Reinforcing Deterrence on NATO's Eastern Flank

Wargaming the Defense of the Baltics

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Key findings

- Across multiple games using a wide range of expert participants playing both sides, the longest it has taken Russian forces to reach the outskirts of Tallinn and Riga is 60 hours.

- Such a rapid defeat would leave NATO with a limited number of options, all bad.

- Having a force of about seven brigades, including three heavy armored brigades—adequately supported by airpower, land-based fires, and other enablers on the ground and ready to fight at the onset of hostilities—might prevent such an outcome.

- While not sufficient for a sustained defense of the region or to restore NATO members' territorial integrity, such a posture would fundamentally change the strategic picture from Moscow.

- While this deterrent posture would not be inexpensive in absolute terms, it is not unaffordable, especially in comparison with the potential costs of failing to defend NATO's most exposed and vulnerable allies.

SUMMARY ■ Russia's recent aggression against Ukraine has disrupted nearly a generation of relative peace and stability between Moscow and its Western neighbors and raised concerns about its larger intentions. From the perspective of the North Atlantic Treaty Organization (NATO), the threat to the three Baltic Republics of Estonia, Latvia, and Lithuania—former Soviet republics, now member states that border Russian territory—may be the most problematic.

In a series of wargames conducted between summer 2014 and spring 2015, the RAND Corporation examined the shape and probable outcome of a near-term Russian invasion of the Baltic states. The games' findings are unambiguous: As currently postured, NATO cannot successfully defend the territory of its most exposed members. Across multiple games using a wide range of expert participants in and out of uniform playing both sides, the longest it has taken Russian forces to reach the outskirts of the Estonian and/or Latvian capitals of Tallinn and Riga, respectively, is 60 hours. Such a rapid defeat would leave NATO with a limited number of options, all bad: a bloody counteroffensive, fraught with escalatory risk, to liberate the Baltics; to escalate itself, as it threatened to do to avert defeat during the Cold War; or to concede at least temporary defeat, with uncertain but predictably disastrous consequences for the Alliance and, not incidentally, the people of the Baltics.

Fortunately, avoiding such a swift and catastrophic failure does not appear to require a Herculean effort. Further gaming indicates that a force of about seven brigades, including three

heavy armored brigades—adequately supported by airpower, land-based fires, and other enablers on the ground and ready to fight at the onset of hostilities—could suffice to prevent the rapid overrun of the Baltic states. While not sufficient to mount a sustained defense of the region or to achieve NATO's ultimate end state of restoring its members' territorial integrity, such a posture would fundamentally change the strategic picture as seen from Moscow. Instead of being able to confront NATO with a stunning coup de main that cornered it as described above, an attack on the Baltics would instead trigger a prolonged and serious war between Russia and a materially far wealthier and more powerful coalition, a war Moscow must fear it would be likely to lose.

Crafting this deterrent posture would not be inexpensive in absolute terms, with annual costs perhaps running on the order of $2.7 billion. That is not a small number, but seen in the context of an Alliance with an aggregate gross domestic product in excess of $35 trillion and combined yearly defense spending of more than $1 trillion, it hardly appears unaffordable, especially in comparison with the potential costs of failing to defend NATO's most exposed and vulnerable allies—that is, of potentially inviting a devastating war, rather than deterring it.

DEFENDING THE BALTIC REPUBLICS: A STRATEGIC CHALLENGE FOR NATO

Vladimir Putin has now attacked neighboring countries three times, with his second invasion of Ukraine still unfolding. His pursuit of greater Russian influence along Moscow's periphery has ended what was nearly a generation of post–Cold War peace and stability in Europe and revived legitimate fears of Moscow's intentions among its neighbors.

After eastern Ukraine, the next most likely targets for an attempted Russian coercion are the Baltic Republics of Estonia, Latvia, and Lithuania. Like Ukraine, all three spent many years as component republics of the Soviet Union, gaining independence only on its dissolution. The three are also contiguous to Russian territory. Also like Ukraine, Estonia and Latvia are home to sizable ethnic Russian populations that have been at best unevenly integrated into the two countries' postindependence political and social mainstreams and that give Russia a self-justification for meddling in Estonian and Latvian affairs.[1] This storyline is disturbingly familiar.

Unlike Ukraine, the Baltic states are members of NATO, which means that Russian aggression against them would trigger Article V of the North Atlantic Treaty—the collective defense provision according to which an attack against any signatory is considered to be an attack against all. This creates an obligation on the part of the United States and its alliance partners to be prepared to come to the assistance of the Baltic states, should Russia seek to actively and violently destabilize or out-and-out attack them.

In a September 2014 speech in the Estonian capital of Tallinn, President Barack Obama articulated and strongly affirmed that commitment:

> [W]e will defend our NATO Allies, and that means every Ally. . . . And we will defend the territorial integrity of every single Ally. . . . Because the defense of Tallinn and Riga and Vilnius is just as important as the defense of Berlin and Paris and London. . . . Article 5 is crystal clear: An attack on one is an attack on all. . . . We'll be here for Estonia. We will be here for Latvia. We will be here for Lithuania. You lost your independence once before. With NATO, you will never lose it again.[2]

Unfortunately, neither the United States nor its NATO allies are currently prepared to back up the President's forceful words.

MILITARY GEOGRAPHY FAVORS RUSSIA

During the Cold War, NATO positioned eight Allied corps along the border between West Germany and its Warsaw Pact neighbors to the east. More than 20 allied divisions were stationed to defend that frontier, with many more planned to flow in as reinforcements before and during any conflict (see Figure 1).

The borders that Estonia, Latvia, and Lithuania share with Russia and Belarus are roughly the same length as the one that separated West Germany from the Warsaw Pact. They are, however, defended only by the indigenous forces of the three Baltic states, which muster the rough equivalent of a light infantry brigade each. Since Russia's invasion of Crimea, other NATO countries, including the United States, have rotated forces through the Baltics, but these have typically been in battalion strength or smaller—hardly enough to defend the republics against a plausible Russian attack.

The distances in the theater also favor Russia. From the border to Tallinn along the main highways is about 200 km; depending on the route, the highway (versus crow-flight) distance to Riga is between about 210 and 275 km. From the Polish border to Riga, on the other hand, is about 325 km as the crow flies;

Figure 1. NATO's Old and New Front Lines

to Tallinn, almost 600 km. And to get anywhere from Poland, NATO forces would have to transit the "Kaliningrad corridor," a 110- to 150-km-wide stretch of territory between the Russian enclave and Belarus that could be subject to long-range artillery and flank attacks from both sides and would require a commitment of (scarce) NATO forces to secure.

The terrain in the theater is a mix, with large open areas interspersed with forested regions; lakes; and, in some places, sizeable wetlands. Off-road mobility in parts of all three Baltic countries could be difficult, especially for wheeled vehicles. There is, however, a fairly robust network of roads and highways throughout, and there are few large rivers to serve as natural defensive lines and barriers to movement. Our analysis sought to account for the effects on movement and combat of this variability in terrain.

To be sure, Russia's army is much smaller than its Soviet predecessor. Today, it can muster for operations in its Western Military District (MD)—the region adjacent to the Baltic states—about 22 battalions, roughly the same number of divisions forward deployed in the non-Soviet Warsaw Pact countries in 1990.[3] These forces appear more than adequate, however, to overwhelm whatever defense the Baltic armies might be able to present.

CURRENT NATO POSTURE CANNOT SUPPORT ALLIANCE COMMITMENTS

Despite President Obama's bold words in Tallinn, a series of RAND wargames clearly indicates that NATO's current posture is inadequate to defend the Baltic states from a plausible Russian conventional attack.

The games employed Russian forces from the Western MD and the Kaliningrad *oblast*—a chunk of sovereign Russian territory that sits on the northeastern border of Poland, along the Baltic Sea coast—totaling approximately 27 maneuver battalions in a short-warning attack to occupy either Estonia and Latvia or both and present NATO with a rapid fait accompli.[4] The strategic goal of the invasion was to demonstrate NATO's inability to protect its most vulnerable members and divide the alliance, reducing the threat it presents from Moscow's point of view.

The scenario assumed about a week of warning, which enabled NATO to flow some reinforcements into the Baltics— mainly light infantry units that could be speedily air transported, along with airpower. Tables 1–4 list the forces with which both sides were credited at D-Day—when the hostilities began.

The two sides adopted strategies that were generally similar across the games played, which are illustrated in Figure 2.

The Red players typically made a main effort toward the Latvian capital of Riga, with a secondary attack that quickly secured the predominantly ethnic Russian areas of northeast Estonia, and then proceeded toward Tallinn.

The NATO players, recognizing that they had woefully inadequate forces to mount anything resembling a forward defense, sought instead to use indigenous forces to delay Red's advance along major axes while positioning the bulk of their forces in and around Tallinn and Riga in an attempt to sustain a minimal lodgment in and around the two capitals.

The outcome was, bluntly, a disaster for NATO. Across multiple plays of the game, Russian forces eliminated or bypassed all resistance and were at the gates of or actually entering Riga, Tallinn, or both, between 36 and 60 hours after

Table 1. NATO Ground Forces

Country	Unit Type (battalion)	Location	Qty
Estonia	Infantry	Estonia	2
	Light infantry	Estonia	3
Latvia	Light infantry	Latvia	2
Lithuania	Mechanized infantry	Lithuania	2
	Motor infantry	Lithuania	2
United States	Airborne infantry	Baltics	2/1
	Attack helicopter	Baltics	2
	Stryker	Baltics	1/1
	Combined arms	Poland	0/1
United Kingdom	Air assault	Baltics	1
Total			17/3

NOTES: NATO forces listed as located in the "Baltics" were assumed to have been deployed into the region prior to the commencement of hostilities. These forces could be placed by the Blue players at any reasonable location on the map. Numbers after a slash indicate additional units that, depending on the duration of the game, might arrive on the map. Polish forces were assumed to be committed to defending the national territory—especially screening Poland's 200-km-long border with Kaliningrad—and securing NATO's rear area and, therefore, not available to participate in the direct defense of the Baltic states. This is consistent with what we understand to be the expectations regarding Poland's likely choices in the early stages of any conflict in the Baltics. Analytically, the assumption allowed us to set up a limiting case in terms of demand for forces from outside the immediate vicinity of Estonia, Latvia, and Lithuania.

Table 2. Russian Ground Forces

Type	Location	Qty
Maneuver battalions		
Tank	Western MD	4
Mechanized infantry	Western MD	5
Motorized infantry	Western MD	5
Airborne	Western MD	8
Naval infantry	Kaliningrad oblast	3
Total		25
Artillery battalions		
Tube artillery	Western MD	3
Heavy rocket launcher	Western MD	2
Medium rocket launcher	Western MD	5
Total		10
Surface-to-surface missile battalions		
Iskander short-range ballistic missile	Western MD	2
Tochka very short-range ballistic missile	Western MD	2
Tochka very short-range ballistic missile	Kaliningrad oblast	1
Total		5
Mi-24 Hind attack helicopter battalion		6

NOTE: Each Russian brigade or regiment in the Western MD or Kaliningrad was assumed to be able to produce one deployable battalion tactical group for the attack. This is consistent with the pattern observed in Russian Army operations in Ukraine. The majority of Russian ground forces in Kaliningrad were assumed to be held in reserve for defense of the enclave, and were not available for offensive operations; they are not listed in this table.

Table 3. NATO Combat Air Forces

Nationality	Location	Type	Squadrons
United States	Lithuania	F-15C	1
	United Kingdom	F-15E	1
		B-1B	1
	Poland	F-22	0.5
		F-16C/WW	1[a]
		F-16C	2[b]
	Stockholm[c]	F-15C	1[d]
		F-15E	2[e]
		A-10	0.5
		F-22	1
	North Sea[f]	F/A-18C/D	1
		F/A-18E/F	1
United Kingdom	Lithuania	Typhoon FGR Mk 4	1
	Poland	Tornado GR Mk 4	1
France	Poland	Rafale B/C	1
Norway	Stockholm	F-16C	1
Canada	Poland	CF-18C/D	0.5
Denmark	Poland	F-16C	1
Total			18.5

[a] Deployed from Spangdahlem, Germany.

[b] Deployed from Aviano Air Base, Italy.

[c] We allowed some NATO combat aircraft to be based in Sweden, based on discussions with RAND colleagues who have had informal discussions with Swedish defense officials about scenarios similar to this one. Analytically, this allowed us to explore the possible value of such arrangements. The relative abundance of bases available in Central and Western Europe, especially relative to the size of the deployed force, makes our results relatively insensitive to this assumption, although Swedish basing proved valuable insofar as it allowed NATO combat aircraft access to the battlespace that largely avoided the concentration of modern air defenses located in Kaliningrad.

[d] Deployed from Lakenheath Air Base, United Kingdom.

[e] One deployed from Lakenheath Air Base, United Kingdom.

[f] *George H. W. Bush* carrier strike group, deployed from Norfolk.

the start of hostilities. Four factors appeared to contribute most substantially to this result.

First and obviously, the overall correlation of forces was dramatically in Russia's favor. Although the two sides' raw numbers of maneuver battalions—22 for Russia and 12 for NATO—are not badly disproportionate, seven of NATO's are those of Estonia and Latvia, which are extremely light, lack tactical mobility, and are poorly equipped for fighting against an armored opponent. Indeed, the only armor in the NATO force is the light armor in a single Stryker battalion, which is credited with having deployed from Germany during the crisis buildup prior to the conflict. NATO has no main battle tanks in the field.
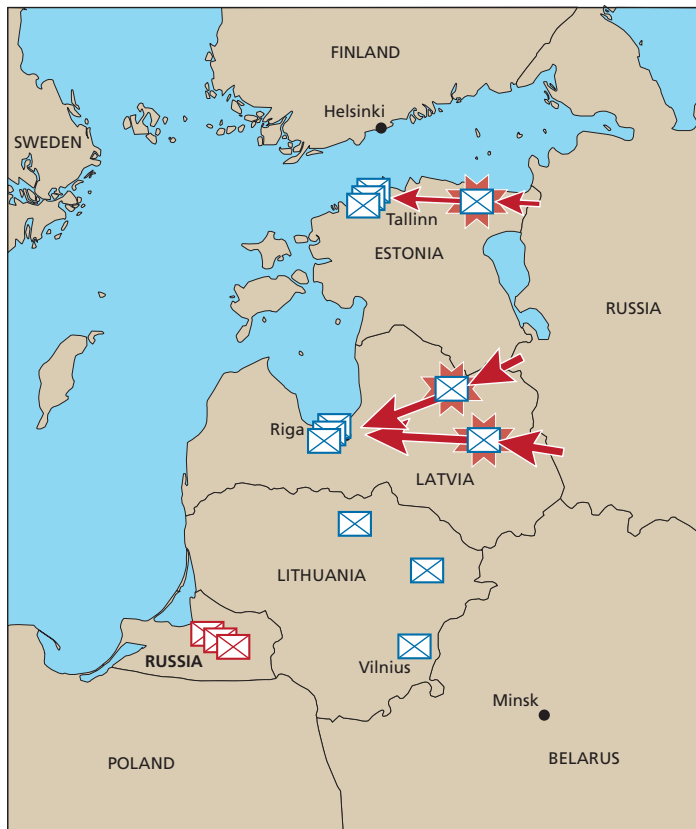
Meanwhile, all Russia's forces are motorized, mechanized, or tank units. Even their eight airborne battalions are equipped with light armored vehicles, unlike their U.S. counterparts.

Second, Russia also enjoys an overwhelming advantage in tactical and operational fires. The Russian order of battle includes ten artillery battalions (three equipped with tube artil-

Table 4. Russian Combat Air Forces

Type	Squadrons
Su-27 FLANKER	9[a]
Su-34 FULLBACK	2
MiG-29 FULCRUM	3
MiG-31 FOXHOUND	4
Su-24 FENCER	5[a]
Tu-22M3 BACKFIRE	4
Total	27

[a] One naval aviation regiment (squadron) in Kaliningrad.

Figure 2. General Strategy of the Two Sides

ability meant that they could be pinned and bypassed if the Russian players so desired. By and large, NATO's infantry found themselves unable even to retreat successfully and were destroyed in place.

Finally, while NATO airpower was generally able to take a substantial toll on advancing Russian troops, without adequate NATO ground forces to slow the attack's momentum, there is simply not enough time to inflict sufficient attrition to halt the assault. Airpower is rate limited, and against a moderately competent adversary—which is how we portrayed the Russian Air Force—NATO's air forces had multiple jobs to do, including suppressing Russia's arsenal of modern surface-to-air defenses and defending against possible air attacks on NATO forces and rear areas. This further limited NATO air's ability to affect the outcome of the war on the ground. Without heavy NATO ground forces to force the attackers to slow their rate of advance and assume postures that increased their vulnerability to air strikes, Russian players could meter their losses to air by choosing how to array and move their forces.

RUSSIAN FAIT ACCOMPLI CONFRONTS NATO WITH UNPALATABLE CHOICES

Russian forces knocking on the gates of Riga and Tallinn in two or three days would present NATO leaders with a set of highly unattractive options.

The leaders and people of the Baltic states, who would need to decide whether to defend their capitals, would confront the first quandary. Quality light forces, like the U.S. airborne infantry that the NATO players typically deployed into Riga and Tallinn, can put up stout resistance when dug into urban terrain. But the cost of mounting such a defense to the city and its residents is typically very high, as the residents of Grozny learned at the hands of the Russian Army in 1999–2000. Furthermore, these forces likely could not be resupplied or relieved before being overwhelmed. Whether Estonia's or Latvia's leaders would choose to turn their biggest cities into battlefields—indeed, whether they should—is, of course, uncertain.[5]

The second and larger conundrum would be one for the U.S. President and the leaders of the other 27 NATO countries. A rapid Russian occupation of all or much of one or two NATO member states would present the Alliance with three options, all unappetizing.

First, NATO could mobilize forces for a counteroffensive to eject Russian forces from Latvia and Estonia and restore the ter-

lery and seven with multiple-rocket launchers), in addition to the artillery that is organic to the maneuver units themselves. NATO has no independent fires units at all, and the light units involved in the fight are poorly endowed with organic artillery.

Third, NATO's light forces were not only outgunned by the much heavier Russian units, but their lack of maneuver-

ritorial integrity of the two countries. Under the best of circumstances, this would require a fairly prolonged buildup that could stress the cohesion of the alliance and allow Russia opportunities to seek a political resolution that left it in possession of its conquests. Even a successful counteroffensive would almost certainly be bloody and costly and would have political consequences that are unforeseeable in advance but could prove dramatic.[6]

Any counteroffensive would also be fraught with severe escalatory risks. If the Crimea experience can be taken as a precedent, Moscow could move rapidly to formally annex the occupied territories to Russia.[7] NATO clearly would not recognize the legitimacy of such a gambit, but from Russia's perspective it would at least nominally bring them under Moscow's nuclear umbrella. By turning a NATO counterattack aimed at liberating the Baltic republics into an "invasion" of "Russia," Moscow could generate unpredictable but clearly dangerous escalatory dynamics.

On a tactical level, a counteroffensive campaign into the Baltics would likely entail the desire, and perhaps even the necessity, of striking targets, such as long-range surface-to-air defenses and surface-to-surface fires systems, in territory that even NATO would agree constitutes "Russia." Under Russian doctrine, it is unclear what kinds or magnitudes of conventional attacks into Russian territory might trigger a response in kind (or worse), but there would certainly be concern in Washington and other NATO capitals about possible escalatory implications.[8]

Finally, it is also unclear how Russia would react to a successful NATO counteroffensive that threatened to decimate the bulk of its armed forces along its western frontier; at what point would tactical defeat in the theater begin to appear like a strategic threat to Russia herself?[9]

The second option would be for NATO to turn the escalatory tables, taking a page from its Cold War doctrine of "massive retaliation," and threaten Moscow with a nuclear response if it did not withdraw from the territory it had occupied. This option was a core element of the Alliance's strategy against the Warsaw Pact for the duration of the latter's existence and could certainly be called on once again in these circumstances.

The deterrent impact of such a threat draws power from the implicit risk of igniting an escalatory spiral that swiftly reaches the level of nuclear exchanges between the Russian and U.S. homelands. Unfortunately, once deterrence has failed—which would clearly be the case once Russia had crossed the Rubicon of attacking NATO member states—that same risk would tend to greatly undermine its credibility, since it may seem highly unlikely to Moscow that the United States would be willing to

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exchange New York for Riga. Coupled with the general direction of U.S. defense policy, which has been to de-emphasize the value of nuclear weapons, and the likely unwillingness of NATO's European members, especially the Baltic states themselves, to see their continent or countries turned into a nuclear battlefield, this lack of believability makes this alternative both unlikely and unpalatable.[10]

The third possibility would be to concede, at least for the near to medium term, Russian control of the territory they had occupied. Under this scenario, the best outcome would likely be a new cold war, with the 21st century's version of the old "inner German border" drawn somewhere across Lithuania or Latvia. The worst be would be the collapse of NATO itself and the crumbling of the cornerstone of Western security for almost 70 years.[11]

NATO NEEDS HEAVY FORCES TO DENY RUSSIA A QUICK VICTORY

In addition to assessing the viability of NATO's current posture, our games explored enhancement options for creating a force that could deny Russia a swift victory in the first three days.[12]

Avoiding the fait accompli is valuable because it begins to present Russia with the risk of a conventional defeat and thereby is at least the beginning of a more credible deterrent. On the one hand, Russia today looks to its northwest and sees little between its forces and the Baltic Sea but highway and the prospect of forcing NATO into the three-sided corner described above. Our goal was to devise a posture that would present an alternative landscape: one of a serious war with NATO, with all the dangers and uncertainties such an undertaking would entail, including the likelihood of ultimate defeat at the hands of an alliance that is materially far wealthier and more powerful than Russia. Nations can be tempted or can talk themselves into wars that they believe will be quick, cheap, victories that are "over by Christmas" but, historically, are far less likely to choose to embark on conflicts that they expect to be protracted, costly, and of uncertain outcome. We set out to identify at least one plausible NATO posture that would change Moscow's calculus in this scenario from the former to the latter.

Our results strongly suggest that a posture that could credibly deny the fait accompli can be achieved without fielding anything like the eight corps that defended NATO's Cold War border with the Warsaw Pact. A total force of six or seven brigades, including at least three heavy brigades, backed by NATO's superior air and naval power and supported by adequate artillery, air defenses, and logistics capabilities, on the ground and ready to fight at the onset of hostilities appears able to avoid losing the war within the first few days.

Not all these forces would need to be forward stationed. Given even a week of warning, NATO should be able to deploy several brigades of light infantry to the Baltics. Soldiers from the U.S. 173rd Airborne Brigade Combat Team in Italy and the 82nd Airborne Division in North Carolina could be airlifted in within a few days, as could similar units from other NATO countries, including the United Kingdom and France. U.S. Army combat aviation assets rotationally based in Germany could self-deploy to provide some mobile antiarmor firepower, but by and large, these fast-arriving forces would be best suited to digging in to defend urban areas. In our games, the NATO players almost universally chose to employ them in that way in and immediately around Tallinn and Riga.[13]

What cannot get there in time are the kinds of armored forces required to engage their Russian counterparts on equal terms, delay their advance, expose them to more-frequent and more-effective attacks from air- and land-based fires, and subject them to spoiling counterattacks. Coming from the United States,

such units would take, at best, several weeks to arrive, and the U.S. Army currently has no heavy armor stationed in Europe.

America's European allies have minimal combat-ready heavy forces. At the height of the Cold War, West Germany fielded three active corps of armored and mechanized units; today, its fleet of main battle tanks has shrunk from more than 2,200 to around 250. The United Kingdom is planning on removing all its permanently stationed forces from Germany by 2019; currently, only one British brigade headquarters, that of the 20th Armoured Infantry, remains in continental Europe, and the British government is committed to its withdrawal as a cost-saving measure.

The quickest-responding NATO heavy armor force would likely be a U.S. combined arms battalion, the personnel for which would fly in and mate up with the prepositioned equipment of the European Activity Set stored in Grafenwoehr, Germany.[14] Getting this unit into the fight is a complicated process that will not be instantaneous. Breaking out the equipment—24 M-1 main battle tanks, 30 M-2 infantry fighting vehicles, assorted support vehicles—preparing it for movement, transporting it by rail across Poland, offloading it, and road-marching it forward into the battle area are unlikely to take less than a week to 10 days.[15]

Providing adequate heavy armor early enough to make a difference is the biggest challenge to NATO's ability to prevent a rapid Russian overrun of Estonia and Latvia. It is critical to emphasize that this relatively modest force is not sufficient to mount a forward defense of the Baltic states or to sustain a defense indefinitely. It is intended to keep NATO from losing the war early, enabling but not itself achieving the Alliance's ultimate objectives of restoring the territorial integrity and political independence of its members. But it should eliminate the possibility of a quick Russian coup de main against the Baltic states, enhancing deterrence of overt, opportunistic aggression.

There are several options for posturing the necessary heavy forces, each carrying different combinations of economic costs and political and military risks. For example, NATO could permanently station fully manned and equipped brigades forward in the Baltic states; could preposition the equipment in the Baltics, Poland, or Germany and plan to fly in the soldiers in the early stages of a crisis; could rely on rotational presence; or could employ some combination of these approaches. The next phase of our analysis will explore a range of these options to begin assessing their relative strengths and weaknesses.

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It is unclear whether denial of the prospect for a rapid victory would suffice to deter Russia from gambling on an attack on the "Baltic three," were it inclined to contemplate one. What seems certain is that NATO's current posture, which appears to offer Moscow the opportunity for a quick and relatively cheap win, does not.[16]

It is also important to point out that, critical though they are, maneuver brigades are insufficient in and of themselves. Armor and infantry battalions must be adequately supported with artillery, air defense, logistics, and engineering. Over the past 15 years, the Army has reduced the amount of artillery organic to its divisions and has essentially stripped out all air defense artillery from its maneuver forces. Further, there are presently no fires brigades in Europe able to augment the modest number of guns at the brigade and battalion level. This is in marked contrast to Russian tables of organization and equipment, which continue to feature substantial organic fires and air defense artillery, as well as numerous independent tube and rocket artillery and surface-to-air missile units.

This disparity has had substantial impacts in our wargames. In one instance, in which NATO was playing with an enhanced force posture, the Blue team sought to use a U.S. armor brigade combat team (ABCT) to fight what was in essence a covering force action to delay the advance of a major Russian thrust through Latvia. A critical element of such a tactic is the use of fires to cover the maneuver elements as they seek to disengage and move back to their next defensive position. In this case, however, the ABCT was so thoroughly outgunned by the attacking Red force, which was supported by multiple battalions of tube and rocket artillery in addition to that of the battalion tactical groups themselves, that the battalion on one flank of the brigade was overwhelmed and destroyed as it sought to break contact, and the rest were forced to retreat to avoid the same fate.

The lack of air defenses in U.S. maneuver forces showed up in another game, in which two arriving NATO heavy brigades were organized into a counterattack aimed at the flank of a Russian thrust toward Riga.[17] Because the Russian Air Force is sufficiently powerful to resist NATO's quest for air superiority for multiple days, the Red team was able to create "bubbles" in space and time to launch massed waves of air attacks against this NATO force. The absence of short-range air defenses in the U.S. units, and the minimal defenses in the other NATO units, meant that many of these attacks encountered resistance only from NATO combat air patrols, which were overwhelmed by sheer numbers. The result was heavy losses to several Blue battalions and the disruption of the counterattack.

This highlights a critical finding from our analysis: A successful defense of the Baltics will call for a degree of air-ground synergy whose intimacy and sophistication recalls the U.S. Army–U.S. Air Force "AirLand Battle" doctrine of the 1980s. The games have repeatedly identified the necessity for allied ground forces to maneuver within the envelope of friendly air cover and air support and for ground fires to play an integral role in the suppression campaign against Russia's advanced surface-to-air defenses.[18] Against an adversary, such as Russia, that poses multidimensional threats, airpower must be employed from the outset of hostilities to enable land operations, and land power must be leveraged to enable airpower.

Preventing a quick Russian victory in the Baltics would also require a NATO command structure able to plan and execute a complex, fast-moving, highly fluid air-land campaign. This is not something that can safely be left to a pickup team to "do on the day"; it requires careful preparation. The eight

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NATO corps that defended the inner German border during the Cold War each possessed—admittedly to different degrees in some cases—the ability to plan for and fight the forces they would command in wartime. Tactical and operational schemes of maneuver were developed and rehearsed; logistics support was planned; the reception, staging, and onward integration of reinforcing forces were laid out and, if never practiced in full, tested to an extent that lent confidence that procedures would work reasonably well when called upon.[19]

Traditionally, the level of planning called for in the initial phase of the defense has been the province of a U.S. corps. At the height of the Cold War, two Army corps under the operational command of 7th Army had planning responsibilities for Europe; today, none do. The Army should consider standing up a corps headquarters in Europe to take responsibility for the operational and support planning needed to prepare for and execute this complex combined arms campaign, as well as a division headquarters to orchestrate the initial tactical fight, to be joined by others as forces flow into Europe.[20] Follow-on operations to relieve and reinforce the initial defense and restore the prewar borders could well require at least one additional corps headquarters, which could be provided by a NATO partner or drawn from one of the Alliance's nine preexisting corps.[21]

THE PRICE OF DETERRING DISASTER

For more than 40 years, NATO's member states made enormous investments to deter a potential Soviet attack on Western Europe. Today, the West confronts a Russia that has violently disrupted the post–Cold War European security order. Led by a man who has characterized the fall of the Soviet Union as the greatest geopolitical catastrophe of the 20th century, Russia has at the very least put on hold the vision of a "Europe whole and free." To the extent that Moscow believes that NATO poses a threat to its ability to exercise necessary influence along its periphery, the presence of the Baltic NATO members along its borders may well seem unacceptable.[22]

Since the early 1990s, the United States and its NATO partners have shaped their forces based on the belief that Europe had become an exporter of security, and for more than two decades that assumption held true. Unfortunately, the usually unspoken accompanying assumption—that the West would see any disruption to that status quo coming far enough in advance to reposture itself to meet any challenge that might emerge—appears to have missed the mark. Instead, Russia's aggressiveness and hostility have caught NATO still resetting itself in a direction that is making it less prepared to deal with Moscow's behavior.

The first step to restoring a more-robust deterrent is probably to stop chipping away at the one that exists. If NATO wishes to position itself to honor its collective security commitment to Estonia, Latvia, and Lithuania, its members should first hit the pause button on further steps that reduce its ability to do so. While some ongoing actions may be too far advanced to stop, the United Kingdom and the United States should evaluate whether additional withdrawals of forces from Germany are wise, given the changed circumstances. All members should reassess their force structures and postures with an eye toward determining whether there are affordable near-term actions that can be taken that could increase the Alliance's capability to respond to a threat to the Baltics and thereby strengthen deterrence of such a threat.

These measures need not be limited to strictly military ones. For example, one challenge NATO would face in the event of a Baltic crisis would be moving heavy equipment and supplies from storehouses and ports in Western Europe east to Poland and beyond. German and Polish transportation authorities could conduct a systematic assessment of the adequacy of

rail and road infrastructure and rolling stock to support the swift and organized movement of multiple brigades and many thousands of tons of materiel on short notice. Substantial investments may be necessary to facilitate these flows, investments that—because they also benefit the civilian economy—may prove more politically palatable than direct expenditures on troops and weapons.

But troops and weapons are also needed, and it verges on disingenuous for a group of nations as wealthy as NATO to plead poverty as an excuse for not making the marginal investments necessary to field a force adequate at the very least to prevent the disaster of a Russian coup de main.

> The first step to restoring a more-robust deterrent is probably to stop chipping away at the one that exists. If NATO wishes to position itself to honor its collective security commitment to Estonia, Latvia, and Lithuania, its members should first hit the pause button on further steps that reduce its ability to do so.

Buying three brand-new ABCTs and adding them to the U.S. Army would not be inexpensive—the up-front costs for all the equipment for the brigades and associated artillery, air defense, and other enabling units runs on the order of $13 billion. However, much of that gear—especially the expensive Abrams tanks and Bradley fighting vehicles—already exists. Some is available due to recent cuts in Army force structure; there is also equipment in long-term storage, and some could be transferred from Reserve Component units, if needed. So, although there may be some costs to procure, upgrade, or make serviceable existing equipment—as well as to transition units from one type to another—it is likely much less than $13 billion.

The annual operating and support costs for three ABCTs plus enabling units—the price tag to own and operate the units—are roughly $2.7 billion.[23] That is not a small number, but seen in the context of an Alliance with an aggregate gross domestic product of more than $35 trillion and combined yearly defense spending of more than $1 trillion, it is hard to say that it is *a fortiori* unaffordable,[24] especially in comparison to the potential costs of failing to defend NATO's most exposed and vulnerable allies—of potentially inviting a devastating war, rather than deterring it.[25]

It can be hoped that Russia's double aggression against Ukraine is the result of a unique confluence of circumstances and that it does not portend a more generally threatening approach to the West. However, President Putin clearly appears to distrust NATO and harbor resentments toward it. His rhetoric suggests that he sees the Alliance's presence on Russia's borders as something approaching a clear and present danger to his nation's security. Aggressive acts, angry—even paranoid—rhetoric, and a moderate but real military buildup combine to signal a situation where it may be less than prudent to allow hope to substitute for strategy.

Taking measured steps to bolster NATO's defensive posture in the Baltic states is not committing the United States and Europe to a new Cold War and does not signal irreversible hostility toward Russia. It is instead due diligence that sends a message to Moscow of serious commitment and one of reassurance to all NATO members and to all U.S. allies and partners worldwide.

Appendix: Methodology and Data

The research documented in this report was conducted in a series of wargames conducted between the summer of 2014 and early spring 2015. Players included RAND analysts and both uniformed and civilian members of various Department of Defense organizations, including the U.S. Army, U.S. Air Force, U.S. Navy, U.S. Marine Corps, Joint Staff, U.S. Army in Europe, and U.S. Air Forces, Europe, as well as NATO Naval Command, Europe.

RAND developed this map-based tabletop exercise because existing models were ill-suited to represent the many unknowns and uncertainties surrounding a conventional military campaign in the Baltics, where low force-to-space ratios and relatively open terrain meant that maneuver between dispersed forces—rather than pushing and shoving between opposing units arrayed along a linear front—would likely be the dominant mode of combat. Further, the novelty of the scenario meant that there was little to go on in terms of strategic or operational concepts for either side; the free play of experts was needed to begin developing reasonable plans, branches, and sequels.

The general game design was similar to that of traditional board wargames, with a hex grid governing movement superimposed on a map. Tactical Pilotage Charts (1:500,000 scale) were used, overlaid with 10-km hexes, as seen in Figure A.1. Land forces were represented at the battalion level and air units as squadrons; movement and combat were governed and adjudicated using rules and combat-result tables that incorporated both traditional gaming principles (e.g., Lanchester exchange rates) and the results of offline modeling. We also developed offline spreadsheet models to handle both inter- and intratheater mobility. All these were subject to continual refinement as we repeatedly played the game, although the basic structure and content of the platform proved sound.

Orders of battle and tables of organization and equipment were developed using unclassified sources. Ground unit combat strengths were based on a systematic scoring of individual weapons, from tanks and artillery down to light machine guns, which were then aggregated according to the tables of organization and equipment for the various classes of NATO and Russian units. Overall unit scores were adjusted to account for differences in training, sustainment, and other factors not otherwise captured. Air unit combat strengths were derived from the results of offline engagement, mission, and campaign-level modeling.

Full documentation of the gaming platform will be forthcoming in a subsequent report.

Figure A.1. Tabletop Exercise Map, Grid, and Unit Markers

Notes

[1] Lithuania's ethnic Russian population is proportionately far smaller and better integrated into the country's mainstream.

[2] Barack Obama, "Remarks by President Obama to the People of Estonia," Tallinn, Estonia, September 3, 2014. As of November 24, 2015:
https://www.whitehouse.gov/the-press-office/2014/09/03/remarks-president-obama-people-estonia

[3] Russian ground forces are typically organized in brigades, but contemporary Russian practice is to generate one ready battalion tactical group from each brigade. Hence, in this report, we will denominate Russian Army forces as battalions.

[4] For purposes of this analysis, we assumed that Russia would sustain roughly the same size force opposite Ukraine as it had deployed there in summer 2014.

[5] Both Tallinn and Riga are also home to significant ethnic Russian populations—more than 30 percent in the former, 40 percent in the latter. If even a small minority of these people is actively sympathetic to the Russian invaders' cause, it could pose a major internal security challenge for the defenders.

[6] The last time Russia lost a European war, its czarist regime collapsed in revolution.

[7] This would not be a risk-free gambit for Russia because it might foreclose options that could later appear attractive. Incorporating the occupied territory into Russia would make it difficult, if not impossible, for the leadership in Moscow to back down from fighting to retain them, even in a situation where the costs of doing so were extremely high. We thank Steven Pifer of Brookings for this insight.

[8] We did not portray nuclear use in any of our games, although we did explore the effects of various kinds of constraints on each side's operations intended to represent limitations that might be imposed by national or alliance political leaderships anxious to avoid setting off escalatory spirals.

[9] NATO could take steps to seek to limit escalatory pressures—by assuring Russia that any strikes on Russian soil would be geographically limited and constrained to a small set of very specific targets and by guaranteeing that no ground maneuver forces would enter Russian territory. It would, of course, be up to Moscow to decide how much credence to grant such guarantees.

[10] The credibility of this option is also weakened because it involves, as Matthew Kroenig reminded us, a compellent threat, and compellence—coercing an adversary into surrendering something he has already gained—is generally understood to be significantly harder than deterrence. Withdrawing from the Baltics in the face of NATO nuclear threats would undoubtedly be seen as a humiliating reverse for Moscow, and the Russian leadership would—probably with reason—fear the domestic consequences of such a traumatic display of weakness.

[11] A subcase of this option that is sometimes discussed would be for NATO to help people in the occupied Baltic states mount an insurgency against their occupiers. The prospects for success of such an undertaking are at best highly uncertain; the brutality of Russia's war in Chechnya indicates that, under some circumstances at least, Moscow is willing to take a very "gloves off" approach to dealing with such opposition. In any event, such a strategy certainly countenances a high probability of considerable loss of life and damage to the economies of these states. Even if an insurgency ultimately succeeded in convincing Moscow to withdraw, it would likely take many months to years, during which the people of the occupied territories would endure substantial suffering, while the loss of the Baltics would constitute a clear strategic setback for the United States and its allies. Finally, planning for this as NATO's response to Russian coercion, intimidation, and aggression offers little assurance to our allies, who would certainly find little comfort in the notion of Washington and Brussels nominating partisan warfare as their primary line of defense.

[12] We did not exhaustively examine all possible alternatives and have not worked through the total requirements for the entire scenario—not just preventing an immediate defeat, but sustaining the defense and eventually rolling back Russian troops from any territory they did manage to occupy. Ongoing analysis is beginning to address these issues.

[13] Attempting to use these light, foot-mobile forces forward against the much heavier and faster-moving Russian units left them exposed to being pinned and either bypassed or overrun and destroyed in detail. In either event, they did little to slow the enemy advance. They proved unable even to retreat, since they literally could not outrun their pursuers.

[14] The Army has announced plans to add two more battalion-sized activity sets in Europe, bringing the total amount of prepositioned armor to a brigade equivalent. While the details of and time line for these additional deployments are not yet known as of this writing, media reports suggest that they would be distributed widely across NATO's eastern frontier, "in Poland, Romania, Bulgaria, and possibly Hungary" with only a battalion's worth combined across the three Baltic republics (Eric Schmitt and Steven Lee Myers, "U.S. Is Poised to Put Heavy Weaponry in Eastern Europe," *New York Times*, June 13, 2015). This scattershot laydown of company-sized equipment sets, while perhaps politically and symbolically significant, would likely do little to solve the military challenge described in this report. For a report on the Pentagon's plans, see Schmitt and Myers, 2015.

[15] Heavy tracked vehicles do not typically move long distances on their treads; doing so causes enormous damage to the roads they traverse, and the vehicles themselves tend to arrive at their destination in poor condition. Instead, they are loaded onto heavy equipment transport trucks or special railcars and moved to a location fairly close to the battlefield, to which they then move under their own power.

[16] Even in the absence of strong conventional resistance, attacking NATO nonetheless would represent a very risky course for Russia. Deterrence is a complex phenomenon that does not rest on any single element. Nevertheless, the lack of a credible conventional defense cannot strengthen it.

[17] This again was a scenario in which NATO's posture was assumed to be improved beyond its current state.

[18] It is well to recall that the first shots of the 1991 Gulf War were fired by U.S. Army attack helicopters against Iraqi air defense sites. So, this is by no means a new idea.

[19] Probably the most notable examples of these exercises were the U.S. Army's periodic "Return of Forces to Germany," or "REFORGER" drills, which would see tens of thousands of U.S. soldiers deploy from the United States to Europe in full-up rehearsals of a wartime reinforcement of NATO's Central Front.

[20] This could be dual-hatted as a NATO headquarters, but as a U.S. Corps, it would be able to conduct detailed planning in advance or in the absence of the unanimous approval of the North Atlantic Council, which is a prerequisite for deliberate planning actions by a NATO headquarters.

[21] Other options have been discussed to enhance NATO's deterrent posture without significantly increasing its conventional force deployments. For example, NATO could rely on an increased availability and reliance on tactical and theater nuclear weapons. However, as recollections of the endless Cold War debates about the viability of nuclear threats to deter conventional aggression by a power that itself has a plethora of nuclear arms should remind us, this approach has issues with credibility similar to those already discussed with regard to the massive retaliation option in response to a Russian attack.

NATO could also seek to bolster the capabilities of the Baltic states' own militaries, perhaps by providing them with ample stocks of antiarmor weapons, such as Javelin or Tube-Launched, Optically Tracked, Wire-Guided missiles. The enormous disparity in size between the potential Russian threat and the largest force that the tiny Baltic republics—whose combined population is slightly greater than that of Maryland, and whose combined economies rank somewhere between those of New Mexico and Nebraska—could plausibly field makes it difficult to imagine how they could defend themselves without substantial NATO reinforcement, regardless of how well their armies might be equipped.

[22] It is worth noting that, when NATO troops exercise in Georgia, Ukraine, and the Baltic states, they are operating nearly as close to the Russian heartland as Wehrmacht *panzers* penetrated in 1941–1942. It is difficult to believe that the symbolism of this has escaped the notice of Russia's leaders.

[23] Thanks to our RAND colleague Joshua Klimas for providing us with detailed cost modeling.

[24] Put precisely, it is 0.27 percent of NATO's aggregate annual defense spending.

[25] As noted above, there are other, potentially less expensive ways of putting heavy armor closer to the Baltics than by stationing forces there. Once again, we are seeking to present something of a limiting case in terms of cost.

Acknowledgments

About This Report

Beginning in summer 2014, RAND Arroyo Center conducted a series of wargames examining possible Russian conventional aggression against the three Baltic members of the North Atlantic Treaty Organization (NATO): Estonia, Latvia, and Lithuania. Although such an attack may not be likely, Moscow's recent behavior suggests that NATO should take the prospect sufficiently seriously to at least evaluate the requirements for deterring and, if necessary, defeating Russian adventurism.

This report documents the findings of these games, arguing that the current NATO posture is woefully inadequate to defend the Baltic republics. In fact, Russia has the potential to achieve a rapid overrun of one or more of the Baltic states, creating a situation that would present NATO and the United States with nothing but bad options. Our analysis also indicates, however, that relatively modest investments in improved posture could allow NATO to greatly reduce Moscow's confidence in its ability to score a quick, cheap victory, enhancing deterrence and contributing to restabilizing the relationship between Russia and its Western neighbors.

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