 April 2000): 10-13, FBIS-CEP20000629000307, 29 June 2000.
- Lambeth, Benjamin S., *Russia's Air Power in Crisis*, Washington D.C.: Smithsonian Institution, 1999.
- Lennox, Duncan, ed., *Jane's Air-Launched Weapons*. Surrey, UK: Jane's Information Group, 1999.
- Lutz, Raymond R. "Russian Strategy in Chechnya: A Case Study in Failure." Research paper, Air War College, 1997.
- Manilov, Valerii. "The War in Chechnya." *Journal of the Royal United Services Institute for Defence* 145, no. 3 (June 2000): 28-30.
- McGregor-Wood, Simon. "The Spoils of War." *ABC News Online*, 3 April 2000. Internet, http://abcnews.go.com/sections/world/DailyNews/Chechnya00403_water.html. accessed 17 January 2001.
- Metz, Steven. *Armed Conflict in the 21st Century: The Information Revolution and Post-Modern Warfare*. Carlisle Barracks: Strategic Studies Institute, 1999.
- "Military Aviation News." November 1999. Internet, <http://military.topcities.com/news/nov99.htm>. accessed 28 January 2001.
- Mueller, Andy. "Command and Control of Airpower in MOOTW." Research paper, Naval War College, 1998.
- Musayev, Ruslan. "Bombs Hit Civilian Convoy in Chechnya." *ABC News Online*, 30 October 1999. Internet, <http://abcnews.go.com/sections/world/DailyNews/chechnya991030.html>. accessed 17 January 2001.

- _____. "Russia Prepared for Ground War against Chechnya, Airstrikes Continue for Fourth Day." *Washington Post*, 27 September 1999. Internet, www.washingtonpost.com/wp-srv/Wpcap/1999-09/27/005r-092799-idx.html. accessed 28 January 2001.
- Myers, Steven L. "Russia Fights Stalinist Battles with American Tactics." *New York Times*, 16 January 2000, 5.
- Nikolayev, Boris. "In the Fiery Skies of Chechnya." *Karmeyskiy Sbornik* (March 2000): 32-36, FBIS-CEP20000508000178, 8 March 2000.
- Novichkov, N. "Frontal and Army Aviation in the Chechen Conflict." Internet, http://www.amina.com/article/mil_avi.html. accessed 17 January 2001.
- Ostanin, Sergey. "General Kornukov Praises Air Force Performance in Chechnya." *Moscow ITAR-TASS* (11 August 2000), FBIS-CEP20000811000183, 11 August 2000.
- Payin, Emil A. and Arkady A. Popov. "Chechnya." Internet, http://isqkc.org/chechnya_rand.htm. accessed 17 January 2001.
- Peters, Ralph. "The Russian Way of War." *The Wall Street Journal*, 13 December 1999, A-34.
- Putin, Vladimir. "Why We Must Act." *New York Times*, 14 November 1999.
- Radio Free Europe/Radio Liberty. "Russia: Prime Minister Says Combat Operations Underway in Chechnya." Moscow: Radio Free Europe/Radio Liberty, 30 September 1999. Internet, <http://www.rferl.org/nca/features/1999/09/F.RU.990930163527.html>. accessed 23 December 2000.
- Rand Corporation. "Russia's Air Force: An Institute in Painful Transition." Internet, <http://www.rand.org/publications/RB/RB45/>. accessed 21 November 2000.
- "Russian Air Force Faces Unstable Future." *Aviation Week and Space Technology*, 7 August 1995, 22-23.
- "Russian Air-to-Ground Weapons." Internet, <http://www.aeronautics.ru/img001/airsurface.htm>. accessed 15 February 2001.
- "Russia Seizes Northern Chechnya." *BBC News Online*, 5 October 1999. Internet, http://news.bbc.co.uk/hi/english/world/europe/newsid_465000/465670.stm#top. accessed 17 January 2001.
- Scales, Robert H. *Future Warfare*. Carlisle Barracks: Strategic Studies Institute, 1999.
- Schwartz, Norton A. and Robert B. Stephan. "Don't Go Downtown without Us: The Role of Aerospace Power in Joint Urban Operations." *Airpower Journal* (Spring 2000): 3.
- Senna, Phillip M. "The JFACC and Small Scale Contingency Operations." Research paper, Air Command and Staff College, 1998.

- Smolin, Andrey and Viktor Kolomiyets. "Only Mountain are Worse than Mountains: Chechen Rebel Air Defenses Examined." *Armeyskiy Sbornik* (1 March 2000): 45-46, FBIS-CEP20000508000179, 8 May 2000.
- Solovyev, Yuriy. "Moscow District Air Commander Assesses Units' Combat Readiness," *Armeyskiy Sbornik* (1 June 2000): 50-52, FBIS-CEP20000829000235, 29 August 2000.
- Surtsukov, Anatoliy and Sergey Prokopenko. "Lessons of Combat Operations: A Shooting Sky." *Krasnaya Zvezda* (18 July 1995): 2, FBIS-UMA-95-153-S, 9 August 1995, 3.
- Tate, Frank. "MOUT and Attack Aviation in Close Air Support." Monograph, School of Advanced Military Studies, 2000.
- The Ministry for Press, Television, Radio Broadcasting and Mass Communications of the Russian Federation, "Chechen Chronicles." Moscow: Russian Information Center, 1999. Internet, <http://www.infocentre.ru>. accessed 17 December 2000.
- Thomas, Jeff. "Russia's Second Chechen War." Washington: Center for Strategic and International Studies, 1999. Internet, <http://www.csis.org/ruseura/ex999.html>. accessed 23 December 2000.
- Thomas, Timothy L. "Air Operations in Low Intensity Conflict: The Case in Chechnya." *Airpower Journal* (Winter 1997): 51.
- _____. "A Tale of Two Theaters: Russian Actions in Chechnya in 1994 and 1999." Fort Leavenworth: Foreign Military Studies Office, 1999. Internet, <http://call.army.mil/call/fmso/fmsopubs/issues/chechtale.htm>. accessed 14 January 2001.
- _____. "Grozny 2000: Urban Combat Lessons Learned." Fort Leavenworth: Foreign Military Studies Office, 1999. Internet, <http://call.army.mil/fmso/fmsopubs/issues/grozny2000/grozny2000.htm>. accessed 17 January 2001.
- Turpalov, Lyoma. "Chechnya's Clear Skies Bring Rain of Bombs." *Seattle Times*, 21 November 1999.
- _____. "Russian Air Forces Bombard Suspected Rebel Enclaves in Chechnya's Southern Mountains." *Corpus Christi Caller-Times*, 10 February 2000. Internet, <http://www.callertimes.com/cfapps/printhis/index.cfm>. accessed 15 December 2000.
- U.S., Air Land Sea Application Center. *Targeting: The Joint Targeting Process and Procedures for Targeting Time-Critical Targets*. Washington, DC: Government Printing Office, 1997.
- _____. *Multiservice Procedures for the Theater Air-Ground System*. Washington, DC: Government Printing Office, 1998.
- U.S., Department of the Air Force. *Air Force Doctrine Document 1, Basic Aerospace Doctrine of the United States Air Force*. Washington, DC: Government Printing Office, 1997.

- _____. *Air Force Doctrine Document 2-1.3, Counterland Operations*. Washington, DC: Government Printing Office, 1999.
- _____. *Air Force Doctrine Issue Paper, Air Interdiction and Close Air Support*: Maxwell AFB: HQ AFDC, September 1999. Internet, <http://www.doctrine.af.mil/Application/Issues/IssueDocument.asp?> accessed 1 July 2000.
- U.S., Department of the Army. *FM 3-0, Operations (DRAG Edition)*. Washington, DC: Government Printing Office, 2000.
- _____. *FM 90-10, Military Operations on Urbanized Terrain*. Washington, DC: Government Printing Office, 1979.
- _____. *FM 90-10-1, An Infantryman's Guide to Combat in Built-up Areas*. Washington, DC: Government Printing Office, 1993.
- _____. *ST 27-1, Military Law*. Fort Leavenworth: Command and General Staff College, 1999.
- U.S., Information Agency. "Russia: War Clouds over Chechnya." *Foreign Media Reaction Daily Digest* (October 1, 1999), Washington: United States information Agency. Internet, <http://www.fas/man/dod101/ops/war/1999/10/www9801.htm> accessed 14 January 2001.
- U.S., Joint Chiefs of Staff. *JP 1, Joint Warfare of the Armed Forces of the United States*. Washington, DC: Government Printing Office, 1995.
- _____. *JP 3-0, Doctrine for Joint Operations*. Washington, DC: Government Printing Office, 1995.
- _____. *JP 3-03, Doctrine for Joint Interdiction Operations*. Washington, DC: Government Printing Office, 1997.
- _____. *JP 3-09.3, Joint TTP for Close Air Support*. Washington, DC: Government Printing Office, 1995.
- _____. *JP 3-3, Doctrine for Joint Interdiction Operations*. Washington, DC: Government Printing Office, 1997.
- _____. *JP 3-56.1, Command and Control for Joint Air Operations*. Washington, DC: Government Printing Office, 1994.
- _____. *JP 3-60, Joint Doctrine for Targeting. Preliminary Coordination Draft, 12 November 1999*. Washington, DC: Government Printing Office, 1999.
- _____. *JP 5-0, Doctrine for Planning Joint Operations*. Washington, DC: Government Printing Office, 1995.

- Valasek, Thomas. "Interview with Shamil Basayev: Chechen Commander of the Eastern Section of the Chechen Front." *Jane's Defense Weekly*, 6 October 1999. Internet, <http://www.cdi.org/issues/Europe/basayev.html>. accessed 3 March 2001.
- Venik. "Chechen War Chronicles." Internet, <http://members.nbci.com/011700/aviation/index.htm>. accessed 25 February 2001.
- Venik. "War in Chechnya: Russian Air Force Losses." Internet, www.aeronautics.ru/chechnya/losses/index.htm. accessed 24 February 2001.
- Veshnikov, Valeriy. "If Flying, Then How to Fly, If Shooting, Then How to Shoot." *Armeyskiy Sbornik* (July 1995): 26-27, FBIS-UMA-95-188-S, 28 September 1995, 13-14.
- Vick Alan and others. *Aerospace Operations in Urban Environments: Exploring New Concepts*. Santa Monica: RAND Corporation, 2000.
- "War in Chechnya: Russian AF Losses." Internet, <http://www.aeronautics.ru/chechnya/losses/index.htm>. accessed 24 February 2001.
- "Whirlwind over the Caucasus." Internet, http://members.nbci.com/_XMCM/082499/aviation/nws001/afm104.htm. accessed 24 February 2001.
- Wines, Michael. "Putin Scaling down Chechen War despite New Fighting." *New York Times*, 23 January 2001. Internet, <http://ebird.dtic.mil/Jan2001/e20010123scaling.htm>. accessed 23 January 2001.
- Young, Susan H. "Gallery of USAF Weapons." *Air Force Magazine*, May 2000, 158.