

## A Strategy for Deterring Russia

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The 2014 Russian invasion and annexation of Crimea represent a turning point in European history. As President Toomas Ilves of Estonia has observed, “Everything that has happened since 1989 has been predicated on the fundamental assumption that you don’t change borders by force, and that’s now out the window.”<sup>1</sup> After Crimea, the Kremlin followed with military operations in Eastern Ukraine and military pressure against NATO states and neutrals. In Syria, it made war outside of the former Soviet Union for reasons that have little to do with fighting terrorism. According to then-NATO Supreme Commander General Philip Breedlove, “Many former-Soviet bloc and Eastern and Central European states have long been concerned about Russia’s intentions in Europe and they consider the Ukraine crisis the latest validation of their concerns.”<sup>2</sup>

Roger McDermott, one of Britain’s foremost experts on Russia, noted that Russia’s December 2015 National Security Strategy “marks the culmination of a long process in deteriorating relations between Moscow and Washington and in how the Russian security elite perceives the North Atlantic Treaty Organization (NATO).”<sup>3</sup> In June 2016, Ambassador Michael McFaul, the architect of the Obama administration’s “reset” policy, declared that relations between the United States and Russia are “worse than at any time since the Cold War.”<sup>4</sup> In March 2016, Igor Ivanov, Russia’s Foreign Minister under Yeltsin and Putin and Secretary of the Russian National Security Council under Putin, stated, “The risk of confrontation with the use of nuclear weapons in Europe is higher than in the 1980s.”<sup>5</sup>

According to Secretary of Defense Ash Carter, “...we’re taking a strong and balanced approach to deter Russian aggression – we haven’t had to devote a significant portion of our defense investment to this possibility for a quarter-century, but now we do.”<sup>6</sup> Are we? In September 2014, General Philip Breedlove told General (ret.) Colin Powell the White House was not engaging on Russian aggression because it feared the U.S. would be “drug (sic) into a conflict” with Russia.<sup>7</sup>

A Russian attack against a NATO state should be suicidal in light of NATO’s enormous manpower, technical and economic superiority but it is not. During the Cold War, the Soviets faced a large forward deployment of NATO forces and the strategies of Massive Retaliation and subsequent Flexible Response, both of which envisioned NATO first use of nuclear weapons in

the case of a successful major Soviet invasion. Today, NATO states spend \$100 billion less on defense than they have pledged to do.<sup>8</sup> Russia faces only small NATO forces along its borders and no significant threat of nuclear escalation. In the face of Russia's repeated nuclear attack threats,<sup>9</sup> NATO merely complains about them,<sup>10</sup> and does nothing to enhance its nuclear deterrent.

If deterrence fails, NATO strategy would likely be dominated by the fear of nuclear escalation. NATO would probably fight back but not all NATO states would. NATO military strategy would probably impose on the military political constraints much like the Vietnam War. Indeed, U.S. Ambassador to NATO Douglas Lute, in an interview with distinguished Russian journalist Pavel Felgenhauer, said that the US and its allies would try to counter the Russian S-400 anti-access/area denial threat in Kaliningrad without crossing into Kaliningrad per se.<sup>11</sup> Thus, Putin apparently could define the battlefield. He would probably face little risk of a NATO counter attack against a vulnerable section of Russia's border. NATO probably wouldn't launch air attacks deep into Russian territory and, perhaps, even on Russian territory at all. Such constraints could result in a NATO defeat. Russia will fight to win.

Pavel Felgenhauer has characterized Western policy as "Swinging Between Deterrence and Appeasement." He further noted, "Appeasement of authoritarian regimes like Russia's routinely fails because it is interpreted as a manifestation of weakness, which solicits more aggressive actions to obtain even more concessions."<sup>12</sup> The lack of resolve on the part of key NATO players is illustrated by the German Foreign Minister's June 2016 characterization of a NATO war game reportedly aimed at deterring Russia as "warmongering."<sup>13</sup> While NATO's larger post-Ukraine exercises are useful, they do not appear to involve high intensity combat much less nuclear deterrence operations.

Twenty-five years of denial about the existence of a serious Russian threat coupled with Western nuclear pacifism have weakened deterrence and warfighting potential. The U.S. Navy has been cut by one-half and the U.S. Air Force cut more than that. The number of U.S. aircraft based in Europe is down 75%.<sup>14</sup> The average age of U.S. fighter aircraft is 27 years. The first permanent basing of a U.S. stealth fighter squadron in Europe will not take place until 2021.<sup>15</sup> U.S. ground forces in Europe were reduced from five divisions and a brigade to two light brigades, ill-suited to fight Russia's tank heavy forces. Operational readiness has become a disaster area. According to Senator John McCain, only two of the Army's 60 combat brigades

are at the highest level of readiness and less than 50% of the Air Force's squadrons are ready for full spectrum operations.<sup>16</sup> Marine Corps Hornet jets are only 32% flight worthy.<sup>17</sup> The Navy is cannibalizing parts for ship deployments and less than one-half of Navy fighter aircraft are mission capable.<sup>18</sup>

Forces most suitable for the deterrence of Russia have generally not been modernized and, in some cases, have been scrapped. U.S. military equipment is old and worn out by decades of constant combat. The number of heavy brigades has been significantly reduced. The average age of U.S. nuclear weapons is 27 years.<sup>19</sup> Russia is preparing to fight us and we are preparing to fight terrorists.

In 2015, General Frank Gorenc, U.S. Air Force Commander for Europe, said the anti-access/area denials threat "is *not* just a Pacific problem...It's as significant in Europe as it is anywhere else on the planet."<sup>20</sup> (Emphasis in the original). Moreover, since 2000, Russia has openly proclaimed that it reserves the right to use nuclear weapons first in conventional war.<sup>21</sup> In 2009, Russian National Security Council Secretary Sergei Patrushev said this included regional and local wars and with pre-emptive nuclear strikes.<sup>22</sup> Russia exercises this capability. In January 2016, NATO's annual report stated, "Russia has conducted at least 18 large-scale snap exercises, some of which have involved more than 100,000 troops. These exercises include simulated nuclear attacks on NATO Allies (eg, ZAPAD) and on partners (eg, March 2013 simulated attacks on Sweden)..."<sup>23</sup>

Our response, according to NATO's Secretary General, Jens Stoltenberg, is "...implementing the biggest reinforcement of collective defence since the end of the Cold War."<sup>24</sup> True, but this effort is small compared to the demonstrated and growing Russian attack capability. A 2015 Rand study concluded that Russia could militarily overrun the three NATO Baltic States capitals in 36 to 60 hours.<sup>25</sup> Putin has claimed that he can capture five NATO capitals by force in two days.<sup>26</sup> In 2014, he said that Russia could alone "strangle" all of NATO.<sup>27</sup>

To date, the U.S. has deployed five Army and Marine companies on the territory of five Eastern European NATO allies and the European NATO response has only been the deployment of a small number of aircraft. There have been many short duration and small scale U.S. aircraft deployments to Europe but they are no substitute for deployed forces. The planned NATO response involves the deployment of one U.S. armored brigade, four "robust" NATO battalions

in Eastern Europe and the creation of a 5,000 man “spearhead” element of NATO’s rapid deployment force (which is being expanded), supposedly to be deployable within “as little as 48 hours.”<sup>28</sup>

One hundred thousand Russian troops with increasingly modernized arms and supported by battlefield nuclear weapons are hardly likely to be stopped, particularly in the Baltic States, by four “robust” NATO European battalions and a U.S. armored brigade. The NATO battalions are going to be deployed in four nations (Estonia, Latvia, Lithuania and Poland.)<sup>29</sup> Pavel Felgenhauer has written, “The battalions will apparently carry more political, than purely military weight...”<sup>30</sup> Former Under Secretary of State Nicholas Burns has characterized the NATO deployment as “modest.”<sup>31</sup> The U.S. armored brigade is going to be deployed in seven nations (Bulgaria, Estonia, Germany, Latvia, Lithuania, Poland, and Romania.). It will be broken up into company and battalion sized units.<sup>32</sup> Thus, there will apparently be no sizable troop concentration anywhere in Eastern Europe other than the local forces armed largely with Soviet-era weapons. The Ukraine conflict has demonstrated that modernized Russian forces have a substantial advantage over forces with Soviet-era weapons.

Russia’s armored forces are increasingly getting modernized T-90 tanks.<sup>33</sup> Russia is also developing the much improved Armata tank and a series of armored vehicles based upon it.<sup>34</sup> Russia says it will have a 152mm gun, the equivalent of a meter of steel armor and will be the best tank in the world.<sup>35</sup> Perhaps, but it is certainly a much better tank than the Soviet-era tanks that are deployed in Eastern Europe today. In stark contrast, NATO tanks have generally not been modernized.

The recently announced Russian force enhancements near NATO exceed NATO’s defensive efforts. Distinguished Russian journalist Alexander Golts has summed this up as follows: “Russia’s war machine is pivoting from the South to the West. It has now become known that in parallel with the formation of three new divisions--two in the Western and one in the Southern MD...Russia is also moving to the Western border two separate motorized rifle brigades from the central parts of the country.”<sup>36</sup> Defense Minister General of the Army Sergei Shoigu has stated that the 11<sup>th</sup> Corps is being sent to Kaliningrad and 10,000 contract soldiers will be sent to the Western military district.<sup>37</sup> Even taking into account the typical Russian exaggeration, it apparently has done significantly more than NATO has.

According to Felgenhauer, “US ambassador to NATO Douglas Lute told this author on June 13, ‘In time of crisis, the battalions will be swiftly reinforced by allied and US troops.’ In 2017, Washington plans to add an additional combat brigade to the two already in Europe, deploy an air brigade, and permanently position the heavy equipment of another combat brigade.” He added that the “forward deployment of additional forces could begin ‘in peacetime’ and this could affect ‘the calculus of any potential aggressor’.”<sup>38</sup>

This is not clear. The announced U.S. deployment in Europe involves a rotational U.S. armored brigade to augment the Striker Brigade and Airborne brigade now deployed in Central Europe. The Obama administration has said it is prepositioning equipment in Europe but there has been no mention of deploying an airborne brigade or equipment for a full armored brigade. Whether we deploy in Europe one heavy and two light brigades or one heavy and three light brigades, we will be outnumbered and outgunned. The light brigades are not near the probable areas of Russian attack. Dr. Philip A. Karber and Joshua Thibeault, in an article on Russian “New Generation Warfare In the Ukraine” concluded, “Light infantry fighting vehicles, which prioritize mobility and firepower over survivability, are vulnerable to anti-tank weapons, medium-caliber (30 mm) automatic cannons mounted on other light armored vehicles, artillery submunitions and thermobaric warheads.”<sup>39</sup> The U.S. Striker brigade in Germany does not even have the survivability enhancements required for the Iraq insurgency and is currently armed with 50 caliber machine guns. What we need, as advocated in an Atlantic Council report by Ambassador R. Nicholas Burns (Ret.) and General James L. Jones, Jr., USMC (Ret.), is “heavy brigades on the Eastern flank to rebuild our capacity to defend NATO and deter Russia.”<sup>40</sup> Octavian Manea of the Rand Corporation writes, “We have to have the heavy component of NATO’s defensive ground force in the theatre before a crisis occurs. Specifically, the Alliance should deploy heavy brigade-sets to the Eastern flank of the Alliance in order to be prepared for the kinds of challenges that Russia could pose.”<sup>41</sup> This is not being done.

Dependence on rapid reinforcements before a conflict begins is risky. The now routine large Russian military exercises and snap drills blur the distinction between exercises and a real attack which may not be obvious until the fighting starts. Moreover, the rapid deployment force is likely to be composed of light forces, the least effective type against Russian tank heavy forces.

Lieutenant General Sir Adrian Bradshaw, Deputy Supreme Commander of NATO forces in Europe, has voiced concern about a Russian conventional attack on a weak NATO state backed

by the threat of escalation to deter a NATO response.<sup>42</sup> Indeed, since the beginning of Russian aggression in Ukraine, a main focus of Russian nuclear threats has been on deterring a NATO counter attack.<sup>43</sup> General Bradshaw has also stated that the NATO rapid deployment force must be armed with the same weapons Russia has, that is, tactical nuclear weapons.<sup>44</sup> The NATO rapid deployment force will not be supported by battlefield nuclear weapons since they do not now exist in NATO. According to a 2009 NATO information publication, "...NATO has radically reduced its reliance on nuclear forces.... Taking further advantage of the improved security environment, NATO has taken a number of steps to decrease the number and readiness levels of its dual-capable aircraft."<sup>45</sup>

The current and planned NATO deterrent situation is roughly equivalent to a Cold War posture in which a few divisions were deployed along the East German border and they had no battlefield nuclear weapons. Such a posture might have failed. Now NATO is leaving Eastern European NATO states vulnerable to a Russian ground offensive supported by tactical nuclear weapons if necessary. According to Gary Samore, then a senior Obama administration NSC official, Russia has retained 10 times as many tactical nuclear weapons as the U.S.<sup>46</sup> The disparity is more than numbers. Russian press reports indicate that Russian tactical nuclear forces include virtually every type of Cold War Soviet tactical nuclear weapon capability.<sup>47</sup> Russian tactical nuclear weapons reportedly include tactical nuclear artillery and missiles.<sup>48</sup> In April 2014, Academician Yevgeniy Avrorin, a former Director of the Sarov nuclear weapons laboratory (the All-Russian Scientific-Research Institute), in an interview published by the Sarov nuclear weapons laboratory, said the 152-mm nuclear artillery shell with "a kiloton yield" has been "broadly deployed" throughout the Russian Army.<sup>49</sup> NATO's arsenal includes only dual-capable aircraft carrying B-61 bombs.

Russian modernization is introducing new nuclear weapons types and capabilities which are precluded by U.S. nuclear weapons policy. A declassified August 2000 CIA report stated that there were "powerful advocates" for the development of very low-yield nuclear weapons in the Russian military and the Atomic Energy Ministry and the range of applications for subkiloton nuclear weapons "could include artillery, air-to-air missiles, ABM weapons, antisatellite weapons, or multiple rocket launchers against tanks or massed troops."<sup>50</sup> In 2009, the U.S. Strategic Commission report said Russia was developing "low-yield tactical nuclear weapons

including an earth penetrator.”<sup>51</sup> In 2014, a popular Moscow weekly (*Argumenti.ru*) declared, “The Russian tactical nuclear arsenal dominates Europe...”<sup>52</sup>

According to one NATO diplomat, “What worries us most in this strategy is the modernization of the Russian nuclear forces, the increase in the level of training of those forces and the possible combination between conventional actions and the use of nuclear forces, including possibly in the framework of a hybrid war.”<sup>53</sup> The difference in views about nuclear weapons utility between NATO and Russia is vast. In December 2012, the Director of National Intelligence’s National Intelligence Council observed, “Nuclear ambitions in the US and Russia over the last 20 years have evolved in opposite directions. Reducing the role of nuclear weapons in US security strategy is a US objective, while Russia is pursuing new concepts and capabilities for expanding the role of nuclear weapons in its security strategy.”<sup>54</sup>

Russia has practiced the first use of nuclear weapons in its theater war exercises against NATO and others since 1999 when simulated Russian nuclear first use was first announced.<sup>55</sup> In May 2014, Russia staged a major nuclear exercise presided over by Putin that involved the announced launch of several tactical nuclear capable missiles and bombardment rockets.<sup>56</sup>

In December 2009, then-Commander of the Strategic Missile Troops Lieutenant General Andrey Shvaychenko said, “In a conventional war, they [the nuclear ICBMs] ensure that the opponent is forced to cease hostilities, on advantageous conditions for Russia, by means of single or multiple preventive strikes against the aggressors’ most important facilities.”<sup>57</sup> In September 2014, General of the Army (Ret.) Yuri Baluyevskiy, former Chief of the General Staff and Deputy Secretary of the Russian National Security Council, said the “conditions for pre-emptive nuclear strikes...is contained in classified policy documents.”<sup>58</sup>

Russia characterizes the first use of nuclear weapons as “de-escalation” of a conflict. “De-escalation” was codified in the “Ivanov doctrine” which is contained in an October 2003 document entitled *Urgent Priorities of the Development of the Russian Federation Armed Forces*. This document elaborated upon Putin’s new Military Doctrine which he signed into law in 2000. It declared, “De-escalation of aggression is forcing the enemy to halt military action by a threat to deliver or by actual delivery of strikes of varying intensity with reliance on conventional and (or) nuclear weapons.”<sup>59</sup>

In June 2015, U.S. Deputy Secretary of Defense Robert Work and then-Vice Chairman of the Joint Chiefs of Staff Admiral James Winnefeld observed, “Russian military doctrine includes

what some have called an ‘escalate to de-escalate’ strategy—a strategy that purportedly seeks to deescalate a conventional conflict through coercive threats, including limited nuclear use,” a policy they categorized as “playing with fire.”<sup>60</sup> In March 2016, Robert Scher, Assistant Secretary of Defense for Strategy, Plans and Capabilities, said, “Russia’s purported doctrine of nuclear escalation to deescalate a conventional conflict amounts to a reckless gamble for which the odds are incalculable and the outcome could prove catastrophic.”<sup>61</sup>

Russia demonstrated impressive long-range conventional cruise missile strike capability in the Syrian conflict. In December 2015, President Putin revealed that the Kalibr and KH-101 cruise missiles used in these attacks “can be equipped either with conventional or special nuclear warheads.”<sup>62</sup> Russia does not care much about limiting collateral damage and will use precision conventional weapons primarily for enhanced military effect. The December 2014 version of Russia’s military doctrine states, “The use of precision weapons shall be considered within the framework of the Russian Federation’s fulfillment of forceful measures of strategic deterrence.”<sup>63</sup> In May 2014, Russia’s Defense Minister Sergei Shoigu said, “...we are planning to quadruple by 2021 the number of carriers of high-accuracy weaponry.”<sup>64</sup>

Anti-access/area denial capability depends significantly upon air and missile defenses. Lt. General Herbert R. McMaster, Jr. recently said, “Russia has established air supremacy over Ukraine from the ground.”<sup>65</sup> This was achieved with the least capable of Russia’s modern air defenses. Today, Russia is building a comprehensive “aerospace defense” system designed to defend against all types of airborne and missile attack. “Aerospace defense” is a term used to conceal the fact that Russia was doing exactly what it was attacking the U.S. for doing on missile defense, only on a much larger scale. The program is aimed at defending against the U.S. and NATO. It has the potential to degrade both the U.S. nuclear deterrent and the ability of NATO to defend the weaker treaty members. According to General Frank Gorenc, the U.S. air advantage in Europe “is shrinking” and “the more alarming thing is their [Russia’s] ability to create anti-access/area denied [zones] that are *very* well defended’ by batteries of ground-based anti-aircraft missiles.”<sup>66</sup> (Emphasis in the original.)

In 2012, then-Lieutenant General Oleg Ostapenko, then-Aerospace Defense Troops commander, listed one of main functions of the Aerospace Defense forces as: “Destroying ICBM and SLBM warheads and destroying or functionally suppressing enemy military spacecraft.”<sup>67</sup> In 2011, then-Russian Chief of the General Staff Nikolai Makarov announced that Russia was

building an “impenetrable” missile defense.<sup>68</sup> Russian defenses are not going to be impenetrable but they have the potential to erode our deterrent capability and seriously impact our ability to use airpower to defend against a Russian attack.

Russia has two systems to intercept ICBMs and SLBMs – the Moscow ABM system and the S-500 multi-role surface-to-air missile system. The Moscow ABM is being upgraded into the A-235 configuration.<sup>69</sup> There are actually more ABM interceptors deployed at Moscow alone than the number the U.S. plans to deploy. The main defense against ICBMs and SLBMs (the Russians tend to call both ICBMs) will be the multirole S-500. Russian generals state that it is capable of intercepting ICBMs as well as medium-range missiles, airborne threats including aircraft, cruise missiles and hypersonic missiles and that the system is capable of intercepting missiles in near space.<sup>70</sup> It will obviously be more capable than the existing Russian S-400 surface-to-air missile against stealth aircraft. The announced S-500 range is 600-km.<sup>71</sup> Since the earth is round, the S-500 could intercept non-stealth aircraft only at high altitude at this range unless there is some type of cooperative engagement capability which would expand its capabilities. Because of the limited range of U.S. conventional air-launched cruise missiles, the S-500 has the potential to intercept the aircraft that carry them before the missiles can be launched. Russia has said that delivery of the S-500 system to the troops will begin soon. The announced Russian S-500 program involves the deployment of 10 battalions by 2020.<sup>72</sup> They will not likely make that date but their deployment is not likely to end at 10 battalions.

U.S. land-based missile defenses, other than the Patriot, have no self-defense capability against aerodynamic threats. This apparently is a direct result of designing against rogue state threats rather than against Russia.

Russia has plans for missile defense beyond the S-500. In September 2011, Vladimir Kozin, a Deputy Director of the Russian Foreign Ministry’s Information and Press department, said that Russia was planning to develop its own sea-based missile defense system.<sup>73</sup> The former chief designer of Almaz-Antey Corporation, which develops Russia’s air and missile defense systems, Igor Ashurbeili, has stated that the successor to the S-500 missile defense now under development will be air based.<sup>74</sup>

The Russian S-400, with an announced intercept range of up to 400-km, is currently operational.<sup>75</sup> Pavel Felgenhauer has pointed out, “The Baltic Sea Fleet is based in Kaliningrad, and Russia has deployed long-range capabilities in the enclave, including the newest S-400 air

defense systems, thus extending its ‘anti-access/area denial’ (A2/AD) capabilities far out of Kaliningrad.”<sup>76</sup> The S-400 has also been deployed near St. Petersburg and also extends anti-access/area denial beyond Russian territory.<sup>77</sup> The Russians say the S-400 is capable of intercepting ballistic missiles with a speed of 4.8-km per second (or a range of about 3,000-km), bombers, and cruise missiles. The announced S-400 program involves the deployment of 56 battalions.<sup>78</sup> The Russians are also deploying a new mobile SAM system called the S-300V4. Russia has just announced that it has a new 400-km range interceptor.<sup>79</sup> Almaz-Antey’s Chief Designer Pavel Sozinov told *TASS* this “means that Airborne early warning and control aircraft, including AWACS (Airborne Warning and Control System), will now be unable to enter the 400-kilometer zone without repercussions.”<sup>80</sup> Russia is also developing the medium-range mobile S-350E Vitaz surface-to-air missile system.<sup>81</sup>

Russia is in the process of improving its anti-access/area denial capabilities by the deployment of a number of types of advanced 4.5 generation fighters with improved intercept and strike capability. In 2018, Russia will begin to deploy what they call a 5<sup>th</sup> generation fighter, the Pak FA or Pak T-50.<sup>82</sup> In reality, it is apparently not a true 5<sup>th</sup> generation fighter but appears to outclass any of the Western 4.5 generation fighters.<sup>83</sup>

The capability of the new Russian fighters in an anti-access/area denial role is aided by the lack of advanced air defenses in much of Europe and the dramatic cuts in U.S. air defense programs. This includes the truncation of the F-22 program at 187 aircraft, the termination of the AWACs replacement program, the decision not to produce MEADS, the cut in the DG-1000 program to three ships and the elimination of most of its air defense capability, the complete termination of the CG-X air and missile defense cruiser program and the limitation of dual frequency radar deployment to aircraft carriers which assures very slow introduction.

Are we countering the capabilities of Russian advanced air and missile defenses? Deployment of 5<sup>th</sup> generation aircraft in Europe clearly has not been given high priority since the first U.S. F-35 squadron will not be available until 2021. Felgenhauer writes, “Ambassador Lute believes the US and its allies ‘are ready to counter these threats’ using electronic warfare and possibly long-range conventional strike assets, without the need to cross into Kaliningrad per se (Author’s interview, June 13).”<sup>84</sup> Yet, according to Major General Jeff Harrigian and Colonel Max Marosko, USAF, “Threat aircraft, air-to-air missiles (AAMs), electronic attack (EA), and electronic protection systems have advanced beyond the capabilities of US fourth generation

fighters.”<sup>85</sup> The U.S. has no electronic warfare aircraft deployed in Europe and there have been no announced temporary deployments. Without electronic warfare assets how can there be any realistic training against advanced defenses? Treating Kaliningrad as a sanctuary is very dangerous. Highly restrictive rules of engagement could preclude victory and might reduce the effectiveness of our nuclear deterrent.

Russian surface-to-air missiles reportedly have another anti-access/area denial capability. In July 2010, Pavel Felgenhauer wrote, “...Moscow plans to covertly quit the 1987 treaty on medium and short-range missiles” because the Russian S-300 and the S-400 air defense missiles, the new S-500 air and missile defense interceptor and the Moscow ABM interceptors are nuclear-armed and can function as “dual-use...conventional or nuclear medium- or shorter-range ballistic missiles.”<sup>86</sup> Felgenhauer also stated that surface-to-surface nuclear strike capability was demonstrated in the Vostok-2010 military exercise conducted in the Far East.<sup>87</sup> In April 2015, Felgenhauer reported that the range of the Russian S-300 system (the shortest range of the systems he listed) in a nuclear ground-attack role had a range of “up to 400 kilometers.”<sup>88</sup> If Felgenhauer is correct about these capabilities, at least two of the systems he mentioned (the Moscow ABM and the S-500) violate the INF Treaty.<sup>89</sup>

There is increasing evidence that Russian SAMs have ground-attack capability. The President of Belarus has publicly noted the ground-attack capability of his S-300s.<sup>90</sup> In 2016, *TASS* reported on that the S-400 “can also be used against ground objectives.”<sup>91</sup> This has significant implications. In 2011, *Red Star* said Russia has 700 nuclear warheads for the Moscow ABM system and its surface-to-air missiles.<sup>92</sup> If dual capable missiles can be launched at surface or naval targets without the use of the radar, the nature of the destruction of air defenses mission could change. Individual launchers may have to be targeted and they will have a very substantial self-defense capability.

Russian anti-access/area denial capability is being augmented by the development of a variety of advanced strike capabilities including strategic forces, the new multirole fighters, hypersonic missiles and a variety of short-, medium- and intermediate-range ground-launched missiles that either violate the INF Treaty or circumvent it. The Russian Navy is being modernized by relatively small but heavily armed warships and advanced submarines. The dual capable supersonic Kalibr ship-launched cruise missile is being widely deployed and *TASS* says Russia is going to deploy hypersonic missiles by 2019-2022.<sup>93</sup>

Russia is in the process of dramatically modernizing its strategic nuclear strike capability. A few systems are dual capable. Their announced programs include over 20 new or modernized strategic delivery systems, most of which are clearly new. The announced Russian strategic nuclear modernization program includes:<sup>94</sup>

- A new road-mobile and silo-based Topol-M Variant 2 (SS-27 Mod 1) ICBM.
- A new SS-27 Mod 2 derivative with a Multiple Independently-targetable Re-entry Vehicle (MIRV) payload that the Russians call the RS-24/Yars.
- Improved versions of the Soviet legacy SS-N-23 SLBM called the Sineva and the Liner with many more warheads.
- A new MIRVed (six warheads) Bulava-30 SLBM being deployed on two types of new Borey class submarines.
- A program to modernize the SS-19 ICBM with a hypersonic vehicle.
- A new stealthy long-range strategic nuclear cruise missile designated the KH-102.
- In December 2015, President Putin revealed that the long-range KH-101, which was supposed to be a conventional ALCM, was nuclear capable.
- Modernization of Blackjack (Tu-160) and Bear (Tu-95) heavy bombers.
- In 2015, Russian announced that it would build at least 50 more of an improved version of the Tu-160.
- Development and deployment of the new Sarmat heavy ICBM with a mammoth 10 tons of throw-weight (which will reportedly carry 10 heavy or 15 medium nuclear warheads) in 2018-2020.
- Development and deployment of a new rail-mobile ICBM in 2018-2020.
- Development and deployment of a new “ICBM” called the RS-26 Rubezh, in reality, an intermediate-range missile, by 2016 or 2017.
- Development of a “fifth generation” missile submarine carrying ballistic and cruise missiles.
- Development of a new stealthy heavy bomber which will carry cruise missiles and reportedly hypersonic missiles.
- Development of the “Maritime Multifunctional System Status-6,” a nuclear-armed, nuclear-powered, 10,000-km range, very fast, drone submarine capable of operating at a

depth of 1,000-meters which the Russian press says carries a 100-megaton bomb and possibly a cobalt bomb.

- Improved versions of the SS-27 Mod 2/RS-24 and the Bulava 30 SLBM.
- A new liquid fueled SLBM intended for the Husky 5<sup>th</sup> generation submarine.

These new and modernized systems carry everything from new precision low-yield and low-collateral damage warheads to nuclear weapons with ultra high yield.<sup>95</sup> The new Sarmat heavy ICBM will become Russia's main counterforce weapon. There are three Russian press reports that indicate that Russia has deployed precision low-yield nuclear weapons with yields between tens and 200 tons of TNT on their Bulava-30 and Sineva SLBMs.<sup>96</sup> The Russians have said that two of their new ICBMs will have conventional warhead options.<sup>97</sup> The new Russian nuclear capable bombers are also being given much improved conventional strike capability including very long-range cruise missiles. They face no air defense capability of any significance in the U.S. and only modest capability in NATO Europe.

Russian anti-access/area denial is being improved by the development of hypersonic missiles with a variety of basing modes.

Russian anti-access/area denial capability is being buttressed by systems that violate or circumvent the INF Treaty. In 2014, the Obama administration concluded Russia was violating the INF Treaty, calling this "a very serious matter."<sup>98</sup> It determined "that the Russian Federation was in violation of its obligations under the INF Treaty not to possess, produce, or flight-test a ground-launched cruise missile (GLCM) with a range capability of 500 km to 5,500 km, or to possess or produce launchers of such missiles."<sup>99</sup> This violation goes to the heart of the Treaty. According to a senior State Department official, "The Russian system is a state-of-the-art ground-launched cruise missile (GLCM) that Russia has tested at ranges capable of threatening most of [the] European continent."<sup>100</sup> Under Secretary of State Rose Gottemoeller recently said, "...this is not a technicality, a one-off event, or a case of mistaken identity, but a serious Russian violation of one of the most basic obligations under the INF Treaty."<sup>101</sup> Congressman Mac Thornberry (R-Texas), Chairman of the House Armed Services Committee, stated, "Russia's development of intermediate-range nuclear platforms is designed to hold our interests at risk and enable Putin's expansionist policies."<sup>102</sup>

In 2015, Undersecretary Gottemoeller said that testing of the prohibited Russian cruise missile began in 2008.<sup>103</sup> This is way too long for testing a new cruise missile. Thus, it seems

likely that this system has been covertly deployed and is a current anti-access/area denial threat to NATO Europe. There is no way to target covertly deployed systems. Moreover, the Russian R-500 cruise missile system, which is now operational, is reported to have a range between 1,000-km and 3,000-km in different versions.<sup>104</sup>

Russia is reviving the INF-range ballistic missile threat to Europe and Asia through the deployment of the RS-26 Rubezh, an IRBM masquerading as an ICBM.<sup>105</sup> According to state-run *Sputnik News*, it carries four 300-kt warheads.<sup>106</sup> It may not be able to fly to ICBM range with its normal payload. Indeed, according to *Rossiyskaya Gazeta*, a Russian Government daily newspaper, it has “a combat radius from 2,000 km.”<sup>107</sup>

Russia has now widely deployed the nuclear capable Iskander-M, a ballistic missile with an official range of 500-km but which some Russian press sources say has a range of 600-1,000-km.<sup>108</sup> Russia has also announced an improved version of the Iskander.<sup>109</sup> Recently, *TASS* reported that the “Iskander M is equipped with five types of aeroballistic missiles and one cruise missile.”<sup>110</sup>

The Russians have announced a program to create an “Oka” missile replacement.<sup>111</sup> The Oka or SS-23 was a missile eliminated under the INF Treaty.<sup>112</sup> In light of Russian nuclear doctrine, all of these missiles are likely to be dual capable. Thanks to U.S. compliance with the INF Treaty and other commitments made in the 1991-1992 Presidential Nuclear Initiatives there are no conventional or nuclear theater missiles in NATO Europe and Asia and NATO has no battlefield nuclear weapons.<sup>113</sup> Russia has an unprecedented advantage in systems that could be used for anti-access/area denial strikes.

To summarize, the threat we face involves a Russian conventional military advantage along its entire border except, perhaps China, and this disparity is apparently growing. Russia probably has more nuclear weapons than the rest of the world combined. (In 2009, *TASS* said Russia probably had 15,000-17,000 nuclear weapons.<sup>114</sup>). It has annexed territory by force and continues to support a war in Eastern Ukraine and threatens a number of weak NATO states with military aggression in the name of protecting Russian populations abroad.

NATO is depending on a rapid deployment force to be the main deterrent to Russian attack. In this context, the anti-access/area denial capabilities of Russia become very important. They may have the capability to prevent NATO’s rapid deployment force from being deployed. As former NATO Secretary General Anders Fogh Rasmussen recently stated, NATO must

permanently station “land, air, and maritime forces” in the Eastern European states threatened by Russia.<sup>115</sup>

How do we deter a Russian attack on NATO? This is not an easy question to answer and politics hamper dealing with the Russian threat. Our current defense budget is inadequate. The current pivot strategy can’t deter China in the long run and is contributing to the security crisis in Europe. Additionally, we are losing our technological lead.<sup>116</sup> We are operating as if the problem with Russia is short term. It is not; it is long term. We are operating as if arms control is the solution. The reality is that we do a lousy job in negotiating arms control agreements and Russian noncompliance is actually making the problem worse.<sup>117</sup> The politics of nuclear pacifism in the West are undercutting our nuclear deterrent and dramatically increasing nuclear weapons costs.

There is a critical need to reinforce NATO’s presence in Eastern Europe and to deter Russian nuclear weapons first use. This is vital because the failure of deterrence could end Western civilization. It is impossible to talk in detail about the changes that are necessary, but I believe it clear that we need to:

- Beef up military capability in Eastern Europe, moving at least an additional 5%-7% of total NATO ground and Air Force strength with appropriate naval support into Eastern Europe. These should be heavy ground forces and, to the maximum extent possible, stealth aircraft. We also need jamming aircraft in Europe.
- Beef up our nuclear deterrent capability. Obviously, we need to maintain an effective Triad. In particular, we must increase our ability to retaliate in-kind against Russian precision low-yield/low-collateral damage attacks. There is a critical need to deter Russian use of battlefield nuclear weapons. We should improve our capability against HDBTs. Much of this can be done at zero cost if we discard the ideological constraints that are, in part, causing the problem.
- Create viable alternatives to the current over dependence upon GPS guidance for conventional weapons and delivery systems. GPS denial could result in a catastrophic decline in our assumed conventional force capability.
- Upgrade our missile defense capability so we can intercept Russia missiles on more than a token basis. We need sufficient capability to deal effectively with theater and strategic strikes with precision low-yield nuclear and conventional strike missiles.

- Enhance the air defenses of our forces deployed in Europe, our naval forces and recreate air defense of the continental U.S.
- Refocus our armed forces to deal with high intensity conflict and develop the weapons necessary for it. This is a very big and expensive task.

Current declaratory policy minimizes deterrence and should be changed. Russia should be told that:

- If Russia invades a NATO state, Russian forces will be defeated and no area of Russia will be a sanctuary.
- If Russia uses nuclear weapons against a NATO state, there will be nuclear retaliation against Russia.

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