*by Karl Mueller** *

Filling the **Baltic Gap**

Or How I Learned to Stop Worrying and Love the d6

If current plans hold, the U.S. Army will soon be re-deploying Abrams main battle tanks to Europe, stationing an armored brigade combat team on the continent for the first time in years. This is going to happen because Russia invaded Ukraine and Washington doesn't want the same thing to happen to a NATO member. And also because of a wargame.

March 2014 – A month after Russia's invasion of Crimea, my Go-playing physicist-turned-policy analyst friend Jim Bonomo and I are in my office, likely talking about the *Nothing Gained But Glory* VASSAL game that I've been slowly losing to him since before Christmas, when Dave Shlapak appears in the doorway. Dave's been at RAND since the mid-'80s, when he spent his time working on computer simulations of warfare on the Central Front and occasionally playing SPI's original *NATO* while waiting for his programs to compile. Now he's leading a project about strategies for dealing with Chinese anti-access missile threats in the western Pacific, but thinks it's time to do some analysis about what defending against a future Russian attack in the Baltic states would look like. Existing computer-based theater-level sims aren't much help because

they were made to analyze campaigns involving high force-to-space ratios with continuous front lines being shoved back and forth across Germany or Korea, and a fight for the Baltics would be a battle of maneuver involving lots of space and very few forces. So why, he suggests, don't we look at the Baltic scenario with a good old-fashioned paper wargame?

RAND has a long backstory in wargaming. It was seeing RAND games in the late 1950s that gave Charles W. Roberts the idea of tiling a wargame map with hexes instead of the squares he had used in *Tactics II* and the original *Gettysburg*. In my lifetime, computer-based simulations have largely taken over analytical gaming, sometimes bringing new levels of investigative power, but often just providing the illusion of it as the details of the models and their

simplifying assumptions become invisible to players and to the policymakers whose decisions the games are supposed to inform. Tabletop exercises ("TTXs") are still commonplace in the defense policy world but tend in the military to focus on training objectives, while more free-form seminar games can be excellent tools for exploring decision making (RAND runs a lot of them) but rarely offer the sort of simulation fidelity that can be provided by a genuinely good wargame.

So with Putin's Russia vandalizing the expectation that post-Sochi Europe would continue to be a quiet international security backwater, a handful of RAND researchers started to put together a board wargame to give us and eventually our U.S. Army and Air Force sponsors a sense of what a Russian invasion and NATO defense of the Baltic states might look like. We initially assumed that this exercise might at best be able to generate some additional insights to supplement the more intense strategic and operational planning efforts that would be taking place at the same time in U.S. military and Alliance headquarters. However, it gradually became clear—rather disconcertingly—that we were out in front of most of the official planning, not following in its wake.

Defending the Baltic states against a Russian invasion is a diabolically difficult problem for NATO. Together, Lithuania, Latvia, and Estonia are about the same size as West Germany, and their border with Russia and Belarus is as long as the FRG's border with East Germany and Czechoslovakia—which NATO defended with nine multi-division corps. However,

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the Baltic states have a combined population substantially smaller than Belgium's, and few natural barriers to impede an invasion. NATO's options for reinforcing them during a conflict are severely limited by their geographic isolation from the rest of the Alliance, and particularly by the presence of long-range surface-to-air and anti-ship missiles in the Kaliningrad exclave. Kaliningrad is Russian territory, which Moscow insists it would use nuclear weapons to defend.

The Russian army is not the Red Army of old, of course. By gathering together the contract troops in each of the Western Military District's brigades, Moscow might assemble a Baltic invasion force of 25 or 30 tank, motor rifle, and mechanized airborne battalion tactical groups. But they would be heavily supported by artillery and long-range rockets, which have been effective at annihilating enemy forces in Ukraine, and protected by large numbers of advanced surface-to-air missiles. Against this would stand a few battalions in each of the Baltic states, potentially reinforced by some U.S., British, French, and Dutch airborne forces that lack armored vehicles and, if deployed forward, would have trouble falling back fast enough in the event of an attack to avoid being overrun or surrounded. NATO could bring a lot of airpower to the fight (and might be able to fly from Swedish as well as Alliance bases), but the aerial hammer would have little time to inflict attrition on an invasion force that could reach the Baltic capitals in less than three days if not impeded on the ground by an armored anvil. The problem is in part one of an imbalance of combat power, but it's even more about force-to-space ratios.

September 3, 2014

As fighting continues in eastern Ukraine, President Barack Obama makes a major address in Tallinn, telling the crowd filling Freedom Square *"We have a solemn duty to each other. 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*

A NATO naval commander plots a risky foray into the Baltic as a RAND controller warns him about the anti-ship missile threat from Kaliningrad.

Access to Swedish airspace and bases would be invaluable for forces defending the Baltic states, and Russian sabre rattling appears to be making it more likely.

be here for Lithuania. You lost your independence once before. With NATO, you will never lose it again." Many in the audience are in tears.

The RAND Baltic defense game began as a sandbox for exploring the shape of the problem, but soon became focused on examining the issue of what additional capabilities could serve to present Moscow with the expectation that a Baltic invasion would be a long and costly fight rather than a fast and relatively inexpensive victory. That might well not be necessary for deterrence to hold—there are a lot of good reasons for Russia not to invade the Baltics—but past experience

suggests that it would probably be sufficient. In contrast, if Russian leaders were keen to construct an apparently plausible theory of victory, it would be much easier for them to discount the probability of purely punitive retaliation on a massive scale, or a threat that following a successful Russian occupation of the Baltics, NATO would mass its slow-mobilizing forces and launch a counteroffensive to liberate the lost Alliance territory months later. They might well imagine that in spite of its size and wealth NATO would lack the unity and patience to wage a long war, or that the West would back down from a major conflict that might turn nuclear if presented with a fait accompli in the Baltics.

Designing the game was an improvisational affair, supported by modest concept development funds and squeezed in between the team members' obligations to other projects.

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Russia's heavy and modern SAM umbrella advances with its ground forces, and is not easily suppressed.

The first day of a Russian advance focusing on Latvia. With months to mobilize, NATO would outnumber the enemy, but here the temporal currency is days and hours.

Our first maps were 1:500,000 Tactical Pilotage Charts overlaid with a hex grid printed on some of the last surviving transparency sheets in North America (after discovering that Chessex strangely no longer makes transparent hex mats); in time these would be replaced with freeware-generated hex-grids printed on plexiglass sheets by a local sign shop, and finally by having a designer in our graphics department take a break from working on corporate promotional materials to print custom maps. But we have continued to use aeronautical charts as the basis for them as much for the atmosphere they generate for the players as for economy.

The counters were similarly home brewed, laid out in Powerpoint (because I already knew how to use it) in as Simonsenesque a manner as possible, and assembled from reams of laser-printer label sheets and chipboard using a rotary

paper cutter whose floral motif decorations suggested that its makers had not intended it for exactly this purpose. But the airplane and ship silhouettes are fastidiously correct because that is one of the things that sets us apart from the lower primates, and all of their corners are clipped because we tried it on a lark for the first run of the game and it turned out to be the sort of hit with the players that is not often seen outside of a game unboxing video.

The resulting game—for which we have never yet got around to thinking of a catchy title— resolves combat using 12-hour turns and 10-km hexes; units are battalions of ground forces, SAM batteries, and half-squadrons of aircraft (12 fighters or six bombers). The component list includes two maps printed on large-format vinyl (one 42 x 60 inches and one 55 x 70); 18 sheets of variously oversized counters painstakingly clipped by people who never expected to be doing this when they were in graduate school; a set of living rules that would merit a complexity rating of about 3 on the back of the box if GMT published the game; some assorted polyhedral dice; and between six and ten defense analysts of diverse ages and genders with 150-200 years of total professional experience among them.

Of these bits, it's the meatware that matters most. Instead of having the players learn how to play the game, which is a lot to ask of mostly-non-wargamers who are always short on time, the control team works with the players to translate their military decisions into game terms, in addition to their traditional role of adjudicating the results of those choices. Moreover, we don't want the players to optimize their decisions to suit the game rules. But the greatest advantage of this approach is that we can adapt the rules and procedures of the game while it is underway. If they players want to try something we have not foreseen, which often happens, instead of saying *"you can't do that because it's not included in the model"* the controllers confer—often with the players included in the conversation—to decide how best to represent the action. And since the designers are part of the control team, there is a tendency for each run of the game to result in rules tweaks, new ideas for the order of battle, and another round of making counters.

Having deep expertise on the control team is also important for making the game credible to the players. The rules, unit ratings, and combat results tables involve abstractions and judgment calls, as in any civilian wargame, but

When time permits, the RAND team meets to playtest and refine the rules—and to see if they can execute more successful campaigns than the players.

in this setting the players come into the game with plenty of real expertise in the subject. They often ask *"Have you taken X into account in your model?"* The answer can be *"yes, here's how"* or *"no and here's why we left it out"*, but not *"sorry, we don't really understand X"*. In a sense, the game controllers play the part of the dungeon master in a role-playing game—and need some of the same sort of dramatic instinct—except that the adventure takes place in the real world and we don't hide anything behind a screen.

April 2015 – After running versions of the game with a number of U.S. Army and Air Force player teams at home, half a dozen of us are now boarding a flight to Frankfurt so we

can play it with USAFE planners at Ramstein Air Base. My carry-on baggage includes a five-foot-long black map tube that we are working hard to stop calling "the RPG" now that we're at the airport, a case of Plano boxes packed full of handmade wargame counters, and materials for making more if we need to add something new to the game while we're playing. The TSA X-ray operator has never seen a Deluxe Corner Clipper before but seems satisfied if unimpressed by my explanation of its function.

We approached the first plays of the game involving external participants with some trepidation. Would players accustomed to computer-assisted games scoff at the abstractions in our rules such as a the simple combat results tables? How would they react when they saw a bad die roll wipe out a flight of F-22s or a Marine battalion? It turned out that there was no problem. This was partly due to the controllers clearly knowing their business, and reminding the players that computerized games

also depend on random number generation even though it is hidden from view. But it was also because the officers playing the game knew from long personal experience that there is a great deal of friction and random chance in warfare, that things often do not go as planned, and that weapon systems do not consistently perform up to the specs quoted in the manufacturers' advertising. They could see the odds of success and failure on the CRTs and found them reasonable, so when the die roll for an F-22 attack came up "1" instead of "6", the poor result made sense to them—more so, in fact, than if the same losses were being generated by an electronic simulation with a combat resolution system that's opaque to the players.

While most players have taken readily to the game approach, for many of them the substance of the scenario has demanded more of an intellectual adjustment. Only the most senior U.S. military officers began their profession careers before the Soviet Union dissolved, and for the past fifteen years the great majority have been concentrating almost entirely on fighting against irregular enemies with very limited military capabilities. Waging a war against Russia would involve suffering losses at rates the United States has not faced since 1945, and the urgency of a Baltic defense scenario does not permit the luxury of carefully nibbling away at the Russian threat until it is substantially reduced in order to minimize those casualties. It is not only the possibility of nuclear weapons being used that creates an imperative to deter this conflict—although that additional danger should not be neglected in the hope that Moscow would consider nuclear escalation unthinkable in spite of their frequent statements to the contrary.

The same is true of potential major war between the United States and China, and this has also become the subject of gaming using the same general approach (now dubbed RFLEX, for "RAND Framework for Live Exercises"), with the addition of new maritime rules. RFLEX games looking at several scenarios for potential conflict in Korea have involved trying different rules for ground combat suited to larger units and higher force densities. More detailed treatments of spacepower and cyberwar are in the works.

January 2016 – We've come to

Cambridge to play the Baltic game with military officers and government officials from Britain and the three Baltic states. The British Army has recently been doing some Baltic gaming of its own. Usually in these events we spend the first day letting the players try to fend off a Russian invasion with the meager forces that NATO would have available under current plans, then we reset the game to play with a substantially reinforced defense. This time Dave begins the session by asking *"Is there anyone here who thinks that we have any hope of defending the Baltic states with the capabilities we have today?"* No hands are raised. We move straight into a scenario in which the United States has prepositioned heavy forces in eastern Europe and Britain, France, and Germany have made serious investments in their armies' readiness.

Games like these, even when played repeatedly, do not give precise answers to questions. At their best, they lead to findings that are about close orders of magnitude and general probabilities. For example, we think the Baltic game suggests that the problem of preventing Russia from being able to seize much of the Baltic states' territory at relatively low cost in a matter of a few days is solvable by positioning a multi-brigade heavy NATO force in northeastern Europe. (For details, download the report Reinforcing Deterrence on NATO's Eastern Flank from www.rand.org.) Such a force posture is not currently planned, although the long-prevailing tide of U.S. forces flowing out of Europe has now reversed direction.

Suggestive findings can be both useful and powerful, provided that wargames are used in concert with other analytical and experimental tools. It is important not to oversell the predictive power of wargames, however—those who sponsor them are often eager to hear findings that are unrealistically definitive and precise, and there is no shortage of subordinates and contractors willing to satisfy such urges. This is perhaps more true than ever today, as the Department of Defense seeks to "revitalize" its use of wargaming (a number of important discussion of this initiative and principles for avoiding its potential pitfalls have appeared in recent months on the War on the Rocks website).

Wargames can also be invaluable tools for immersing their players in unfamiliar problems. In the same way that many civilian wargamers find that playing a game about Waterloo creates a more vivid understanding of its subject than reading a history of the battle can, there is a considerable difference between sitting through a briefing that says the Baltic states are vulnerable to conquest and experiencing it directly albeit virtually. But I would proffer that much of this effect is lost when games are not transparent to the participants so that they can understand and evaluate the mechanisms by which their successes or failures came about. Based on our experience so far, players seem to agree.

So what's old is new again. It's not yet clear whether this is part of an enduring renaissance of paper wargaming in the Department of Defense—at some point something else will become the flavor of the month in the Pentagon, and we're hoping that by then the value of such games as analytical as well as educational tools will be well established. In the meantime, it's nice to see that the Old Ways still have something to offer. Even better is seeing that there is a new cohort of younger military analysts (at least around here fully half of them are women) who don't remember a world before cell phones and CDs but are embracing classic wargaming with enthusiasm. They too realize that military success or failure can come down to a die roll, and they like throwing the dice. ◑

Applying the approach to other potential conflicts: a Sino-Japanese war in the East China Sea...

...and intervention in a North Korean state collapse and internal conflict.