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THE NATURE OF RUSSIA'S THREAT TO NATO'S ENHANCED FORWARD PRESENCE IN THE BALTIC STATES

by

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December 2017

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In the wake of Russia's 2014 annexation of Crimea and subsequent military support to separatists fighting in Eastern Ukraine, the North Atlantic Treaty Organization (NATO) has deployed Enhanced Forward Presence (EFP) forces to Estonia, Latvia, Lithuania, and Poland to reassure NATO's members and to deter Russian aggression. The EFP suggests policy makers consider a Russian incursion into the Baltic States a significant possibility. This thesis explores the nature of Russia's threat to NATO's EFP. It details Russia's national security strategy, military doctrine, and foreign policy toward the Baltic States to assess Russia's political-strategic objectives. It analyzes Russia's military reforms, recent performance in Ukraine and Syria, and organization and training for combat to assess the combat potential Russia could bring to bear against NATO's EFP. The research suggests Russia is conducting information operations to achieve policy objectives in the Baltic States and does not seek to cross the threshold into open, armed conflict with NATO. The EFP presents a viable military deterrent against Russian armed aggression through its trip-wire function, which would lead to deterrence by punishment. However, the Baltic States, and thereby NATO, remain vulnerable to Russian political and social influence by way of energy dependence, malign state influence in the information sphere, and Estonia and Latvia's own divisive citizenship policies. NATO's ability to develop consensus on and codify what actions constitute an information operations attack will enhance NATO's ability to deter Russian information warfare.

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THE NATURE OF RUSSIA'S THREAT TO NATO'S ENHANCED FORWARD PRESENCE IN THE BALTIC STATES

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ABSTRACT

In the wake of Russia's 2014 annexation of Crimea and subsequent military support to separatists fighting in Eastern Ukraine, the North Atlantic Treaty Organization (NATO) has deployed Enhanced Forward Presence (EFP) forces to Estonia, Latvia, Lithuania, and Poland to reassure NATO's members and to deter Russian aggression. The EFP suggests policy makers consider a Russian incursion into the Baltic States a significant possibility. This thesis explores the nature of Russia's threat to NATO's EFP. It details Russia's national security strategy, military doctrine, and foreign policy toward the Baltic States to assess Russia's political-strategic objectives. It analyzes Russia's military reforms, recent performance in Ukraine and Syria, and organization and training for combat to assess the combat potential Russia could bring to bear against NATO's EFP. The research suggests Russia is conducting information operations to achieve policy objectives in the Baltic States and does not seek to cross the threshold into open, armed conflict with NATO. The EFP presents a viable military deterrent against Russian armed aggression through its trip-wire function, which would lead to deterrence by punishment. However, the Baltic States, and thereby NATO, remain vulnerable to Russian political and social influence by way of energy dependence, malign state influence in the information sphere, and Estonia and Latvia's own divisive citizenship policies. NATO's ability to develop consensus on and codify what actions constitute an information operations attack will enhance NATO's ability to deter Russian information warfare.

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TABLE OF CONTENTS

I. INTRODUCTION 1
- A. BACKGROUND AND SIGNIFICANCE 1
- B. RESEARCH QUESTIONS 2
- C. LITERATURE REVIEW 2
- D. POTENTIAL HYPOTHESIS 5

II. REASSURANCE, DETERRENCE, AND DEFENSE IN THE BALTIC STATES 7
- A. THE IMPETUS FOR NATO ACTION 7
  - 1. Covert Invasion and Annexation of Crimea 8
  - 2. Russian-Backed Separatist Campaign in the Donbas 11
- B. NATO RESPONSE 13
  - 1. NATO's Readiness Action Plan and the European Reassurance Initiative 13
  - 2. Enhanced Forward Presence 14

III. RUSSIAN POLICY AND STRATEGY 17
- A. NATIONAL SECURITY STRATEGY 18
- B. MILITARY DOCTRINE 24
- C. RELATIONS BETWEEN RUSSIA AND THE BALTIC STATES 27
  - 1. Pre-Soviet Relations 27
  - 2. Post-Soviet Relations 29
- D. IMPLICATIONS FOR THE BALTIC STATES 31
  - 1. Concept and Aims of Hybrid Warfare 31
  - 2. Russia's Hybrid Warfare Goals and Methods in the Baltic States 34
  - 3. Susceptibility of the Baltic States to Russian Hybrid Tactics 38

IV. RUSSIAN MILITARY CAPABILITY 43
- A. REFORMS 43
  - 1. Serdyukov, Makarov, and the New Look 43
  - 2. Shoigu 46
  - 3. Organizational Reforms 48
  - 4. Material Reforms 57
- B. CONTEMPORARY PERFORMANCE 64

1. Ukraine.....64
2. Syria 75
C. GROUND FORCE CAPABILITY.....76
1. Western Military District Composition and Disposition.....77
2. The Battalion Tactical Group and its Organization and Equipment 84
3. Training in the Western Military District 88

V. ANALYSIS AND IMPLICATIONS 103
A. PERSONNEL 104
B. LOGISTICS.....107
1. GPV 107
C. FORCE GENERATION AND DEPLOYMENT.....111
D. OPPORTUNITIES 119

VI. CONCLUSION 123

LIST OF REFERENCES.....125

INITIAL DISTRIBUTION LIST 137

LIST OF ACRONYMS AND ABBREVIATIONS

3G	Third-generation mobile communications
4G	Fourth-generation mobile communications
A2AD	anti-access and area denial
AA	anti-aircraft
AAA	anti-aircraft artillery
AC	Army Corps
AI	artificial intelligence
AirDef	air defense
AIRM	automated engineer reconnaissance vehicle
AOR	area of responsibility
APC	armored personnel carrier
Arty	artillery
AT	anti-tank
ATGM	anti-tank guided missile
BCT	Brigade Combat Team
BDA	battle-damage assessment
Bde	Brigade
BKhRVT	armament and storage repair base
BPC	build partner capacity
BTG	Battalion Tactical Group
BTO	Territorial Defense Battalion
C2	command and control
C3	command, control, and communications systems
C4ISR	command, control, communications, computers, intelligence, surveillance, and reconnaissance
CAST	Centre for Analysis of Strategies and Technologies
C-IED	counter-improvised explosive device
CAA	Combined-Arms Army
CAS	close air support
CBSS	Council of the Baltic Sea States

CDCM	coastal-defense cruise missiles
CFE	Conventional Forces in Europe Treaty
CMD	Central Military District
Co	Company
Comm	Communications
COP	common operating picture
CRRF	Collective Rapid-Reaction Force
CS	combat support
CSS	combat service support
CSTO	Collective Security Treaty Organization
CTG	Company Tactical Group
CU	Customs Union
Div	Division
Donbas	Donets Basin
DOSSAF	Movement for Schoolchildren, the Young Army, and the Voluntary Society for Supporting the Army
DPICM	dual-purpose improved conventional munitions
DRFM	digital radio-frequency memory
DTO	Territorial Defense Divisions
EAEU	Eurasian Economic Union
EFP	Enhanced Forward Presence
ELINT	electronic intelligence
EMD	Eastern Military District
ERI	European Reassurance Initiative
EU	European Union
EW	electronic warfare
FOI	Swedish Defence Research Agency
FSB	Federal Security Service
GLCM	ground-launched cruise missile
GLONASS	Global Navigational Satellite System
GPS	Global Positioning System
GPV	State Armaments Program

GRU	Main Intelligence Directorate of the General Staff
GSM	Global System for Mobile Communications
HF	high frequency
HQ	headquarters
IADS	integrated air defense systems
ICBM	intercontinental ballistic missile
IED	improvised explosive device
IFF	identification of friend or foe
IFV	infantry fighting vehicle
IO	information operations
IOC	initial operating capacity
ISI	import-substitution industrialization
ISTAR	intelligence, surveillance, target acquisition, and reconnaissance
IW	information warfare
JSE	joint-strategic exercise
KBMTO	logistics and maintenance storage base
km	kilometer
KSO	Special Operations Command
KSSO	Special Operations Forces Command
LAV	lightly-armored vehicle
LST	tank landing ship
m	meter
MANPADS	man-portable air defense system
MilCon	Military Construction
MCLC	mine-clearing line-charge
MLRS	multiple-launch rocket systems
MoD	Ministry of Defense
MOUT	military operations in urban terrain
MR	Motorized Rifle
MTO	Logistics and Maintenance
MVD	Ministry of the Interior
NATO	North Atlantic Treaty Organization

NBC	nuclear, biological, and chemical defense
NCO	non-commissioned officer
NFIU	NATO Force Integration Units
NGO	non-governmental organizations
NGW	Next Generation Warfare
NRF	NATO Response Force
NSNF	non-strategic nuclear forces
NSS	National Security Strategy of the Russian Federation
OPFOR	opposing force
OOB	order of battle
OODA	observe, orient, decide, act
OSCE	Organization for Security and Cooperation in Europe
OSK	Joint Strategic Command
OSK-N	Joint Strategic Command-North
OSK-W	Joint Strategic Command-West
PLK	trans-shipment and logistics complex
PGM	precision-guided munition
PGS	prompt global strike
PSYOPS	psychological operations
RAP	NATO *Readiness Action Plan*
RBS	Russian-backed separatist
Recon	Reconnaissance
Rgt	Regiment
Rossgvardia	National Guard of the Russian Federation
RSO&I	reception, staging, onward movement, and integration
RUSI	Royal United Services Institute
SAM	surface-to-air missile
SAW	squad automatic weapon
SCAR	strike coordination and armed reconnaissance
SCO	Shanghai Cooperation Organization
SEAD	suppression of enemy air defense
Sep	Separate, or detached

SIGINT	signals intelligence
SMD	Southern Military District
S*petsnaz*	*Voyska Spetsialnovo Naznacheniya*-Special Forces
SRBM	short-range, operational-tactical ballistic missile
TA	Tank Army
TSC	Theater Security Cooperation
TTP	tactic, technique, and procedure
UAV	unmanned aerial vehicles
UGV	unmanned ground vehicles
UHF	ultra-high frequency
UMTS	Universal Mobile Telecommunications System
UN	United Nations
USEUCOM	United States European Command
USSR	Union of Soviet Socialist Republics
VDV	Airborne Forces
VHF	very-high frequency
VJTF	Very High Readiness Joint Task Force
VKO	Aerospace Defense Forces
VKS	Aerospace Forces
VTA	Military Transport Aviation
VVS	Air Forces
WMD	Western Military District

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I. INTRODUCTION

A. BACKGROUND AND SIGNIFICANCE

In the wake of Russia's 2014 annexation of Crimea and subsequent military support to separatists fighting in Eastern Ukraine, the North Atlantic Treaty Organization (NATO) has deployed Enhanced Forward Presence (EFP) forces to Estonia, Latvia, Lithuania, and Poland to reassure NATO's members and deter Russian aggression. The EFP suggests policy makers consider a Russian incursion into the Baltic States a significant possibility. Prior to the dissolution of the Soviet Union, the U.S. Army maintained a series of field manuals that analyzed the organization, doctrine, operations, tactics, and equipment of the Soviet Army. These field manuals served as the basis for how U.S. and NATO ground combat forces organized and trained to fight a Soviet adversary. With the collapse of the Soviet Union, the U.S. Army now maintains only a generic, non-country–specific, opposition force (OPFOR) series on adversary organization, operations, tactics, and equipment. While the Army's current OPFOR publications are based on post-Soviet forces and account for many changes in Russian force structure and organization, the Russian military continues to modernize, experiment, and reorganize. These reforms began with an attempt to transition from a mobilization force built upon conscripts to a professional force. Following Russia's poor yet effective 2008 performance in Georgia, Russia instituted its "New Look" reforms to address organizational and battlefield deficiencies. In response to NATO's EFP in Poland and the Baltic States, however, the Russian military is reverting back to Soviet-era formations. As security experts, defense officials, and policy makers are considering the possibility that NATO and Russian forces may engage in combat within the Baltic States, contemporary analysis of Russia's order of battle (OOB), tactics and lessons-learned in current conflicts within Syria and Ukraine, and combat preparations through joint-strategic exercises (JSE) is prudent for NATO ground forces to understand the nature of the Russian threat.

B. RESEARCH QUESTIONS

Eyeing Russian policy toward former Soviet republics and in the face of the NATO's EFP and U.S. military armored brigade rotational deployments to the Baltic States, what are the strategic, operational, and tactical implications of Russia's military reorganization and contemporary lessons learned for combined and joint NATO ground forces that may face Russian forces?

This thesis analyzes how Russian forces could engage NATO ground forces in the Baltic States. It analyzes if the scenario of direct military confrontation is plausible and assesses what events would precipitate direct military confrontation between Russian and NATO forces. What lessons has the Russian military learned following operations in Georgia, Ukraine, and Syria? Do these lessons learned translate into how Russia would fight NATO's conventional forces? How will Russia's military reorganization and ongoing military modernization affect its capabilities to engage NATO? Finally, what do Russia's joint and strategic military exercises portend for how it might engage NATO forces?

C. LITERATURE REVIEW

There are three primary schools of thought regarding whether or not armed conflict between Russia and NATO in the Baltic States is plausible. The first is an ideologically driven argument, typified by Russian policy analyst Mikhail Aleksandrov and Russian-nationalist political scientist Alexander Dugin's writings, that points to the inevitability of Russia reabsorbing the Baltic States through the realization of its great-power status.[1] The opposite view, shared by Russian and Western observers alike, views the independent states of Estonia, Latvia, and Lithuania through the lens of their European Union (EU) and NATO membership, heretofore forever outside the Russian

[1] Kirk Bennet, "Can NATO Defend the Baltics?" The American Interest, 13 July, 2016, http://www.the-american-interest.com/2016/07/13/can-nato-defend-the-baltics/; Marcel H. Van Herpen, Russia's Nuclear Threats and the Security of the Baltic States, 16/05 (Maastricht, NL: Cicero Foundation), 12–13, http://www.cicerofoundation.org/lectures/Marcel_H_Van_Herpen_Russia_Nuclear_Threats_Baltics.pdf.

sphere of influence.[2] These two schools are informed by opposing views of the Crimean affair. One side views it as Russian opportunism during a period of instability on its border. The other sees it as the calculated manifestation of Russian hybrid warfare doctrine, attributed to Russian General Valery Gerasimov, and applying all the instruments of national power against an enemy in a non-linear fashion.[3] The third school of Post-Soviet thought warning of Russia's possible military designs in the Baltic States is deductive reasoning informed by Russia's military exercises on the Baltic periphery, specifically, the *Zapad* series of JSEs.[4] Despite the stated goals of *Zapad* as a counterinsurgency exercise, many Western defense and security experts view the *Zapad* exercises as blueprints for how Russia (and Belarus) would attack the Baltic States and potentially Poland.

Several think tanks have participated in wargames to investigate the outcome of a Russian invasion of the Baltic States, however, ongoing Russian military reorganization, modernization, and tactical refinement beg the question of how the Russians would actually fight in such a scenario.[5] Within this discussion, the literature proposes either a conventional *Blitzkrieg*-style invasion or hybrid-style two-phase fight precipitated by an

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[2] Bobo Lo, *Russia and the New World Disorder* (Baltimore: Brookings Institution Press, 2015), 102-103; Michael Kofman, "Fixing NATO Deterrence in the East or: How I Learned to Stop Worrying and Love NATO's Crushing Defeat by Russia," War on the Rocks, 12 May 2016, https://warontherocks.com/2016/05/fixing-nato-deterrence-in-the-east-or-how-i-learned-to-stop-worrying-and-love-natos-crushing-defeat-by-russia/; Michael Kofman, "NATO Deterrence and the Russian Specter in the Baltics," The Russia File, 10 August 2016, http://www.kennan-russiafile.org/2016/08/10/nato-deterrence-and-the-russian-specter-in-the-baltics/.

[3] Rod Thornton and Manos Karagiannis, "The Russian Threat to the Baltic States: Problems of Shaping Local Defense Mechanisms," *The Journal of Slavic Military Studies* 29, no. 3 (2016): 343, https://doi.org/10.1080/13518046.2016.1200359.

[4] Van Herpen, "Russia's Nuclear Threats," 7.

[5] Vladimir Shamanov, "By 2021 Non-nuclear Forces in the Russian Federation will be able to completely replace Nuclear in Matters of Deterrence," Interfax–Agency for Military News (AVN), 20 February 2017, http://militarynews.ru/story.asp?rid=1&nid=442450; Vadim Shtepa "Russian First Guards Tank Army as an Instrument of Hybrid War Against Baltic States," *Eurasia Daily Monitor*, The Jamestown Foundation, 22 June 2016, https://jamestown.org/program/russian-first-guards-tank-army-as-an-instrument-of-hybrid-war-against-baltic-states/.

insurgency fought by Russian-backed separatists (RBS).[6] The hybrid scenarios involve Russia infiltrating non-conventional forces to stoke ethnic tension, organizing separatist paramilitaries in ethnically-Russian dominant cities, such as Narva, Estonia, or the Latgale region of Latvia. The separatists would be supported by information operations (IO), to include cyber attacks. A NATO response would lead to a conventional Russian incursion in defense of ethnic Russians.[7] Furthermore, the experts disagree on Russia's reliance upon a strategic nuclear deterrent, non-strategic nuclear forces (NSNF), or conventional precision-guided munitions (PGM) to achieve its goals.[8]

Regardless of whether or not Russia would adopt a conventional or hybrid approach, either scenario would involve conventional forces at some point. There are conflicting opinions on whether or not a conventional Russian force in the Baltic States would be based on the New Look reforms or a more traditional Cold War model.[9] New Look reforms are characterized by Battalion Tactical Groups (BTG), subordinate to brigades and operating under the command and control (C2) of armies. The Cold War model is characterized by regiments, subordinate to divisions, operating under the C2 of armies. Recent wargames have used the New Look force structure; however, both Western and Russian sources have recently begun promoting the idea that Russia would

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[6] Mary Ellen Connell and Ryan Evans, "Russia's 'Ambiguous Warfare' and Implications for the U.S. Marine Corps," CNA, May 2015, https://www.cna.org/CNA_files/PDF/DOP-2015-U-010447-Final.pdf; Douglas V. Mastriano, *Project 1721: U.S. Army War College Assessment on Russian Strategy in Eastern Europe and Recommendations on How to leverage Landpower to maintain the Peace* (Carlisle, PA: Strategic Studies Institute and U.S. Army War College Press, 2017), 42.

[7] David A. Shlapak, Michael W. Johnson, Karl Mueller, and David Ochmanek, "In Defense of a Wargame: Bolstering Deterrence on NATO's Eastern Flank," War on the Rocks, 14 June 2016, https://warontherocks.com/2016/06/in-defense-of-a-wargame-bolstering-deterrence-on-natos-eastern-flank/.

[8] Mikhail Barabanov, "Changing the Force and Moving Forward after Georgia," in *Brothers Armed: Military Aspects of the Crisis in Ukraine*, 2nd ed., ed. Colby Howard and Ruslan Phukov (Minneapolis: East View Press, 2015), 92–3; Van Herpen, "Russia's Nuclear Threats," 7–9; Shamanov, "Non-nuclear Forces."

[9] Roger N. McDermott, *Brothers Disunited: Russia's Use of Military Power in Ukraine* (Ft. Leavenworth, KS: Foreign Military Studies Office, 2015), 31; Nikolai Novichkov, "Shoigu Talks up New Formations, Spending Plans," *Jane's Defence Weekly*, 28 February 2017, http://janes.ihs.com.libproxy.nps.edu/Janes/Display/jdw64813-jdw-2017.

use Cold War era, Soviet-style tank armies in a fight with NATO ground forces.[10] Furthermore, Swedish analysis of the *Zapad* exercises foresees tank and combined-arms armies consisting of divisions as the primary model for a Russian advance into the Baltic States. These armies would be supported by airborne units with attached tank companies and naval infantry amphibious landings, all backed by large-scale indirect fires.[11]

The primary gaps in the literature fail to address how C2 was executed from within the Western Military District (WMD) during its *Zapad* exercises. There are operational and tactical implications for NATO forces depending on whether or not Russian forces were employed as fully-manned brigades, as single BTGs under the command of a brigade, single BTGs under direct C2 of armies, or some other C2 construct. Furthermore, the wargame literature does not appear to account for the Russian military's reconstitution of tank armies. It also fails to address whether or not lessons learned in fire support and coordinating arms post-Georgia have been integrated into Russian tactical doctrine. The most significant piece of information missing from the literature at the outset of thesis research was how Russia will carry out the *Zapad* 2017 exercise. If Russia is training to fight NATO in the Baltic States through *Zapad*, the 2017 installment portrays the latest Russian thinking in organization, doctrine, and tactics, and equipment.

D. POTENTIAL HYPOTHESIS

The most compelling argument for whether or not Russia will invade the Baltic States is articulated best by retired U.S. diplomat Kirk Bennet. He postulates that a Russian invasion of the Baltic States would simply be too costly for Russia. It would jeopardize Russia's operations in Ukraine, the Caucuses, and Syria.[12] Additionally, Russia's military, unable to maintain readiness across the force due to failure to meet its

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[10] Novichkov, "Shoigu Talks up New Formations, Spending Plans;" Arseni Sivitski, "Belarus at the Center of Russia-NATO Wargame Simulation," The Potomac Foundation, 13 February 2017, http://www.thepotomacfoundation.org/belarus-at-the-center-of-russia-nato-wargame-simulation/.

[11] Johan Norberg, "Training to Fight–Russia's Major Military Exercises 2011–2014," Swedish Defence Research Agency (Försvarsdepartementet–FOI) Report FOI-R--4128--SE, December 2015, https://www.foi.se/reportsummary?reportNo=FOI-R--4128--SE.

[12] Bennett, "Can NATO Defend the Baltics?"

contract goals and a weak talent pool for conscripts, would not be able to fulfill its domestic and regional missions.[13] Furthermore, additional international sanctions would cripple Russia's energy exports, thus bankrupting the economy.

To fulfill the aims of this thesis, however, there must be an assumption that Russia would invade. Any protracted attempt at state capture through hybrid means, using special operations forces and intelligence operatives in a covert, unconventional campaign to support an ethnic Russian separatist movement, would likely draw a NATO buildup, diminishing Russian chances for success. Therefore, Russia's most likely course of action will be an armor heavy *Blitzkrieg* from Belarus into the Baltic States, carried out by the WMD's newly reconstituted 1st Guards Tank Army, with the goal of securing permanent geographic access to the Kaliningrad *Oblast*.

[13] "Jane's Sentinel Security Assessment–Russia and the CIS," Jane's by IHS Markit, March 14, 2017, http://janes.ihs.com.libproxy.nps.edu/Janes/Display/russs010-cis; Roger N. McDermott, *Russia's Strategic Mobility: Supporting 'Hard Power' to 2020*? (Stockholm: Försvarsdepartementet (FOI)–Swedish Defense Research Agency, 2013), 50; Rod Thornton, *Military Modernization and the Russian Ground Forces* (Carlisle, PA: Strategic Studies Institute, 2011), 31.

II. REASSURANCE, DETERRENCE, AND DEFENSE IN THE BALTIC STATES

A. THE IMPETUS FOR NATO ACTION

In 2014, when Viktor Yanukovych abdicated his presidential responsibilities and fled Ukraine in the face of the Euromaidan Revolution, the Kremlin seized the opportunity to intervene militarily amidst the turmoil. Russia's Crimean campaign was fueled by fears of both Russian regime instability vis a vis the Euromaidan "color revolution" movement, and the implication that Russia's Black Sea Fleet anchorage in Crimea may have been threatened by the deteriorating civil and security situation in Ukraine.[14] Russia's interests include maintaining Black Sea Fleet ports in Crimea, and the capability they provide Russia to project power into the Mediterranean and beyond.[15] The Kremlin seeks to regain and maintain Ukraine as its buffer against NATO. NATO and EU expansion threaten President Vladimir Putin's revisionist quest to balance the West through a Russian-dominated Eurasianist hegemony. A corollary to that goal is the unification of ethnic Russians and the greater Slavic peoples.[16]

The Euromaidan movement provided a power-vacuum through which the Kremlin could seize the initiative to secure its interests while promoting union with ethnic Russians in Crimea and the Donets Basin (Donbas) region of Eastern Ukraine. Royal United Services Institute Researcher Dr. Igor Sutyagin observes that "the main strategic objective of Russian troops [in the Donbas] is to secure the continued resistance of Russian-controlled 'republics' in eastern Ukraine."[17] Russian forces initially acted in a covert manner to avoid drawing third-party intervention. They advanced until significant resistance was met, and then consolidated their gains through deterrence and diplomacy.

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[14] McDermott, *Brothers Disunited*, 6.

[15] United States Army Special Operations Command, *Little Green Men: A Primer on Modern Russian Unconventional Warfare, Ukraine 2013–2014* (Fort Bragg, NC: The United States Army Special Operations Command, June 2015), 39.

[16] Ibid., 35.

[17] Igor Sutyagin, "Russian Forces in Ukraine" (briefing paper, Royal United Services Institute, London, UK, March 2015), 9

1. Covert Invasion and Annexation of Crimea

Russia likely began developing plans to seize Crimea following the dissolution of the Soviet Union. These plans would have been updated during the 2004 Orange Revolution, and the 2013 Euromaidan movement.[18] When Yanukovych fled Ukraine, Russia reacted. Russian forces moved against key Crimean administrative facilities, followed by key aviation and air defense units.[19] Russian special designation (*Voyska Spetsialnovo Naznacheniya—Spetsnaz*) and special operations forces initially blockaded military units, while fully seizing air defense and C2 nodes.[20] Despite Russia's illegal covert actions, there did not appear to be enmity between the Ukrainians and Russians at many locations under siege.[21] While waiting for a diplomatic resolution, Russian forces eventually withdrew or relaxed their posture outside many Ukrainian military facilities.

Russia's Crimean operation began in force in the early morning on 27 February 2014. Plain-clothes members of the Special Operations Command (KSO, alternatively known as the Special Operations Forces Command – KSSO) and the Airborne Forces' (VDV) 45th Guards Separate (Sep) *Spetsnaz* Regiment (Rgt), which has since been upgrade to brigade strength, seized Crimea's parliament building. In the afternoon, 300 personnel, likely Marines from the 382nd Sep Naval Infantry (Marine) Battalion (Bn), disembarked in Crimea from the *Azov* landing ship.[22] Early the next morning, uniformed forces without insignia raided Belbek airfield, securing Crimea's primary fighter aircraft unit—the 204th Tactical Aviation Brigade (Bde). Russia's Black Sea Fleet blockaded Ukraine's naval surface forces in port in Crimea, but was unsuccessful in preventing the Coast Guard from fleeing. Russia deployed 300 ground forces, the guided missile cruiser

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[18] McDermott, *Brothers Disunited*, 10.

[19] Anton Lavrov, "Russian Again: The Military Operation for Crimea," in *Brothers Armed: Military Aspects of the Crisis in Ukraine*, ed. Colby Howard and Ruslan Pukhov (Minneapolis, MN: East View Press, 2014), 166.

[20] McDermott, *Brothers Disunited*, 12.

[21] Lavrov, "Russian Again," 169.

[22] Ibid., 164; The Russian designation "отдельный" Is typically translated as "detached" in British and Commonwealth analysis, and "separate" in U.S. analysis. It often denotes a unit which Is not under the direct tasking authority of the unit to which it Is subordinate, but rather, under the C2 of a higher-echelon command; Georgian intelligence officer; email communication with the author, 19 March, 2017.

Moskva, and corvette escorts to deny the Coast Guard freedom of movement, but was not willing to use force to that end.[23]

On 28 February, The Kremlin ordered snap inspections across the Western and Southern Military Districts. Black Sea Fleet *Spetsnaz* were lifted into Crimea via Mi-8 helicopters that were escorted by Mi-35M attack helicopters. In the afternoon, approximately 1500 *Spetsnaz* were lifted into Crimea by Il-76 transports. *Spetsnaz* seized Crimea's airport and the Ukrainian state television station.[24]

On 1 March, *Spetsnaz* units were inserted via amphibious landing ship at Sevastopol', and via aircraft in Simferopol'. The 10th Sep *Spetsnaz* Bde surrounded Crimea's parliament building, augmenting Russian forces already in control of the structure. In the afternoon, Russian forces surrounded three Ukrainian air-defense regiments and two radar installations, to include the 55th Anti-aircraft Missile Regiment in Yevpatoria.[25] Forces likely from either the 18th Coastal Defense Bde or 382nd Sep Marine Bn conducted an amphibious landing in Feodosiya via Zubr air-cushioned landing craft (LCAC).[26]

Between 1 and 2 March, the 10th Sep *Spetsnaz* Bde arrived in Crimea via amphibious shipping, along with the 25th Sep *Spetsnaz* Rgt's equipment. Russian researcher Anton Lavrov notes that uniformed *Spetsnaz*, without insignia, deployed across Crimea in "battalion and company-sized troop convoys…in trucks…accompanied by [*GAZ Tigr-M*] armored vehicles" on 2 March.[27] Russian forces established a logistics staging area at Lazarevsky barracks, which had been long been abandoned for military purposes. Within 12 days, from 22 February to 5 March, the 810th Sep Marine Bde—already stationed at the leased Black Sea Fleet base in Sevastopol'—had been reinforced with conventional forces from the 31st Guards Sep VDV Bde, as well as *Spetsnaz* units from the 3rd, 10th, 16th, and 22nd Sep *Spetsnaz* Bdes, and the 25th Sep *Spetsnaz* and the

[23] Lavrov, "Russian Again," 169, 163–4, 167; *Little Green Men*, 51.

[24] Lavrov, "Russian Again," 165; McDermott, *Brothers Disunited*, 12.

[25] Lavrov, "Russian Again," 166.

[26] McDermott, *Brothers Disunited*, 16.

[27] Lavrov, "Russian Again," 166.

45th Guards Sep VDV *Spetsnaz* Rgts. The VDV's 31st Guards Sep Bde, as well as its 7th and 76th Guards VDV Divs (Div), were airlifted to Sevastopol'. Additionally, there were two KSSO units in Crimea.[28]

Russian naval forces blockaded Ukrainian naval forces in Novoozerne on 5 March.[29] After holding their blockade for three days, Russian forces surrounding the 5th Naval Aviation Bde at Novofedorivka airfield were unable to prevent the unit from flying five helicopters and three fixed-wing aircraft off the installation and into Ukrainian-controlled airspace. Although this occurred over a five-day period, these were the only Ukrainian aircraft to flee Crimea.[30] From 6 to 17 March, Russian forces transitioned from deploying lightly armed and equipped *Spetsnaz* in Ukraine, to deploying armored vehicles and artillery, as well as attack aircraft, along Russia's border with Ukraine to deter a Ukrainian counterattack.[31] On 6 March, Russian forces scuttled the decommissioned Russian *Ochakov* to assist in blockading Ukrainian naval holdouts.[32] The 727th Sep Marine Bn and the 18th Guards Sep Motorized Rifle (MR) Bde began moving from their bases in Russia toward Crimea on 6 March. On 9 March, the 11th Sep Coastal Defense Rocket Artillery (Arty) Bde, with 3K55 K-300P Bastion-P coastal-defense cruise missiles (CDCM), was observed in Crimea. The CDCMs served as anti-access and area denial (A2AD) deterring against third-party intervention, as the Ukrainian navy was already blockaded.[33]

By 12 March, the 12th MRBde had deployed to Crimea via ferry.[34] The 18th Sep MRBde entered Crimea and reinforced *Spetsnaz* and proxy forces at the Perekop Isthmus. The Russian units at Perekop, reinforced with artillery and multiple-launch rocket systems (MLRS), were the primary defense against a Ukrainian counterattack. On 14

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[28] Lavrov, "Russian Again," 168–9; McDermott, *Brothers Disunited*, 16.

[29] *Little Green Men*, 51.

[30] Lavrov, "Russian Again," 168–9.

[31] Ibid., 170.

[32] McDermott, *Brothers Disunited*, 12.

[33] Lavrov, "Russian Again," 171.

[34] McDermott, *Brothers Disunited*, 12.

March, the 291st Arty Bde, armed with 2A65 Msta-B howitzers and 9P140 BM-27 *Uragan* MLRS, entered Crimea. On 15 March, Russia deployed a battery of S-300PS surface-to-air missiles (SAMs) at the Gvardeiskoye airfield near Simferopol'. Russia also deployed the 96K6 *Pantsir*-S1 air defense system.[35]

On 19 March, Russian KSSO forces began the operation to seize the remaining Ukrainian military units that had taken defensive positions in their bases. They were supported by motorized infantry in armored personnel carriers (APC) and Mi-35M attack helicopters, as well as proxy forces in some instances. The Russians systematically boarded and seized Ukrainian vessels, while surrounding and coercing ground forces through shows of force. By 25 March, Russia had affected the surrender or defection of all Ukrainian forces in Crimea.[36]

2. Russian-Backed Separatist Campaign in the Donbas

Concurrently with its covert invasion of Crimea, Russia began its military intervention in the Donbas. Sutyagin argues that Russia's goal in Ukraine is maintaining control over a reintegrated Donbas, giving the Kremlin influence within the Ukrainian political process.[37] The Russian military's primary mission in the Donbas is to advise and assist, and build the capacity of RBS forces in Eastern Ukraine.[38] Throughout this campaign, Russia deployed 40,000 to 50,000 ground combat troops and an additional 45,000 to 50,000 combat support (CS) and combat service support (CSS) forces on the border with Ukraine, Belarus, and Moldova. These forces were deployed via snap exercises at the battalion level. Deploying battalion-sized forces for exercises skirts the Organization for Security and Cooperation in Europe's (OSCE) Vienna Document requirement for transparency, remaining in the letter of the document, but outside of its

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[35] Lavrov, "Russian Again," 172.

[36] Ibid., 174–7.

[37] Igor Sutyagin with Justin Bronk, *Russia's New Ground Forces: Capabilities, Limitations, and Implications for International Security*, Royal United Services Institute Whitehall Paper 89 (Philadelphia: Taylor & Francis, 2017), 104–105.

[38] McDermott, *Brothers Disunited*, 19–21.

spirit and intent. This legal instrumentalism is a common Russian policy tactic.[39] These forces provided deterrence against Ukrainian forces fighting RBS, while also providing a rear area in which to organize and train for combat operations in Ukraine.[40] The primary methods Russian forces used to assist RBS were providing C2, intelligence, weapons and equipment, and training. Russian forces provided persistent cross-border fire support, and ultimately engaged in direct offensive combat operations at the brigade level.

Ukrainian sources claim 150 *Spetsnaz* trainers deployed to Slov"yans'k, in the Donbas, in mid-March.[41] RBS, under *Spetsnaz* guidance, began seizing government buildings in the Donbas in March. On 27 April, RBS seized the Donetsk television station and begin broadcasting Russian Today (RT) instead of Ukrainian programming.[42] Ukraine's forces, however weak, began successfully maneuvering against RBS. In response, Russian artillery forces initiated cross-border strikes against Ukrainian forces in July 2014. In August, Russia intervened directly with ground forces, committing approximately 4,000 conventional forces to spoil Ukraine's successful counteroffensive.[43] The Kremlin's committal of conventional forces demonstrates the futility of its hybrid methods against forces willing to offer resistance.

From December 2014 to February 2015, ahead of the Minsk negotiations to achieve a diplomatic resolution to the conflict, Russian forces withdrew from the front lines and assumed primarily fire support and logistics roles for RBS. However, after the Minsk I agreement, Russian forces resumed a front-line combat role.[44] The 5th Tank Bn and 37th MRBde deployed to the Donbas in February 2015, engaging Ukrainian forces in Debal'tseve. Russian forces and RBS cut utilities to the city, causing a humanitarian

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[39] Sutyagin, *Russia's New Ground Forces: Capabilities, Limitations, and Implications for International Security*, 14–16.

[40] McDermott, *Brothers Disunited*, 34.

[41] Tor Bukkvoll, "Russian Special Operations Forces in Crimea and Donbas," in *Parameters* 46, no. 2 (Summer 2016), 18.

[42] *Little Green Men*, 52.

[43] Maksymilian Czuperski et al., *Hiding in Plain Sight: Putin's War in Ukraine* (Washington, DC: Atlantic Council, 2015), 5; Sutyagin, "Russian Forces in Ukraine" 1.

[44] Sutyagin, "Russian Forces in Ukraine," 6–7.

disaster while encircling Ukrainian defenders in a month-long siege.[45] By March 2015, Russia had approximately 12,000 forces in the Donbas serving in both advisor and direct-combat roles.[46] Aside from conventional and special operations forces, Russia employed intelligence personnel, local and foreign paramilitary and volunteer fighting formations, and private military corporations under Russian leadership to wage its campaign against Ukraine.[47]

B. NATO RESPONSE

In the post-Crimean environment of Russia's hybrid campaign in Ukraine, the Baltic States are experiencing renewed fear of Russian invasion. The barometers for tensions between Moscow, Tallinn, Riga, and Vilnius are read in Brussels, Mons, and Washington, DC, The Baltic States' EU and NATO membership binds their strategic relations with Russia to Europe and the Atlantic and, in turn, influences U.S., EU, and NATO policies toward Russia.[48] Following Russia's annexation of Crimea, analysts and policy makers have paid considerable attention to collective defense and reinforcing deterrence against potential Russian aggression in the Baltic States.

1. NATO's Readiness Action Plan and the European Reassurance Initiative

NATO implemented the readiness action plan (RAP) during its 2014 Wales Summit, which enhanced the NATO Response Force (NRF) by creating the Very High Readiness Joint Task Force (VJTF).[49] RAP emphasizes rotational deployments into the Baltic States to serve as a trip-wire force while staying within the basing and stationing limits of the Conventional Forces in Europe (CFE) Treaty and the NATO-Russia Founding Act. Both the NRF and VJTF are manned on a rotational basis. The VJTF,

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[45] MAJ Amos C. Fox, "Battle of Debal'tseve: the Conventional Line of Effort in Russia's Hybrid War in Ukraine," *Armor* 128, no. 1 (Winter 2017), 47–81.

[46] Czuperski et al., *Hiding in Plain Sight*, 11, 15–16.

[47] *Little Green Men*, 40, 42.

[48] Agnia Grigas, *The Politics of Energy and Memory between the Baltic States and Russia* (Burlington, VT: Ashgate, 2013), 1.

[49] "NATO Response Force / Very High Readiness Joint Task Force" NATO, January 2016, https://www.shape.nato.int/nato-response-force--very-high-readiness-joint-task-force.

subordinate to the NRF, provides a rapidly deployable, joint, combined-arms brigade with conventional, special operations, naval, and aviation capabilities, able to respond within two to seven days of notification.

Pursuant to the RAP, NATO established Force Integration Units (NFIU) in the member states along its eastern flank with Russia. The NFIU serve to facilitate C2 and improve infrastructure for the reception, staging, onward movement, and integration (RSO&I) in case of NRF, VJTF, and alliance-member deployment. A wide base of alliance members increased air and maritime patrol and policing in the Baltic Sea. Along the vein of Baltic security, NATO increased bilateral partnerships with Sweden and Finland, while increasing the frequency and size of its exercises in the region.[50]

In concert with the RAP, the United States proposed its European Reassurance Initiative (ERI) at the Wales Summit.[51] The ERI is meant to assure U.S. allies while deterring Russian aggression. It provides increased rotational forces to the United States European Command (USEUCOM) Area of Responsibility (AOR). The ERI also focuses on Theater Security Cooperation (TSC) and Building Partner Capacity (BPC) through Operation ATLANTIC RESOLVE. Aside from deploying forces, the ERI enhances infrastructure and prepositions equipment in the AOR to increase U.S. capability to respond to threats.[52]

2. Enhanced Forward Presence

Concurrently with ERI, the Undersecretary of the United States Army sponsored a RAND study examining the prospects for NATO's defense of the Baltic States against a conventional Russian ground attack.[53] The study was predicated on Russia's seizure and

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[50] "NATO Response Force / Very High Readiness Joint Task Force" NATO, January 2016, https://www.shape.nato.int/nato-response-force--very-high-readiness-joint-task-force.

[51] "ERI Factsheet." Headquarters, USEUCOM, 5 January 2017, www.eucom.mil/doc/35544/eri-fact-sheet.

[52] Office of the Under Secretary of Defense (Comptroller), "European Reassurance Initiative: Department of Defense Budget Fiscal Year (FY) 2017," U.S. Department of Defense, February 2016, comptroller.defense.gov/Portals/45/Documents/defbudget/.../fy2018_ERI_J-Book.pdf.

[53] David A. Shlapak and Michael W. Johnson. "Reinforcing Deterrence on NATO's Eastern Flank: Wargamming the Defense of the Baltics." RAND Corporation, 2016. https://www.rand.org/pubs/research_reports/RR1253.html.

annexation of Crimea, and the Military Doctrine of the Russian Federation's view of NATO. The RAND study's results received sensationalized media attention, and generated debate among analysts and policy makers. It presented a severe capability gap between Russian and NATO ground forces that would prevent NATO from exercising deterrence by denial toward Russian Aggression.[54]

The RAND study's policy implications materialized at NATO's 2016 Warsaw Summit. Given the Baltic States' proximity to Russia and Kaliningrad, their significant Russian minority populations, Russia's aggression in Georgia and Ukraine, and Russia's stated foreign policy goals, the Baltic States and Poland successfully lobbied their NATO allies for an increased deterrent to Russian aggression. At the 2016 Warsaw Summit, NATO committed to deploying rotational ground forces as an EFP in Poland and the Baltic States. The EFP consists of four rotational, multinational combined-arms battalions, one each in: Estonia, Latvia, Lithuania, and Poland. While the RAND study appears to be the catalyst for EFP, it was based on a specific wargame scenario. As NATO moves forward with EFP, in order to counter aggression, any effort at deterrence must first understand the nature of the threat.

[54] Shlapak, "In Defense of a Wargame: Bolstering Deterrence on NATO's Eastern Flank."

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III. RUSSIAN POLICY AND STRATEGY

The Kremlin's overarching foreign policy goals are to become a regional hegemon and global great power. It relies on its nuclear deterrent to underwrite its revisionist goals. The Kremlin is pursuing these goals through: building alliances to balance against the United States, trade and proliferation of military technology throughout Eurasia, engagement in the periphery of the Middle East and Global South, and supporting the political will of Russia's diaspora in the post-Soviet space.[55]

Although some argue that Russia's policy toward the former Soviet Republics is for calculated reclamation, Russia analyst Bobo Lo contends that, "The Kremlin understands…that its prospects of pursuing a successful imperial agenda are slim to nonexistent."[56] He posits that Russia's objectives are, "strategic, economic, and normative leadership in post-Soviet Eurasia; preserving a power relationship over the ex-Soviet-republics; and the marginalization of outside—especially Western—interests and influence."[57] In contrast to Russian actions in Georgia, Ukraine, and Syria, Lo contends that Russia pursues these ends through soft power and economics instead of military force. Regarding the Baltic States, Russia is less inclined toward this leadership role due to Lo's explanation that they "were late annexations to the Soviet Union, had previously been part of the European mainstream since the Middle Ages, and are members of NATO and the EU."[58]

Russia's foreign policy under Putin has undergone a transformation from optimistic cooperation to bilateralism cloaked in the guise of Russian-dominated multilateralism. In 2000, Russia sought to balance against NATO diplomatically, working through the OSCE to counter the Atlantic decision-making nexus of NATO.[59]

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[55] Robert Nalbandov, *Not by Bread Alone: Russian Foreign Policy under Putin* (Lincoln, Nebraska: Potomac Books, 2016, 458–9.

[56] Lo, *Russia and the New World Disorder*, 101.

[57] Ibid.

[58] Ibid., 102.

[59] Nalbandov, *Not by Bread Alone*, 7.

NATO's 2004 expansion shattered Putin's dreams of an OSCE dominated by Russian interests. He saw the organization as subordinate to NATO and the United States. Putin's policies have evolved from seeking European multilateral cooperation and bilateral relations with the U.S., to creating multilateral geopolitical dominance in the Eurasian sphere.[60] Putin relies on multilateral organizations created and dominated by Russia, such as the Collective Security Treaty Organization (CSTO), Eurasian Economic Union (EAEU), and Customs Union (CU) to support Russia's balancing.[61] With the hope of the OSCE supplanting NATO dashed, Russian relations with Europe are increasingly characterized by bilateralism. This European bilateralism, once characterized by German dominance of European affairs, is now seeing a cohesive anti-Russian bloc in which the Baltic States are no longer beholden to the pressures of larger states.[62]

A. NATIONAL SECURITY STRATEGY

Structurally, the Russian national security policy is manifest in the *National Security Strategy of the Russian Federation* (NSS). The Duma Defense Committee and military draft the NSS in an iterative process. The Security Council and Duma endorse the NSS before it is signed by the President.[63] The military's response, the Military Doctrine of the Russian Federation, is also approved by the President.[64] Professor of Contemporary Russian Politics, Dr. Mikhail Tsypkin, sheds light on the difference between structure and reality: "The Duma Defense Committee, like Duma itself, is nothing but a rubber stamp. They play no role in (drafting the NSS)."[65] Instead, the NSS reflects the will of Putin and his closest advisors. The following discusses the Kremlin's worldview, national security interests, threat perceptions, and the policy implications of these factors as promoted by Russia's NSS and Military Doctrine.

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[60] Nalbandov, *Not by Bread Alone*, 7–9.

[61] Lo, New World Disorder, 97.

[62] Ibid., 194.

[63] Brannon, Russian Civil-Military Relations, 3–4, 27.

[64] Jakob Hedenskog, Gudrun Persson, and Carolina Vendil Pallin, "Russian Security Policy," in *Russian Military Capability in a Ten-Year Perspective–2016*, ed. Gudrun Persson (Stockholm: Swedish Defense Research Agency–FOI, 2016), 98.

[65] Mikhail Tsypkin, email message to the author, 2 December, 2017.

The Kremlin's view of the international system borrows heavily from the Realist Paradigm. Russia views itself as sovereign and independent, a world leader due to: being the largest country in the world, holding the seat of the Orthodox faith, and serving as a geographic bridge between Asia and Europe. It derives additional power from its nuclear capabilities.[66] Russia envisions itself in a struggle with the West for resources, markets, influence, and access to the global commons. The Kremlin seeks stability within the international system through what it views as equal security, which is the idea that it must balance against threats.[67]

Russia's most recent NSS was enacted at the end of 2015. The interests and priorities it identifies include many socially-oriented themes such as preserving Russian culture and improving the economy and living standards. However, it also includes the dubious interest of social and political stability, signaling regime fears of domestic dissent, and providing precedent for government intervention in civil discourse.[68] These fears were partially stoked by the unforeseen mass protests in Russia following 2011 parliamentary and 2012 presidential elections. The overall themes of Russia's current NSS are: the imperative to increase Russian influence abroad, countering the United States and NATO, ensuring domestic stability, and strengthening the Russian economy.[69]

The current NSS is oriented toward authoritarian regime stability against internal threats, while projecting the threat image onto foreign powers to rally national support.[70] Heavily nationalistic in tone, it emphasizes Russianness over the secular, individualism

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[66] Isabelle Facon, "Russia's National Security Strategy and Military Doctrine and their Implications for the EU," Policy Department, Directorate-General for External Policies, European Parliament, January 2017, doi: 10.2861/635490.

[67] Timothy L. Thomas, *Kremlin Kontrol: Russia's Political-Military Reality* (Ft. Leavenworth, KS: Foreign Military Studies Office, 2017), 63, 67, 69.

[68] Defense Intelligence Agency, *Russia Military Power: Building a Military to Support Great Power Aspirations* (DIA-11-1704-161) (Washington, DC: Defense Intelligence Agency, 2017), 16–17, www.dia.mil/Military-Power-Publications.

[69] Olga Oliker, "Unpacking Russia's New National Security Strategy," Center for Strategic and International Studies, 7 January 2016, https://www.csis.org/analysis/unpacking-russias-new-national-security-strategy.

[70] Thomas, *Kremlin Kontrol: Russia's Political-Military Reality*, 65.

of the West.[71] The NSS gives significantly more attention to domestic, non-military goals and concerns such as strengthening national unity. It highlights the need to protect and reinforce traditional Russian culture and values against foreign influence.[72] Russia believes the West is actively trying to subordinate the legitimacy of Eurasian governments, in opposition to Russia's national interests. This includes Western-led sanctions that are limiting Russia's economic growth.[73]

Russia views itself as surrounded by threats, to include from the Arctic. Although the Kremlin perceives its largest neighbor, China, as a concern, it is particularly threated by NATO's: enlargement, physical encroachment along the Russian border, offensive capabilities, and increasingly global role. Russian defense and security researcher Isabelle Facon cites the Kremlin's view that "U.S. efforts to retain absolute military supremacy" create problems for Russia, while NATO expansion and EU enlargement into the former Soviet and Warsaw Pact spaces limit Russia's ability to exert influence while contributing to general global instability.[74] Russian national security concerns include military threats from NATO precision-guided munitions (PGM) and forthcoming U.S. prompt global strike (PGS) systems, as well as conventional weapons, missile defense systems, and weapons of mass destruction proliferation. Furthermore, U.S. efforts to secure biological weapons labs in the Former Soviet Union are viewed warily by the Kremlin, which perceives nefarious motives behind the U.S. actions.[75]

While Russia's external threat perception is focused on NATO, this manifests internally as fear of regime change through color revolution.[76] On the domestic front, Russia feels its citizenry is subject to influence by information operations from foreign-

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[71] Hedenskog, "Russian Security Policy," 109.

[72] Defense Intelligence Agency, *Russia Military Power: Building a Military to Support Great Power Aspirations*, 15; Oliker, "Unpacking Russia's New National Security Strategy."

[73] Oliker, "Unpacking Russia's New National Security Strategy."

[74] Facon, "Russia's National Security Strategy and Military Doctrine and their Implications for the EU," 9; Hedenskog, "Russian Security Policy," 116; Oliker, "Unpacking Russia's New National Security Strategy."

[75] Hedenskog, "Russian Security Policy," 117.

[76] Ibid., 111.

influenced state and non-state groups and individuals alike. These groups, such as non-governmental organizations (NGOs) and the media, foster corruption and subversion to create global instability.[77] The Kremlin feels the ultimate goal of these information operations is regime change through a color-revolution-style event.[78] The latest NSS iteration codifies Russia's fear of Western-backed color revolutions such as those in Urkaine, Georgia, Kyrgyzstan, and the Arab Spring as well as regime change such as that in Serbia, Iraq, and Libya.[79]

Bartles observes that "Russia now believes that the primary threat of regime change comes not from military invasion, but from a new way that war is waged, by a combination of nonmilitary and military methods."[80] This is informed by the so-called, Western-labeled "Gerasimov Doctrine." The Gerasimov Doctrine is based on Russian General Valery Gerasimov's theory that future war is characterized by Western-instigated regime change following a pattern. This pattern consists primarily of non-military measures—i.e., information operations—perpetrated by state proxies such as NGOs and media. The information operations are designed to fuel a domestic, anti-regime opposition that would draw a violent response from the regime, after which Western powers can intervene with military force to affect regime change.

Russia's NSS expresses the intent to increase its coercive power both internally and abroad.[81] Russia's national security goals are focused on placing Russia at the nexus of global power and leadership. The Kremlin pursues these goals through a mix of soft power intended to promote Russian culture, IO to garner sympathy and support, and hard power to deter and coerce.[82] The Kremlin's means for implementing its NSS are strategic

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[77] Defense Intelligence Agency, *Russia Military Power: Building a Military to Support Great Power Aspirations*, 17; Oliker, "Unpacking Russia's New National Security Strategy;" Thomas, *Kremlin Kontrol: Russia's Political-Military Reality*, 71.

[78] Oliker, "Unpacking Russia's New National Security Strategy."

[79] Facon, "Russia's National Security Strategy and Military Doctrine and their Implications for the EU," 9; Hedenskog, "Russian Security Policy," 111.

[80] Charles K. Bartles, "The Significance of Changes in Russia's Military Doctrine," *OE Watch* 5, no. 6, (June 2015): 83. https://community.apan.org/wg/tradoc-g2/fmso/m/oe-watch-past-issues/195455.

[81] Thomas, *Kremlin Kontrol: Russia's Political-Military Reality*, 65.

[82] Hedenskog, "Russian Security Policy," 110.

deterrence and a modernizing conventional military capability. Strategic deterrence in Russian security thought includes not only nuclear forces, but a whole-of-government approach that uses the entirety of the instruments of national power.[83] Import-substitution industrialization (ISI) and revitalizing the defense industry are Russia's key tools for economic development, and military modernization is the key benchmark for how the Kremlin will evaluate the success of its strategy.[84] Russia is developing its military capability by increasing readiness and strategic mobility.[85]

To the extent that Russia is building defense capability, Russia considers this a defensive measure focused on deterrence. In the European theater, Russian efforts to balance against the perceived threats from Western IO efforts and asymmetries in missile defense and precision strike capabilities take the form of deterrence via A2AD systems.[86] The Kremlin is modernizing its military capability to balance against its perceived threats, as well as to entice non-aligned, or impressionable states toward its sphere of influence.[87] These threats necessitate a buffer zone in which Russian political or military influence and interests predominate. The Kremlin pursues this buffer through Eurasian regional organizations and bilateral relations.[88]

The NSS specifically targets NGOs and social media, citing their perceived role in the (relatively) peaceful color revolutions in Georgia, Kyrgyzstan, and Ukraine.[89] This internal focus explains renewed attention given to non-MoD military forces, such as the creation and strengthening of the National Guard of the Russian Federation (*Rossgvardia*).[90] The NSS has evolved to include protection for *Rossotrudnichestvo*—

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[83] Defense Intelligence Agency, *Russia Military Power: Building a Military to Support Great Power Aspirations*, 23.

[84] Oliker, "Unpacking Russia's New National Security Strategy."

[85] Thomas, *Kremlin Kontrol: Russia's Political-Military Reality*, 68.

[86] Ibid., 64, 69.

[87] Facon, "Russia's National Security Strategy and Military Doctrine and their Implications for the EU;" 10.

[88] Ibid., 6–7.

[89] Defense Intelligence Agency, *Russia Military Power: Building a Military to Support Great Power Aspirations*, 16–17.

[90] Hedenskog, "Russian Security Policy," 97–8.

Russian compatriots living abroad. The Kremin's compatriots abroad policy is meant to unite ethnic Russians abroad with their motherland, fostering nationalism based upon Putin's view of their spiritual-moral and cultural-historical linkages, and providing *Rossotrudnichestvo* with a security umbrella to guarantee their civil rights. Conversely, this policy also provides what some view as a convenient pretext for Russian military intervention in the former Soviet Republics.[91]

The Russian National Security Strategy discusses maintaining trust and security in Northern Europe, primarily through multilateral means in the Council of the Baltic Sea States (CBSS).[92] Russia expert Dr. Dmitri Trenin notes that when Russia refers to Northern Europe, it is only referring to "Denmark, Finland, Iceland, Norway, and Sweden."[93] Analysis of the NSS, which purports to support mutual interests in the Baltic area, points to Russia's lack of intent to support trust and security in Estonia, Latvia, and Lithuania. It is a slight against the Baltic States. Russian relations with the Baltic States seek to control the economic and security environment, as well as foster the consideration of Russian interests when the Baltic States decide geopolitical issues.[94]

While Russian relations with the West are suffering, it will simply turn to the East rather than capitulate.[95] NATO has a military presence in the Baltics now, so the Kremlin will focus on its Syria operations, the CSTO, Eurasia, and Asia proper. Russia claims to value the roles of international and regional organizations, as well as international law, in achieving foreign policy objectives. While Russia seeks to cultivate multilateral relations, the Kremlin places a premium on its bilateral relations, particularly those with China and

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[91] Brannon, *Russian Civil-Military Relations*, 38; Thomas, *Kremlin Kontrol: Russia's Political-Military Reality*, 68.

[92] Ministry of Foreign Affairs of the Russian Federation, "Foreign Policy Concept of the Russian Federation," The Ministry of Foreign Affairs of the Russian Federation, № 2232–01-12-2016, 1 December 2016, paragraph 71, http://www.mid.ru/en/foreign_policy/official_documents/-/asset_publisher/CptICkB6BZ29.

[93] Dmitri Trenin, "Russian Policies toward the Nordic-Baltic Region," in *Nordic-Baltic Security in the 21st Century: The Regional Agenda and the Global Role*, ed. Robert Nurick and Magnus Nordemann (Washington, D.C.: Atlantic Council, 2011), 47.

[94] Lo, *New World Disorder*, 102–3.

[95] Hedenskog, "Russian Security Policy," 114.

India.[96] Russia's staunch support of the Assad regime and legislation that requires foreign-funded NGOs in Russia to register as foreign agents are also manifestations of policy in action to counter Western-led regime change.

The Kremlin's security outlook is primarily realist in nature. It sees a multipolar world dominated by great powers.[97] It values sovereignty and non-interference. However, it will use institutionalism instrumentally, particularly when deferring to the United Nations (UN) provides an advantage, or when balancing against NATO and the EU via the CSTO and EEU.[98] Russia will continue to seek opportunities to demonstrate power and leadership in the international and domestic arenas. The Kremlin will continue attempting to counter U.S. influence, while at the same time realizing that it must rely on working with the United States on transnational threat issues such as terrorism.

B. MILITARY DOCTRINE

Doctrine in the Russian sense is akin to policy in the U.S. sense.[99] Military doctrine is the official Russian view on preparing for armed conflict. Contained within is the nature of warfare, and how to apply military force within that construct. Russia's military doctrine is predicated on analysis of the threats to Russian interests. Brannon notes that Russian military doctrine answers five distinct questions: it identifies likely enemies; identifies the character, aims, and tasks of future war; specifies the forces necessary for future war, and how to develop them; prescribes the training necessary for future war; and it describes the means for conducting warfare.[100] The *Military Doctrine of the Russian Federation* terms NATO as one of the "main external military dangers" to Russia, intent on not only containing Russia, but actively expanding into Russia's sphere

[96] Oliker, "Unpacking Russia's New National Security Strategy."

[97] Hedenskog, "Russian Security Policy," 115.

[98] Defense Intelligence Agency, *Russia Military Power: Building a Military to Support Great Power Aspirations*, 14–5.

[99] Thomas, *Kremlin Kontrol: Russia's Political-Military Reality*, 63.

[100] Robert Brannon, *Russian Civil-Military Relations* (New York: Routledge, 2016), 27.

with military installations and forces.[101] The doctrine aims to counter NATO and U.S. expansion, force build up, and missile defense.[102]

Current Russian military doctrine characterizes modern warfare as fought predominantly through asymmetric, indirect methods.[103] The U.S. Defense Intelligence Agency observes that "Russia views wars as often undeclared, fought for relatively limited political objectives, and occurring across all domains, including outer space and the information space."[104] The military doctrine says that military force in the current operational environment is characterized by application of all the instruments of national power, using indirect, asymmetric methods, with an emphasis on special operations forces, irregular forces, private military companies and civil unrest.[105] These forces are integrated toward achieving cross-domain synergy that culminates in simultaneous effects. Modern conflict also includes political and social components, supported by external actors. Conventional weapons are increasingly technical, and processes are exceedingly networked and automated, resulting in higher degrees of target discrimination and kinetic effects, while offering reduced warning and reaction time.

The Russian military doctrine stresses conflict prevention, fostering stability through deterrence. Beginning in 1999, Russian military doctrine permitted the first-use of nuclear weapons specifically to repel an aggressor when no other means of crisis resolution are viable.[106] This manifests in a doctrine of escalation intended to deescalate a crisis.[107] Russia will use nuclear weapons to retaliate for first use of nuclear or other weapons of mass destruction against Russia or Russia's allies, or when the existence of

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[101] Vladimir Putin, *The Military Doctrine of the Russian Federation*, 26 December 2014, Unofficial translation as presented by the Embassy of the Russian Federation to the Republic of Thailand, http://thailand.mid.ru/en/military-doctrine-of-the-russian-federation.

[102] Ibid.

[103] Bartles, "The Significance of Changes in Russia's Military Doctrine," 81.

[104] Defense Intelligence Agency, *Russia Military Power: Building a Military to Support Great Power Aspirations*, 22.

[105] Hedenskog, "Russian Security Policy," 108.

[106] Brannon, *Russian Civil-Military Relations*, 35.

[107] Katarzyna Zysk, "Nonstrategic nuclear weapons in Russia's evolving military doctrine," *Bulletin of the Atomic Scientists* 73, no. 5 (22 August 2017): 4–6.

the Union State (Russia and Belarus) is threatened. In addition to maintaining strategic rocket and non-strategic nuclear forces (NSNF), the Ministry of Defense (MoD) is expanding the role of nuclear, biological, and chemical defense (NBC) forces. This has a dual purpose; it promotes the utility of thermobaric weapons in urban environments, while also countering a perceived U.S. biological weapons threat.[108]

Nuclear weapons are still the cornerstone of Russian strategic deterrence, but deterrence has expanded to include non-nuclear, and non-kinetic means.[109] Russia is developing its precision strike capability, including it for the first time in the 2014 military doctrine. Russia is expanding its conventional and irregular military capability because nuclear deterrence will likely be ineffective at deterring the threat it perceives from color revolutions. The Kremlin is stressing readiness and mobilization.[110] At the same time, the Swedish Defence Research Agency (FOI) notes that Russia acknowledges that non-military, indirect methods such as IO are now much more effective than the power of the gun in achieving political and strategic objectives.[111]

Toward a whole of government, whole of nation effort at national defense and security, Russia continues the Soviet tradition of political indoctrination, targeting its citizenry with propaganda to maintain war-footing. This is primarily aimed at the youth, and carried out through MoD support of the Russian Movement for Schoolchildren, the Young Army, and the Voluntary Society for Supporting the Army (DOSSAF). The Russian General Staff recognizes the importance of technology in modern and future warfare, and Russian conscripts have neither the technical skill, nor the time to learn the skills necessary to serve with maximum utility on today's battlefield. DOSSAF and similar programs teach militarily transferable skills while promoting nationalistic

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[108] Bartles, "The Significance of Changes in Russia's Military Doctrine," 83.

[109] Hedenskog, "Russian Security Policy," 111–2.

[110] Defense Intelligence Agency, *Russia Military Power: Building a Military to Support Great Power Aspirations*, 17, 22.

[111] Ibid., 23; Hedenskog, "Russian Security Policy," 109.

patriotism, providing the military with a talent pool for conscripts that needs less individual and special training.[112]

Russia's stated policy is to achieve deterrence though readiness, using non-nuclear means as a starting point, while not precluding escalation. The military doctrine cites Russia's policy to seek deterrence through coalition building, arms-control regime compliance, countering unilateral and alliance missile defense while promoting joint missile defense, countering the weaponization of space, relying on UN-led peacekeeping operations, countering biological weapons, and countering information operations. Information operations are now key part of NSS and military doctrine, but Russia's realist world outlook depends on hard power, specifically, nuclear balancing, as the status quo guarantee.[113]

C. RELATIONS BETWEEN RUSSIA AND THE BALTIC STATES

1. Pre-Soviet Relations

In determining Russia's threat to NATO's EFP, it is relevant to evaluate the relations between Russia and the Baltic States. The Estonians, Latvians, and Lithuanians as nations with a geographic homeland existed in their current location before the Slavic predecessors to modern Russians immigrated to the region. The geographic territory now belonging to the Baltic States was set upon by Russian imperial designs during Peter the Great's reign. He sought Baltic Sea ports for his expanding navy, and invaded the territory of Estonia during his Great Northern War with Sweden at the beginning of the 18th century.[114] Under Catherine the Great, Russia incorporated Lithuania into the Russian Empire by the end of the 18th century.[115] Russia retained the Baltic territories

[112] Hedenskog, "Russian Security Policy," 105, 107, 113.

[113] Ibid., 114–5.

[114] Nalbandov, *Not by Bread Alone*, 48.

[115] Agnia Grigas, "Russia's Motives in the Baltic States," Foreign Policy Research Institute, 7 December 2015, https://www.fpri.org/article/2015/12/russias-motives-in-the-baltic-states/.

until ceding them to Germany in the Treaty of Brest-Litovsk during its exit from the First World War.[116]

Following Germany's defeat in 1918, Latvia and Estonia enjoyed two decades of independence until 1939, while Lithuania had declared independence earlier during the war. The Baltic States were again brought within the Russian sphere under the Soviet Union as agreed upon by Germany and Russia in the Molotov-Ribbentrop Pact.[117] In accordance with provisions in the secret protocol to the non-aggression pact, the Soviets invaded the Baltic States after the outbreak of the Second World War. Although Germany's military held the Baltic States during much of the war, the Soviet Union's victory over the Nazi's cemented the Baltic States within the Soviet state. Following the war, ethnic Russians and Russian-speaking Soviet citizens were relocated into the region, dramatically shifting the demographics of Estonia and Latvia.[118]

Gorbachev's *Glasnost* and *Perestroika* of the 1980s led to independence movements in the Baltic States. His subsequent inaction against the reemergence of Baltic nationalism from 1987 to 1990 set the conditions for the demise of the Union of Soviet Socialist Republics (USSR), making it impossible for Russia to take part in crafting the future of the Baltic States.[119] Gorbachev's eventual reaction, too late, was an attempt of a crackdown by security forces and the military in Latvia and Lithuania that further exacerbated nationalist tendencies in the Soviet republics.[120] During the August 1991 revolution in Moscow, the Baltic republics declared independence. Shortly after, the Soviet Union dissolved.[121]

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[116] Nalbandov, *Not by Bread Alone*, 50; Tsygankov, *The Strong State*, 60.

[117] Nalbandov, *Not by Bread Alone*, 51.

[118] Nick Sinclair, "Old Generation Warfare: The Evolution–Not Revolution–of the Russian Way of Warfare," in *Military Review* 96, no. 3 (May-June, 2016): 10.

[119] Tsygankov, *The Strong State*, 80.

[120] Ibid., 82; Martin Malia, *The Soviet Tragedy: A History of Socialism in Russia, 1917–1991* (New York: The Free Press, 1994), 481.

[121] Malia, *Soviet Tragedy*, 488–9.

2. Post-Soviet Relations

Post-Soviet Russian policies toward the greater Baltic Sea region are focused on two primary concerns: maintaining stability and continued access to Kaliningrad, St. Petersburg, and its other Baltic ports; and maintaining Baltic pipeline access to Germany. Russia's policies specific to Estonia, Latvia, and Lithuania are four-fold: balancing against NATO, controlling the energy and transportation infrastructure, expanding political rights to Russian minorities (particularly concerning citizenship and language rights in education), and promoting the Soviet contribution toward liberating Europe in the Second World War.[122]

The tenor of Russia's relations with the Baltic States is directly proportional to the tone of Russia's relations with the United States. Russia does not view the former Soviet republics as independent actors; it views them as tools of the West. In the case of Estonia, Latvia, and Lithuania, Russia views them as tools of NATO (read the United States) and the EU. Russia seeks to balance the United States in most geopolitical moves.[123] Under that rubric, Russian relations with the Baltic States should be analyzed from an adversarial stand-point in an EU or NATO context. When U.S.-Russian relations are good, Russia has no incentive to harass the Baltic States. When relations sour, Russia is prone to saber-rattling and rhetoric designed simply to draw attention to itself.[124]

The Baltic States are a lever with which the Kremlin believes it can sow discord and weaken alliance consensus, ultimately delegitimizing NATO as the guarantor of European security.[125] Russian fears of NATO expansion, particularly of NATO forces' forward presence in Poland and the Baltic States, draws vehement reactions from Russian politicians. It incites official rhetoric that portends a Russian invasion to recapture its former Soviet Republics. NATO's presence in what once were Soviet republics and

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[122] Tsygankov, *Strong State*, 47.

[123] Lo, *New World Disorder*, 42–3.

[124] Ibid., 180.

[125] Grigas, "Russia's Motives in the Baltic States;" Uwe Hartmann, "The Evolution of the Hybrid Threat, and Resilience as a Countermeasure," NATO Defense College, Research Division, September 2017, www.ndc.nato.int/download/downloads.php?icode=527.

buffer-states for Russia has resulted in a Russian arms build-up and increased nuclear rhetoric.[126]

During the Cold War, the Soviets built an interdependent energy and transportation infrastructure in the Baltic States. Russia's current energy policy, tied to its national security interests, is to retain a Russian-dominated market. The Kremlin's goals toward this end are market stability and a diverse, Russian-controlled, transit and distribution network.[127] Russian gas and oil firms seek to retain their dominance over the Baltic States' energy markets, while diversifying transit options to the greater European market. Additionally, Russia seeks continuing access to the warm-water ports in Baltic States.[128]

The Russian National Security Strategy's inclusion of *Rossotrudnichestvo* is particularly salient for the Baltic States. There are significant minority populations of ethnic Russians, native Russian speakers, and Russian citizens in the Baltic States.[129] Many are stateless aliens as a result of not possessing the requisite language skills for citizenship under the post-Soviet Baltic States' citizenship laws.[130] Except for in Lithuania, where they enjoy full citizenship, Russian speakers are largely disenfranchised politically and economically.[131] Ethno-linguistic tensions within the Baltic States provide cleavages which Russia can exploit, and has taken the opportunity to nest within its overall concept of Russian security and stability.

Trenin notes that Russia's information strategy emphasizes supporting propaganda campaigns highlighting discrimination against Russian-speaking minorities and "accusing Baltic leaders of being pro-Nazi."[132] Russian-Baltic relations are aggravated by the Baltic-States narrative that Nazism was justified to counter Stalin, and

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[126] Nalbandov, *Not by Bread Alone*, 73, 75.

[127] Brenda Shaffer, *Energy Politics* (Philadelphia: University of Pennsylvania Press, 2009), 123.

[128] Grigas, "Russia's Motives in the Baltic States."

[129] Radin, *Hybrid Warfare*, 14.

[130] Ibid., 15–6; Thornton, "Russian Threat," 341.

[131] Lanoszka, "Russian Hybrid Warfare," 185, 192; Thornton, "Russian Threat," 341.

[132] Trenin, "Russian Policies toward the Nordic-Baltic Region," 49.

a Nazi-occupied Baltic region would have been preferable to a Soviet-occupied region. This narrative leads the Baltic States to minimize the Soviet contribution in defeating the Nazis.[133] To the Kremlin, which has repeatedly attempted to exert soft power through promoting its image as the savior of Europe, this slight from the Baltic States is a serious affront.[134]

D. IMPLICATIONS FOR THE BALTIC STATES

NATO faces a hybrid threat from Russian revisionist, ideologically expansionist aims in the Baltic States. Western observers contend that Russian national security thought perceives a permanent state of hybrid war with the West, and the Baltic States are a primary battlespace for this conflict.[135] This section discusses the concept of hybrid warfare and its aims, followed by Russia's goals and methods for carrying out such a campaign, and concluding with the Baltic States' susceptibility to the Russian hybrid threat.

1. Concept and Aims of Hybrid Warfare

Contemporary thought on Russian warfare focuses on the phenomenon of hybrid warfare, characterized primarily by unconventional and non-military means of obtaining political objectives. General Gerasimov is often viewed as Russia's chief hybrid warfare ideologue. As Chief of the General Staff of the Armed Forces of the Russian Federation, he is responsible for writing Russia's military doctrine.

Russia refers to what the West calls 'hybrid' as next generation, or non-linear warfare.[136] Next Generation Warfare (NGW), as promoted by General Gerasimov and referred to in the West as the Gerasimov Doctrine, seeks to achieve foreign policy objectives through non-attributable military and irregular actions, using conventional

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[133] Trenin, "Russian Policies toward the Nordic-Baltic Region," 49.

[134] Sergei Lavrov, "Russia's Foreign Policy: Historical Background," in *Russia in Global Affairs*, 3 March 2016, http://www.mid.ru/en/foreign_policy/news/-/asset_publisher/cKNonkJE02Bw/content/id/21.

[135] Rod Thornton and Manos Karagiannis, "The Russian Threat to the Baltic States: Problems of Shaping Local Defense Mechanisms," *The Journal of Slavic Military Studies* 29, no. 3 (2016): 331, DOI:10.1080/13518046.2016.1200359.

[136] Thornton, "Russian Threat," 337.

tactics as a last resort.[137] Conventional force is used pursuant to a fabricated pre-text, carried out by agent provocateurs.[138]

Gerasimov observed the changing nature of military means for obtaining political objectives. He observed the spread of democracy, and subsequent disorder that occurs when democracy overtakes authoritarianism, and he postulated that these events were a form of warfare perpetrated by the West. Many Western observers of Russian security issues cite his thoughts on the future of warfare as a doctrine that will guide Russia through waging undeclared information wars to achieve its goals. However, hybrid is a Western construct, and does not give sufficient weight to military power. While Russia has exhibited coercive tools in the diplomatic, informational, and economic realms, Russian military action in Ukraine demonstrates that military power remains a necessary policy instrument.

U.S. characterizations of hybrid warfare involve a combination of conventional military force with state and non-state sponsored criminal, terrorist, and irregular warfare elements to achieve political goals.[139] Political scientist Andrew Radin notes that it involves "covert or deniable activities, supported by conventional or nuclear forces, to influence the domestic politics of target countries."[140] Political scientist Dr. Alexander Lanoszka defines hybrid warfare as a strategy manifest in the "marriage of conventional deterrence and insurgent tactics" that exploits nationalism to achieve political goals through plausibly deniable covert action.[141] He notes that, "hybrid warfare involves manipulating existing cleavages to sow internal dissension and foment local discord."[142] Hybrid warfare marshals the diplomatic, informational, military, and economic capacities of a belligerent state to "undermine its target's territorial integrity, subvert its political

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[137] Andrew Radin, *Hybrid Warfare in the Baltics: Threats and Potential Responses* (Santa Monica, CA: RAND Corporation, 2017), 5, 9.

[138] Bartles, "Gerasimov," 33.

[139] Alexander Lanoszka, "Russian Hybrid Warfare and Extended Deterrence in Eastern Europe," *International Affairs* 92, no. 1 (2016): 177; Radin, *Hybrid Warfare*, 6.

[140] Radin, *Hybrid Warfare*, 5.

[141] Lanoszka, "Russian Hybrid Warfare," 176.

[142] Ibid., 185.

cohesion ...disrupt its economy," and expand the belligerent state's territory and influence.[143] Hybrid tactics include propaganda, espionage, political agitation, criminal sabotage and subversion, recruiting fifth columns, infiltrating covert forces, and border demonstrations and skirmishes.[144]

Information warfare (IW) is an important, some consider the pre-eminent, method of conducting a hybrid campaign.[145] IW seeks to damage the physical, as well as psychological, targeting the actual information systems and networks themselves as well as seeking to influence perceptions in order to shape outcomes.[146] Hybrid warfare is not attritional in nature; the primary target is domestic politics, not military forces. Conventional force is primarily used for its deterrent effect.[147] The overwhelming local superiority of the belligerent coerces the target state into a state of paralysis; the target fails to act militarily against a state-sponsored threat that may be difficult to attribute—it may even appear legal and legitimate.[148]

Theorists and observers disagree on the impetus for hybrid tactics; Lanoszka sees strength (albeit in a comparatively local realm) as the precursor to hybrid tactics, while Russia military analyst Dr. Rod Thornton and Russia foreign policy analyst Dr. Emmanuel Karagiannis see hybrid warfare as the natural reaction of a relatively weak military. Thornton's view is that hybrid practitioners have adapted to exploit their conventional weakness, while Lanoszka's view is that a hybrid strategy can only be effective if the practitioner's conventional deterrent is effective.[149] Both arguments appear to complement each other.

Thornton marks the distinguishing characteristic between conventional and hybrid warfare as wherein conventional tactics seek to affect the terrestrial battlefield, hybrid

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[143] Lanoszka, "Russian Hybrid Warfare," 178.

[144] Ibid., 179; Radin, *Hybrid Warfare*, 20.

[145] Thornton, "Russian Threat," 333.

[146] Lanoszka, "Russian Hybrid Warfare," 5; Thornton, "Russian Threat," 338.

[147] Radin, *Hybrid Warfare*, 6, 8.

[148] Lanoszka, "Russian Hybrid Warfare," 180.

[149] Ibid., 178, 194; Thornton, "Russian Threat," 332.

tactics seek abstract effects across the greater battlespace. These hybrid effects are aimed at the enemy's will to fight. Thornton draws on hybrid warfare proponent Frank Hoffman's characterization of the concept, that which encompasses the physical and abstract, as well as "both 'combatants and non-combatants.'"[150] The ultimate goal of a hybrid campaign is capitulation without combat. Hybrid practitioners aim to shatter the enemy's will through a time-competitive cycle in which the enemy is not only unable to determine the aggressor's intentions, but is unable to determine who the actual combatants are. The ideas of out-cycling your opponent and using the whole of government's instruments of national power in asymmetric warfare are not new. They evoke notions of Clausewitz, Boyd and his OODA-loop (observe-orient-decide-act), and the Marine Corps' maneuver warfare doctrine. What distinguishes hybrid, particularly in the Russian case, is the notion of perpetual aggression combined with the effort to blur the lines between warfighters and civilians.[151]

2. Russia's Hybrid Warfare Goals and Methods in the Baltic States

The goal of Russian hybrid actions against the Baltic States is to render NATO ineffective at fulfilling its defensive role.[152] According to Thornton, Russia's goal in the Baltic States is to "destabilize" their governments in order to undermine "their democratic processes, if not …their actual independence."[153] This is nested within Russia's larger campaign against NATO influence, pursuant to the Russian policy objective of re-establishing both a buffer space with NATO, as well as expanding Russian influence into the EU to counter the United States and assert itself as a regional hegemon.[154]

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[150] Thornton, "Russian Threat," 332–3.

[151] Ibid., 332, 334, 350.

[152] Lanoszka, "Russian Hybrid Warfare," 176.

[153] Thornton, "Russian Threat," 331.

[154] Ibid., 335, 340, 342; Lawrence Freedman, *The Evolution of Nuclear Strategy*, 3rd ed. (New York: Palgrave Macmillan 2003), 55.

The widely-held view in the West is that Russia is already conducting hybrid warfare against NATO via the Baltic States.[155] The Kremlin has political influence through local, regional, and national political parties, as well as through organized crime syndicates. Russia routinely harasses diplomats from the Baltic States. The Kremlin seeks to subvert regime legitimacy in Baltic States through highlighting and exacerbating ethnic tensions over the civil rights of ethnic Russians there.[156] It has conducted cyber-attacks against the Baltic States and used energy resources as tools of coercion.[157] Russian efforts to weaponize energy include supporting IW campaigns targeting the development of non-Russian reliant energy infrastructure, supporting unions within the energy industry, and shutting off energy sources in retaliation for pursuing policies counter to the Kremlin's policies.[158]

Some Western analysts believe Russia's protracted campaign against Ukraine suggests it is unlikely to embark on a similar imbroglio in the Baltic States.[159] Russia's irregular warfare tactics in Eastern Ukraine have been insufficient to achieve military, let alone political goals, and have required conventional support to effect tactical success.[160] Russia's campaign against the Baltic States is designed to accomplish the effects of having a buffer against NATO without drawing NATO into conventional combat.[161] Thornton notes, "Moscow's goal…is not to militarily occupy [the Baltic States]—it is to destabilize them."[162] Russia realizes that it could not sustain the costs associated with loss of energy markets, influence within EU countries, and personnel due to a conflict with NATO. Russia seeks to gain sufficient influence in the Baltic States' governments that it is able to influence and undermine the EU and NATO.[163] It follows that if Russia

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155 Radin, *Hybrid Warfare*, 13–4; Thornton "Russian Threat," 333.

156 Lo, *New World Disorder*, 273.

157 Radin, *Hybrid Warfare*, 14, 20.

158 Thornton, "Russian Threat," 344–5.

159 Radin, *Hybrid Warfare*, 11.

160 Ibid., 7–8.

161 Lanoszka, "Russian Hybrid Warfare," 190; Thornton, "Russian Threat," 350.

162 Thornton, "Russian Threat," 334.

163 Ibid., 334, 340.

seeks influence within the EU and NATO via a proxy, occupying or absorbing as an administrative division an EU or NATO member would not facilitate that goal.

Russia seeks to influence *Rossotrudnichestvo*, as well as citizens of the Baltic States through IW. Its goals are to erode faith in the legitimacy and veracity of democratic public institutions and non-Russian-backed media.[164] Russia also seeks to subvert the loyalty and will of both decision makers, and rank and file service members in the Baltic States. Additionally, the Kremlin endeavors to erode the morale of the Baltic States citizens' perceptions of vulnerability by conducting aggressive maneuvers along its borders and violating their territorial seas and airspaces.[165] However, the Kremlin seeks to limit Russian forces along its border with NATO to discourage a conventional NATO build-up.[166]

The Kremlin's IW effort is bulwarked by a robust media presence in the Baltic States to provide persistent pro-Russian messaging to both Russian and non-Russian speakers alike. The Kremlin spreads its IW themes through traditional media such as radio, television, and print, as well as through the cyber realm, which offers even more anonymity and deniability. Social media and its susceptibility to mis-attributable—even fake—contributors provides an ideal venue for promoting Russian themes while subverting the legitimacy of the Baltic States. Furthermore, the Kremlin sponsors NGOs, civic organizations, and educational institutions within the Baltic States to promote Russian messaging and state-sanctioned culture.[167]

Russia seeks to exacerbate civil tensions through an IW effort aimed at stoking populist fears in the Baltic States against which it can rally to the defense of *Rossotrudnichestvo.* Russia's effort to de-legitimize NATO hinges on creating an environment of uncertainty as to the Kremlin's involvement in either sowing discord or intervening on behalf of Russian-speaking minorities in the Baltic States. Russian hybrid

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[164] Thornton, "Russian Threat," 336, 342; Radin, *Hybrid Warfare*, 18.

[165] Thornton, "Russian Threat," 338–9.

[166] Radin, *Hybrid Warfare*, 23.

[167] Ibid., 18; Thornton, "Russian Threat," 335, 344.

warfare attempts to cloak its irregular and conventional tactics in dubious legality. This provides Russia an advantage in which NATO and the West are slow to react while debating Russia's covert involvement and the legitimacy of overt actions. Russia aims to conceal its involvement long enough to create sufficient debate within NATO's decision-making bodies as to Russia's true role, resulting in NATO failing to react in a timely manner. If NATO cannot agree that Russia has attacked a member-state, NATO cannot act as an alliance. If Russia were to act against the Baltic States without a NATO response, when Russia did claim responsibility, NATO's legitimacy as a defensive alliance would therefore be destroyed.[168]

Radin sees the Russian threat to the Baltic States as conventional in nature, arguing that the *Rossotrudnichestvo* in the Baltic States prefer EU membership to the Kremlin's yoke, and that the Baltic States have internal security capabilities that are competent enough to "either defeat Russian covert forces or compel Russia to escalate to conventional war."[169] Russia's hybrid threat, in Radin's view, is subversion coupled with conventional and strategic capabilities.[170]

Conflict scenario theorists looking at the Russian-Baltic States problem set envision a Russian IW campaign targeting disenfranchised Russian-speakers in the Baltics. These *Rossotrudnichestvo*, would be incited to protest against discriminatory language and citizenship policies.[171] Russian agent provocateurs would incite violence against the state, while also inciting a violent state reaction against separatists. This is the manifestation of reflexive control that further reinforce Russian IW themes.[172] Kremlin-sponsored militias, supported by Russian security services would then act to protect the rights of the *Rossotrudnichestvo.* Russian security services would initially provide covert support. Again, agent provocateurs would then incite an armed conflict after which

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[168] Lanoszka, "Russian Hybrid Warfare," 187, 192–3; Radin, *Hybrid Warfare*, 23; Thornton, "Russian Threat," 339–40.

[169] Radin, *Hybrid Warfare*, 2, 18, 21–2, 25.

[170] Ibid., 2.

[171] Lanoszka, "Russian Hybrid Warfare," 192; Radin, *Hybrid Warfare*, 19; Thornton, "Russian Threat," 342.

[172] Radin, *Hybrid Warfare*, 21.

Russian security services could provide overt support in the form of peace keepers. The psychological deterrent of Russia's numerically and asymmetrically superior local forces would deter a response from both the Baltic States and NATO.[173] Or, further armed conflict would then create a justification for Russian armed intervention, a conventional limited-objective attack reminiscent of Russia's 2008 war with Georgia.[174]

Returning to the impetus for alarm, Russia's actions in Ukraine, it is important to note that Russia appears to have operated opportunistically, rather than in a calculated fashion intent on seizing Crimea and supporting separatism in the East. Much like Russia's cyber-attack in Estonia, it fit Kremlin policy, but the Kremlin was not the catalyst for action.[175] Observers point to Russia's use of unidentified, non-attributable security forces in Crimea, so called "little green men" or "polite green men." However, many were Russian Marines already garrisoned in Sevastopol'. Conflict scenarios involving Russia introducing little green men into the Baltic States ignore the disparity between the Baltic States and Crimea. Russia leased its Black Sea Fleet naval bases in Crimea from Ukraine, and many of Russia's little green men were already legitimately stationed in Crimea. No such situation exists in the Baltic States; no Russian forces are garrisoned in NATO countries and any attempt to deploy such a force would be immediately transparent to the sovereign Baltic States. This suggests Russia's goal is to have influence agents in place to take advantage of developing situations.

3. Susceptibility of the Baltic States to Russian Hybrid Tactics

Several factors contribute to the Baltic States' susceptibility to Russian hybrid warfare. They are primarily focused on *Rossotrudnichestvo*, the enduring legacy of the Baltic States' tenure as Soviet republics, and Russia's border with the Baltic States. Lanoszka views the Baltic States as vulnerable to Russian hybrid tactics only as much as Russia desires to "expand… or reassert… its regional hegemony."[176] As the Baltic States

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[173] Radin, *Hybrid Warfare*, 8; Thornton, "Russian Threat," 350.

[174] Thornton, "Russian Threat," 342.

[175] Radin, *Hybrid Warfare*, 19.

[176] Lanoszka, "Russian Hybrid Warfare," 187.

are now EU and NATO members, their internal politics offer no threat to Russian regime survival. In as much as Russia desires to expand its influence, NATO's RAP, and subsequent EFP—conventional deterrence measures targeting Russia that include increased NATO forces deployed to the Baltics—increases the likelihood of Russian hybrid, rather than conventional warfare.[177]

The significant minority population in the Baltic States has caused some to fear Russian state capture, or a hybrid take-over scenario. While Nalbandov and Lo imply that the Baltic States' NATO and EU membership places them forever outside of Russia's control, Russia's self-proclaimed right to intervene on behalf of ethnic Russians, however, may give disproportionate influence to the Russian diaspora in the post-Soviet space.[178] Ethnic Russians comprise 24 percent of the population in Estonia, 27 percent in Latvia, and 6 percent in Lithuania, while the percentage of Russian speakers is 34 percent, 30 percent, and 8 percent respectively. Russian speakers comprise the majority in Riga proper, and are a significant portion of Tallinn's population. Resident aliens comprise 7 percent of Estonia's population and 12 percent of Latvia's.[179] These demographics also tilt sharply away from the titular nations in the Ida-Viru County of Estonia, the Latgale region in Latvia, and in cities close to Lithuania's border with Kaliningrad and Belarus.[180]

There are vulnerabilities to Russian influence in the Baltic States, but the hybrid template of Ukraine does not project well in Estonia and Latvia, and has even fewer prospects in Lithuania. The professional, NATO-backed security services of the Baltic States are capable of collecting intelligence, conducting counterintelligence, and providing internal security. Despite Russia's persistent IW campaign to promote its agenda, the higher standard of living within the EU is preferable to Kremlin rule for the Baltic States' minorities.

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[177] Lanoszka, "Russian Hybrid Warfare," 191.

[178] Nalbandov, *Not by Bread Alone*, 293; Lo, *Russia and the New World Disorder*, 32, 96.

[179] Lanoszka, "Russian Hybrid Warfare," 182.

[180] Grigas, "Russia's Motives in the Baltic States;"

Thornton speculates Russia's most likely course of action in the Baltic States is to wage an IW campaign aimed at gaining influence in the legislatures and executives of the Baltic States through national and local elections. Both Estonia and Latvia have political parties aligned with the Putin-controlled United Russia Party. Although these parties receive the primary share of Russian-speaking citizen's votes, the low percentage of the Russian-speaking citizenry relegates these parties to secondary political importance, not partners in coalition governments.[181] However, residency, not citizenship is the requirement for voting in municipal elections. In Riga and Tallinn, where *Rossotrudnichestvo* comprise significant portions of the population, the Kremlin can wield disproportionate influence.[182]

Russian IW themes and foreign policy toward the Baltic States highlight and exacerbate the tensions between Russian-speakers and the titular nations within the Baltic States.[183] The Baltic States have a history of anti-imperial nationalism. This morphed into anti-Soviet nationalism during the Second World War, and lingers today as anti-Russian nationalism, portrayed by the Kremlin as fascism that targets the civil rights of Russians and Russian speakers in these former Soviet republics.[184] The history of Soviet occupation and subsequent physical, demographic, and psychological legacies contribute to feelings of fear and helplessness among ethnic Estonians, Latvians, and Lithuanians.[185] Russia is afforded an advantage over NATO in understanding how to exploit the regional complexity in the post-Soviet space during an IW campaign.[186] The Baltic States' security apparatus is limited in reacting by the public's fear of returning to their fascist legacy under Nazi occupation and anti-Soviet resistance; liberal democracies are not apt to suppress political dissent, even if it is subversive and of foreign origin.[187]

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[181] Radin, *Hybrid Warfare*, 17; Thornton, "Russian Threat," 343.

[182] Thornton, "Russian Threat," 343.

[183] Ibid.; Thornton, "Russian Threat," 342.

[184] Lanoszka, "Russian Hybrid Warfare," 183–4.

[185] Thornton, "Russian Threat," 340.

[186] Lanoszka, "Russian Hybrid Warfare," 186.

[187] Thornton, "Russian Threat," 341, 345.

Radin notes that "Estonian and Latvian defense leaders claim that they are not especially worried about the hybrid threat and are more concerned about the prospect of a large-scale conventional attack."[188] Estonia and Latvia share borders with contiguous Russia, while Lithuania borders the Kaliningrad exclave. The Baltic States' militaries by themselves are inadequate for defense against Russian conventional forces. Furthermore, they are newcomers to NATO and not every state in such a large alliance may risk their own security on behalf of Estonia, Latvia, or Lithuania.[189] However, Radin also acknowledges the unlikeliness of a conventional scenario.[190]

Armed conflict between Russia and the Baltic States would deprive Russia of a prime source of income. Russia has worked diligently to develop natural gas delivery infrastructure such as Nord Stream to decrease its reliance on transit states such as the Baltics, subsequently giving Russia more geopolitical leverage in those bypassed states. Yet, while the Baltic States, and the EU as a whole, are largely dependent on Russian energy imports, Russia is also dependent on EU markets for its energy exports.[191] This is even more relevant now that Lithuania is importing liquid natural gas, which it also supplies to Estonia, and Latvia is unbundling its Kremlin-controlled, vertical energy firm structures, loosening Russia's total grip on the Baltic States' energy security. Furthermore, as was demonstrated in Ukraine following Russia's annexation, Russia was not apt to turn off the gas taps to Ukraine due to its downstream feed into Crimea. Lithuania is in a similar position, as it serves as a transit state for the Soviet-era energy infrastructure that supplies Kaliningrad. Any gas production cuts to Lithuania would affect Russia's ability to project its A2AD bubble from Kaliningrad. Most importantly, Russia does not want to engage NATO conventionally because it could likely escalate into nuclear conflict.[192]

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188 Radin, *Hybrid Warfare*, 1.

189 Thornton, "Russian Threat," 341.

190 Radin, *Hybrid Warfare*, 13.

191 Thornton, "Russian Threat," 341.

192 Freedman, *The Evolution of Nuclear Strategy*, 37, 106; Lanoszka, "Russian Hybrid Warfare," 191.

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IV. RUSSIAN MILITARY CAPABILITY

A. REFORMS

Reform in the Russian Armed Forces had been discussed since the dissolution of the Soviet Union; however, it was Russia's poor performance during its five-day war with Georgia in 2008 that was the catalyst for implementing change. Command, control, and communications systems (C3) were not networked, and often did not work. Poor C3, compounded by service-specific reporting chains, precluded joint coordination of air support. Russian aircraft were vulnerable to Georgian integrated air defense systems (IADS), compounded by a lack of Russian identification of friend or foe (IFF) technology, resulting in Russian air losses to Georgian forces as well as fratricide. Russian intelligence was widely criticized for its poor technical performance; Russia's Global Navigational Satellite System (GLONASS) was not fully operational, leading to failures to provide timely indications and warning, and in targeting. Old, poorly maintained equipment frequently broke-down. When new equipment was in-place, such as reactive armor, the actual panels had been removed, negating the armor's function.[193]

1. Serdyukov, Makarov, and the New Look

Putin appointed Anatoliy Serdyukov as Defense Minister in 2007. The first civilian Defense Minister, he was an accountant by trade, specifically brought in to battle the military's endemic corruption, which accounted for 30 percent of the MoD's budget that year.[194] Towards that end, Serdyukov established military police forces. By 2012, military police brigades, subordinate to the MoD, were established in each military district.[195] In the wake of the war in Georgia, Serdyukov became synonymous for the "New Look" reforms which he subsequently began implementing in late 2008; they were

[193] Mark Galeotti, *The Modern Russian Army 1992–2016* (New York: Osprey, 2017), 21–22, 25.

[194] Dale R. Herspring, "Military Reform," in *Putin's Russia*, 6th ed., ed. Stephen K. Wegren (New York: Rowman & Littlefield, 2016), 327.

[195] Galeotti, *The Modern Russian Army 1992–2016*, 35.

the hallmark of his tenure. An accountant by trade, Serdyukov pursued structural reorganization, seeking high combat readiness through efficiency.

Despite Serdyukov's association with the New Look, his Chief of the General Staff, Nikolai Makarov, proposed and led the majority of reforms.[196] General Makarov led the reforms toward what is described in Russia as sixth-generation, or non-contact, and in the West as network-centric warfare, characterized by automated and integrated command, control, communications, computers, intelligence, surveillance, and reconnaissance (C4ISR). It was Makarov's idea that a smaller, professional force would be most valuable, especially during the initial stages of conflict. He also sought to simplify C2 through simplifying the military district structure.[197] Serdyukov and Makarov consolidated the ten existing military districts into four, which were operationalized as joint strategic commands (OSK). The districts are the Western Military District (WMD), Southern Military District (SMD), Central Military District (CMD), and Eastern Military District (EMD) (although not a district, Joint Strategic Command North would later be established under Serdyukov's successor). The new district/OSK structure, with joint C2, allowed personnel reductions at the services' headquarters, central commands, the General Staff, and MoD.[198] Along with the C2 structure, the military consolidated the 65 various military schools and academies into 10.[199] In 2009, Serdyukov established d a 34-month non-commissioned officer (NCO) academy.[200]

Aside from reorganizing into OSKs, the primary hallmark of Russia's New Look reforms was the transition from divisions to brigades as the primary operational unit. Abandonment of the divisional model streamlined C2 from the operational command, to OSK, to brigade.[201] Brigades were to focus on readiness and rapid deployment

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[196] Galeotti, The Modern Russian Army 1992–2016, 22.

[197] McDermott, *Russia's Strategic Mobility*, 27, 29, 35.

[198] Mikhail Barabanov, "Changing the Force and Moving Forward After Georgia," in Brothers Armed: Military Aspects of the Crisis in Ukraine, 2nd ed., ed. Colby Howard and Ruslan Phukov (Minneapolis: East View Press, 2015), 93; Galeotti, The Modern Russian Army 1992–2016, 29.

[199] Barabanov, "Changing the Force and Moving Forward After Georgia," 93.

[200] Galeotti, The Modern Russian Army 1992–2016, 42.

[201] McDermott, *Russia's Strategic Mobility*, 30.

throughout the post-Soviet space, while Russia would rely on the strategic nuclear deterrent to counter NATO. Although the primary rationale for this transition was a shift in focus from Cold-War era units poised for confrontation with the West to a force poised for rapid deployment to secure regional stability and counter separatists within Russia, this was largely a shell-game. The underlying cause was unit readiness. Russia's military was unable to meet its volunteer enlistment goals and unable to staff its readiness goals across the force. The majority of Russian divisions were cadre-only shells, ghost units waiting for conscripts to be mobilized. Transitioning from a division and regiment to brigade and battalion model allowed the Russian Army to provide the previously regimental-level fire support and combat service support to BTGs under brigades, as battalions were in-effect the only level of unit which could be filled with appropriate personnel, notwithstanding the VDV. The VDV retained the division construct, was staffed with a higher proportion of volunteer professionals, and enjoyed higher personnel readiness than regular forces. Additionally, the VDV needed divisions to provide the extra CS and CSS that VDV forces required for operating forward of friendly lines.[202]

Serdyukov abandoned mobilization-based conscript manning for permanent-readiness brigades.[203] This was possible by reducing the size of the force from two million nominal personnel, to a target of one million staffed billets. He also cut the officer corps drastically, from 335,000 to 220,000 personnel (originally planned to be 150,000). Serdyukov traded logistics for combat personnel by outsourcing garrison logistics services to civilian contractors.[204] In addition to shrinking the force, the military moved towards a professional force of 450,000 contract soldiers--*Kontraktniki*.[205] Conscripts were not abandoned, but units would be integrated with conscripts serving

[202] Igor Sutyagin with Justin Bronk, *Russia's New Ground Forces: Capabilities, Limitations, and Implications for International Security*, Royal United Services Institute Whitehall Paper 89 (Philadelphia: Taylor & Francis, 2017), 25.

[203] Barabanov, "Changing the Force and Moving Forward After Georgia," 94; McDermott, *Russia's Strategic Mobility*, 36.

[204] Barabanov, "Changing the Force and Moving Forward After Georgia," 93–94; Herspring, "Military Reform," 330–331, 338.

[205] Herspring, "Military Reform," 334.

under professional NCOs.[206] In 2010, warrant officers, who filled traditional Western-NCO roles were disbanded. In 2013, they were returned to the force structure, now serving in a more Western-style, technical role. The draft was reduced to a one-year term, satisfied through two call-ups a year.[207]

Then-President Dmitri Medvedev's reform priorities were to: bring permanent-readiness brigades about by dissolving mobilization-based divisions and regiments; improve C2; improve training; improve equipment and weapons, to include precision-guided munitions, through modernization; and incentivize professional, contract service through increased benefits. When he felt that Medvedev's priorities had been achieved, Serdyukov, went on to prioritize improving procurement and combat training, forming a military police force; trading CSS, such as messing, for combat billets by switching to civilian providers; as well as equipping the Aerospace Defense Forces (VKO); and increasing the number of contract professionals.[208]

2. Shoigu

At the end of 2012, Serdyukov and Makarov were replaced by Sergei Shoigu as Defense Minister and General Valery Gerasimov as Chief of the General Staff. Shoigu worked to instill pride back to the Russian military, which many senior officers felt Serdyukov had eviscerated. He brought back legacy formal uniforms and reinstated the Tsarist-era 1st Sep *Semyonovsky* Rgt ceremonial honor guard in Moscow, as well as venerated combat units that had been disbanded.[209] His chief concern, however, was enhancing Russia's conventional offensive potential.[210] Shoigu prioritizes combat readiness through tactical training, that is, at the brigade-level and below.[211] Offensive

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[206] Barabanov, "Changing the Force and Moving Forward After Georgia," 94.

[207] Galeotti, *The Modern Russian Army 1992–2016*, 37, 42.

[208] McDermott, *Russia's Strategic Mobility*, 30–31.

[209] Galeotti, *The Modern Russian Army 1992–2016*, 16.

[210] Sutyagin, *Russia's New Ground Forces: Capabilities, Limitations, and Implications for International Security*, 79–80.

[211] Pavel Baev, *Ukraine: A Test for Russian Military Reforms* (Paris: Defense Research Unit, French International Relations Institute–IFRI, May 2015), 8.

capability is a new part of Russia's deterrence strategy, bolstered by Russia's aggression in Georgia.[212] Sutyagin points out that while Shoigu's reorganization focuses on offensive capability meant for limited objective operations before NATO can respond, it does not seek "full-scale, prolonged, and conventional conflict with NATO."[213]

Russian military reform is informed and refined by lessons learned from exercises and combat in Georgia, Ukraine, and Syria. Russia lost five aircraft in Georgia before it began deploying electronic warfare (EW) equipment to counter Georgian IADS. Russia is operationally testing and employing new EW equipment and tactics, techniques, and procedures (TTPs) in Syria and Ukraine.[214] Russia defense and security expert Roger McDermott notes that now "Russian Ground Forces do not move or conduct operations without EW support."[215] EW is given such prominence in the Russian military that the idea of a separate EW Forces branch of service is being discussed.[216]

These lessons learned are driving changes in doctrine, organization, training and material. Shoigu reestablished many of the disbanded professional training schools that were consolidated in the New Look.[217] In 2014, the National Defense Control Center, and the Combat Control Center were created to provide networked national-level C2.[218] And in 2015, the MoD announced plans to create a contract-professional-only NCO corps.[219] EW is a now a fundamental component of Russia's A2AD strategy. At the tactical level, lessons from Ukraine have led to Russia seeking A2AD through extended range tank, rocket, and artillery fire that operates beyond adversary counterbattery

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[212] Sutyagin, *Russia's New Ground Forces: Capabilities, Limitations, and Implications for International Security*, 22–3.

[213] Sutyagin, *Russia's New Ground Forces: Capabilities, Limitations, and Implications for International Security*, 2, 8.

[214] Roger N. McDermott, *Russia's Electronic Warfare Capabilities to 2025* (Tallinn, EE: International Centre for Defence and Security, September 2017), 20, 23.

[215] McDermott, *Russia's Electronic Warfare Capabilities to 2025*, 5.

[216] Ibid., 10.

[217] Galeotti, *The Modern Russian Army 1992–2016*, 43.

[218] Ibid., 29.

[219] Ibid., 42.

capabilities.[220] Tank units have increased their engagement ranges in training from an average of 1700 meters to 2200 meters, and have implemented independent tank engagements.[221] Force generation lessons have led Russia towards prepositioning of equipment and material to support the rapid deployment and build-up of combat forces. In addition to reliance on the VDV's rapid air-deployment capability, Russian prepositioning operates on the concept of deploying ground forces by rail, emphasizing speed through leaving heavy equipment and weapons in garrison, to be shipped a month or two after the initial deployment.[222]

3. Organizational Reforms

a. Maneuver Forces

Russian order of battle (OOB) is in a state of flux. The military is not completely abandoning the New Look brigade model, but it is reactivating divisions and deactivating brigades.[223] In exercises and in Ukraine, brigades are proving inefficient at C2 because they have to provide C2 for 18 subordinate units.[224] At the same time, the MoD is creating two "super light" motorized rifle brigades, which will be equipped with wheeled, instead of tracked vehicles. They will be formed in the CMD and SMD, where terrain precludes heavy armor maneuverability.[225]

In 2013, Russia reestablished the 2nd Guards *Tamanskaya* MRDiv and 4th Guards *Kantimarovskaya* Tank Div as formations with regiments as subordinate units. This was widely viewed as a balance against NATO's growing presence in the former Soviet Union, as well as a morale boost for both the public and military. Both divisions

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220 Keir Giles, "Assessing Russia's Reorganized and Rearmed Military," Carnegie Endowment for International Peace, 3 May 2017, http://carnegieendowment.org/2017/05/03/assessing-russia-s-reorganized-and-rearmed-military-pub-69853.

221 Sutyagin, *Russia's New Ground Forces: Capabilities, Limitations, and Implications for International Security*, 43.

222 McDermott, *Russia's Strategic Mobility*, 75.

223 Institute for Strategic Studies, *The Military Balance* (London: International Institute for Strategic Studies, 2017), 184.

224 Sutyagin, *Russia's New Ground Forces: Capabilities, Limitations, and Implications for International Security*, 27–28.

225 Ibid., 48.

have storied combat histories. In January 2016, the MoD announced it would create four new divisions, three in the WMD, and one in the CMD. It was only able to generate two in the WMD, the 3rd Guards *Vislenskaya* MRDiv and the 144th Guards MRDiv, and ended up forming the third in the SMD. The new divisions will have 12 to 14 subordinate battalions each, 7 to 8 of which will be combat and CS.[226]

In 2014, OSK North (OSK-N) was formed in the WMD on the basis of the Northern Fleet's forces, with the addition of the 14th Army Corps (AC).[227] While it appears that OSK-N is defensive in nature, borne out of the fear that Russia's primary source of natural gas will become vulnerable as the North Sea Route opens to maritime traffic, it is also a measure to balance NATO. The 14th AC's 200th and 80th MRBdes are positioned on the Kolya Peninsula, with the 200th MRBde adjacent to the border with Norway. Sutyagin contends that the reestablishment of 99th MRDiv (Arctic) in the EMD on the Chukotka peninsula, proximal to Alaska via the Bering Strait, is intended to balance NATO's EFP. This balancing with the 14th AC and 99th MRDiv is less about Arctic adventurism than insecurity.[228]

Regardless of brigade or division formations, BTGs are the preferred units for tactical employment.[229] The BTG has received much attention following the New Look, giving many the impression it is a novel construct, but it has actually been in use since during Soviet times. Modern permanent-readiness BTGs are supposed to be able to deploy in two hours upon notification, but Sutyagin speculates that it takes a full 24-hours for a BTG to deploy.[230]

The MoD has established brigade-level prepositioning stocks of equipment and munitions at armament and storage repair bases (BKhRVT). These have a staff which

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[226] Sutyagin, *Russia's New Ground Forces: Capabilities, Limitations, and Implications for International Security*, 28–29.

[227] Galeotti, *The Modern Russian Army 1992–2016*, 29.

[228] Sutyagin, *Russia's New Ground Forces: Capabilities, Limitations, and Implications for International Security*, 122–124, 126.

[229] Galeotti, *The Modern Russian Army 1992–2016*, 22.

[230] Sutyagin, *Russia's New Ground Forces: Capabilities, Limitations, and Implications for International Security*, 23.

conducts preventative maintenance to ensure equipment readiness, while also serving as a headquarters staff and C2 element that can form a brigade in case of general mobilization. The BKhRVT can equip a brigade-level fly-in echelon in 24 to 72 hours. Sources are conflicting on the actual number BKhRVTs, Sutyagin says there are 21 BKhRVTs overall, concentrated on Russia's flanks; 5 are in the WMD (2 motorized rifle, 1 tank, and 2 artillery), and 11 are in EMD, while the FOI says there are 2, and Jane's says there are 9 in the WMD.[231]

To address manning shortfalls while also providing rapidly-deployable professional forces, The MoD has created Territorial Defense Divisions (DTO) and Territorial Defense Battalions (BTO).[232] These units are operational reserves, light infantry that can provide rear-area security in the event an OSK has to deploy forces that would otherwise defend its military district.[233]

While the BTG may be well suited for rapid deployment, Russia's true "Rapid Reaction Forces," the VDV, *Spetsnaz*, and Marines, are the priority for manning and organizational change. The MoD's goal is to staff these forces completely with professional contract servicemen by 2018.[234] The VDV are the President's strategic reserve forces, and although there is a VDV brigade attached to each military district, the VDV is operationally controlled by the central VDV headquarters.[235]

The MoD planned to double the VDV's end strength, to 72,000 personnel, by the end of 2017. That goal has since been reduced to 60,000 personnel by 2020. The VDV's 45th Guards Sep *Spetsnaz* Bde was recently upgraded from a regiment. The MoD plans on adding a third regiment to each VDV division, increasing the 31st Guards Sep VDV

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[231] "Jane's World Armies: Russian Federation–Army," Jane's, 20 April 2017, http://janes.ihs.com.libproxy.nps.edu/Janes/Display/jwara226-cis; Sutyagin, *Russia's New Ground Forces: Capabilities, Limitations, and Implications for International Security*, 20–22; Institute for Strategic Studies, *The Military Balance*, 51.

[232] Sutyagin, *Russia's New Ground Forces: Capabilities, Limitations, and Implications for International Security*, 49.

[233] Charles K. Bartles, "The Significance of Changes in Russia's Military Doctrine," *OE Watch* 5, no. 6, (June 2015): 83. https://community.apan.org/wg/tradoc-g2/fmso/m/oe-watch-past-issues/195455.

[234] Mark Galeotti, *The Modern Russian Army 1992–2016* (New York: Osprey, 2017), 45.

[235] Ibid., 50.

Bde to the 104th Guards VDV Div in 2018, and creating the 345th Guards VDV Bde in 2018.[236] The 237th Guards VDV Rgt will be upgraded to a brigade, established subordinate to the 76th Guards VDV Div in Pskov, and then further redeployed to Pushkino, Leningrad *Oblast'* or Kaliningrad.[237] VDV training has transitioned from preparing regionally-focused and capability-specific units to training generalists, capable of operating in the full range of geographic conditions, from desert, to arctic, to airborne operations over the water.[238]

The VDV is transitioning from its traditional airborne role to an air assault focus with a greater infantry role. It is adding tank companies to each VDV division (except the 7th, which is designated for mountain warfare) and the 31st Sep VDV Bde, with plans to upgrade the companies to tank battalions armed with T-72B3M tanks and BMD-4M infantry fighting vehicles (IFV) starting in 2018. The VDV also plans to upgrade the separate reconnaissance companies within VDV brigades and divisions to reconnaissance battalions, each with a *Spetsnaz* company. These units employ unmanned aerial vehicles (UAV) at the company level, and were some of the first to get *Grusha* UAVs.[239] Incidentally, UAV companies are being established in all Ground Forces maneuver brigades as well, employing tactical *Orlan*-10, *Takhion*, and *Eleron*-3SV UAVs.[240]

In 2012, the General Staff established the KSSO, created out of 346th *Spetsnaz* Bde. These forces undertake national command authority missions, and would go on to be highly influential in Crimea.[241] As for more traditional *Spetsnaz*, in 2014, the MoD began establishing separate reconnaissance brigades under combined-arms army

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[236] Sutyagin, *Russia's New Ground Forces: Capabilities, Limitations, and Implications for International Security*, 50–52.

[237] Sutyagin, *Russia's New Ground Forces: Capabilities, Limitations, and Implications for International Security*, 90.

[238] Ibid., 53.

[239] Dmitry Gorenburg, "The State of the Airborne Troops," *Russian Military Reform* (blog), 12 March 2012, https://russiamil.wordpress.com/tag/vdv/; Sutyagin, *Russia's New Ground Forces: Capabilities, Limitations, and Implications for International Security*, 51–53.

[240] Sutyagin, *Russia's New Ground Forces: Capabilities, Limitations, and Implications for International Security*, 48.

[241] Galeotti, *The Modern Russian Army 1992–2016*, 54–55.

structures. The 127th Sep Reconnaissance (Recon) Bde was established under the Black Sea Fleet in 2014, and the 96th Sep Recon Bde was established under the 1st Guards Tank Army (TA) in 2015. There are plans for each army to get one, each with a *Spetsnaz* Bn and a psychological operations (PSYOPS) unit organic to it. These separate reconnaissance brigades are not Spetsnaz under the GRU's control. They are under the operational control of the conventional commander at the Army level.[242] Additionally, the Ground Forces' brigade and division-level reconnaissance companies are being upgraded to battalions, each with a *Spetsnaz* company.[243]

In 2008, sniper platoons were introduced at the motorized-rifle, tank, and Marine-brigade level, as well as at VDV regiments and divisions. The platoons have since been upgraded to four-platoon companies, resident at the brigade and regimental level and assigned to a specific subordinate battalion. One of the platoons is designated *Spetsnaz*, and is under direct tasking authority of the brigade commander.[244] While some accounts of Russian snipers in Ukraine claim snipers are operating en-masse, conventional tables of organization place snipers in two-man teams. Additionally, the reconnaissance groups of *Spetsnaz* battalions and Ground Forces reconnaissance battalions each have two-man sniper teams, although these snipers are not employed as a team.[245]

b. Nuclear, Biological, and Chemical Defense

Under the New Look, the MoD established NBC brigades under each military district. NBC forces provide aerosol concealment to disrupt intelligence, surveillance, target acquisition, and reconnaissance (ISTAR) and weapons guidance systems, as Sutyagin notes, operating in the "ultraviolet, visual, infrared, and radar [frequency] bands."[246] They employ TDA-U/TDA-2K and TDA-2M smoke generators, and have

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[242] Sutyagin, *Russia's New Ground Forces: Capabilities, Limitations, and Implications for International Security*, 55.

[243] Ibid., 57.

[244] Alexey Ramm, "Russian Military Snipers," *Moscow Defense Brief*, no. 6 (2016): 21.

[245] Ibid., 22.

[246] Sutyagin, *Russia's New Ground Forces: Capabilities, Limitations, and Implications for International Security*, 66.

been given increased prominence through their role in countering ISTAR and artillery in Ukraine.[247] NBC forces serve a dual role, providing force protection through concealment and NBC defense, while also providing indirect fires with thermobaric flamethrowers.[248] These thermobaric weapons have been instrumental in urban combat in Ukraine. In 2014, the MoD established NBC regiments at the combined-arms army level, this is in addition to the standard NBC companies within brigades and divisions.[249]

c. Combat Engineering

In 2008, combat engineers were expanded into combat engineer regiments at the combined-arms army level, brigades at the district level, battalions at the motorized-rifle brigade level, and companies at the tank brigade level.[250] The General Staff also maintains a combat engineer reserve. Assault Pioneers were reestablished within combat engineer units in 2015, in response to Russia's poor performance in seizing the Donets'k airport through 2014 and 2015. Assault Pioneers are focused on urban assault and obstacle reduction to penetrate defenses.[251] The 6th Combined-Arms Army's (CAA) 30th Combat Engineer Rgt was reestablished after 2013's *Zapad* JSE highlighted an insufficient pontoon bridging capability to operate in the terrain in vicinity of the Baltic States and Finland.[252] By 2020, each CAA plans to reintroduce combat engineer regiments, each with an assault pioneer battalion.[253] Also, each military district's combat engineer brigade will establish assault pioneer battalions, employing UR-77 or UR-07M mine-clearing line-charge (MCLC) capable vehicles, as well as IMR-3 obstacle-clearing

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[247] Ibid.

[248] Sutyagin, *Russia's New Ground Forces: Capabilities, Limitations, and Implications for International Security*, 68.

[249] Ibid., 62–64.

[250] Ibid, 70.

[251] Ibid, 74.

[252] Ibid, 70.

[253] Ibid, 79.

vehicles augmented by *Uran*-6 unmanned anti-personnel mine and obstacle-clearing vehicles.[254]

d. Electronic Warfare

Russian military reform is emphasizing EW from the tactical to operational-strategic level.[255] EW units exist at the military district, CAA, division, and brigade level. Between 2009 and 2015, EW brigades were formed at the military district level. The WMD has two brigades, and the remaining districts have one each. EW brigades are each comprised of four battalions.[256]

EW companies, capable of 50km of EW coverage, were formed within the New Look's maneuver brigades.[257] EW companies consist of 100 personnel, divided among a headquarters and five EW jamming platoons. The headquarters platoon employs a RP-330KPK automated command post and R-330K automated control station. Each jamming platoon is trained and equipped to target a specific frequency band or capability: one is dedicated to HF, employing the R-378B automated jammer; another is dedicated to VHF, employing the R-330B; and one is dedicated to VHF frequencies used by tactical aircraft for communications and navigation, employing the R-934B automated jammer in its two squads. There is a platoon dedicated to jamming cellular and Global Positioning System (GPS) signals, as well as radio communications and munitions that employ radio-controlled fuses.[258] It has five squads: one employs the R-330Zh *Zhitel* automated jammer, which targets mobile Inmarsat and Iridium satellite communications, as well as GPS; another employs two 1L262E SPR-2M Rtut-BM MT-LB-mounted jammers, which target VHF and UHF communications and radio-controlled munitions; and three each

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[254] Ibid, 74–77.

[255] Sutyagin, *Russia's New Ground Forces: Capabilities, Limitations, and Implications for International Security*, 81.

[256] McDermott, *Russia's Electronic Warfare Capabilities to 2025*, 5–6.

[257] Ibid., 5.

[258] Ibid., 7.

employ two RP-377U counter-improvised explosive device (C-IED) jammers.[259] The fifth platoon has two squads, one dedicated to jamming radio communications, employing the RP-377L and RP-377LA *Lorandit-M* C-IED jammer and direction-finding systems; and the other dedicated to targeting landmines and improvised explosives, employing 15 RP-377UVM1L portable automated jammer.[260]

This organization and equipment loadout does not appear inflexible, and appears to be based on being equipped with either the RB-301B *Borisoglebsk*-2 automated EW system, or the R-330M1P *Diabazol* automated EW system. The RB-301B employs the R-330K automated control station to synchronize variants of the R-330T UHF, R-378A/B HF, R-325U HF, and R-934B VHF automated vehicle-mounted jammers.[261] While the manufacturer displays the *Borisoglebsk* as a wheel-mounted system, McDermott notes that it is available in tracked-variants, based on the MT-LB chassis.[262] The truck-mounted R330M1P *Diabazol* employs the R-330KMA C2 system to synchronize the *Altayets-AM* HF/UHF/Global System for Mobile Communications (GSM), R-330Zh, and R-934UM VHF/UHF jammers.[263]

In October 2017 the MoD announced the creation of a permanent, separate EW company dedicated to countering UAVs, ostensibly armed with 1RL257 *Krasukha*-S4 mobile EW systems. It also mentioned there were 20 ad-hoc units that had been formed within the Aerospace Defense Forces (VKS) to counter UAVs.[264]

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[259] Ibid.; Sutyagin, *Russia's New Ground Forces: Capabilities, Limitations, and Implications for International Security*, 81.

[260] McDermott, *Russia's Electronic Warfare Capabilities to 2025*, 7.

[261] "R-330K Mobile Automated Control Station," JSC Concern Sozvezdie, 15 November 2017, http://eng.sozvezdie.su/catalog/r330k_mobile_automated_control_station/.

[262] McDermott, *Russia's Electronic Warfare Capabilities to 2025*, 18.

[263] "Automated complex of radio-electronic suppression R-330M1P 'Diabazol'," 15 November 2017, http://www.protek-vrn.ru/production/avtomatizirovannyj-kompleks-radioelektronnogo-podavleniya-r-330m1p-diabazol/.

[264] "The first permanent subdivision for combating drones," Ministry of Defense of the Russian Federation, 28 October 2017, https://function.mil.ru/news_page/country/more.htm?id=12148695@egNews.

e. *Logistics*

In 2010, the MoD created new logistics and maintenance (material and technical support—MTO) units in an attempt to rectify the military's shortcomings in providing adequate food and water; petroleum, oil, and lubricants; and ammunition during 2008 in Georgia.[265] The MoD created logistics and maintenance storage bases (KBMTO) and MTO brigades at the military district level, as well as MTO battalions at the brigade level.[266] There are plans to create MTO brigades at the CAA level as well.[267] Logistics reforms from 2012 to 2015 aimed at achieving efficiency by consolidating from 330 "storage sites" to 24 trans-shipment and logistics complexes (PLK) as well as cutting uniformed MoD personnel who work there, trading logistics billets for combat billets.[268] The Ground Forces also consolidated from 140 to 13 regional ammunition supply points, in bunkers. Building force protection and defensive supply infrastructure is a first for the Russians.[269]

Greater emphasis has been placed on improving the Railway Troops, which are fundamental to Russia's ability to support transportation both within Russia, and across the Soviet legacy rail networks in the former Soviet Union and in Finland.[270] The *Zapad* 2009 JSE emphasized to Russian planners that rail transport was imperative for intra-theater transport, while also foreshadowing the need for prepositioning and centralized maintenance facilities at the MD level. It took five days for the 4th Tank Bde to move 400km from its Moscow garrison to Belarus during the exercise. Motorized rifle brigades took even longer due to a lack of An-124 transport and Mi-26 assault support aircraft. Part of the problem was that battalions within the newly formed brigades were encumbered by fire support assets that had previously been the purview of regiments

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[265] McDermott, *Russia's Strategic Mobility*, 37, 41.

[266] McDermott, *Russia's Strategic Mobility*, 41.

[267] Ibid., 48.

[268] Sutyagin, *Russia's New Ground Forces: Capabilities, Limitations, and Implications for International Security*, 18.

[269] Ibid., 16–17.

[270] McDermott, *Russia's Strategic Mobility*, 37.

under division commands.[271] Although the Kremlin recognized the necessity for railway troops, they were systematically downsized through personnel reforms, while concurrently receiving a smaller proportion of contract personnel than combat units.[272] However, the MoD's Railway Troops have been reorganized into 10 railway brigades.[273]

f. Aerospace Forces

Under the New Look, the VKO was established, and later merged with the Air Forces (VVS) under Shoigu to form the Russian Aerospace Forces (VKS). Beginning in 2014, tactical aviation in support of maneuver forces are being moved from the VKS to the Ground Forces, establishing one brigade in each military district, and one regiment at each combined-arms army. Brigades will have 84 to 88 assault support and attack helicopters, as well as EW helicopters, and regiments will have 66 assault support and attack helicopters.[274] The number of Military Transport Aviation (VTA) regiments was also increased, and transport squadrons were created. These are aligned to VDV formations, which is the VTA's main priority for support despite also being available for general Ground Forces lift. The VTA employs legacy An-12, An-22, An-26, An-124, and Il-76 transport aircraft.[275]

4. Material Reforms

Material reforms to modernize Russia's Soviet-legacy equipment are implemented through the State Armaments Program (GPV). The current GPV, in effect from 2011 to 2020, has the goal of modernizing 70 percent of the military's equipment over the course of its implementation. In 2010, Then-Prime Minister Putin planned on

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[271] Ibid., 32–34.

[272] McDermott, *Russia's Strategic Mobility*, 39.

[273] Institute for Strategic Studies, *The Military Balance*, 224.

[274] Sutyagin, *Russia's New Ground Forces: Capabilities, Limitations, and Implications for International Security*, 49.

[275] McDermott, *Russia's Strategic Mobility*, 73.

$425 billion for the GPV, while the MoD requested $1.2 trillion.[276] The actual budget was closer to $630-$650 billion.[277] When Shoigu assumed control of the MoD, he moved to redevelop the domestic military-industrial complex, while also endeavoring to increase equipment reliability by bundling life-time maintenance contracts into the procurement process.[278]

The current GPV pays considerable attention to automation, C2 integration, and targeting adversary C4ISR.[279] It emphasizes reliance on technology over manpower, and pays greater attention to protecting individual forces than in the past.[280] Gerasimov, following Makarov's lead, is continuing to modernize Russia's network-centric C4ISR.[281] The military has procured new C2 systems; the VDV has the *Andromeda-D*, which is entering initial operating capacity (IOC); and the Ground Forces will have the *Sozvezdie-M*2, which has not yet entered IOC.[282] Russia is developing autonomous ISR, fire support, and NBC defense systems such as the *Kompas* RURS and *Platforma-M* unmanned ground vehicles.[283] Additionally, Russia is procuring *Zala* 421-series, *Gorizont*-Air-S100, *Orlan*-10, *Granat*-1, and *Eleron*-3SV UAVs, as well as testing the *Altius-M*, which would be Russia's first armed UAV.[284] Even Russia's T-14 *Armata* tank, the supposedly forthcoming armored panacea, has an unmanned, automated turret.[285]

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[276] Dmitry Gorenburg, "Russia's State Armaments Program 2020: Is the Third Time the Charm for Military Modernization?" PONARS Eurasia Policy Memo no 125, October 2010, http://www.ponarseurasia.org/sites/default/files/policy-memos-pdf/pepm_125.pdf, 1–2.

[277] Galeotti, *The Modern Russian Army 1992–2016*, 26, 34; McDermott, *Russia's Electronic Warfare Capabilities to 2025*, 13.

[278] Herspring, "Military Reform," 337–8.

[279] McDermott, *Russia's Electronic Warfare Capabilities to 2025*, 13.

[280] Sutyagin, *Russia's New Ground Forces: Capabilities, Limitations, and Implications for International Security*, 77.

[281] McDermott, *Russia's Electronic Warfare Capabilities to 2025*, 3.

[282] Sutyagin, *Russia's New Ground Forces: Capabilities, Limitations, and Implications for International Security*, 53.

[283] Galeotti, *The Modern Russian Army 1992–2016*, 58. 62–64.

[284] Ibid., 63.

[285] Giles, "Assessing Russia's Reorganized and Rearmed Military."

Network-centric warfare has come to individual equipment as well, with the *Ratnik* system. The *Ratnik*, which is to be introduced from 2014 to 2020, is a digital-camouflage pattern family of network-integrated armor and communications equipment. Its base components are the 6B45 body armor, 6B47 helmet, *Strelets* individual communications and navigation system, and 168-0.5 UME individual radio.[286] Other armor innovations are the OVR-1 explosive ordnance disposal suit, and the OVR-3Sh liquid-cooled assault-pioneer armor.[287]

The next GPV, which was supposed to have been approved in 2016, now has a target implementation of 2018 to 2025. It has not yet been approved, but reportedly the MoD will only receive half of its requested funding. The GPV 2025 will focus less on traditional military hardware, and emphasize the information sphere, autonomous systems, precision-guided munitions, and new weapons concepts such as hypersonic weapons.[288]

Beginning in 2009, the military industrial complex vertically integrated Russia's EW-systems manufacturers into one company, forming a research and development center the next year. The defense minister established a scientific committee for EW in 2015, and two additional EW production firms began operating soon after.[289] Russian Prime Minister Dmitri Medvedev signed a classified decree as President in 2012 to develop Russia's EW capabilities through 2020.[290]

EW is Russia's key asymmetric bid for success to counter U.S. PGM and PGS. At the operational level, Russia employs the *Murmansk-BN* system, which targets communications in the HF frequency band over a 5,000km range. Russia plans to field the RB-109A *Bylina* system in EW brigades from 2018 to 2025. The *Bylina* is reported to

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[286] Galeotti, *The Modern Russian Army 1992–2016*, 56–58.

[287] Ibid., 38; Sutyagin, *Russia's New Ground Forces: Capabilities, Limitations, and Implications for International Security*, 76–77.

[288] Roger McDermott "Russia's State Armaments Program to 2025 Promises High-Technology Procurement," *Eurasia Daily Monitor* 14, no. 34 (14 March 2017), https://jamestown.org/program/russias-state-armaments-program-2025-promises-high-technology-procurement/.

[289] McDermott, *Russia's Electronic Warfare Capabilities to 2025*, 7–8.

[290] Ibid., 14.

be autonomous, employs artificial intelligence (AI), and is networked with existing EW and C2 systems from the company to brigade level.[291]

Under the current GPV, Russia has procured the following new EW C2 and jamming systems: the *Alurgit*; *Avtobaza* ELINT sensor, which passively detects airborne and maritime radar emissions; RB-301B *Borisoglebsk*-2; RB-531B *Infauna* BTR-mounted communications and radio-controlled munitions jamming system, fielded in the VDV; MKTK-1A *Judoist* ELINT platform; 1L269 *Krasukha*-2-O S-band jammer, which targets airborne early warning and control; 1RL257 *Krasukha*-S4, which targets X and Ku-band radars; Leer-2; RB-341V Leer-3, which targets third (3G) and fourth generation (4G) GSM mobile communications for both intrusion and jamming through its three organic *Orlan*-10 UAVs; *Lesocheck* man-portable communications and radio-controlled jammer; Less C2 system; LGSh-503 jammer; LGSh-718L cellular communications, Bluetooth and Wi-Fi jammer; RP-377LA *Lorandit-M*; *Magniy-REB* EW trainer; 1L267 *Moskva*-1 automated airborne radar jamming system, with its sub-component 1L265 sensor and 1L266 C2 system; *Murmansk-BN*; *Parodist*; 6BM *Pelena* and 69M-22 *Pelena* man-packable jammers; *Plavsk*; PKU-6M spectrum analyzer; Pole-21 GPS jamming system, with component R-340RP transmitters, which are amplified through placement on civilian cellular broadcast towers; RB-636AM2 *Svet-KU*, which is capable of jamming 3G mobile signals on the CDMA2000 and Universal Mobile Telecommunications System (UMTS) networks, as well as 3G and 4G signals on GSM networks.[292]

Aboard aviation platforms, the GPV plans to procure: *Ryachag-AV* Digital Radio Frequency Memory (DRFM) jammers, employed from Mi-8MTPR1 helicopters, responsible for suppression of enemy air defense (SEAD); *Shipovnik-Aero* UAV

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[291] Ibid., 15.

[292] McDermott, *Russia's Electronic Warfare Capabilities to 2025*, 13–14. 22–23, B1; Sutyagin, *Russia's New Ground Forces: Capabilities, Limitations, and Implications for International Security*, 82; Vitaly Kuzmin, "4th Guards Kantemirovskaya Tank Division Open Day 2017 - Part 2," *Military Blog* (blog), 2017, http://www.vitalykuzmin.net/Military/4th-Kantemirovskaya-Tank-Division-Open-Day-Part2/i-656wRJn; Vitaly Kuzmin, "International Exhibition of Means of State Security Provision Interpolitex-2016 - Demonstration part 2," *Military Blog* (blog), 2016, http://www.vitalykuzmin.net/Military/Interpolitex-2016-Demo-part2/i-M3g4NQg; "Electronic Warfare: Russian Response to the NATO's Advantage?" Defence 24, 5 May 2017, http://www.defence24.com/639005,electronic-warfare-russian-response-to-the-natos-advantage-analysis.

jammers; *Svet-VSG* and *Vitebsk* EW systems, mounted on Su-25 and Ka-52 attack aircraft. Russia's military airlift command, the VTA, began fielding the Il-22PP EW aircraft in 2016.[293] Additionally, the GPV plans to add An-70 transport aircraft to the VTA fleet, while also upgrading to the An-124-100 and Il-76MD90A.[294]

Russia's next generation of armored vehicles will be built around the *Armata*, *Kurganets*-25, and *Bumerang* families of vehicles. Additionally, the *GAZ*-2975 *Tigr-M* armored utility vehicle is being fielded across the force.[295] The *Armata* family, built on the *Armata* chassis, includes 28 separate variants such as the T-14 *Armata* tank, T-15 *Bakhulnik* IFV, and T-16 repair and recovery vehicle (BREM). There is the 2S35 *Koalitsiya-SV* self-propelled artillery, MLRS, and BMO-2 thermobaric flamethrower variants.[296] The T-14 will have its own UAV system for organic battlefield awareness and more independent tank operations.[297] The *Armata* will allow transition from operations conducted by standard units to a modular structure of task organized *Armata* vehicles. This idea began circulating in 2014, and envisions replacing battalions with a module of 2 tanks, 3 IFVs, a combined fire-support and air-defense variant, an artillery variant, a supply variant, and a C2 variant. The modular concept theoretically supports continuous operations by using rotational crews.[298]

Russia's existing tanks are being upgraded to T-72B3 and T-72B3M variants, and the Marines are upgrading their PT-76 light amphibious tanks to T-80 and T-90s.[299] In addition to the heavy *Armata* system, the GPV plans on implementing the *Kurganets*-25 family of tracked, amphibious armored vehicles. There is an IFV variant, meant to replace the BMP and MT-LB platforms, and an APC variant. Current BMPs are being

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[293] McDermott, *Russia's Electronic Warfare Capabilities to 2025*, 16–18, 24.

[294] McDermott, *Russia's Strategic Mobility*, 73–74.

[295] Galeotti, *The Modern Russian Army 1992–2016*, 35; Ramm, "Russian Military Snipers," 22.

[296] Sutyagin, *Russia's New Ground Forces: Capabilities, Limitations, and Implications for International Security*, 44–45, 58, 64.

[297] Giles, "Assessing Russia's Reorganized and Rearmed Military."

[298] Sutyagin, *Russia's New Ground Forces: Capabilities, Limitations, and Implications for International Security*, 46.

[299] Galeotti, *The Modern Russian Army 1992–2016*, 54, 61.

upgraded to the BMP-3 and VDV variant BMD-4Ms, with the 8BYa01 *Bakhcha-U* combat module, which features the 2A70 combination missile launcher and 2A72 cannon.[300] The GPV also includes the *Bumerang* family of wheeled armored vehicles, consisting of the K-16 APC, and K-17 IFV, intended to replace BTR-series vehicles. Current BTR-80s are being upgraded to air droppable BTR-82As, with 2S23 *Nona-SV* self-propelled mortar and *Taifun-M* MLRS variants.[301]

Additional artillery and rocket upgrades include increasing the size and scope of artillery units within the Ground Forces, and increasing the range, rate of fire, and mobility of systems.[302] Systems are also becoming more automated. There are new thermobaric weapons, such as the SPO *Varna-S*, for use in urban combat, and a new *Uran*-10 antitank weapons.[303] The 9M111 *Fagot* anti-tank guided missile (ATGM) is being replaced by the 9M133 Kornet and the 9M115-2 Metis-M.[304] All heavy artillery systems are being transitioned from towed to self-propelled systems; the 2S35 *Koalitsiya-SV* is replacing both the 2A65 Msta-B towed howitzer and the 2S19 Msta-S self-propelled system.[305] The 9A53 *Uragan*-1M and 9A52-4 *Tornado* MLRS systems and their variants are replacing legacy MLRS; the BM-21 Grad is being replaced by the 9A53-G *Tornado*, and the 9K58 BM-30 *Smerch* is being replaced by the 9A53-S *Tornado*.[306] The *Uragan* and *Tornado* are universal systems capable of firing multiple rocket calibers, providing more flexibility and range to tactical and operational-level commanders. Additionally, the new rocket delivered 9M61 T-90 UAV, capable of being fired from 9K58 BM-30 *Smerch* and 9A53-S *Tornado* MLRS platforms, provides

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[300] Sutyagin, *Russia's New Ground Forces: Capabilities, Limitations, and Implications for International Security*, 61.

[301] Galeotti, *The Modern Russian Army 1992–2016*, 60–61.

[302] Sutyagin, *Russia's New Ground Forces: Capabilities, Limitations, and Implications for International Security*, 58.

[303] Ibid., 64, 76.

[304] Galeotti, *The Modern Russian Army 1992–2016*, 55.

[305] Sutyagin, *Russia's New Ground Forces: Capabilities, Limitations, and Implications for International Security*, 59.

[306] Galeotti, *The Modern Russian Army 1992–2016*, 13, 62; Gorenburg, "Russia's State Armaments Program 2020: Is the Third Time the Charm for Military Modernization?" 5; Sutyagin, *Russia's New Ground Forces: Capabilities, Limitations, and Implications for International Security*, 59.

artillery commanders with greater ISTAR capabilities.[307] Each separate missile brigade within the Ground Forces will have its 9K79-1 *Tochka-U* operational-tactical ballistic missile launchers replaced by newer 9K720 *Iskander-M* launchers.[308]

Small arms are being modernized through the GPV as well. The AK-12 is replacing the AK-74 as the standard-issue rifle, and the PYa MP-443 *Grach* is replacing the *Makarov* as the standard-issue sidearm. The PKP *Pecheneg* PGMG is replacing both the RPK and PKM as the standard squad automatic weapon (SAW). The 9K338 *Igla-S* man-portable air defense system (MANPADS) is being replaced by the 9K333 *Verba* MANPADS. Sniper units are equipped with 6P29 VSS, SVD, Steyer-Mannlicher SSG, the new 6S8 *Kord* ASVK sniper rifles, augmented by traditional infantry small-arms.[309] Under the GPV, the SVD is being replaced by the SV-98.[310]

Combat engineers are getting new bridging capabilities that will hold up to 120 metric tons capacity across a 600m width. They are also getting new mine clearing capabilities: the Automated Engineer Reconnaissance Vehicle (AIRM), *Prokhol*-1 unmanned mine clearance vehicle, and the BRM-3MA mine-clearance vehicle. Combat engineers will be employing upgraded POM-3 anti-personnel, as well as M-225 and Temp-30 anti-tank mines, upgraded UMZ-K mine-laying vehicles with a planned UMZ-A *Armata* variant. Additionally, combat engineers will be outfitted with the VSM-1 MLRS or helicopter-launched mine-laying systems, as well as new-model inflatable decoys that mimic radar and IR signatures of decoyed vehicles and combat systems.[311]

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[307] Sutyagin, *Russia's New Ground Forces: Capabilities, Limitations, and Implications for International Security*, 59–61.

[308] Dmitry Kornev, "Combat Use of Ballistic Missiles by Soviet and Russian Forces," *Moscow Defense Brief*, no. 4 (2016): 26.

[309] Ramm, "Russian Military Snipers," 22.

[310] Galeotti, *The Modern Russian Army 1992–2016*, 52, 55.

[311] Sutyagin, *Russia's New Ground Forces: Capabilities, Limitations, and Implications for International Security*, 71–2.

B. CONTEMPORARY PERFORMANCE

1. Ukraine

a. Crimea

Observers note that Russia relied on highly-disciplined contract soldiers, predominantly *Spetsnaz*, to carry out the Crimea operation with speed and surprise.[312] Lavrov notes that *Spetsnaz* tasked with seizing Ukrainian military installations in Crimea "were specifically instructed not to use deadly force, if possible."[313] Russian proxy forces, so-called 'Crimean self-defense forces,' were less disciplined, but nonetheless, they caused no casualties.[314] Russia used ethnic Cossack paramilitaries to blockade and seize Crimean positions.[315] Local Crimean proxy forces had marginal impacts on Russia's Crimea operation; their utility was in providing a public face of resistance against the Kyiv regime.[316]

The 16th Sep *Spetsnaz* Bde, 76th Guards VDV Div, 810th Sep Marine Bde, the 431st Maritime Reconnaissance *Spetsnaz* Point (Naval *Spetsnaz* brigades are designated as points), and the General Staff's KSSO were instrumental in seizing Crimea.[317] Covert *Spetsnaz* seized terrain, then turned it over for local proxy forces to occupy.[318] The KSSO, a national-mission unit created in 2011, is a separate command from the General Staff's Main Intelligence Directorate (*Glavnoye Razvedyvatel'noye Upravleniye* – GRU) *Spetsnaz*.[319] The KSSO forces' role in Crimea was primarily covert action. Russian journalist Alexey Nikolsky observes that in Crimea, KSSO forces were used to seize,

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312 Lavrov, "Russian Again," 180; McDermott, *Brothers Disunited*, 14.

313 Lavrov, "Russian Again," 174.

314 Ibid., 175.

315 *Little Green Men*, 44. It should be noted that this Is not a new hybrid concept. During Russia's 2008 war in Georgia, Cossacks operated under the command and employ of the Russian military. See Galeotti, *The Modern Russian Army 1992–2016*, 22.

316 Bukkvoll, "Russian Special Operations Forces in Crimea and Donbas," 16.

317 Galeotti, *The Modern Russian Army 1992–2016*, 55.

318 Bukkvoll, "Russian Special Operations Forces in Crimea and Donbas," 43.

319 Alexey Nikolsky, "Little, Green and Polite: The Creation of Russian Special Operations Forces," in *Brothers Armed: Military Aspects of the Crisis in Ukraine*, ed. Colby Howard and Ruslan Pukhov (Minneapolis, MN: East View Press, 2014), 124.

"the most important objectives, such as the Crimean parliament building, the command (headquarters) HQs of the Ukrainian Army, and hard-target military compounds that were expected to put up the greatest resistance."[320] They were supported by *Spetsnaz* and Marines in seizing the HQs of the Ukrainian Navy and Marine units in Sevastopol' and Feodosiya.[321]

Russian forces in Crimea were lightly armed, with 150 BTR-80 APCs and *GAZ*-2975 *Tigr-M* armored utility vehicles, as well as BM-21 *Grad* MLRS. Russia did not insert tanks into Crimea until Ukraine capitulated. Russian forces moved personnel and equipment into Crimea via ferry, fixed and rotary wing aviation, and amphibious transport. Logistics were primarily brought into Crimea from Russia by ferry.[322] The majority of conventional Russian forces, armed with APCs and artillery, entered Crimea after rail transport to the Kerch ferry crossing.

Russia's invasion was supported by a thorough intelligence penetration of the Ukrainian security services, and an active IW campaign to garner popular support for Crimea's referendum and independence (followed by Russia's annexation of Crimea) and spread disinformation and obfuscate Russian involvement.[323] Lavrov notes that, "throughout this entire period, the Russian government, including President Vladimir Putin himself, repeatedly denied that the unidentified troops in Crimea were Russian soldiers."[324]

Russian forces attempted to shut down Crimea's telephone, mobile phone, and internet connectivity during its take-over. *Spetsnaz* seized media infrastructure. Russian propaganda efforts portrayed the messianic vision of Putin and the Russia military rescuing ethnic Russians from Western, Ukrainian fascists. The Black Sea Fleet's presence in Crimea gave Russia disproportionate influence on the peninsula.[325]

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[320] Ibid., 124.

[321] Alexey Nikolsky, "Little, Green and Polite," 130.

[322] Alexey Nikolsky, "Little, Green and Polite," 169, 171-2.

[323] McDermott, *Brothers Disunited*, 14-5.

[324] Lavrov, "Russian Again," 173.

[325] *Little Green Men*, 39, 46-7.

Ukrainian ground forces in Crimea were predominantly ethnic Russian, and many defected to the Russian armed forces en masse, while naval forces were stauncher in their attempts to resist and escape.[326]

b. The Donbas

Russia provided forces, armor and artillery, air defense, C2 systems, EW systems, and UAVs to RBS in Eastern Ukraine[327] RBS agitated for Russian intervention on behalf of the self-proclaimed Donets'k and Luhans'k People's Republics. They were led and advised by current and former Russian intelligence and security forces personnel. Russian intelligence and security services organized proxy forces and encouraged Ukrainians to defect.[328] Russian and RBS BTGs in Donbas operated directly under the C2 of the SMD and General Staff.[329]

(1) Force Generation and Sustainment

Russian forces in the Donbas were primarily contract soldiers, not conscripts.[330] Observers estimate between 3,500 and 12,000 Russian forces at any given time were participating in combat in Ukraine between August 2014 and December 2015. These forces were generated from 117 separate units. All of Russia's military districts provided forces. Eight of Russia's ten field armies provided forces for combat and CS; the only two that did not were the EMD's 5th and 35th.[331] The ad-hoc nature of force generation for the Donbas was the result of the constitutional prohibition against conscripts serving in conflict abroad during peacetime.[332]

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[326] Lavrov, "Russian Again," 175.

[327] McDermott, *Brothers Disunited*, 27-8.

[328] *Little Green Men*, 45-6.

[329] Sutyagin, *Russia's New Ground Forces: Capabilities, Limitations, and Implications for International Security*, 24.

[330] McDermott, *Brothers Disunited*, 32.

[331] Sutyagin, "Russian Forces in Ukraine," 4.

[332] Galeotti, *The Modern Russian Army 1992–2016*, 328.

Russian defense and security researcher Dr. Tor Bukvoll notes that *Spetsnaz* from "all seven *Spetsnaz* GRU Brigades, the 45th Guards Sep VDV Spetsnaz Bde, and the Federal Security Service (FSB)," participated in the Donbas, but the KSSO, which provided *Spetsnaz* for the Crimea seizures did not participate in the Donbas. *Spetsnaz* in the Donbas deployed in composite battalions of approximately 275 fighters. The fighters were employed in 10 to 12-man teams. There were three to four *Spetsnaz* battalions operating in the Donbas at any given time. Their role in the Donbas was primarily training and advising separatist forces and conducting special reconnaissance. They also conducted limited sabotage and direct action missions.[333]

The August counteroffensive consisted of BTGs from the following conventional MRBdes: 17th, 18th Guards Sep, 21st, and 33rd. It also consisted of BTGs from the following VDV regiments: 104th Guards, 137th Guards, 247th, 331st Guards, as well as the 31st Guards Sep VDV Bde. In addition to conventional and VDV BTGs, the August counteroffensive included reconnaissance teams from the following units: 2nd Sep and 10th Sep *Spetsnaz* Brigades (the 2nd reportedly furnished a BTG), 45th Guards Sep VDV *Spetsnaz* Rgt, 173rd Guards Sep Reconnaissance Company (Co), and the reconnaissance battalions of the 9th Sep and 18th Guards Sep MRBdes.[334]

McDermott observes that Russian units deployed were "up to the brigade level."[335] He suggests that while Russian artillery units deployed at the unit level, *Spetsnaz* and motorized rifle units deployed in disaggregated fashion.[336] Due to manpower constraints and combat losses, Russian BTGs were not employed as organic units, but rather, they were often piecemealed together.[337] Russia observer Dr. Phillip Karber contends that Russian unit manning was at 50 percent of authorized strength.[338]

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[333] Bukkvoll, "Russian Special Operations Forces in Crimea and Donbas," 17, 19.

[334] Sutyagin, "Russian Forces in Ukraine," 2.

[335] McDermott, *Brothers Disunited*, 39.

[336] Ibid.

[337] Sutyagin, "Russian Forces in Ukraine," 6, 8.

[338] Phillip A. Karber, "'Lessons Learned' from the Russo-Ukrainian War: Personal Observations," (Draft for the Potomac Foundation, 8 July 2015), 26.

Lavrov notes that Russian "units involved in the Crimean operation…were able to commit only part of their strength due to manning shortfalls and conscription issues; [those units] could normally commit no more than two-thirds of their strength, leaving conscripts drafted last autumn…back at base."[339]

Sutyagin notes Russia's "limited capacity to sustain" its Ukrainian operation.[340] He goes on to cite that "twenty-eight military units were required to generate the approximately 90,000 troops stationed on the Russo-Ukrainian border and within Crimea in spring 2014. These units were drawn from a relatively limited geographic area in this early phase of the operation against Ukraine. To sustain the deployment and the required intensity of fighting, it was necessary to call upon more units."[341] The WMD and SMD initially provided complete BTGs, but later resorted to providing company-sized forces, while the EMD provided reinforced battalion-plus sized formations. Personnel and equipment resourcing suggests that the WMD and SMD have insufficient personnel and equipment to sustain combat operations against Ukraine.[342]

Russian forces in the Donbas were qualitatively inferior to the forces that were used to seize Crimea.[343] McDermott notes that "regular combined-arms operations … secured key advances" in Ukraine.[344] As the conflict wore on, however, Russian and separatist forces in Ukraine increasingly suffered from low morale. The Russian Ministry of the Interior (MVD) reacted by deploying forces, its Dzerzhinsky Div, to prevent Russian and separatist forces from retreating.[345] Russian forces and RBS were often forced to culminate in the face of weaker forces due to inadequate logistics support.[346] McDermott notes that "Russia still has only limited deployment and sustainment

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339 Lavrov, "Russian Again," 175

340 Sutyagin, "Russian Forces in Ukraine," 2.

341 Ibid.

342 Sutyagin, "Russian Forces in Ukraine," 8.

343 Ibid., 9.

344 McDermott, *Brothers Disunited,* 23.

345 Sutyagin, "Russian Forces in Ukraine," 8-9.

346 Karber, "'Lessons Learned' from the Russo-Ukrainian War," 37.

capabilities to commence and support operations on the country's periphery.[347] Rail transportation was the primary method Russian and RBS forces used for logistics in the Donbas. Not only did rail allow for efficient transportation of military vehicles without incurring the maintenance requirements of road travel, but it provided a measure of force protection as improvised explosive devices (IED) became a threat in the area.[348] However, it constrained Russia's ability to maneuver across the dispersed battlespace. Additionally, Russian forces in the Donbas suffered increasing casualties due to the lack of deployed and disaggregated medical capability.[349]

Russia denies its forces were fighting in Ukraine, but there are numerous examples of Russian-only military hardware in the Donbas. These systems, either never exported beyond Russia, or too complex even for Russian conscripts, were likely under the control of regular Russian forces, and not RBS. Russian forces in the Donbas were occasionally armed with AS *Val* silenced assault rifles.[350] They employed T-72B3 and T90 main battle tanks, 96K6 *Pantsir*-S1 air defense systems, *KamAZ*-43269 *Dozor* armored reconnaissance vehicles, *KamAZ*-5350 trucks, 2B26 *Grad-K* MLRS, *GAZ*-3937 *Vodnik* multi-purpose vehicles, and GAZ-2975 *Tigr-M* armored utility vehicles.[351]

The hallmark of Russian maneuver in the Donbas has been massed fires, followed by armored attack. Russian armored and mechanized advances were preceded by VDV insertion, and accompanied by ground-based air defense.[352] Russian BTGs in Ukraine operated on 40km frontages, the doctrinal frontage of a brigade. They were typically composed of an armor company, three motorized infantry companies, an anti-tank company, two to three artillery batteries (self-propelled and/or MLRS), and two air

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347 McDermott, *Brothers Disunited*, 5.

348 James Harvey, *Rebel Drones: UAV Overmatch in the Ukrainian Conflict*, (Ft Leavenworth, KS: Foreign Military Studies Office, 2015), 2.

349 McDermott, *Brothers Disunited*, 34.

350 McDermott, *Brothers Disunited*, 25, 28, 31, 32.

351 Czuperski et al., *Hiding in Plain Sight*, 8-11, 21; McDermott, *Brothers Disunited*, 29-30.

352 Phillip Karber, "'Lessons Learned' from the Russo-Ukrainian War: Personal Observations," unpublished report, 8 July 2015, 38–40, https://prodev2go.files.wordpress.com/2015/10/rus-ukr-lessons-draft.pdf.

defense companies.[353] Karber's analysis based on personal interviews and first-hand observation points to four specific technological factors that influenced Russian operations in the Donbas: the proliferation of UAVs, the increased range and lethality of artillery, the effects of active and reactive armor, and the comparative armor weakness of infantry fighting vehicles and armored personnel carriers.[354]

(2) Unmanned Aerial Vehicles and Electronic Warfare

Russian forces use commercial and military UAVs in Ukraine for (ISTAR) (to include signals intelligence – SIGINT) and EW. Karber notes that Russia is employing at least "13 fixed wing (UAVs) and at least one quad-copter design" in the Donbas.[355] The *Zastava* model ISR UAV, as well as the RB-341V Leer-3 and *Shipovnik-Aero* are some examples.[356] Russia's UAVs are employed in five distinct roles. The first is long-range, high altitude ISR along the border, followed by brigade-level rear-area surveillance from slightly shorter ranges and slightly lower altitudes. The third role is medium range, real-time target identification. The third role includes cueing the fourth role – short range target and coordinate acquisition for BM-21 *Grad* MLRS at approximately 1,000 to 2,500 feet. The fifth role is short range battle-damage assessment (BDA) and ISR conducted by quad-copter systems flying at approximately 800 to 1000 feet. The standard time between UAV target identification and the application of fires is 15 minutes.[357]

Russian UAVs appear constrained by their programming. They do not appear to have the capability for real-time ground control station direction, and do not appear to be able to acquire moving targets. Additionally, Russian UAVs do not appear to be active at night, suggesting a lack of IR imaging. The proliferation of UAVs has led to paranoia among combatants, resulting in a preference for the increased use of camouflage and

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[353] Phillip Karber and Joshua Thibeault, "Russia's New Generation Warfare," The Potomac Foundation, 13 May 2016, http://www.thepotomacfoundation.org/russias-new-generation-warfare-2/.

[354] Karber, "Russia's New Generation Warfare."

[355] Karber, "'Lessons Learned' from the Russo-Ukrainian War," 11.

[356] Gorenburg, "Russia's State Armaments Program 2020: Is the Third Time the Charm for Military Modernization?" 32; McDermott, *Russia's Electronic Warfare Capabilities to 2025*, 26

[357] Karber, "'Lessons Learned' from the Russo-Ukrainian War," 11-12.

operating at night.[358] Russian and RBS forces have shown the ability to counter UAVs through small-arms fire, anti-aircraft artillery (AAA) fire (ZU-23), MANPADS, and EW. The Russian preference for countering UAVs is EW targeting the UAV's C2 and navigational systems.[359]

Russian forces and RBS are also using EW to pre-detonate radio-proximity artillery and mortar rounds, interfere with and jam radio and cellular communications, conduct ISTAR to target emitters, and conduct PSYOPS.[360] EW tactics consisted of using counterbattery radar to locate and target Ukrainian forces with artillery. Additionally Russian IO tactics consisted of taunting Ukrainian forces through text message in conjunction with artillery strikes, as well as threatening to harm Ukrainian forces' families.[361] McDermott notes that Russian EW units are "highly mobile."[362] They provide an electronic protection shield for maneuver forces. The RB-531B *Infauna* was used to jam communications within 3km of maneuver units, while the 1L262E SPR-2M Rtut-BM, Leer-2, and *Lorandit* were used to jam GSM signals. The RB-301B *Borisoglebsk*-2, RB-341V Leer-3, R-330Zh *Zhitel*, and R-934UM were operated from 15 to 30km from the front; and the *Shipovnik*-Aero, 1L269 *Krasukha*-2-O, 1RL257 *Krasukha*-S4, and A-50 EW aircraft were used at ranges from 60km up to 240km from the front.[363]

(3) Fires

Artillery is the primary maneuver arm in the Russian Ground Forces, and it is the main effort in Ukraine.[364] There is no aviation fires component. Russian air defenses

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[358] Ibid., 12-13, 15.

[359] Harvey, *Rebel Drones*, 2-3; Karber, "'Lessons Learned' from the Russo-Ukrainian War," 14.

[360] McDermott, *Russia's Electronic Warfare Capabilities to 2025*, 25–26.

[361] Sutyagin, *Russia's New Ground Forces: Capabilities, Limitations, and Implications for International Security*, 32–3.

[362] McDermott, *Russia's Electronic Warfare Capabilities to 2025*, 25.

[363] McDermott, *Brothers Disunited*, 30; McDermott, *Russia's Electronic Warfare Capabilities to 2025*, 26.

[364] Ibid., 21.

have almost completely denied Ukraine the ability to employ airpower.[365] The overwhelming majority (approximately 85 percent) of casualties in the Donbas were from artillery. Artillery rates of fire in the Donbas have reached up to 400 rounds a day per tube.[366] Russian artillery units also supported RBS with cross-border fires from within Russia.[367]

U.S. Army Major Amos Fox highlights that because the Kremlin did not deploy VKS aircraft to Ukraine, Russian commanders were obviated of the responsibility for joint fires coordination and airspace de-confliction. This increased the efficiency and responsiveness of fire support. He claims that the targeting cycle enjoyed "near instantaneous sensor-to-shooter" responsiveness.[368] This may hold true for ground reconnaissance forces, but does not accord with observations of UAS ISTAR and the 15-minute kill chain lag between target acquisition and application of fires.

Russian forces prefer massed fires and area fires over precision fires. They increasingly use MLRS over standard tube artillery in the Donbas, at a ratio of 3:4, which results in substantially more MLRS than conventional tubes.[369] Examples of Russian artillery tactics consist of massed 122mm MLRS fires against a 300m target area at a range of up to 15km from five firing positions dispersed across a 23km front. In another attack, the Russians used five 122mm MLRs dispersed across a 100m front to attack a point target.[370] In yet another, Russian artillery and MLRS fires massed against two Ukrainian mechanized infantry battalions and destroyed the majority of the Ukrainian forces and armored vehicles in only a matter of minutes.[371]

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365 *Little Green Men*, 32.

366 Karber, "'Lessons Learned' from the Russo-Ukrainian War," 15-16.

367 Czuperski et al., *Hiding in Plain Sight*, 18.

368 Fox, "Battle of Debal'tseve: the Conventional Line of Effort in Russia's Hybrid War in Ukraine," 45.

369 Karber, "'Lessons Learned' from the Russo-Ukrainian War," 12, 16.

370 Czuperski et al., *Hiding in Plain Sight*, 19, 29.

371 Karber, "'Lessons Learned' from the Russo-Ukrainian War," 36.

The nature of the artillery threat has resulted in unit frontages that exceeded their doctrinal prescriptions. Russian forces prefer to engage targets with artillery from maximum range. As the battlespace grew, Russia pursued longer-range projectiles for its artillery systems.[372] While no longer used by NATO forces, Russia makes heavy use of dual-purpose improved conventional munitions (DPICM – a cluster-style munition), scatter-able mines (another cluster-style munition), as well as top-attack munitions and thermobaric munitions. The increased effects of artillery led the Russians to entrench and reinforce positional defenses. The dispersed nature of fighting in the Donbas resulted in the re-allocation of Russian brigade and higher-level artillery systems to the battalion level. Russian battalions were augmented with longer range 2S3 *Akatsiya* self-propelled guns, 52-P-546 D-20 towed howitzers, and BM-21 *Grad* systems, giving battalions fire support out to 18km, which is farther than their typical 2S1T *Gvozdika* self-propelled and 2A18M D-30 towed howitzers. Russia employed the BM-21 and BM-21-1 *Grad*, TOS-1 *Buratino* thermobaric MLRS, 9P140 BM-27 *Uragan*, 2A18M D-30, 9K58 BM-30 *Smerch* MLRS, 2S3 Akatsiya, 2S5 Giatsint-S self-propelled gun, 2S7 *Pion* self-propelled gun, and 2S35 *Koalitsiya-SV* artillery systems in the Donbas. Russian forces in the Donbas used the 2S1 *Gvozdika* self-propelled howitzer in both its traditional indirect fire role, and as a direct fire weapon. The 2S1 *Gvozdika* was used to cover armored advances at ranges from 1km to 6km.[373] Additionally, Russian forces in Ukraine employ the 1L219M *Zoopark*-1, 1RL232 Leopard-T, and 1RL239 Lynx-1 counterbattery radar systems.

(4) Armor

Russian forces' use of explosive reactive armor on its legacy and upgraded tanks diminished the utility of single-warhead anti-tank missiles and rockets in Ukraine. Single-warhead missiles are not able to penetrate reactive armor equipped tank hulls. Although this effect was shared by both Ukrainian and Russian tankers, neither side deployed tandem-warhead ATGMs in the Donbas. Russia began deploying the explosive reactive

[372] Ibid., 18-20.

[373] Karber, "'Lessons Learned' from the Russo-Ukrainian War," 16, 18, 19-21.

armor equipped T-72B3 and active armor equipped T90 to the Donbas in September 2014. The active armor on Russia's T90 tanks has successfully defeated ATGMs in the Donbas.[374] The T90 was deployed in smaller numbers, in company-sized formations, and saw less front-line use compared to the T-72B3. However, the T90 was instrumental in Russian success against Ukrainian forces.

The active armor on Russia's most modern tanks has proven susceptible to direct fire weapons.[375] The increased proliferation and lethality of direct fire weapons and artillery in the Donbas has resulted in Russian infantrymen forgoing the comparatively weak armor of their IFVs and APCs. Instead, they are riding atop their vehicles and fighting as dismounted light infantry to increase their survivability. They have also decreased the number of infantrymen per IFV or APC. Karber observes "the net effect is that tank attacks are less effective because they no longer have accompanying mechanized infantry with equal mobility and able to protect them from other infantry.[376]

(5) Deception

Russia's operations in Ukraine are disavowed by the Kremlin, setting the stage upfront for an overarching climate of deception from the top down. While allowing Russia maneuver time through ambiguity, Russia's deception has also limited its ability to prosecute the war. Russia did not deploy its air forces to the Donbas because that would have taken away the Kremlin's plausible deniability.[377] Foreign Military Studies Office Russia analyst Timothy Thomas describes a deceptive IO tactic RBS employ through requesting OSCE observers visit their positions. Russian forces then initiate an artillery strike against Ukrainian forces that concludes before OSCE observers arrive at the Russian position. The Ukrainian forces conduct counterbattery fire that is observed by the OSCE and portrayed as Ukrainian aggression.[378]

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[374] Ibid., 23-24.

[375] Ibid., 21.

[376] Karber, "'Lessons Learned' from the Russo-Ukrainian War," 26.

[377] McDermott, *Brothers Disunited*, 33.

[378] Timothy L. Thomas, *Kremlin Kontrol: Russia's Political-Military Reality* (Ft. Leavenworth, KS: Foreign Military Studies Office, 2017), 196.

There have also been more nefarious deception operations. Russia made a pattern of suspending operations while negotiating, only to resume offensive action in violation of the treaty upon Ukrainian acquiescence. After Putin assured besieged Ukrainian forces in Ilovaisk that they would be allowed safe passage to withdraw, the Ukrainians accepted the truce. However, Russian troops attacked the withdrawing Ukrainians and turned those who surrendered over to RBS, who tortured and executed the prisoners.[379] Maskirovka—camouflage and deception—by way of inflatable decoys was used in September 2014 to deceive the OSCE after the Minsk ceasefire, giving observers the illusion that Russia was withdrawing forces and complying with sanctions when they in fact retained armor in place.[380]

2. Syria

Russia's intervention in the Syrian civil war consists primarily of an air campaign against the Islamic State and other insurgent forces that are battling the Syrian regime. The air campaign is coordinated on the ground by *Spetsnaz* performing terminal attack control. Although the air campaign has been augmented with occasional cruise missile strikes, these were not out of necessity, but rather, to advertise and demonstrate that capability.

Russia specialist Dmitry Gorenburg notes that Russia's aviation operations demonstrated an "over-used and aging aircraft fleet" that nonetheless successfully implemented the post-Georgia reform goals of joint integration between terminal attack controllers and strike aircraft pilots.[381] Whereas previously, coordination occurred between service-component headquarters, the joint integration of forces under new OSKs has enabled rapid strike coordination. Impressively, Russian aviation has successfully integrated strikes with Iranian and Syrian ground maneuver units. Russian aircraft

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[379] Karber, "'Lessons Learned' from the Russo-Ukrainian War," 37-38.

[380] Sutyagin, Russia's New Ground Forces: Capabilities, Limitations, and Implications for International Security, 73.

[381] Dmitry Gorenburg, "What Russia's Military Operation in Syria Can Tell Us About Advances in its Capabilities," PONARS Eurasia Policy Memo No. 424, March 2016, 2, http://www.ponarseurasia.org/memo/advances-russian-military-operations.

demonstrated equipment modernization that allowed night strike, as well is more effective targeting.[382] However, Russian VKS suffered from personnel shortages; and from maintenance, pilot-performance, and inventory deficiencies in Syria. After several mishaps, the Kremlin resorted to reducing and cancelling non-Syrian aviation operations to maintain operational tempo.[383] Nonetheless, Russian forces in Syria have been achieving their operational and tactical objectives. They are employing PGMs, as well as UAVs for ISTAR and BDA for the first time in combat.[384] Additionally, Russian forces on the ground have been using microwave jammers to counter enemy UAVs.[385]

Russia's performance in Syria bears the caveat that Russian aircraft have de facto air superiority and freedom of movement fighting lightly equipped insurgent forces in an electromagnetically uncontested environment. Furthermore, Russia's use of *Spetsnaz* for terminal control begs the question of how well aerial fires would be integrated within conventional ground forces conducting maneuver against an adversary with near-peer capabilities, as was the case when Russia struggled during its war in Georgia. Finally, although Russia used PGMs, not only is its PGM stockpile insufficient for sustained use, but strike missions in Syria enjoyed greater accuracy with unguided munitions.[386]

C. GROUND FORCE CAPABILITY

Russia has four military districts. With the addition of OSK-N, the districts are operationalized into five OSKs. The WMD has the largest concentration of forces, comprising 40 percent of total Russian Forces. Additionally, it shares a border with the NATO member-states Estonia, Latvia, Lithuania, Norway, and Poland. This section provides an open source assessment of the Russian Federation's ground-combat forces that could be deployed against the Baltic States without significant warning. It is prudent

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[382] Ibid., 3.

[383] Giles, "Assessing Russia's Reorganized and Rearmed Military."

[384] Gorenburg, "What Russia's Military Operation in Syria Can Tell Us About Advances in its Capabilities," 3.

[385] Galeotti, *The Modern Russian Army 1992–2016*, 36.

[386] Gorenburg, "What Russia's Military Operation in Syria Can Tell Us About Advances in its Capabilities," 3.

to focus on the WMD because as Lavrov points out, "any large troop movements [in Russia]…are impossible to keep secret."[387] NATO would likely have advance warning of mobilization and deployment of forces from other districts.

1. Western Military District Composition and Disposition

The WMD, operationalized as OSK-West (OSK-W), is headquartered in St. Petersburg. It is comprised of three army headquarters: the 1st Guards Tank Army, 6th Combined-Services Army (alternatively known as the 6th CAA), and the 20th Guards CAA.[388] The WMD is also home to the 6th Air Force and Air Defense Army, 2nd and 32nd Air Defense Divs, the Baltic Fleet, and the Northern Fleet (under operational control of OSK-N). Through the Baltic Fleet, the WMD controls the 11th AC in Kaliningrad, which includes the Baltic Fleet's ground forces. Additionally, the WMD provides overall C2 for the Russian forces in Transnistria.[389]

Although they fall under the authority of the Commander in Chief of the General Staff, the WMD is home to three VDV divisions: the 76th Guards VDV Div in Pskov, 98th Guards VDV Div in Ivanovo, and 106th Guards VDV Div in Tula.; as well as the 45th Guards Sep VDV Spetsnaz Bde in Kubinka, Moscow *Oblast'* and the 345th Guards VDV Communications Bde. The 345th Guards VDV Bde is planned to be formed in Voronezh *Oblast'* by 2020.[390] Also located within the WMD, but outside of its chain of command is the 2nd Sep *Spetsnaz* Bde in Cheryokha, Pskov *Oblast*' and the 16th Sep

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[387] Anton Lavrov, "Russian Military Activity in the Baltic," *Moscow Defense Brief*, no. 4 (2016): 6.

[388] Institute for Strategic Studies, *The Military Balance*, 219.

[389] The WMD's OOB was compiled and verified from several sources, some of which contained partial or conflicting information. Except where noted in subsequent footnotes, the WMD's OOB was primarily contained in the following: Gudrun Perrson, *Russian Military Capability in a Ten-Year Perspective–2016* (Stockholm: Försvarsdepartementet (FOI)–Swedish Defence Research Agency, 2016), 81; Institute for Strategic Studies, *The Military Balance*, 185, 212, 218; Andrey Frolov, "Russian Army in 2014 and Western Military District," Centre for Analysis of Strategies and Technologies (CAST), 2014, 15; "Jane's World Armies: Russian Federation–Army;" Mark Galeotti, *The Modern Russian Army* 1992-2016 (New York: Osprey, 2017), 30-1; Igor Sutyagin with Justin Bronk, *Russia's New Ground Forces: Capabilities, Limitations, and Implications for International Security*, Royal United Services Institute Whitehall Paper 89 (Philadelphia: Taylor & Francis, 2017), 89–104.

[390] Sutyagin, *Russia's New Ground Forces: Capabilities, Limitations, and Implications for International Security*, 103–104.

Spetsnaz Bde in Tambov.[391] These units integrate within the WMD when operationalized as an OSK, but VDV forces, to include VDV *Spetsnaz*, remain under the cognizance of the Commander of Centrally Controlled Forces, directly subordinate to the Chief of the General Staff, and *Spetsnaz* remain under the GRU.[392]

Directly subordinate to the WMD, and under control of OSK-W, is: the 82nd Sep MRBn in Bender (in Moldova's Transnistria); 113th Sep MRBn in Tiraspol (also in Transnistria); 18th Sep Self-propelled Artillery (Arty) Bn in Tambov; 19th Sep Self-Propelled Mortar Bn in Tambov; a Recon Bde of unknown designation or location; the 1st C3 Bde in Sertolovo, Leningrad *Oblast'*; 79th Guards Rocket Arty Bde in Tver'; 202nd AirDef Bde in Naro-Fominsk, Moscow *Oblast'*; 49th Air Defense (AirDef) Bde in Krasnyy Bor, Smolensk *Oblast'* (transferring to the 1st Guards Tank Army); 27th Sep NBC Bde in Kursk; a Military Police Bde of unknown designation or location; the 1st Guards Combat Engineer Bde in Murom, Vladimir *Oblast'*; 45th Guards Sep Combat Engineer Bde in Nakhabino, Moscow *Oblast'*; 28th Pontoon Bridging Bde in Murom; 34th Railway Bde (location unknown); 29th Sep Railway Bde in Bryansk; 38th Sep Railway Bde in Yaroslavl'; 5th Sep Railway Bde in Abakan (*Oblast'* unknown – Jane's lists this unit subordinate to the WMD, however, it operated within the CMD during the *Zapad* 17 exercise, and unverified internet sources suggest it may be in Khakasiya *Oblast'*, which is in the CMD); 15th Sep EW Bde in Tambov; and the 16th Sep EW Bde, the location of which is contested (Sutyagin lists the 16th in Kursk, while Jane's lists it in Plavsk, Tula *Oblast'*).[393]

There is ambiguity regarding Russia's capability to support prepositioning. According to Sutyagin, there are 21 BKhRVTs overall across the country, concentrated

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391 "Jane's World Armies: Russia–Special Operational Forces," Jane's, 14 February 2017, http://janes.ihs.com.libproxy.nps.edu/Janes/Display/jawc0450-jasf.

392 Persson, *Russian Military Capability*, 27.

393 Institute for Strategic Studies, *The Military Balance*, 212; "Jane's World Armies: Russian Federation–Army;" Sutyagin, "RDS Special: Formations and Units involved in 'Zapad-2017' Russian-Belarussian strategic exercises," *RUSI Defence Systems*, 6 October 2017, https://rusi.org/publication/rusi-defence-systems/rds-special-formations-and-units-involved-%E2%80%98zapad-2017%E2%80%99-russian; Sutyagin, Russia's New Ground Forces: Capabilities, Limitations, and Implications for International Security, 99.

on Russia's flanks. He claims there are five in the WMD, two for motorized rifle, one for tank, and two for artillery units. Under the 6th CAA is the 216th BKhRVT in Petrozavodsk, Republic of Kareliya; and under the 20th Guards CAA there is the 99th BKhRVT in Tver'.[394] Also, under the 20th Guards CAA is the 103rd Military Supply Depot (BRKhVT) in Shilovo, Voronezh *Oblast'*, which apparently does not function as a prepositioning center.[395] According to Jane's, there are eight additional BKhRVT, however, some of the locations given are outside the WMD's area.[396] Additionally, there is the 3783rd MTO base within the WMD.[397]

a. 1st Guards Tank Army

The 1st Guards Tank Army, headquartered in Bakovka, Moscow *Oblast'*, is comprised of: the 4th Guards *Kantimarovskaya* Tank Div in Naro-Fominsk, Moscow *Oblast'*; 2nd Guards *Tamanskaya* MRDiv in Kalininets, Moscow *Oblast'*; 144th Guards MRDiv in Yel'nya, Smolensk *Oblast'*; and 6th Sep *Chestochova* Tank Bde in Mulino, Nizhny Novgorod *Oblast'*. It will likely include the 10th Tank Div in Klintsy, Bryansk *Oblast'*, which is still forming from the 1st Sep *Ural-Lvov* Tank Bde in Boguchar, Voronezh *Oblast'*.[398] Directly subordinate to the Army are: the 60th Sep C3 Bde in Selyatino, Moscow *Oblast'*; the 27th Sep Guards MRBde in Mosrentgen, Moscow *Oblast'*; 112th Sep Guards *Novorossiysk* Rocket Bde in Shuya, Ivanovo *Oblast'*; 49th AirDef Bde in Krasnyy Bor; 96th Sep Recon Bde in Nizhny Novgorod; an artillery brigade or regiment of unknown designation or location; an engineer regiment of

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394 Sutyagin, *Russia's New Ground Forces: Capabilities, Limitations, and Implications for International Security*, 21.

395 McDermott, *Russia's Strategic Mobility*, 53.

396 "Jane's World Armies: Russian Federation–Army."

397 Johan Norberg and Fredrik Westerlund, with contribution from Carolina Vendil Pallin and Roger Roffey and maps by Per Vikström, "Russia's Armed Forces in 2016," in *Russian Military Capability in a Ten-Year Perspective – 2016*, ed. Gudrun Persson (Stockholm: Försvarsdepartementet (FOI)–Swedish Defense Research Agency, 2016), 51.

398 The Military Balance, 185; "Jane's World Armies: Russian Federation–Army;" Michael Kofman, "Russia's New Divisions in the West," *Russia Military Analysis* (blog), 7 May 2016, https://russianmilitaryanalysis.wordpress.com/2016/05/07/russias-new-divisions-in-the-west/; "'New' Divisions in the West," Russian Defence Policy (blog), 23 October 2016, https://russiandefpolicy.blog/2016/10/23/new-divisions-in-the-west/; Sutyagin, *Russia's New Ground Forces: Capabilities, Limitations, and Implications for International Security*, 96.

unknown designation in Mulino, the 20th NBC Rgt in Tsentralnyy, Nizhny Novgorod Oblast' (transferring from the 20th Guards CAA); and the 69th Sep MTO Bde (transferring from the 20th Guards CAA).[399]

The 4th Guards Tank Div is comprised of the following, all located in Naro-Fominsk: the 12th Guards *Shepetovskiy* Tank Rgt, 13th Guards *Shepetovskiy* Tank Rgt, a tank regiment of unknown designation and location (according to Igor Sugyagin, forecasted to be "either the 14th Guards, or the 43rd Guards *Verkhnedneprovskiy* Tank Rgt), 423rd Guards *Yampolskiy* MRRgt, 275th Arty Rgt, 538th AirDef Rgt, 330th Military Construction (MilCon) Bn, and 413th Communications (Comm) Bn.[400]

The 2nd Guards MRDiv is comprised of the following, all located in Kalininets: the 1st Guards MRRgt, 15th Guards MRRgt, 1st Guards *Chertkovskiy* Tank Rgt, (formed from the 87th Sep Tank Bn), 147th Guards Arty Rgt, 1174th Sep Anti-Tank (AT) Div, 136th Guards Sep Recon Bn, 147th AirDef Rgt, 211th MilCon Bn, and 47th Comm Bn. The 1117th AirDef Rgt in Kobyakovo, Moscow *Oblast'* is also subordinate to the 2nd Guards MRDiv.[401]

The 144th Guards MRDiv is comprised of the 488th MRRgt in Klintsy, which was formed from the 28th *Simferopl* MRBde, recently transferred from the CMD; as well as the 228th Tank Rgt, which is still forming; and the 856th Arty Rgt in Pochep, Bryansk *Oblast'*.[402] Additionally, its subordinate motorized rifle regiments are dispersed along the border with Ukraine and Belarus.[403] The 6th Sep Tank Bde is comprised of three tank battalions of unidentified designation, all located in Mulino.[404]

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399 Institute for Strategic Studies, *The Military Balance*, 212; Sutyagin, *Russia's New Ground Forces: Capabilities, Limitations, and Implications for International Security*, 96–7.

400 Igor Sutyagin, email message to the author, 23 October 2017.

401 Perrson, "Russian Military Capability," 81; "Jane's World Armies: Russian Federation–Army;" Igor Sutyagin, "*Zapad*-2017: Why do the Numbers Matter?" RUSI, 12 September 2017, https://rusi.org/commentary/*Zapad*-2017-why-do-numbers-matter.

402 "Jane's World Armies: Russian Federation–Army;" Sutyagin, *Russia's New Ground Forces: Capabilities, Limitations, and Implications for International Security*, 97–98.

403 Sutyagin, *Russia's New Ground Forces: Capabilities, Limitations, and Implications for International Security*, 96.

404 "Jane's World Armies: Russian Federation–Army."

b. 6th Combined-Services Army

The principal combat power in the 6th CAA, headquartered in Agalatovo, Leningrad *Oblast'* is the 138th Guards Sep *Krasnoselskaya* MRBde in Kamenka, Leningrad *Oblast'* and the 25th Guards Sep *Sevastopol*' MRBde in Strugi Krasnye and Vladimirsky Lager, Pskov *Oblast'*. The Ministry of Defense (MOD) is transitioning the motorized rifle brigades into divisions, but as of January 2017, the 6th and 20th Guards CAAs still each had 2 brigades in lieu of divisions.[405] The 6th CAA is also comprised of: the 95th C3 Bde in Chernaya Rechka and Gorelovo, Leningrad *Oblast'*; 9th Guards *Kiltse-Berlin* Arty Bde in Luga, 268th Guards Arty Bde in Pushkin, Leningrad *Oblast'*; 26th Guards *Nemam* Missile Bde in Luga; 5th AirDef Bde in Lomonosov, St. Petersburg and Neni-Myaki, Republic of Karelia; 30th Combat Engineer Rgt in Kerro, Leningrad *Oblast'*; 6th NBC Rgt in Sapyornoye, St. Petersburg; 10th Sep NBC Bn in Sertolovo; and the 51st Sep (MTO) Bde in Krasnoye Selo, St. Petersburg.[406]

c. 20th Guards Combined-Services Army

The principal combat power in the 20th Guards CAA, headquartered in Mulino, but moving to Boguchar, is the 3rd Guards *Vislenskaya* MRDiv in Boguchar; and a motorized rifle division of unknown designation at Valuyki, Belgorod *Oblast'*. The 3rd Guards MRDiv, recently formed on the basis of the 9th Sep MRBde, contains the 252nd MRRgt in Boguchar, 752nd MRRgt in Valuyki, 237th Guards Tank Rgt in Valuyki, and the 99th Arty Rgt in Boguchar.[407] The other division is forming from the 23rd Guards Sep *Petrokovsky* MRBde, recently transferred to the WMD from the SMD.[408] The 20th Guards CAA is also comprised of: the 9th Guards C3 Bde in Voronezh; 288th Arty Bde

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[405] Ibid.

[406] Frolov, "Russian Army in 2014 and Western Military District," 15; Galeotti, *The Modern Russian Army 1992–2016*, 30; "Jane's World Armies: Russian Federation–Army;" Perrson, "Russian Military Capability," 81; Sutyagin, *Russia's New Ground Forces: Capabilities, Limitations, and Implications for International Security*, 90–91.

[407] "Jane's World Armies: Russian Federation–Army;" "'New'" Divisions in the West;" Sutyagin, email message to the author.

[408] "Jane's World Armies: Russian Federation–Army;" "'New'" Divisions in the West;" Sutyagin, email message to the author; Sutyagin, *Russia's New Ground Forces: Capabilities, Limitations, and Implications for International Security*, 99.

in Mulino (likely relocated closer to the Ukrainian border); 448th Rocket Bde in Durnovo, Kursk *Oblast'*; 53rd AirDef Bde in Kursk; 20th NBC Rgt in Tsentralnyy (transferring to the 1st Guards TA); a combat engineer regiment of unknown designation, forming in Voronezh; a NBC battalion of contested designation (Sutyagin notes it is either the 456th Sep NBC Bn, detached from the WMD's 27th Sep NBC Bde, or the 564th Sep NBC Bn, while Jane's most recent update on Russia's OOB contends it is the 465th NBC Bn. Online sources list a 564th Sep NBC Bn in Kursk, as well as a 465th NBC Bn in Kineshma, Ivanovo *Oblast'*, but list neither their next higher echelon, nor a 456th Bn); and the 69th Sep MTO Bde in Mulino (transferring to the 1st Guards Tank Army).[409]

d. 11th Army Corps

The 11th AC is the WMD's major subordinate command in Kaliningrad *Oblast'*. The 11th AC's principal combat power is the 79th Guards Sep MRbde in Gusevo and the 7th Guards Sep MRRgt, which may now be at brigade strength. Subordinate to the 11th Army Corps are: the 244th Guards Arty Bde, 152nd Guards Missile Bde in Chernyakhovsk, 22nd Sep Guards AirDef (alternatively referred to as either SAM, or anti-aircraft—AA) Rgt, and the 214th Sep EW Rgt.[410] The *Rossgvardia*'s 136th Sep Special MRRgt in Kaliningrad can also be subordinated to the 11th AC in contingencies. Additionally, the VKS' 44th Air Defense Div in Kaliningrad is composed of the 183rd Guards AirDef Rgt in Gvarkeysk, 1545th AirDef Rgt in Znamensk, and the 81st Radar Rgt in Pereslavskoye.[411]

The WMD includes the Baltic Fleet and its associated air defense, aviation, coastal artillery, missile forces, and naval infantry. The Baltic Fleet's naval infantry is

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[409] Frolov, "Russian Army in 2014 and Western Military District," 15; "Jane's World Armies: Russian Federation–Army;" Dmitry Gorenburg, "Ground Forces structure and locations: part 1," Russian Military Reform (blog), 6 August 2010, https://russiamil.wordpress.com/tag/volga-ural-military-district/; Perrson, "Russian Military Capability," 81; Sutyagin, *Russia's New Ground Forces: Capabilities, Limitations, and Implications for International Security*, 99–100.

[410] Institute for Strategic Studies, *The Military Balance*, 212; Sutyagin, *Russia's New Ground Forces: Capabilities, Limitations, and Implications for International Security*, 91–92.

[411] Sutyagin, *Russia's New Ground Forces: Capabilities, Limitations, and Implications for International Security*, 92.

comprised of The 336th Guards Sep Marine Bde in Baltiysk. The 336th is comprised of two Marine battalions, one assault landing battalion, and two artillery squadrons. The Baltic Fleet is also responsible for the 561st Maritime Reconnaissance *Spetsnaz* Point in Parusnoye, comprised of two naval *Spetsnaz* companies.[412] Additionally, the Baltic Fleet's forces in Kaliningrad *Oblast'* consist of: the 25th Sep Coastal Missile Rgt in Donskoye, 69th Guards Sep Naval Engineer Rgt in Primorsk, 841st Sep EW Center in Yantarnyy, and 302nd Sep EW Rgt in Gvardeysk.

e. 76th Guards Airborne Division

The 76th Guards VDV Div is an air-assault division, typically inserting through helicopter instead of parachute. It consists of the following subordinate units, all located in Pskov: The 23rd VDV Rgt; 104th Guards VDV Rgt (to be upgraded to Division status in 2018), 234th Guards VDV Rgt, a Recon Bn of unknown designation, the 175th Sep Recon Co, 1140th Guards VDV Arty Rgt, 4th AirDef Rgt, 656th Combat Engineer Bn, 728th Sep Comm Rgt, 7th MTO Bn, 968th Sep Support Co, and the 1628th MTO Bn.[413] The division is expected to establish a tank battalion between 2016 and 2019, and the 237th Guards VDV Rgt will be upgraded to a brigade in the near future.[414]

f. 98th Guards Airborne Division

The principal combat power of the 98th Guards VDV Div is the 217th VDV Rgt in Ivanovo, 299th VDV Rgt in Yaroslavl', and 331st Guards VDV Rgt in Kostroma. Subordinate to the division are: the 215th Sep Recon Co in Ivanovo, 1065th Guards Arty Rgt in Kostroma, 5th AirDef Rgt in Ivanovo, 661st Guards Sep Combat Engineer Bn in Ivanovo, 674th Comm Bn in Ivanovo, 15th MTO Bn, 969th Sep Support Co in Ivanovo,

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412 Institute for Strategic Studies, *The Military Balance*, 219; Perrson, "Russian Military Capability," 81; Frolov, "Russian Army in 2014 and Western Military District," 18.

413 Dmitry Gorenburg, "Structure of Russian Airborne Troops," *Russian Military Reform* (blog), 13 August 2010, https://russiamil.wordpress.com/2010/08/13/structure-of-russian-airborne-troops/; "Jane's World Armies: Russian Federation–Army;" Lavrov, "Russian Military Activity in the Baltic," 8; Perrson, "Russian Military Capability," 81.

414 "Jane's World Armies: Russian Federation–Army;" Lavrov, "Russian Military Activity in the Baltic," 8; Perrson, "Russian Military Capability," 81; Sutyagin, *Russia's New Ground Forces: Capabilities, Limitations, and Implications for International Security*, 93.

and 1683rd Sep MTO Bn in Ivanovo. The division is scheduled to establish a tank battalion by 2019.[415]

g. 106th Guards Airborne Division

The Principal combat power of the 106th Guards VDV Div is the 51st Guards VDV Rgt in Tula and 137th Guards VDV Rgt in Ryazan. Subordinate to the division are: the 173rd Guards Sep Recon Co in Tula, 1182nd Guards Arty Rgt in Naro-Fominsk, 1st AirDef Rgt in Naro-Fominsk (there is ambiguity as to the regiment's designation, older sources list it as the 107th), 388th Combat Engineer Bn in Plavsk, Tula *Oblast'*; 731st Comm Bn in Tula, 970th Sep Support Co in Tula, and 1060th Sep MTO Bn in Slobodka, Tula *Oblast'*, and 43rd MTO Bn in Plavsk. The Division is scheduled to establish another VDV regiment and tank battalion by 2019.[416]

2. The Battalion Tactical Group and its Organization and Equipment

The MOD is moving away from Serdyukov's New Look brigades, returning to a division model based on four maneuver regiments.[417] Tank divisions have three tank regiments and one motorized rifle regiment, while motorized rifle divisions resemble the inverse structure.[418] The WMD's 6th and 20th Guards CAAs' brigades should transition to divisions in 2017. The 20th Guards CAA's brigades will fall under regiments within the 3rd Guards MRDiv.[419] In units that retain brigades, brigades will not fall under divisions; both divisions and brigades are subordinate to Army-level formations.[420]

A standard motorized rifle brigade is comprised of 3 motorized rifle battalions, as well as tank, self-propelled howitzer, MLRS, AAA, anti-aircraft missile-artillery, anti-aircraft missile, reconnaissance, signals, engineer, and MTO battalions. It also contains

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415 "Jane's World Armies: Russian Federation–Army;" Perrson, "Russian Military Capability," 81;

416 Ibid.; Gorenburg, "Structure of Russian Airborne Troops."

417 Institute for Strategic Studies, *The Military Balance*, 184-5.

418 Lester W. Grau and Charles K. Bartles, *The Russian Way of War: Force Structure, Tactics, and Modernization of the Russian Ground Forces* (Ft. Leavenworth: Foreign Military Studies Office, 2016), 33.

419 Institute for Strategic Studies, *The Military Balance*, 185.

420 Grau, *Russian Way of War*, 33.

sniper, medical, NBC, EW, and UAV companies, as well as a fire-control battery. Brigades each have radar and intelligence platoons. Brigade structure is completed with the commandant's company. Tank brigades have a similar structure, with an inverted ratio of motorized rifle to tank battalions.[421] A brigade's motorized rifle battalions each have three companies, while the tank battalions have four. Overall, a motorized rifle brigade has approximately 3,800 personnel, while a tank brigade has approximately 3,000.[422]

Where regiments are used, they serve as headquarters for four infantry or tank battalions, divided into three infantry and one tank, or three tank and one infantry. Additionally, regiments contain a self-propelled artillery battalion.[423] Regardless of a hierarchy that subordinates regiments under divisions to armies, or one that subordinates brigades to armies, BTGs are the primary combined-arms unit of employment for the Russian ground forces. Although BTGs pre-date the fall of the Soviet Union, they received renewed prominence in the reforms that characterized Anatoliy Serdyukov's tenure as Minister of Defense. The Russian Army could neither man nor equip its nominal forces, so it cut conscript positions and scaled down from regiments to brigades, focusing on devolving regimental fire-support assets to BTGs to provide a manned, trained, and equipped force that would have sustainable readiness for operational use.[424]

Since 2013, the Russian MOD has limited publishing official information about its military organization, equipment, and capabilities.[425] There is no unclassified way to independently verify open source Russian OOB. To compound matters, the organization and equipment of motorized rifle units differ depending on whether the unit is armored or mechanized. Armored motorized rifle units are equipped with BMP-type IFVs while mechanized units are equipped with BTR and MT-LB-type APCs. Across the force, there

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[421] McDermott, Russia's Electronic Warfare Capabilities to 2025, 26.

[422] Galeotti, The Modern Russian Army 1992–2016, 28.

[423] Sutyagin, email message to the author.

[424] Grau, *Russian Way of War*, 49.

[425] Persson, *Russian Military Capability*, 24.

are four more armored units than mechanized, and BMPs are typically employed in tank-heavy brigade formations.[426]

In September 2016, Gerasimov stated that there are 66 BTGs within Russia manned completely by contract professionals. He asserted that there would be 96 by the end of the year, 115 in 2017, and 125 in 2018. According to Gerasimov, each brigade or regiment contains two BTGs consisting of between 700 to 900 personnel. Gerasimov detailed the structure of a BTG as an infantry or tank battalion, each with two to four companies and supporting arms. Supporting arms consist of anti-tank, artillery, reconnaissance, engineer, and logistics platoons.[427] Sutyagin assesses the supporting units are larger, with artillery and air-defense batteries, and he also included NBC elements.[428]

Armored MRBns typically have three infantry companies with a total of 33 BMP-2/3s and 461 personnel, while mechanized MRBns typically have 44 BTR-80/2s or MT-LBs and 539 personnel. A company typically has 11 vehicles. The armored forces are smaller due to their superior firepower; they do not require an additional AT platoon. Tank Bns typically have 31 tanks and 151 personnel, and a company typically has 10 tanks.[429]

A BTG is a combined-arms unit, employing both motorized rifle and tank forces, the ratio of each being dependent on the division or brigade's designation as tank or motorized rifle.[430] Therefore, tank-heavy BTGs should typically have 31 tanks, models T-72B3/T-80/90/14, and 11 BMP-2/3s. These BTGs likely also have the associated armored reconnaissance vehicles, 2S19 Msta-S or older 2S3 *Akatsiya* 152mm self-propelled howitzers, and BM-21 *Grad* 122mm MLR that their parent brigades would

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[426] Institute for Strategic Studies, *The Military Balance*, 212.

[427] Russian Defense Policy Blog, "Contractees in BTGs," Russian Defense Policy, Blog, 17 September 2016, https://russiandefpolicy.blog/tag/battalion-tactical-group/.

[428] Sutyagin, *Russia's New Ground Forces: Capabilities, Limitations, and Implications for International Security*, 31.

[429] Grau, *Russian Way of War*, 209–211, 224.

[430] Institute for Strategic Studies, *The Military Balance*, 184.

provide to conduct fire and maneuver. Additionally, they could have NBC attachments from their CAA, which are equipped with TOS-1 *Buratino* thermobaric MLRS and RPO flamethrowers.[431] Motorized rifle-heavy BTGs typically have 33 BMP-2/3s (armored MRBn-sourced), 44 BTR-80/2s (mechanized MRBn-sourced), or 44 MT-LBs (mechanized MRBn-sourced), as well as 10 tanks, 2 MT-12 AT cannons, 4 9M123 or 9P162 AT vehicles, 8 2S12 *Sani* mortars, and the same associated brigade-level vehicles, fire support, and NBC assets that are listed above for tank-heavy BTGs.[432]

a. Battalion Tactical Groups in the Western Military District

The WMD should be able to provide 33 BTGs, employing approximately 23,000 to 30,000 personnel and 450 tanks, 300 IFVs, and 830 APCs. From its directly subordinate forces, the WMD can field two Recon BTGs, likely with BTR and BRDM-type vehicles and five mechanized, infantry-heavy BTGs. From the 1st Tank Army, the WMD can field seven tank-heavy BTGs and four mechanized infantry-heavy BTGs. From the 6th CAA, the WMD can field four mechanized infantry-heavy BTGs (with MTLBs).[433] The 20th Guards CAA can provide eight BTGs, five armored infantry-heavy, and three mechanized infantry-heavy. The 11th Army Corps can provide two armored infantry-heavy and one mechanized infantry-heavy (with MTLBs) BTGs.[434] Additionally, the Baltic Fleet's Marines in Kaliningrad can provide one mechanized, infantry-heavy BTG.[435] The three VDV divisions within the WMD should be able to provide 14 BTGs with 10,000 to 13,000 troops, equipped with a combination of approximately 450 BMD-type IFVs or 600 BTR-D APCs and approximately 80 tanks.[436] In total, not counting *Spetsnaz*, nominal forces stationed in the WMD could provide 47

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431 "Jane's World Armies: Russian Federation–Army;" Grau, *Russian Way of War*, 235–236, 319–320.

432 Grau, *Russian Way of War*, 235–238.

433 Lavrov, "Russian Military Activity in the Baltic," 7, 9.

434 Iwona Wisniewska, Maria Domanska, Jan Strzelecki, et al, "Kaliningrad Oblast 2016: The Society, Economy, and Army," OSW (Mark Kary Centre for Eastern Studies in Warsaw), December 2016, 28-9, https://www.osw.waw.pl/en/publikacje/raport-osw/2016-12-23/kaliningrad-oblast-2016-society-economy-and-army.

435 Ibid.; Institute for Strategic Studies, *The Military Balance*, 218.

436 Lavrov, "Russian Military Activity in the Baltic," 8.

BTGs comprised of up to 43,000 troops, approximately 530 tanks, 300 IFVs, and 1280 to 1430 APCs.

3. Training in the Western Military District

The culminating annual training event for the Russian military is the JSE. Strategic exercises typically involve an entire military district, and each district participates in a JSE on a regularly scheduled, quadrennial basis. Russia's JSEs since 2011 have each occurred in parallel with a smaller, regional exercise in other military districts, indicating that Russia's strategic training goal is the command and control of two simultaneous, multi-front joint combat operations.[437]

To skirt the OSCE's Vienna Document requirement that foreign observers be invited to monitor exercises with 13,000 or greater participants, the Kremlin claimed 12,700 participants took part in its latest JSE, while simultaneously holding parallel exercises to evaluate the capability of a larger portion of the force. The Kremlin uses legal instrumentalism, maintaining plausible deniability of the true size and scope of JSEs through the conduct of parallel exercises, in order to bind OSCE member states to continue sharing information on their military exercises – information that is intended to build trust and confidence in a stable security environment – without reciprocation. The Kremlin invited observers to Belarus for its latest JSE, but not the Russian portions of the exercise, or to the parallel exercises.[438] Russia's claim of 12,700 participants does not include forces in Kaliningrad, forces in other MDs, or VDV forces.[439]

The WMD featured in parallel exercises, along with the Belarusian military (known as Union Shield), in 2011 and 2015.[440] The WMD's *Zapad* series JSEs, have

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[437] Persson, *Russian Military Capability*, 52-3.

[438] Igor Sutyagin, "*Zapad*-2017: Moscow's Rules," RUSI, 18 September 2017, https://rusi.org/commentary/*Zapad*-2017-moscow's-rules.

[439] Ibid.; Sutyagin, "*Zapad*-2017: Why do the Numbers Matter?"

[440] Liudas Zdanavičius and Matthew Czekaj, "Russia's *Zapad* 2013 Military Exercise: Lessons for Baltic Regional Security," The Jamestown Foundation, December 2015, 1, https://jamestown.org/report/russias-zapad-2013-military-exercise-lessons-for-baltic-regional-security/.

taken place in 1999, 2009, 2013, and 2017.[441] While JSEs allow for strategic messaging, advertising Russia's capabilities to potential adversaries, allies, and arms buyers, Russia's JSEs are not simply shows of force or demonstrations. Underscoring the importance of the *Zapad* exercises for NATO, Estonian Ministry of Defense official Kristjan Prikk noted that "Russian's train exactly as they intend to fight, this *Zapad* will give up ample information on their military and political thinking as it is right now."[442]

a. Previous Zapad Joint Strategic Exercises

Zapad 2009 included the predecessor formation to the 20th Guards CAA, along with the 98th Guards VDV Div; it included 12,500 personnel, 220 tanks, and 450 armored vehicles.[443] *Zapad* 2013 occurred along Russia's border with NATO and the Nordic countries. The officially declared main objective was to "ensure the military security of the Union State."[444] *Zapad 2013* was the culmination of a six-month training work-up. The primary Russian training audience was five BTGs from the 20th Guards CAA that trained for 10 days, covering 1,500km of movement.[445] The scenario, the defense of Belarus from an insurgent attack, was a guise that in reality posited a defense of Belarus from a NATO invasion originating in the Baltic States.[446]

Russian and Belarusian officials claimed participation in *Zapad* 2013 included from 10 to 69 tanks, 140 to 229 pieces of non-aviation equipment, and 11,719 to 12,850 Russian and 201 Belarusian personnel; however, outside observers estimated 45,000 to

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[441] Ibid., 86; Persson, *Russian Military Capability*, 52-3.

[442] Rachel Ansley, "*Zapad*: A Window into Russia's Military Mind?" Atlantic Council 11 July 2017, http://www.atlanticcouncil.org/blogs/new-atlanticist/*Zapad*-a-window-into-russia-s-military-mind.

[443] "Jane's World Armies: Russian Federation–Army."

[444] Aleksander Postnikov, "Statement by the Delegation of the Russian Federation: Presentation on 'Surprise Inspections of the Armed Forces of the Russian Federation in 2013 and Results of the Zapad-2013 Joint Strategic Exercise Conducted by the Armed Forces of the Russian Federation and the Republic of Belarus' by the Deputy Chief of the General Staff of the Armed Forces of the Russian Federation." *Forum for Security Co-operation Journal*, no. 738 (30 October 2013), http://www.osce.org/fsc/107846?download=true.

[445] Postnikov, "Statement by the Delegation of the Russian Federation."

[446] "Jane's World Armies: Russian Federation–Army."

90,000 personnel took part.[447] The higher-end figures account for parallel exercises, as well as MVD mobilizations for internal paramilitary and civil-service personnel who nominally participated in supporting activities during the exercise (MVD forces were transferred from the MVD to the newly created *Rossgvardia*). Snap inspections just prior to the exercise involved 12,000km movements, including a 400km foot march.[448] In conjunction with *Zapad* 2013, the CSTO's Collective Rapid-Reaction Force (CRRF) conducted exercise Cooperation 2013.[449] The CSTO exercise focused on the 98th Guards VDV Div, and included 600 personnel.[450] In parallel, the SMD conducted exercise Combat Commonwealth, focusing on air defense. The Northern Fleet conducted maneuvers concurrently as well.[451]

Swedish defense analyst Johan Norberg contends that, "The scope of *Zapad*-2013 and the simultaneous Northern Fleet exercise indicated that they were about a regional war with NATO, including a possible escalation into using the Northern Fleet's nuclear weapons."[452]

b. Zapad 2017

Zapad 2017 took place in Belarus, Russia, and the Kaliningrad exclave, from 14 to 20 September. It was preceded by command post exercises and live fire drills, occurred in parallel with exercises in every military district, and was conducted in connection with, and followed by multi-national exercises with CSTO and Shanghai Cooperation

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[447] Johan Norberg, "Training to Fight - Russia's Major Military Exercises 2011–2014," Swedish Defence Research Agency (Försvarsdepartementet, FOI), 2015, 34; Karlis Neretnieks, "*Zapad* 13 – Observations and perspective," The Royal Swedish Academy of War Sciences, 12 October 2013, http://kkrva.se/*Zapad*-13-observations-and-perspective/; Colonel A. Krivanos, "Statement by the Delegation of Belarus: Presentation on 'Results of the Zapad-2013 joint Belarusian-Russian exercise' by the Deputy Head of the General Staff of the Armed Forces of the Belarus Republic." *Forum for Security Co-operation Journal*, no. 738 (30 October 2013), http://www.osce.org/fsc/107846?download=true.

[448] Postnikov, "Statement by the Delegation of the Russian Federation."

[449] Krivanos, "Statement by the Delegation of Belarus."

[450] Norberg, "Training to Fight," 37.

[451] Norberg, "Training to Fight," 37-8.

[452] Ibid., 38.

Organization (SCO) states.[453] Ukrainian authorities estimated 240,000 Russian personnel would take part, while Lithuanian officials put the number lower, at 140,000, and Poland estimated 100,000 personnel would participate. These figures undoubtedly include not only *Zapad*, but forces in parallel exercises. Despite Russia's official claims of 12,700 personnel, the Royal United Services Institute (RUSI) estimates 65 to 70,000 personnel took part specifically in *Zapad* 2017.[454]

Russian officials claimed 150 artillery pieces, 140 tanks, and 230 IFVs and APCs participated in *Zapad*'s maneuvers in Belarus. RUSI assesses this allows for one Belarusian motorized rifle brigade with 40 tanks, 180 IFVs and APCs, 78 artillery pieces, and 4,900 personnel. The Belarusian brigade would have been reinforced with an independent artillery battalion with 18 artillery pieces and 200 personnel, as well as 2,000 CS and CSS personnel. Additionally, this includes one Russian tank brigade with 94 tanks, 61 IFVs and APCs, 44 artillery pieces, and 2,900 troops.[455] This accords with the observed participation of the 1st Guards Tank Army's 6th Sep Tank Bde, which initiated rail movement to Belarus on 14 September.[456] In addition to official Russian claims, RUSI assesses that the entire 4th Tank Div may have deployed to Belarus for *Zapad* 2017, while Russia analyst Michael Kofman observes that only subordinate elements appeared to be present.[457]

In addition to the Union State forces in Belarus for *Zapad* 2017, Russian officials claimed 50 artillery pieces, 110 tanks, 200 IFVs and APCs participated within Russia proper. RUSI assesses the actual equipment totals were slightly higher, at 52 artillery

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[453] Michael Kofman, "*Zapad* Watch—Summary of Day One," *Russia Military Analysis* (Blog), 15 September 2017, https://russianmilitaryanalysis.wordpress.com/2017/09/15/*Zapad*-watch-quick-roundup-of-day-one/.

[454] Sutyagin, "*Zapad*-2017: Why do the Numbers Matter?"

[455] Sutyagin, "*Zapad*-2017: Why do the Numbers Matter?"

[456] Kofman, "*Zapad* Watch—Summary of Day One," Michael Kofman, "*Zapad* Watch—Summary of Day Six," *Russia Military Analysis* (Blog), 20 September 2017, https://russianmilitaryanalysis.wordpress.com/2017/09/20/*Zapad*-watch-quick-roundup-of-day-six/; Sutyagin, "*Zapad*-2017: Why do the Numbers Matter?"

[457] Michael Kofman, "*Zapad* Watch—Summary of Day Four," *Russia Military Analysis* (Blog), 18 September 2017, https://russianmilitaryanalysis.wordpress.com/2017/09/18/*Zapad*-watch-quick-roundup-of-day-four/; Sutyagin, "*Zapad*-2017: Why do the Numbers Matter?"

pieces, 125 tanks, and 201 IFVs and APCs. This allows for one tank regiment, one motorized rifle regiment, and one independent reconnaissance battalion. RUSI assesses these units to be the 2nd Guards MRDiv of the 1st Guard's Tank Army's 1st Guards Tank Rgt, 1st Guards MRRgt, and the 136th Guards Sep Recon Bn.[458]

The WMD's 11th Army Corps and the Baltic Fleet's 336th Guards Sep Marine Bde, as well as the newly re-established and 14th AC, subordinate to OSK-N were also involved in *Zapad* 2017. The 11th Army Corps' 7th Guards Sep MRRgt, the 79th Guards Sep MRBde, and the 244th Guards Arty Bde participated, as well as the 14th AC's 80th and 200th MRBdes.[459] Airborne forces from all of the VDV commands stationed in the WMD participated: from 76th Guards VDV Div, 106th Guards VDV Div, and the 98th Guards VDV Div all deployed at least one battalion.[460] Additionally, the 45th Guards Sep VDV *Spetsnaz* Rgt likely participated.[461]

Zapad 2017 was a combined, joint-interoperability exercise within the Union State's armed forces and their various branches.[462] The scenario provided a defensive narrative, based on a surprise attack from the West. This narrative is pragmatic; it fits Russia's historical experience from the Second Word War, but it only partially aligns with Russia's current threat perception.[463] Unlike *Zapad* 2013, which carried undertones of color revolution and exercised the capability to suppress civil-disorder and irregular warfare, *Zapad* 2017 was strictly conventional and high intensity.

Kofman notes that Russia's scenario for *Zapad* 2017 was to defend against surprise attack by an "advanced conventional adversary with a …global force at their

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[458] Sutyagin, "*Zapad*-2017: Why do the Numbers Matter?"

[459] Sutyagin, "*Zapad*-2017: Moscow's Rules."

[460] Kofman, "*Zapad* Watch—Summary of Day One."

[461] Sutyagin, "*Zapad*-2017: Moscow's Rules."

[462] Mathieu Boulegue, "Five Things to Know About the *Zapad*-2017 Military Exercise," Chatham House, 25 September 2017, https://www.chathamhouse.org/expert/comment/five-things-know-about-*Zapad*-2017-military-exercise.

[463] Nicholas J. Myers, "S-400, New Cruise Missiles and More: How Russia's Military Is Back in a Big Way," *The National Interest*, 29 September 2017, http://nationalinterest.org/blog/the-buzz/s-400-new-cruise-missiles-more-how-russias-military-back-big-22520.

disposal."[464] *Zapad* 2017 was built around the premise that the U.S. and NATO will rely on concentrated, overwhelming air power at the outset of conflict.[465] Exercise aggressor forces engaged Russian forces with air and cruise missile strikes, simultaneously with diversionary ground maneuver and vanguard reconnaissance in force conducting direct action.[466] Parallel exercises in other military districts mirrored *Zapad*'s scenario, implying Russia is preparing to defend against a multi-front attack.[467] The parallel exercises suggest Russia is capable of employing brigade-sized units for multi-front operations.[468]

Zapad 2017 was a two phase exercise. Phase one was a three-day defense until the WMD could forward deploy forces and aviation. Phase two was four days of offensive maneuver warfare.[469] Although *Zapad* 2017 did not have the overt simulated nuclear strikes that were present in *Zapad* 1999 and 2009, the defensive phase of the exercise culminated with simulated, potentially nuclear, strikes from Tu-22M3 bombers on 15 September, and a 9K720 *Iskander-M* missile system on 16 September.[470] This accords with Russia researcher Mathieu Boulegue's observation that "Russia seeks to control escalation dominance."[471] Russia is investing heavily in air defense and PGMs, and tested these capabilities against aggressor forces during the JSE.[472] The Russians employed ground based air defenses and tactical aviation, while the VDV was used to

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[464] Kofman, "*Zapad* Watch—Summary of Day One."

[465] Myers, "S-400, New Cruise Missiles and More: How Russia's Military Is Back in a Big Way."

[466] Kofman, "*Zapad* Watch—Summary of Day One."

[467] Michael Kofman, "*Zapad* Watch—Summary of Day Two," *Russia Military Analysis* (Blog), 16 September 2017, https://russianmilitaryanalysis.wordpress.com/2017/09/16/*Zapad*-watch-quick-roundup-of-day-two/.

[468] Kofman, "*Zapad* Watch—Summary of Day Six."

[469] Michael Kofman, "*Zapad* Watch—Summary of Day Three," *Russia Military Analysis* (Blog), 17 September 2017, https://russianmilitaryanalysis.wordpress.com/2017/09/17/*Zapad*-watch-quick-roundup-of-day-three/.

[470] Myers, "S-400, New Cruise Missiles and More: How Russia's Military Is Back in a Big Way."

[471] Boulegue, "Five Things to Know About the *Zapad*-2017 Military Exercise."

[472] Myers, "S-400, New Cruise Missiles and More: How Russia's Military Is Back in a Big Way."

conduct movement to contact and counter reconnaissance against aggressor diversionary-reconnaissance (direct action) units.[473]

(1) Command and Control, Information Operations, and Intelligence in *Zapad* 2017

It took Union State forces just over 24 hours to establish the C2 to develop a common operating picture (COP). *Zapad* 2017's conventional forces were monitored through a COP that provided situational awareness down to the battalion level, provided by a communications architecture that covered 1,000km.[474] Data was transferred along a high-bandwidth network, with transmission speed up to 20 gigabytes per second.[475] In Belarus, the host nation's 86th Comm Bde, along with the 70th Mobile Command Post from the General Staff of the Russian Armed Forces, provided C2.[476] This combined architecture was instrumental in the Union States' ability to conduct close air support (CAS) with Belarusian aviation providing fires for Russian armor units.[477] Additionally, Russian IADS incorporated 55Zh6M *Nebo-M*, 39N6E *Kasta* 2E2, and 48Ya6-K1 *Podlet-K* mobile radars with *Fundament* radar and electronic intelligence (ELINT) command posts to coordinate the actions of 96K6 *Pantsir* S1 air defense systems, as well as S-300 and S-400 SAMs.[478]

VDV forces set up C2 to operate dispersed across a 500 to 2,000km area of operations. They employed the GLONASS and GPS enabled *Andromeda-D* C2 systems in their BTRs, theoretically allowing COP down to the squad level.[479] The dual-use of both satellite systems suggests preparation to operate in a GLONASS-denied environment. During the Georgia War, Russian forces often used commercial GPS for navigation, as their GLONASS constellation was not fully operational. For air

[473] Kofman, "*Zapad* Watch—Summary of Day One."

[474] Kofman, "*Zapad* Watch—Summary of Day Two."

[475] Kofman, "*Zapad* Watch—Summary of Day Four."

[476] Sutyagin, "*Zapad*-2017: Why do the Numbers Matter?"

[477] Kofman, "*Zapad* Watch—Summary of Day Two."

[478] Kofman, "*Zapad* Watch—Summary of Day Four."

[479] Kofman, "*Zapad* Watch—Summary of Day Three."

surveillance, the VDV employed the 48Ya6-K1 *Podlet-K* radar. *Spetsnaz* forces used the *Strelets* C4ISR system to provide friendly-force COP down to the individual level, as well as ISTAR to support targeting and fires.[480] Integration of the *Strelets* system with GLONASS and UAVs was a primary C4ISR focus in *Zapad* 2017.[481]

Zapad 2017 saw extensive use of UAVs for traditional ISR as well as ISTAR in support of artillery fires. Russian ground and naval forces employed the *Orlan*-10, *Eleron*-3SV, and *Grusha* UAVs.[482] Additionally, Russian forces employed aerostats for ISR.[483] Belarusian forces employed *Busel*-variant and *Berkut*-1E UAVs in an ISTAR role in conjunction with fires from 9K58 BM-30 *Smerch* and their new *Polonez* MLRS. A Russian EW brigade used RB-109A *Bylina* automated EW detection and suppression systems, along with Sagittarius C2 and ISTAR components from the *Strelets* system, as well as *Orlan*-10 UAVs linked with RB-341V Leer-3 EW vehicles, which provide the capability to jam cellular signals.[484]

(2) Fires in *Zapad* 2017

The WMD's 6th Air Force and Air Defense Army employed Tu-22M3 bombers, escorted by Su-35 fighters in their traditional roles.[485] Nuclear and anti-surface capable Tu-22M3 bombers conducted simulated strikes from airspace over the Baltic and Norwegian Seas on the second and last days of the exercise, triggering a real-world

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[480] Kofman, "*Zapad* Watch—Summary of Day Six." Timothy L. Thomas, *Russian Military Strategy: Impacting 21st Century Reform and Geopolitics* (Ft. Leavenworth, KS: Foreign Military Studies Office, 2015), 149.

[481] Myers, "S-400, New Cruise Missiles and More: How Russia's Military Is Back in a Big Way."

[482] Michael Kofman, "*Zapad* Watch—Summary of Day Five," Russia Military Analysis (Blog), 19 September 2017, https://russianmilitaryanalysis.wordpress.com/2017/09/19/Zapad-watch-quick-roundup-of-day-five/; Kofman, "Zapad Watch—Summary of Day Six;" Ministry of Defence of the Russian Federation "Combat robots & drones used at Zapad 2017 episodes, Kaliningrad region," Ministry of Defence, 19 September 2017, http://eng.mil.ru/en/news_page/country/more.htm?id=12142814@egNews.

[483] Kofman, "*Zapad* Watch—Summary of Day Four."

[484] Boulegue, "Five Things to Know About the *Zapad*-2017 Military Exercise;" Kofman, "*Zapad* Watch—Summary of Day Six;" Timothy L. Thomas, "Russia's UAV Virtual Cellular Communication Tower," *OE Watch* 7, no. 2 (March 2017): 54.

[485] Kofman, "*Zapad* Watch—Summary of Day Two;" Kofman, "*Zapad* Watch—Summary of Day Five."

NATO response on the last day.[486] Su-24M strike aircraft were used to target aggressor C2, while Su-24MP aircraft were used in a strike coordination and armed reconnaissance (SCAR) role. Both Su-25 and Su-34 strike aircraft conducted bombing sorties while escorted by Su-35 multi-role fighters. Su-25 strike aircraft used rockets and cannon fire against mobile armor formations. Russian VKS primarily used unguided bombs and rockets, in coordination with the SVP-24 *Gefest* targeting system, during the first four days of the exercise, switching to PGM for the last two days. In addition to fixed wing aircraft, the Russian 15th Army Aviation Bde employed Mi-35M, Ka-52, Mi-28N, and Mi-8AMTSh helicopters in CAS and anti-armor roles. Belarus also employed Mi-8MTV-5 and Mi-28N helicopters to provide CAS for Russian VDV forces.[487]

In addition to the Tu-22M3's potential nuclear role in *Zapad* 2017, Russia launched a silo-based RS-24 *Yars* ICBM on 16 September, followed by a mobile-variant RS-24 *Yars* intercontinental ballistic missile (ICBM) on 20 September.[488] This is in keeping with Russia's military doctrine, which supposes that quickly escalating to a nuclear strike when Russian state survival is faced with a conventional threat would result in capitulation by the aggressor. In addition to strategic rocket forces, Russian forces employed the 9K720 *Iskander-M* with 9M723 short-range, operational-tactical ballistic missile (SRBM), the legacy 9K79-1 *Tochka-U* tactical ballistic missile system, and the 9K720 *Iskander-K* with R-500 9M728 ground-launched cruise missile (GLCM).[489] Russian forces conducted simulated launches of *Iskander-M* and *Tochka-U* missiles against massed armor from ranges of 30 to 100km. While the WMD has two *Iskander* brigades, the 152nd Guards Missile Bde in Kaliningrad has not yet upgraded to

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[486] Michael Kofman, "*Zapad* Watch—Summary of Day Seven (last day)," *Russia Military Analysis* (Blog), 21 September 2017, https://russianmilitaryanalysis.wordpress.com/2017/09/21/*Zapad*-watch-quick-roundup-of-day-seven-last-day/; Myers, "S-400, New Cruise Missiles and More: How Russia's Military Is Back in a Big Way."

[487] Kofman, "*Zapad* Watch—Summary of Day Three;" Kofman, "*Zapad* Watch—Summary of Day Four;" Kofman, "*Zapad* Watch—Summary of Day Five;" Kofman, "*Zapad* Watch—Summary of Day Six."

[488] Kofman, "*Zapad* Watch—Summary of Day Seven (last day)."

[489] Kofman, "*Zapad* Watch—Summary of Day Three;" Kofman, "*Zapad* Watch—Summary of Day Five;" Kofman, "*Zapad* Watch—Summary of Day Six;" Myers, "S-400, New Cruise Missiles and More: How Russia's Military Is Back in a Big Way."

the *Iskander*. All *Tochka-U*s are to be phased out by 2020.[490] The Russian MoD also reported that during the exercise Russian forces launched an *Iskander-M* at a range of 480km, but Kofman suggests it was most likely an *Iskander-K*.[491]

Massed artillery and rocket fires, as per Russian tactics, were the main effort for conventional ground forces in *Zapad* 2017. Artillery fire direction received target inputs from UAVs, 1L271 *Aistenok* counter-mortar radars, and the *Strelets* system.[492] As opposed to the 15 minute kill-chain lag that was observed between UAV observation and fires in Ukraine, Russian forces in *Zapad* 2017 conducted real-time targeting with BM-21 *Grad* MLRS and with single-tube artillery. Additionally, Russian forces in *Zapad* 2017 used PGM such as 30F39 *Krasnopol* laser-guided artillery shells in 2A65 Msta-B towed and 2S19 Msta-S self-propelled howitzers; as well as 3F5 *Smel'chak* laser-guided mortar rounds in 2S12 *Sani* heavy mortars.[493]

The 2nd Guards MRDiv, 1st Guards Tank Army's 147th Guards Arty Rgt employed 2S19 Msta-S and 2A65 Msta-B howitzers, as well as BM-21 *Grad* MLRS.[494] The 423rd Guards MRRgt, 4th Guards Tank Div, employed BM-21 *Grad* and 9A53-G *Tornado* MLRS, as well as 2S19 Msta-S and *2S5 Giatsint-S* self-propelled systems.[495] Other units within the tank army employed similar systems, as well as the 2B14 *Podnos* mortar.[496]

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[490] Kofman, "Zapad Watch—Summary of Day Three;" Guy Plopsky, "Why Is Russia Aiming Missiles at China?" The Diplomat, 12 July 2017, https://thediplomat.com/2017/07/why-is-russia-aiming-missiles-at-china/.

[491] Kofman, "*Zapad* Watch—Summary of Day Five."

[492] Ibid.; Roger N. McDermott, "Poisk-2016: CSTO Stages Intelligence and Reconnaissance Exercise," *The Central Asia-Caucasus Analyst*, 31 May 2016, https://www.cacianalyst.org/publications/analytical-articles/item/13366-poisk-2016-csto-stages-intelligence-and-reconnaissance-exercise.html; Peter Zwack, "*Zapad* 2017: Should We Fear Russia's Latest Military Dress Rehearsal?" *The National Interest*, 29 August 2017, http://nationalinterest.org/feature/*Zapad*-2017-should-we-fear-russias-lastest-military-dress-222097?page=show.

[493] Kofman, "*Zapad* Watch—Summary of Day Five."

[494] Kofman, "*Zapad* Watch—Summary of Day Three;" Kofman, "*Zapad* Watch—Summary of Day Four."

[495] Kofman, "*Zapad* Watch—Summary of Day Six."

[496] Kofman, "*Zapad* Watch—Summary of Day Three."

(3) Maneuver in *Zapad* 2017

In Kaliningrad, the 11th AC focused on military operations in urban terrain (MOUT). Its forces were organized into a BTG, reinforced with T-72B1 Tanks, BM-21 *Grad* MLRS, 2S3M *Akatsiya* self-propelled howitzers, and towed artillery. VDV forces with BMD-2 IFVs augmented the 11th Army Corps' BTG for combined-arms maneuver that emphasized motorized rifle forces supported by artillery. *Orlan*-10 and *Grusha* UAVs, as well as *Platforma-M* unmanned ground vehicles (UGV), provided ISTAR, while Su-24 and Su-34s provided CAS. NBC forces employed the RPO-A *Shmel* thermobaric rocket launcher as an urban, antipersonnel weapon. Additionally, Baltic Fleet Marines conducted an amphibious landing with BTR-82A APCs from tank landing ships (LST) in the Baltic Sea, with Ka-27 helicopters providing assault support, and under cover of Mi-35M attack helicopters. The Marines operated ashore in BMP-2 IFVs, supported by tank destroyers – presumably 2S25 Sprut SDM1 self-propelled anti-tank guns.[497]

In Belarus, the 1st Tank Army's 4th Tank Div employed an array of tanks. The division used new T-72B3 tanks, while its recently re-formed 423rd Guards MRRgt used older T-80BVs.[498] The 1st Tank Army's 6th Bde used T-72B3s, and was supported with 2S19 Msta-S artillery.[499] Russian armor units in Belarus operated in conjunction with Belarus' 120th Sep MRBde. The tanks and infantry were supported by Ka-52 attack helicopters, self-propelled and towed artillery pieces, BM-21 *Grad* MLRS, and the TOS-1A *Solntsepek* thermobaric MLRS.[500] In Russia, Kofman noted that the 1st Tank Army waged a "conventional high end fight across a 600 kilometer front"[501] The principal units were the 6th CAA's 25th Guards Sep MRBde, 138th Guards Sep MRBde, and the 2nd Guards MRDiv. The 2nd Guards demonstrated with the latest T-90M and T-80BVM

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[497] Kofman, "*Zapad* Watch—Summary of Day Three;" Kofman, "*Zapad* Watch—Summary of Day Six."

[498] Kofman, "*Zapad* Watch—Summary of Day Five."

[499] Boulegue, "Five Things to Know About the *Zapad*-2017 Military Exercise."

[500] Kofman, "*Zapad* Watch—Summary of Day Two;" Kofman, "*Zapad* Watch—Summary of Day Four."

[501] Kofman, "*Zapad* Watch—Summary of Day Five."

tanks, as well as the BMPT tank fire support vehicle, on the fourth and fifth days of the exercise, when President Putin and other senior officials were present to observe.[502] The WMD's VKS forces trained for air superiority missions with Su-27, Su-30SM, Su-35, and MiG-31 multirole fighter aircraft, while the WMD's IADS and attack/strike aviation supported ground forces' maneuver.[503]

VDV forces operated independently at the battalion and detachment level throughout *Zapad* 2017.[504] The VDV conducted airborne insertions to secure key infrastructure, such as airfields, and to disrupt adversary conventional and special operations forces as Russia's rapid reaction force.[505] The VDV practiced river crossings in their IFVs, in anticipation that an aggressor would use PGMs to destroy key infrastructure, such as bridges, during the initial phase of conflict.[506]

In addition to the battalion that each major VDV command in the WMD provided for the exercise, two battalions from the 76th Guards VDV Div likely participated; one employed BMD-4M IFVs and the other employed BTR-MD *Rakushka* APCs.[507] Detachments from the 106th Guards VDV Div employed both BMD-4M IFVs and BTR-MDM *Rakushka* APCs.[508] Additionally, the VDV employed the M-65 Lynx lightly-armored vehicle (LAV).[509] Anti-armor forces in the VDV employed the 2S25 *Sprut* SDM1 self-propelled anti-tank gun, 9P149 *Shturm-S* self-propelled ATGM launcher, 9M133 Kornet ATGM, and the RPO-A *Shmel* thermobaric rocket launcher.[510]

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[502] Kofman, "*Zapad* Watch—Summary of Day Four;" Kofman, "*Zapad* Watch—Summary of Day Five."

[503] Kofman, "*Zapad* Watch—Summary of Day Two;" Kofman, "*Zapad* Watch—Summary of Day Three;" Kofman, "*Zapad* Watch—Summary of Day Four."

[504] Kofman, "*Zapad* Watch—Summary of Day Three."

[505] Kofman, "*Zapad* Watch—Summary of Day Six."

[506] Kofman, "*Zapad* Watch—Summary of Day Seven."

[507] Boulegue, "Five Things to Know About the *Zapad*-2017 Military Exercise; Kofman, "*Zapad* Watch—Summary of Day One;" Kofman, "*Zapad* Watch—Summary of Day Six."

[508] Kofman, "*Zapad* Watch—Summary of Day Three."

[509] Kofman, "*Zapad* Watch—Summary of Day Two."

[510] Kofman, "*Zapad* Watch—Summary of Day Five."

(4) Logistics in *Zapad* 2017

Transportation and lift during *Zapad* 2017 required tremendous logistical resources. Russian VKS aircraft and support personnel were transferred to forward basing during the exercise, indicating Russia has limited power projection capability away from its current garrison basing. The Russian General Staff's rapid-deployment force, the VDV, was notified of their deployment orders on 14 September. The 76th Guards VDV Div was able to deploy one battalion – equipped with 10 BMD IFVs – in a matter of hours after receiving notification.[511] Each battalion that participated conducted airborne insertions with approximately 400 personnel and 10 combat vehicles, requiring 10 IL-76 transport aircraft with Su-35 escorts per battalion-level insertion.[512] The 106th Guards, 98th Guards, and 76th Guards VDV Divs started operations on 18 September, five days after notification (and two more than advertised), although the 98th may have inserted on 17 September.[513]

Infantry, armor, and artillery units were transported to their training areas via rail.[514] The Russian MoD contracted 4,162 individual rail cars to support moving personnel and equipment from Russia into Belarus during 2017. While many observers consider this to apply specifically to *Zapad* 2017, a Russian commentator Pavel Kovalev assesses that 2,908 rail cars have already been used transporting Russian forces and equipment into Belarus for earlier exercises this year. This leaves 1,254 rail cars available for *Zapad* 2017. A standard military train consists of 57 rail cars. Each rail car can hold up to two pieces of armored rolling stock, or one passenger/cargo car. Thus, a motorized rifle battalion with 550 personnel and 120 assorted vehicles requires 78 rail cars for transport. A tank battalion requires up to 110 rail cards. Additionally, the combat service support requirements to sustain one battalion also requires one train.[515] In effect, Russian

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[511] Kofman, "*Zapad* Watch—Summary of Day One."

[512] Kofman, "*Zapad* Watch—Summary of Day Three."

[513] Kofman, "*Zapad* Watch—Summary of Day Six."

[514] Kofman, "*Zapad* Watch—Summary of Day One."

[515] Russian Defense Policy (Blog), "'Training' for *Zapad*-2017," *Russian Defense Policy* (Blog), 13 August 2017, https://russiandefpolicy.blog/2017/08/13/training-for-*Zapad*-2017/.

Ground Forces require three standard military trains per battalion for rail transport. Sutyagin assesses that the 6th Sep Tank Bde requires 734 rail cars, and the 4th Tank Div requires 2180 rail cars, indicating Russia was able to deploy only a reinforced brigade to Belarus for the exercise.[516]

Once in Belarus, Russian logistics units established a 600 cubic meter fuel farm, from which they supplied fuel for the intense demand generated by seven days of tank, IFV, and APC maneuvers. MTO units employed older KET-L light recovery trucks and BTS-4 tracked armored recovery vehicles, but also employed upgraded BREM-K wheeled armored recovery vehicles, TPM recovery vehicles, MTO-UB-2 Ural maintenance workshops and BAKM 1040 BK cranes.[517] Bridging units made extensive use of pontoon bridging in an effort to prepare for the expected destruction of infrastructure in actual combat.[518]

(5) Force Protection in *Zapad* 2017

Force protection efforts were a main theme throughout *Zapad* 2017. In an A2AD role, Russian forces used 3K60 *Bal* CDCMs to neutralize aggressor surface threats. VKS crews trained for defense against cruise missile attacks.[519] According to Kofman, the VKS focused on "defending key civilian infrastructure" during the defense phase of *Zapad* 2017.[520] Air and missile threats were mitigated with S-300 and S-400 SAMs and 96K6 *Pantsir* S1 anti-aircraft systems.[521] Russian military EW brigades employed RB-109A *Bylina* automated EW detection and suppression systems.[522] Aggressor aviation operated without transponders, which allowed IADS ground control stations to practice

[516] Sutyagin, "*Zapad*-2017: Why do the Numbers Matter?"

[517] Kofman, "*Zapad* Watch—Summary of Day Three."

[518] Kofman, "*Zapad* Watch—Summary of Day Six."

[519] Myers, "S-400, New Cruise Missiles and More: How Russia's Military Is Back in a Big Way."

[520] Kofman, "*Zapad* Watch—Summary of Day Three."

[521] Kofman, "*Zapad* Watch—Summary of Day One;" Kofman, "*Zapad* Watch—Summary of Day Three;" Myers, "S-400, New Cruise Missiles and More: How Russia's Military Is Back in a Big Way."

[522] Kofman, "*Zapad* Watch—Summary of Day Six."

operating in a signature reduced and signature denied environment.[523] *Pantsir* crews engaged slow, low flying targets, typically flying 200km/h at 50m altitude.[524] The 76th Guards VDV Div conducted air defense with 9K35 *Strela* 10M tracked, short-range low-altitude SAMs; 9K338 *Igla-S* MANPADS; and ZU-23 towed AAA.[525] Russian ground forces leveraged their NBC troops to provide smoke for concealment of maneuver forces, as well as for protection while training to fight in a NBC-denied environment.[526] Combat engineers used UR-77 mine clearing vehicles, capable of firing a MCLC.[527] Military police forces, equipped with BTR-82A APCs, provided security and force protection throughout the exercise.[528]

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[523] Boulegue, "Five Things to Know About the *Zapad*-2017 Military Exercise

[524] Kofman, "*Zapad* Watch—Summary of Day Six."

[525] Kofman, "*Zapad* Watch—Summary of Day Three."

[526] Kofman, "*Zapad* Watch—Summary of Day Two." Kofman, "*Zapad* Watch—Summary of Day Six."

[527] Kofman, "*Zapad* Watch—Summary of Day Five."

[528] Kofman, "*Zapad* Watch—Summary of Day Three."

V. ANALYSIS AND IMPLICATIONS

The nature of security relations between the Baltic States and Russia has changed following the Ukraine crisis. When Estonia, Latvia, and Lithuania joined NATO, Russia was no longer viewed as the enemy. The nature of the alliance was that of promoting democratic ideals. The post-Ukraine climate, however, is characterized by the Baltic States' view that Russia is an existential threat to their independence and sovereignty.[529]

Russia's Crimea invasion was opportunistic and asymmetric, exploiting Ukraine's C2 and security structures, which had been weakened by civil disorder and influence operations, to secure its Black Sea Fleet anchorages.[530] The thoroughness and relative speed with which Russia carried out the Crimea operation suggests it was the product of detailed planning that was conducted over several years. Russian forces affected the complete capture and control of Crimea in less than 30 days, with relatively little armed violence. The Kremlin's slower, less committed response in the Donbas suggests Russia lacked the detailed plans in place, the resources, and the political will to achieve similar results there. Russia's floundering successes in the Donbas reveal a military that has asymmetric advantages over Ukraine, but has not yet achieved the readiness levels it desires.

The keys to Russia's success in Crimea were the speed and surprise of its forces. In the Donbas, the integrated use of air defenses, ISR, and fires have given Russia the advantage. Russia was aided by the ambivalence of the West in the face of what was clearly two illegitimate armed invasions of a sovereign state. Russia's actions in Ukraine show that military force is a policy tool that has not diminished in the age of information and hybrid warfare. Karber notes that "the struggle in Ukraine has involved the largest scale battles in Europe since the end of the Second World War."[531] Both Russia's unconventional invasion of Crimea, and conventional invasion of the Donbas

[529] Lo, *New World Disorder*, 190.

[530] McDermott, *Brothers Disunited*, 13.

[531] Karber, "'Lessons Learned' from the Russo-Ukrainian War," 23-4.

demonstrate that non-military means are insufficient for coercing a determined, armed force.

A. PERSONNEL

Regarding Russia's military means, New Look reforms aimed at a force structure of one million personnel, but as of the end of 2016, there were only 930,000 uniformed billets.[532] Galeotti contends that the military reached its staffing goal of 425,000 professional service members ahead of its 2017 deadline, with 427,000 in 2016. This is from total force he estimates to be 760,000, of which the Ground Forces comprise 230,000. He assesses that the Ground Forces have 130,000 professionals.[533] Sutyagin provides a less-optimistic assessment, estimating that the Ground Forces are 19 percent below their 243,500 personnel end-strength.[534] Herspring, with the bleakest estimate, assesses the total force to be 23 percent below end-strength.[535]

A Russian brigade's ability to generate either one or two BTGs is dependent upon its contract manning.[536] The new divisions in the SMD and WMD will require a 37,000 personnel end-strength increase.[537] However, the VDV and Spetsnaz, as Russia's Rapid Reaction Forces, are the priority for professional manning.[538] The imperative for all-professional manning in the Rapid Reaction Forces leaves conventional maneuver forces with a smaller percentage of professionals. This will be exaggerated as the MoD carries out plans to enlarge both the VDV and conventional divisions.[539]

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[532] Sutyagin, *Russia's New Ground Forces: Capabilities, Limitations, and Implications for International Security*, 26.

[533] Galeotti, *The Modern Russian Army* 1992–2016, 41.

[534] Sutyagin, *Russia's New Ground Forces: Capabilities, Limitations, and Implications for International Security*, 30.

[535] Herspring, "Military Reform," 337.

[536] Institute for Strategic Studies, *The Military Balance*, 184.

[537] Sutyagin, *Russia's New Ground Forces: Capabilities, Limitations, and Implications for International Security*, 30.

[538] Baev, *Ukraine: A Test for Russian Military Reforms*, 8.

[539] Ibid., 23.

The Kremlin has had difficulty in meeting its professionalization and NCO development goals.[540] It desires to have only professional NCOs supervising conscripts, reducing the need for officers at the lowest levels. Yet despite meeting its professionalization targets, it is not sufficiently filling NCO billets.[541] Where officers and NCOs do fill traditional Western roles, officers are reluctant to empower their NCOs, creating a duplication of effort.[542] Russia's dearth of NCOs is compounded by the inordinately long 42-month training program at the Ryazan NCO Academy. The combat arms are a priority for NCO staffing, leaving CSS units to struggle with insufficient leadership. CSS NCO billets are typically filled by graduates of the Volsk Military Institute of Rear Services, which offers a three and a half-month course.[543]

Russia's conscription pool is inadequate to support its requirements. Draft dodging is endemic; over a quarter of conscripts who do show for service are physically unfit, and a tenth are disqualified for criminality.[544] Many Russians evade serving for fear of the brutal hazing that is characteristic of Russian conscript service. Despite the introduction of military police and structures to maintain and enforce accountability, hazing and corruption remain problems.[545] The military needs to draft 600,000 conscripts a year, in two biannual cycles of 300,000. It often fails to meet half of that goal due to evasion and physical disqualification. Those who are found fit are generally deemed physically weak overall.[546] While Serdyukov instituted mandatory physical training, Shoigu has reversed course, opting to maximize conscripts' time spent on other training.[547]

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[540] Baev, *Ukraine: A Test for Russian Military Reforms*, 8.

[541] Galeotti, *The Modern Russian Army 1992–2016*, 42–43.

[542] Herspring, "Military Reform," 339.

[543] McDermott, *Russia's Strategic Mobility*, 56–57.

[544] Herspring, "Military Reform," 339.

[545] Ibid., 332, 339.

[546] Galeotti, *The Modern Russian Army 1992–2016*, 37–38.

[547] Herspring, "Military Reform," 338.

Drastically low post-Soviet birthrates led to a dearth of conscription-eligible population. The initial decline, coupled with generally poor health, has resulted in an insufficient manpower pool to support Russia's conscription goals. However, while the demographics of eligibility have temporarily corrected, the manpower shortage is forecasted to continue. Demographics are expected to peak at 2020, after which the effects of Russia's net population decline, compounded by intellectual capital flight, will limit Russia's ability to sustain a high-technology force.[548] In the face of net population decline, Russia is encouraging foreign-born Russian-speakers to enlist, and experimenting with all-women motorized rifle battalions.[549]

Putting an end to the conscription and mobilization-based force structure has left Russia with no true second-echelon reserve capability.[550] Difficulties in sustaining force generation in Ukraine highlight these manpower limitations.[551] Force providers gradually reduced the echelons with which they could support operations in Ukraine, from BTGs to company tactical groups (CTG).[552] Mark Galeotti, a well-known author of Russian military topics, remarks that, "most battalions have one or two companies made up essentially of professionals, but the others include a high proportion of conscripts."[553] As conscripts cannot legally be deployed into the Donbas, manpower shortages have led some commanders within Russia into coercing conscripts into professional service.[554] Despite a reestablished reserve system, the reserves are largely untested, responding poorly when they have been called up, and serving primarily to staff BTOs.[555]

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[548] Timothy Heleniak, "Population Trends," in *Putin's Russia*, ed. Stephen K. Wegren (Lanham, MD: Rowman & Littlefield, 2016), 162–163.

[549] Galeotti, *The Modern Russian Army 1992–2016*, 41; Sutyagin, *Russia's New Ground Forces: Capabilities, Limitations, and Implications for International Security*, 82.

[550] Baev, *Ukraine: A Test for Russian Military Reforms*, 22.

[551] Sutyagin, *Russia's New Ground Forces: Capabilities, Limitations, and Implications for International Security*, 8.

[552] Ibid., 40.

[553] Galeotti, *The Modern Russian Army 1992–2016*, 36.

[554] Sutyagin, *Russia's New Ground Forces: Capabilities, Limitations, and Implications for International Security*, 41.

[555] Giles, "Assessing Russia's Reorganized and Rearmed Military;" Galeotti, *The Modern Russian Army 1992–2016*, 40.

With the institution of the 12-month conscription term, the military's ability to train and employ conscripts in an increasingly technical force is severely limited.[556] Six months of the term are occupied by individual and unit training, providing commanders only a few months of service from their conscripts before demobilization.[557] Budget constraints and time limitations result in the average Russian solder receiving as little as one-eighth of the live-fire training time of Western forces.[558] Putin signed a decree authorizing soldiers to deploy after only four months, down from six, further weakening their competency.[559]

B. LOGISTICS

1. GPV

With the collapse of the Soviet Union and privatization of state-owned enterprises, military procurement turned westward. Domestic Russian industries were focusing on consumer goods, and the military began importing foreign defense technology.[560] Sanctions post-Crimea have denied the Russian defense industry of critical components as it transitions to a strategy of ISI. But developing ISI to substitute by 2020, or even 2025, for the nearly 1900 weapons systems (including the electronic and optical components in the *Armata* family) that are affected by EU, U.S., and Ukrainian sanctions is wishful[561] ISI is not particularly effective for Russia's defense industry, as the majority of firms must focus on dual-use technology to secure capital.[562] Despite ISI, high tech components from states that are sanctioning Russia still account for 10 to 20 percent of end item sub-

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[556] Galeotti, *The Modern Russian Army 1992–2016*, 20.

[557] Herspring, "Military Reform," 337.

[558] Galeotti, *The Modern Russian Army 1992–2016*, 42.

[559] Ibid., 38.

[560] Herspring, "Military Reform," 324.

[561] Sutyagin, *Russia's New Ground Forces: Capabilities, Limitations, and Implications for International Security*, 85–86.

[562] Jeffrey Mankoff and Olga Oliker, with Mathieu Boulegue, "Of the Russian Military Industrial Complex—Russian Roulette Episode #33," 30 June 2017, in *Russian Roulette*, produced by Center for Strategic and International Studies, podcast, https://soundcloud.com/csis-57169780/of-the-russian-military-1.

components.[563] This accounts for the majority of electronic components in military systems, to include GLONASS-K satellites.[564] Manufacturers do not have sufficient, qualified labor to meet demands.[565] Russia is trending back towards state-owned defense enterprises, but this is negatively effecting innovation and efficiency. The result, coupled with an economic downturn, is a weak production capability.[566]

Putin twice attempted military modernization prior to the GPV 2020, and twice failed.[567] The GPV 2020 appears to be another drastic failure in terms of achieving its stated goals.[568] As of 2017, only approximately $250 of the planned $630-$650 billion had been spent on the GPV.[569] Procurement has been fraught with difficulty. It is slow, inefficient, and rife with corruption, e.g., $134 million was lost to fraud, waste, and abuse in 2012. Contracts are non-competitive, and are often more about domestic politics, supporting industries that are too big to fail, than about rearmament with the best technology.[570] Andrey Frolov at the Moscow-based Centre for Analysis of Strategies and Technologies (CAST) notes that despite the Kremlin's efforts to counter corruption, it is hampering both the government and industry sides of the procurement sector.[571]

Economic realities threaten the military's ability to complete its reforms.[572] Russia's defense budget has steadily increased as a share of GDP under Shoigu.[573] Despite

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563 Frolov, "Russian Defense Procurement in 2015," *Moscow Defense Brief*, no. 4 (2016): 18.

564 Sutyagin, *Russia's New Ground Forces: Capabilities, Limitations, and Implications for International Security*, 88.

565 Herspring, "Military Reform," 337.

566 Ibid., 325.

567 Gorenburg, "Russia's State Armaments Program 2020: Is the Third Time the Charm for Military Modernization?" 1.

568 Gorenburg, "Russia's State Armaments Program 2020: Is the Third Time the Charm for Military Modernization?" 2–5; The Military Balance, 211–223.

569 McDermott "Russia's State Armaments Program to 2025 Promises High-Technology Procurement."

570 Galeotti, *The Modern Russian Army 1992–2016*, 34–35.

571 Frolov, "Russian Defense Procurement in 2015," 20.

572 Sutyagin, *Russia's New Ground Forces: Capabilities, Limitations, and Implications for International Security*, 82.

573 Baev, *Ukraine: A Test for Russian Military Reforms*, 8.

a rising GDP that portends economic growth, the continued devaluation of the ruble due to inflation has led to continued economic decline.[574] Russia has continued increasing its defense budget, but the devalued ruble has resulted in a trend of net decline in real defense spending.[575] Defense budget shortfalls will be exacerbated by competition within the power ministries, to include the *Rossgvardia*, which Putin will rely on more for domestic support as the proliferation of social media increases the average Russian's desire for transparency and accountability.[576] There is a rush to complete modernization before the money truly runs out, but a shrinking budget due to low oil prices, sanctions, and inflation continuously results in shifting GPV implementation benchmarks to the right.[577]

The military-industrial complex' continually delayed production and procurement cycles have resulted in supplying the force with outdated technology in insufficient quantities.[578] Russia still has no fifth-generation aircraft.[579] Its UAVs are all tactical platforms. There is still no armed platform similar to the U.S. Predator, still in operation but already a museum piece, or the current Reaper. Marginal PGM use in Syria and *Zapad* 2017 suggests that PGMs are either in short supply, too expensive to procure, or both. The recent focus on arctic troops and arctic VDV training has also shown that these forces are improperly resourced with clothing and other equipment, such as arctic-capable assault support and attack helicopters and snowmobiles, with forces often relying on commercial solutions and personally procured cold-weather clothing.[580]

As the Russian military modernizes its forces and equipment, it has not equipped units completely or in uniform fashion, and likely possesses no reserve capability to

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[574] Ibid., 27; Institute for Strategic Studies, *The Military Balance*, 29.

[575] Institute for Strategic Studies, *The Military Balance*, 29.

[576] Zwack, "Zapad 2017: Should We Fear Russia's Latest Military Dress Rehearsal?"

[577] Frolov, "Russian Defense Procurement in 2015," 18; Sutyagin, *Russia's New Ground Forces: Capabilities, Limitations, and Implications for International Security*, 83–85.

[578] "What Does Modern Mean?," *Russian Defence Policy* (blog), 18 November 2017, https://russiandefpolicy.blog/2017/11/18/what-does-modern-mean/.

[579] Giles, "Assessing Russia's Reorganized and Rearmed Military."

[580] Galeotti, *The Modern Russian Army 1992–2016*, 32; Sutyagin, *Russia's New Ground Forces: Capabilities, Limitations, and Implications for International Security*, 128.

replace battlefield losses of new technology. Despite seeking an integrated C4ISR network, the ground forces and VDV employ different systems.[581] Despite media hype about the *Ratnik* and *Strelets*, only the *Spetsnaz* are using its C2 components, while the base system is simply body armor. Despite the Kremlin's goals for the GPV, McDermot calls the modernization effort "sporadic and at best gradual."[582] This is especially true for EW equipment. High technology equipment and weapons systems are disproportionately vulnerable to damage and maintenance issues in the Russian Ground Forces. MTO personnel are unable to repair technologically advanced systems below the MTO brigade level, often needing to send damaged components to depot-level facilities, or back to the manufacturer, for repair.[583]

The GPV has a goal of fielding 2,300 T-14 *Armata* tanks by 2020, but the military still has no significant operational stock, and the manufacturer has a maximum production capability of 500 a year.[584] This is the platform that will supposedly allow for rotational tank crews in modular elements conducting around-the-clock operations, with no regard to manpower or maintenance deficiencies.[585] The 1st Guards TA and 20th Guards CAA are slated to be the first units that receive this new technology, highlighting another fundamental flaw in Russia's force generation and logistics nexus.[586] Not all like units share the same table of equipment. Not only do the VDV and Ground Forces have different vehicles, even if the *Armata*, *Bumerang*, and *Kurganets* are fielded, different units will get different compliments. For units that train on one system, their ability to rapidly deploy and fight competently relies upon falling in on a prepositioned stock that has exactly the right compliment of equipment. The fact that units deploying from the

[581] McDermott, *Russia's Strategic Mobility*, 75.

[582] Ibid., 36.

[583] McDermott, *Russia's Strategic Mobility*, 48.

[584] Galeotti, *The Modern Russian Army 1992–2016*, 57–58.

[585] Sutyagin, *Russia's New Ground Forces: Capabilities, Limitations, and Implications for International Security*, 47.

[586] Ibid., 100.

EMD to the Ukrainian border did not use prepositioned stocks suggests that non-standard equipment is a limiting factor in the prepositioning concept.[587]

C. FORCE GENERATION AND DEPLOYMENT

Russia's use of BTGs in regional conflicts does not indicate BTGs would operate independently in a fight against NATO forces. Grau notes that "A Russian maneuver brigade can attack independently, but will most often conduct maneuver combat as part of an army."[588] During *Zapad* 2017, the VDV operated at battalion level, and armored and motorized rifled units operated at brigade level. There were multiple brigades from different armies operating under the unified C2 of the WMD. That no one army was singularly represented with all of its forces begs the question of Russia's ability to deploy fully-staffed combined-arms armies capable of conducting round-the-clock operations. The Kremlin most likely cannot, as a result of operational overstretch and manpower shortfalls.

Russia's ability to redeploy units from other military districts theoretically enables it to support large-scale combat operations with nine combined arms armies. However, these forces would not be immediately available in one military district. FOI points out that Russia has never mobilized that many formations at once, that it is unlikely such a large force could be mobilized without signaling Russia's intentions to intelligence agencies, and that this would leave no strategic reserve aside from the minimum formations in each military district. Additionally, even Russia's formidable logistical assets would preclude such an operation occurring in a time-critical environment.[589]

The SMD deployed MTO units and advanced parties two months prior to its planned and rehearsed seven-day *Kavkaz*-2012 exercise, illustrating the obstacles Russia

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[587] Sutyagin, *Russia's New Ground Forces: Capabilities, Limitations, and Implications for International Security*, 40.

[588] Grau, *Russian Way of War*, 33.

[589] Persson, *Russian Military Capability*, 85.

faces in deploying and sustaining combat forces, even within its own territory.[590] While it is noteworthy that Russia deployed 40,000 forces to the Ukrainian border in seven days in 2014, social media analysis suggests that personnel from the 1st Guards TA's 6th Sep Tank Bde deployed for *Zapad* 2017 over one month prior to the beginning of the exercise.[591] Russian forces deploying over more than 100km will likely travel by rail.[592] Mechanized movement over any greater distance is likely to result in the type of maintenance issues experienced near the Roki Pass in Georgia, when Russian tanks broke down at key choke points. With an imperative for rail travel, Russia is limited in projecting considerable power into Europe to air lift, as Russian railcars only work on Russian 1.520 m broad-gauge rails, not on standard European or Chinese 1.435m rails. Russian broad-gauge rails are the standard in the former Soviet Republics (including the Baltic States), as well as in Finland.[593] Anecdotally, it is claimed that rail transportation is nearly three times more expensive than aviation transport.[594]

In a contingency, the Kremlin can transport Rapid Reaction Forces, or BTGs without equipment through the VTA. The VTA is comprised of the 12th Transport Air Division, which commands 5 regiments, employing a total of 6 An-124, 5 An-22, and 82 Il-76 transport and cargo aircraft. One VTA sortie can lift 5 motorized rifle brigades, transporting 25,200 to 26,800 passengers without their vehicles or heavy equipment.[595] The VTA regiments are geographically positioned to support VDV operations. If the aircraft were aggregated, the VTA could transport an entire VDV division in three sorties.[596] In a contingency, VDV and *Spetsnaz* would be the priority for VTA lift,

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590 Nika Aleksejava, "#Zapad Watch: Russia Mobilizes," Digital Foresics Research Lab, 23 August 2017, https://medium.com/dfrlab/zapadwatch-russia-mobilizes-fcc9b7861f6d; McDermott, McDermott, *Russia's Strategic Mobility*, 47.

591 Galeotti, *The Modern Russian Army 1992–2016*, 27.

592 James A. Thompson, *An Unfavorable Situation: NATO and the Conventional Balance* (Santa Monica, CA: RAND, 1988), 16.

593 "Railways," Central Intelligence Agency World Factbook, 21 November 2017, https://www.cia.gov/library/publications/the-world-factbook/fields/2121.html.

594 McDermott, *Russia's Strategic Mobility*, 60.

595 Sutyagin, *Russia's New Ground Forces: Capabilities, Limitations, and Implications for International Security*, 20.

596 Galeotti, *The Modern Russian Army 1992–2016*, 50.

however, permanent readiness BTGs are also able to deploy rapidly. Sutyagin assesses Russia is able to field 47,000 personnel in BTGs for rapid deployment. If these BTGs were to serve as fly-in echelons for prepositioned stocks, he assesses, "Russia's Military Transport Aviation is in theory capable of moving 35–38 BTGrs (20,000–25,000 troops), with light weapons only, in one airlift to join pre-positioned equipment at BKhiRVTs near a combat zone."[597]

Different observers, through wargames and analysis, have come up with divergent theories on how many BTGs Russia could field for an incursion into the Baltic States. In 2013, the Swedish Defense Research Agency (FOI) estimated that one CAA with four brigades and one VDV brigade could prepare in one week, and carry out combat operations without reinforcement for one month, in one direction.[598] The RAND study that formed the basis of opinion for NATO's response to the perceived Russian threat claimed the WMD could field 22 battalions. RAND's methodology is somewhat unclear, claiming at one point to use 27 Russian battalions and a week of mobilization, after which (the wargame concluded) it would take 36 to 60 hours to reach at least one Baltic-State capital, while simultaneously claiming to use 25 battalions, some of which are stationed in Kaliningrad.[599] It claimed to use four tank, five mechanized, five motorized, eight VDV, and three Marine battalions in its calculations.[600]

The FOI assesses Russia's personnel readiness to be 90 percent of nominally available forces and estimates the WMD's nominally available number of maneuver units at two divisions (with two maneuver regiments each) and nine brigades.[601] This could provide for 13 to 26 BTGs. When addressing the combat capability of Russia, FOI makes the assumption that each military district will retain at least one CAA with associated

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[597] Sutyagin, *Russia's New Ground Forces: Capabilities, Limitations, and Implications for International Security*, 23.

[598] Johan Norberg, "Russian Military Capabilities" Podcast, Kennan Institute, Woodrow Wilson International Center For Scholars, 10 Nov 2015, https://www.wilsoncenter.org/event/russian-military-capabilities.

[599] Shlapak "Reinforcing Deterrence on NATO's Eastern Flank," 4.

[600] Ibid., 5.

[601] Persson, *Russian Military Capability*, 29.

aviation as a reserve if deploying for combat. Additionally, FOI posits that the 11th AC (and associated Marines) is not deployable from its current basing in Kaliningrad.[602] Within the WMD, operationalized as OSK-W, FOI assesses that a tank army of five brigades, and CAA of four brigades with associated fire support would be immediately available for combat, retaining one combined-arms army of three brigades in reserve. FOI assesses that *Rossgvardia* forces are not available for deployment.[603] The FOI assesses that OSK-W could prosecute a multi-front campaign due to its large size and ability to field two major formations simultaneously.[604]

Russia is building its military capability in the WMD, but this build-up is focused on supporting RBS in Ukraine and defending Crimea.[605] Russia's conventional forces are not focused on the Baltic States. Sutyagin argues that threatening the Baltic States is really about pressuring Ukraine.[606] Lavrov notes that, "the deployment and reinforcement of military infrastructure along the border with Ukraine will draw all the resources available to the Western Military District for the next several years…[regarding the Baltic States] Russia has been more active … in the Arctic than in the Baltic."[607]

Despite the Western fascination with hybrid warfare, Russia security expert Keir Giles points out that according to Russia's national security documents (including the GPV), strategic deterrence and "the importance of high-intensity warfare [remain] undiminished, and …will continue to play a fundamental role in securing state interests."[608] Russia's classified State Defense Plan for 2016—2020 reportedly prioritizes strategic nuclear forces.[609] Nuclear forces are the priority for GPV 2020. Despite the GPV's inadequate overall budget for modernizing the force, the strategic

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[602] Persson, *Russian Military Capability*, 69.

[603] Ibid., 71.

[604] Ibid., 80.

[605] Ibid., 94.

[606] Sutyagin, *Russia's New Ground Forces: Capabilities, Limitations, and Implications for International Security*, 89.

[607] Lavrov, "Russian Military Activity," 6.

[608] Giles, "Assessing Russia's Reorganized and Rearmed Military."

[609] Institute for Strategic Studies, *The Military Balance*, 183.

nuclear forces are the only programs that have been fully-funded per the budget. This trend is forecasted to continue in the 2018-2025 GPV.[610] Second to nuclear forces, the GPV prioritizes air defense modernization.[611] This is a fear-based policy. Russia's perception is based on the fear the U.S. missile defense system.[612] Russia's military doctrine is based on the perception that the West is waging undeclared war against Russia. In response, the Kremlin seeks to balance through asymmetry while building a modern force; it is not expansionist, as much as it is reactionary. Lithuanian President Dalia Grybauskaite remarked in the Wall Street Journal, that the "[Baltic States] are already in an unconventional cyberwar [with Russia]."[613] The Kremlin sees the West as at war with Russia, and in turn, it is waging an undeclared information war with the West, while carefully avoiding open armed conflict.

The 1st Guards TA and 20th Guards CAA were established in 2014 to balance NATO, however, their subordinate units have been used mainly in Ukraine.[614] The 20th Guards CAA is relocating to Voronezh to focus on operations in Ukraine.[615] The new division formations created in 2016, along the Ukrainian border, were generated through units relocated from other military districts and from north-eastern locations within the WMD. The permanent relocation of forces along the Ukrainian border in the WMD and SMD signifies Russia's current threat perception: Ukraine.[616] Although the Ground Forces are modernizing with the T-14 tank and T-15 IFV, and plan to procure 2,300 tanks between 2016 and 2020, that equipment is going to the 1st Guards TA and 20th Guards CAA, for placement along the border with Belarus and Ukraine. While the WMD has two

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[610] Baev, *Ukraine: A Test for Russian Military Reforms*, 11.

[611] Ibid., 20.

[612] Ibid., 13.

[613] Thomas Grove, Julian E. Barnes, and Drew Hinshaw, "Russia Targets Soldier Smartphones, Western Officials Say; Moscow Seeks Information on Operations and Troop Strength, According to Officials with NATO Countries," *Wall Street Journal*, 4 October 2017, http://search.proquest.com/docview/1946238853/?pq-origsite=primo.

[614] Sutyagin, *Russia's New Ground Forces: Capabilities, Limitations, and Implications for International Security*, 27–28, 95, 99.

[615] Institute for Strategic Studies, *The Military Balance*, 188.

[616] Sutyagin, *Russia's New Ground Forces: Capabilities, Limitations, and Implications for International Security*, 100.

Iskander-M brigades, they are focused on Russia's southwest border, while the missile regiment in Kaliningrad is armed with older *Tochka-U* missiles.[617] Despite rhetoric, the 6th CAA and 76th Guards VDV Div, not the 1st Guards TA, are aligned towards any potential incursion into the Baltic States.[618] Rearmament in the 6th CAA and Baltic area has focused on air defenses, such as the 9K332 *Tor*-M2 and 9K35 *Strela* 10M4 tracked, short-range low-altitude SAMs, and 9K333 *Verba* MANPADS.[619] Despite the West's anxiety over the *Zapad* exercises, the scenario is defensive. The WMD is characterized by large strategic air defenses focused on defending Moscow, because Russia realizes that NATO is not likely to carry out a ground operation to invade Russia; the NATO comparative advantage is in precision guided munitions and air power.

Baev theorizes that instead of intervening in the Baltic States, a more likely course of action for Russian forces building up in the WMD is to secure a land bridge from Russia, to Crimea, and on to Moldova.[620] More likely? Probably. Securing a land bridge to Crimea through a non-NATO state is quite different than seizing NATO territory en route to Kaliningrad. More plausible? Not likely. Russian forces are hampered by political restraints in Ukraine, where they must limit their operations to maintain a modicum of deniability.[621] The Ukrainian Army is more capable now than it was in 2014, when it achieved tactical successes against Russian and RBS forces. There were 3,500 to 6,500 forces actually in Ukraine during August 2014, along with 90,000 on the border, 40,000 to 50,000 of which were ground combat forces. That is up to 32 percent of Russia's total Ground Forces, and was quite unsustainable.[622] Baev is poignant to note that the Soviets deployed 500,000 forces to repress dissent in Czechoslovakia in 1968, and 600,000 forces to occupy the Baltic States during the

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[617] Kofman, "*Zapad* Watch—Summary of Day Three."

[618] Sutyagin, *Russia's New Ground Forces: Capabilities, Limitations, and Implications for International Security*, 95.

[619] Institute for Strategic Studies, *The Military Balance*, 190-195; Lavrov, "Russian Military Activity," 7.

[620] Baev, *Ukraine: A Test for Russian Military Reforms*, 26.

[621] Ibid., 25.

[622] Sutyagin, *Russia's New Ground Forces: Capabilities, Limitations, and Implications for International Security*, 33.

Second World War.[623] Russia's contemporary conventional ground forces are roughly half that size, and are comprised of approximately half conscripts. Manpower, morale, and equipment limit Russia's ability to achieve its goals through conventional power.[624]

For a Russia that views threats as proximal, regardless of capability and intent, it has invited a threat to its own doorstep through EFP.[625] The Kremlin is likely to move forward with policy decisions that assuage NATO and the EU by demonstrating an unwillingness to use the conventional side of hybrid tactics in the Baltic States. The Kremlin is likely to simply maintain the status quo there; Russia already has influence in the economies and local governments of the Baltic States, and military de-escalation will reduce the political will of NATO alliance members to continue rotational deployments through EFP.

As far as securing economic stability is the Kremlin's goal in the Baltic States, it seems like Russia has reached its terminus towards this end. The Kremlin has little rational interest in occupying the Baltic States, as Russia has sunk considerable cost into developing bypass energy and shipping transportation infrastructure to nullify the value of Estonia and Latvia's ports for Russia.[626] For Russia, the Baltic States are sliding towards irrelevance. The diaspora issue will gradually fade as an increasingly cosmopolitan youth replaces the older Soviet-era generations, creating less appetite for Moscow's intervention on their behalf. The memory of Soviet occupation, and Russia's claims of Nazi sympathizers within the Baltic States will remain a tension, but its value is little more than symbolic. Even business interests have been able to trump nationalistic fervor in the Baltic States when dealing with Russia.

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[623] Baev, *Ukraine: A Test for Russian Military Reforms*, 26–27.

[624] Sutyagin, *Russia's New Ground Forces: Capabilities, Limitations, and Implications for International Security*, 7.

[625] James Sherr, "Ukraine and the Black Sea Region: The Military Perspective," in *The Russian Military in Contemporary Perspective*, ed. Stephen Blank (Carlisle Barracks, Pa: U.S. Army War College Strategic Studies Institute, 2017), 3.

[626] Dave Majumdar, "This Is What a NATO vs. Russia War over the Baltics Would Look Like," *The National Interest*, 25 October 2017. http://nationalinterest.org/blog/the-buzz/what-nato-vs-russia-war-over-the-baltics-would-look-22885.

Russian policy towards the Baltic States post-Ukraine is likely to incorporate soft-power in lieu of military might. Despite tactical military victories in Ukraine, RBS, and the Kremlin in general, have failed to achieve their political goals. The conflict is an expensive stalemate, diverting resources that Russia could use for power-projection, or to develop its own economy. Furthermore, Russia's imbroglio in Ukraine has been a strategic failure through its diplomatic and economic consequences. The U.S. and EU-led embargo, falling oil prices, rising inflation, and a lack of investor confidence is eroding Russia's economy.[627] Nevertheless, Russia continues to pursue a hard line with NATO, and has engaged in nuclear posturing and saber rattling, moving missiles to Kaliningrad to increase its A2AD capability.[628] It is actively carrying out information operations against NATO's EFP. Russian EW forces are targeting EFP forces' mobile communications and social media accounts at all levels of command, using UAVs and portable telephone antennas to collect intelligence and conduct PSYOPS. They are also using UAVs to collect information on the strength and disposition of EFP forces.[629]

For their part, if the Baltic States want to prevent stagnating into irrelevance, they must engage with the West to secure sustainable infrastructure investment. The Baltic States' economies have a comparative advantage in the labor market that will be lucrative for EU investment. Only when the Baltic States can turn away from Russian energy will they have true independence, which is paramount to assuaging their security fears. It appears imperative for NATO and the EU that bolstering deterrence in the Baltic States means empowering them through integrative EU investment in energy security infrastructure.

While there appears to be little rational interest for the Kremlin in invading the Baltic States, it remains a possibility due to miscalculation, which would likely concern

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[627] Lo, *New World Disorder*, 56.

[628] Iwona Wisniewska, Maria Domanska, Jan Strzelecki, et al., "Kaliningrad Oblast 2016: The Society, Economy, and Army," OSW (Mark Kary Centre for Eastern Studies in Warsaw), December 2016, https://www.osw.waw.pl/en/publikacje/raport-osw/2016-12-23/kaliningrad-oblast-2016-society-economy-and-army.

[629] Grove, "Russia Targets Soldier Smartphones, Western Officials Say; Moscow Seeks Information on Operations and Troop Strength, According to Officials with NATO Countries."

either a mishap during exercises or routine maneuvers, or due to necessity in conjunction with an operation against the U.S. missile defense complex in Poland, which is expected to enter initial operating capacity (IOC) in 2018. With the 1st Guards TA and 20th Guards CAA focused on Ukraine, the 6th CAA likely to remain on-hand in the WMD as a reserve, and the 11th AC left defending Kaliningrad's A2AD, Russia's only realistic option for achieving surprise while initiating a conventional operation in the Baltic States is to deploy elements of the 6th CAA and 1st TAA. This would likely occur in tandem with airborne and air assault operations, likely from elements of the 76th Guards and 98th Guards VDV Divs. This course of action could include the WMD's separate, subordinate BTGs, allowing for a total of up to 2 reconnaissance, 9 mechanized infantry-heavy, 7 armor-heavy, and 10 VDV BTGs under the command of OSK-W and the VDV. Sutyagin theorizes that if Russia were to invade the Baltic States, it would be precipitated by either the 11th AC establishing a separate reconnaissance brigade, or the newly forming 237th Rgt (to be upgraded to a brigade) deploying to Kaliningrad as a detached, separate brigade. This would allow Russia to project diversionary reconnaissance (direct action) forces behind NATO front lines, viewed as foundational to operational success.[630]

D. OPPORTUNITIES

The RAND study recommends bolstering the Baltic States' defensive capabilities with a seven-brigade tripwire force. NATO's EFP is a meager effort along those lines, offering no deterrence through denial. From 2017 throughout 2018, NATO is establishing its EFP through four rotational multi-national battalions, one in each of the three Baltic States and Poland. The force ratio is in Russia's favor. U.S. and NATO doctrine calls for a 3:1 force ratio for successful offensive combat, which would require up to 84 battalion-level combined-arms task forces to counterattack if Russia deployed its available combat power from the WMD. This would require a tremendous national effort from every NATO Member State, and that effort would have to be preemptively stationed along Russia's border. After one week, Russia would be able to mobilize its remaining military district's forces, further upping the force ratio required from NATO.

[630] Sutyagin, *Russia's New Ground Forces: Capabilities, Limitations, and Implications for International Security*, 54; 93–94.

The Baltic States have no organic armor assets. Estonia has two infantry and three light infantry battalions; however, professional active-duty forces account for only one mechanized infantry battalion equipped with 12 CV9035NL IFVs, 137 XA-180 IFVs and 66 artillery tubes.[631] Latvia has two light infantry battalions, equipped with 40 Spartan CVR-T APCs.[632] Lithuania has two mechanized infantry battalions, two motorized infantry battalions, and one artillery battalion on active duty. Lithuania's maneuver forces are equipped with 200 M113 APCs and 54 105mm howitzers.[633] Additionally, the U.S. Army deployed its first armored brigade to Poland in January 2017 as part of Operation Atlantic Resolve—the U.S. mission to reassure NATO and counter Russian aggression. The current U.S. brigade in Poland is the 1st Infantry Div's 2nd Brigade Combat Team (2 BCT). It has approximately 3,300 soldiers, and is equipped with 87 Abrams tanks, 18 self-propelled artillery pieces, and 138 Bradley infantry fighting and fire support vehicles.[634]

In the event of Russian aggression, Kaliningrad's formidable A2AD assets make it unlikely that NATO would flow forces into the Baltic States to reinforce those forces already there. The NATO forces in place would likely be defeated through attrition or capture, after which the Kremlin would begin negotiating for a beneficial outcome. The loss of NATO forces in direct combat with Russian forces, however, would change the calculus of Russian revisionist border adventures. NATO did not intervene in Georgia, or in Ukraine, because there was no imperative. NATO would be compelled to punish Russian aggression in a Baltic scenario, and NATO's reaction would not be as geographically limited as Russia's advance. The deterrence value of EFP is as a disposable force that would provide impetus for an armed NATO response. It is an armed

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631 "Jane's World Armies: Estonia–Army," Jane's, 20 March 2017, http://janes.ihs.com.libproxy.nps.edu/Janes/Display/jwara151-jwar.

632 "Jane's World Armies: Latvia–Army," Jane's, 14 February 2017, http://janes.ihs.com.libproxy.nps.edu/Janes/Display/jwara186-jwar.

633 "Jane's World Armies: Lithuania–Army," Jane's, 20 March 2017, http://janes.ihs.com.libproxy.nps.edu/Janes/Display/jwara191-jwar; Shlapak, "Reinforcing Deterrence," 4.

634 "European Reassurance Initiative (ERI) Fact Sheet," United States European Command, 5 January 2017, http://www.eucom.mil/doc/35544/eri-fact-sheet; "Fact Sheet: Atlantic Resolve," U.S. Army Europe, 22 November 2017; http://www.eur.army.mil/organization/factsheets/Factsheet_AtlanticResolve.pdf.

response that Belarus and the rest of the CSTO are unlikely to invite, and Russia unlikely to provoke, while EFP's multinational contingent binds the alliance across Europe and the Atlantic.

If such a scenario were to occur, Russian training and operations demonstrate asymmetries that could be exploited by NATO forces. Russian planning and conduct of maneuver warfare is predicated on scientific correlation of forces, and offers little room for ingenuity. Once operational-level commanders issue an order, it translates into a plan. There is no decentralized execution based on fulfilling an overarching commander's intent, but rather, commitment to the plan.

U.S. Army Captain Nicolas Fiore's research suggests Russian BTGs suffer from exploitable vulnerabilities. Fiore notes that BTGs in Ukraine did not have persistent, wide-area ISR capabilities, limiting their ability to focus ISR and EW, and relegating commanders to focusing C2 on narrow objectives, while degrading their overall battlespace awareness. He observes that the BTG structure's disproportionately high complement of brigade-level fire support assets leaves it vulnerable to either the rear, flanks, or both. It can neither adequately defend its entire position against fire, movement, and maneuver, nor can it properly mass to maximize efficiency of fire support. While Fiore's point regarding security is valid, Russian forces do prefer mass. However, Russian forces prefer to mass their artillery against point targets, using infantry and armored maneuver only after direct and indirect fires enable a breakthrough. Fiore also cites force regeneration issues with Russian BTGs that suffered casualties in Ukraine.[635] While this may be attributed to the lack of second echelon forces following the New Look reforms, it could also speak to general manpower shortages due to recruitment failures, inadequate reserve mobilization system, or prohibitions on deploying conscripts into combat abroad. Regardless, Russian fly-in echelons, transitioning into the Ukrainian theater from other military districts did not use prepositioned stocks, and suffered from a lack of organic engineering capability for river

[635] CPT Nicolas J. Fiore, "Defeating the Russian Battalion Tactical Group," *Armor* 128, no. 2 (Spring 2017), 9–11.

crossing and defensive preparation, suggesting second echelon reinforcements are more vulnerable to attack in the period immediately following their arrival in theater.[636]

Observers note that the increasing number of operations and exercises conducted both Russia and NATO is placing these forces in greater proximity to each other, increasing the risk for accidents or miscalculations that could lead to unintended conflict.[637] Russia's increased air presence in in the Baltic has been met by an increase in the numbers of aircraft supporting NATO's Baltic Air Policing mission.[638] NATO must maintain communication with Russia, from the tactical to strategic levels, to deescalate quickly any such tensions.

[636] Sutyagin, *Russia's New Ground Forces: Capabilities, Limitations, and Implications for International Security*, 70.

[637] Zwack, "Zapad 2017: Should We Fear Russia's Latest Military Dress Rehearsal?"

[638] Baev, *Ukraine: A Test for Russian Military Reforms*, 19.

VI. CONCLUSION

Open-source assessments of Russia's military capability, regardless of methodology or the specific number of BTGs fielded, all point to the same general conclusion: Russia has local superiority through an overwhelming capability in manpower and combined-arms forces. Russia can deploy an overwhelming force without warning, and can follow up with reinforcements to sustain momentum or reinforce its position. Despite reforms, economic and demographic decline, as well as operational commitments would limit the Kremlin's ability to sustain such an operation indefinitely, especially if required to commit to a multi-front defense.

These capabilities seem to portray a bleak military situation for the Baltic States and NATO, especially considering Russia's A2AD and nuclear capabilities. Despite Russia's comparative advantage in a Baltic-States scenario, Russia has not yet demonstrated the will to embark on any such action. While Russian forces train for such a scenario in their strategic exercises, this does not communicate intent; all militaries train to carry out their functions. What is more relevant than wargames is that Russia's military intervention against non-NATO forces in Ukraine have not achieved any political settlement after three years of protracted conflict. Because the Russian military faces increasing fiscal constraints and growing mission creep against non-NATO forces in Ukraine and Syria, it is not in Russia's interest to engage in a third conflict against a committed alliance. NATO's EFP, although insufficient for defending the Baltic States, is sufficient for deterring any conventional Russian force from entering the Baltic States, regardless of size.

As security of the regime is the Kremlin's primary goal, a military adventure in the Baltic States presents a losing proposition. Russia's actions in Ukraine have led to a stalemate that is slowly whittling down their economy, already suffering from the drop in global oil prices and soon to be followed by a net drop in global oil demand. Fears of Russian revisionism in the Baltic States have led to NATO placing more troops in the region. NATO's commitment to reinforcing deterrence in the Baltic States stands in stark contrast with Georgia and Ukraine. Although it has aggravated the Kremlin and drawn

sharp critique, the West has demonstrated through EFP its resolve to uphold the alliance.[639] As Russia is not likely to use conventional force against NATO, NATO's resolve and deterrence will be further enhanced if it can come to a consensus on what constitutes, and how to respond to attacks in the cyber domain and electromagnetic spectrum.

[639] Lo, *Russia and the New World Disorder*, 226.

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