



Baltic Mine Warfare Challenges and Opportunities: A US Perspective



Scott C. Truver PhD

Senior Advisor
Strategic Initiatives Group
Center for Naval Analyses
truvers@cna.org

University of Copenhagen
27 September 2018

1

Good afternoon.

My thanks to Dr. Breitenbauch for the invitation to participate at today's forum. And I know I owe a "thank-you" to Dr. Sebastian Bruns, too.

I've been asked to discuss the sea mine/mine warfare (MIW) domain – mines and mining as well as mine countermeasures (MCM) – in the Baltic Sea and to address challenges and opportunities within the MIW perspective. Where are we with regard to dealing with specific common threats and challenges? What trend lines if any can be discerned? Are there any cross-sectoral lessons to be learned?

Before we get under way, I must acknowledge that the views and opinions expressed here are mine, alone, and should not necessarily be attributed to CNA or the USN.

Let's begin.


Strategic Importance of the Baltic

- **United States has had longstanding security interests in the region, at least since 1949**
 - NATO's northern flank, of the 29 NATO members in 2018, 6 border the Baltic
- **The Baltic's commercial vessel traffic drives regional (and global) economies**
 - 15% of the world's maritime traffic transits Baltic
 - Every day sees some 2,000 commercial ships underway
 - More than 125,000 ships transit the straits each year
 - Major conduit for energy supplies from Russia to Europe
 - More than 3.3 million barrels of oil every day
- **Substantial commercial fishing and thriving cruise ship industries**






2

The United States has had security and economic interests in the region that include the security of NATO allies and partners—Finland and Sweden—from Russian adventurism that exacerbates regional uncertainty.

Since 2008 Russian military activity in the Baltic Sea region has been on the rise, with a significant surge after the annexation of Crimea in 2014. These strategic interests have been challenged, and the Baltic has become an increasingly complex and contested operating environment.

And crowded.

On average, at any time, there are some 2000 ships underway in the Baltic Sea—any one of which could be a minesweeper, once.

Though the region has nearly 200 ports, only eight are considered major facilities. These eight ports represent the major shipping outlets for shipping and international trade, and are vital to the economic prosperity of each state. They also support regional navies and coastguards. For military as well as commercial reasons, then, they could be targets in a focused offensive mining campaign.

And Russia embraces naval mining, if primarily in a defensive mode, as Nick Childs noted a few years ago. That said, some 40% of Baltic commerce is Russian so they will have to be careful when/where/how they place mines.

Some Numbers to Keep in Mind

- **41...the number of mining “events” world wide, from Albania mining the Corfu Channel in 1946 to Houthi rebels mining Red Sea ports in 2017**
- **15/19...of the 19 USN warships sunk or severely damaged by enemy action since 1945, 15 were mine victims, including the USS TRIPOLI**
- **1 million...400,000...400...the total estimated mines worldwide, in potential adversaries’ mine arsenals, and the different types of mines available, with the “big four”**
 - Russia: 125,000–300,000
 - China: >80,000
 - North Korea: >25,000
 - Iran: 5,000–7,000
- **????...WBIEDs for terrorist attack–1984 “Mines of August” Red Sea– or “Gray Zone” operations**
- **< 10,000...the USN mine inventory of three basic designs**
- **65,000–170,000...mines, torpedoes and other “historical ordnance” litter the Baltic seabed**



3

CLICK: The world is awash with naval mines. There have been 41 mining events since the end of WWII.

CLICK: Since October 1950, about 80% of the USN ships sunk or severely damaged by adversary action have been mine victims. The picture shows USS Tripoli after hitting an Iraqi contact mine in Operation Desert Storm.

CLICK: 2018 assessments of the global threat identify about a million sea mines of more than 400 types in the inventories of more than 50 navies worldwide, not counting U.S. weapons. More than 30 countries produce and more than 20 of those export mines. Even highly sophisticated weapons are available in the international arms trade.

CLICK: One estimate identifies more than 400,000 mines in the arsenals of America’s potential adversaries. Others show Russia with more than 125,000, China with some 80,000 mines, North Korea about 25,000, and Iran 6,000. We just do not know for sure, but we do know the threat is real, global, and increasingly lethal.

CLICK: Worse, these data are just for sea mines. They do not include water-borne improvised explosive devices (WBIEDs) that terrorists as well as traditional navies can challenge military and commercial transit of maritime chokepoints as well as the high seas. It is not too far-fetched to expect Russia or a Russian proxy to use WBIEDs in non-attributed “gray zone” maritime *insecurity* operations.

CLICK: In comparison, the U.S. Navy mine inventory in 2018 numbers less than 10,000 weapons of three basic designs.

CLICK: Clearly, the Baltic navies understand well the dimensions of the threat.

Mine Warfare in the Baltic



Dr. Lee Willett wrote, “The Baltic region, with shallow water—average depth of 185 feet—and narrow access points, creates unique challenges for offensive and defensive mine warfare operations alike.”

I didn’t need any OPLANS to identify mineable regions of the Baltic Sea. Within the ovals mines can be deployed for offensive or defensive anti-access/area-denial tasks, by NATO/Finnish/Swedish mine-layers as well as Russian—assuming Russia will have the platforms to lay mines.

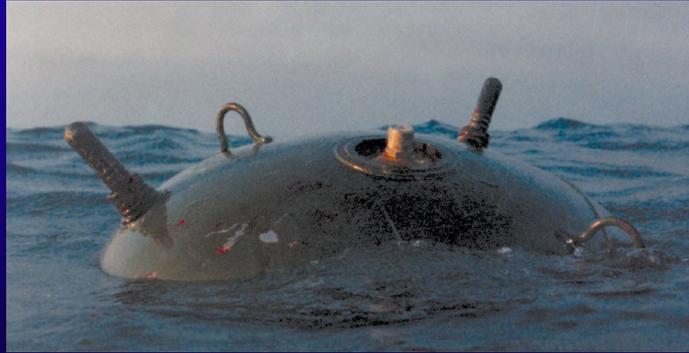
Open-source Baltic navies information identifies 63 dedicated mine-hunters and –sweepers in NATO members/partners’ fleets, from Estonia’s three mine-hunters to Poland’s 20 hunters/sweepers. Denmark’s platform-agnostic Modular MCM detachments need to be added to the mix. Combined with these navies’ 10 dedicated mine-layers, they provide a vital presence/deterrence function. But more will be needed before the shooting starts.

As Vice Adm. Clive Johnstone RN Commander NATO’s Allied Maritime Command commented, “to fight your way through and get presence is really going to be militarily quite demanding. We have rehearsed that, but it’s far better to have forces in place from the start.” Those forces have to come from all of NATO, not just the Baltic States. “[The Baltic nations] are genuinely brilliant, they are delivering capability to Standing Naval Forces in a way that I think should embarrass some bigger nations. But they’re small nations. They’re not going to win the war. They’re going to be brave and hold the line, and we’re going to have to bring in other capabilities.”

The Admiral clearly understands that the safe arrival of “other capabilities” depends on the effectiveness of these small nations and their little ships.

‘Reminds me of the slogan of the USN’s MCMs: “Where the fleet goes the Mine Force has already been.”’

A MINE IS...



...A TERRIBLE THING THAT WAITS!

Wrapping up...at the beginning I stated three questions: Where are we with regard to dealing with specific common threats and challenges? What trend lines if any can be discerned? Are there any cross-sectoral lessons to be learned?

The Baltic navies know well the dimensions of the Russian mine threat, even if at times their governments do not share their passion. Mines are the quintessential asymmetric weapons that directly attack strategies as well as forces. They can be quickly and surreptitiously laid by surface ships—including fishing boats, other coastal craft, and commercial vessels—submarines, and aircraft.

Naval mines can attack critical sea and seabed infrastructure, in addition to ships and submarines.

This threat will grow exponentially as more adversaries gain access to unmanned system-delivery technologies amplifying the MCM problem.

Without effective MCM enabling freedom of maneuver during crisis or conflict, the other defense sectors could be hamstrung in their abilities to carry out missions and tasks.

There is a need for even greater collaboration among the Baltic states to deal with the common threat.

And we need to make sure that *our* mines are up to the tasks at hand. We should make our adversaries worry about our mines more than we worry about theirs. Indeed, unlike 1991, in 2018 the Baltic is a NATO “lake,” and the Russians are vulnerable to NATO/Finnish/Swedish mine-laying in Gulf of Finland and the approaches to Kaliningrad. Polish “little blue sailors” might even mine Kaliningrad and blame it on the “historical ordnance” problem.

These same WWI/WWII mines could give plausible deniability to Russian mining.

‘Seems to me that that we have numerous opportunities to address the challenges ahead.

Thank you.



Back Up Slides

USN MIW Renaissance: Modular MCM Force

- **USN MCM Vision: transition from legacy platform-based, sequential operations to unmanned/autonomous modular MCM systems employing advanced sensors and weapons that can conduct missions in parallel operations:**
 - Sustaining in-service, legacy capabilities until advanced technologies, systems, and platforms are fielded
 - Developing modular technologies and systems that increasingly are unmanned and autonomous
 - Fielding Modular MCM adaptive force packages for employment from various ship platforms as well as from shore sites
- **The ultimate objective for the Modular MCM Force is to rapidly complete full kill-chain operations against the adversary threat spectrum while reducing the overall MCM risk to mission and force to the lowest levels achievable.**



See: Scott C. Truver and David Everhart, A Modular MCM Vision, Real Clear Defense, 8 September 2018,

https://www.realcleardefense.com/2018/09/08/a_modular_mine-countermeasures_vision_304175.html

USN MIW Renaissance: Encapsulated Effectors

- Today's USN Weapons that Wait...
 - Most USN mines are aircraft-deployed converted-bomb Mk62/63 Quickstrike 500/1000-pound bottom mines (IOC 1983)
 - The 2000-pound Mk67 Submarine-Launched Mobile Mine for clandestine ops (IOC 1979)
 - The 2,000-pound Mk65 mine is a thin-walled, purpose-built 2000-pound weapon (IOC 1983)
- Quickstrike-Extended Range high-precision/accuracy at great range/altitude using JDAM/GPS technologies
- USN Smart Mine Initiative, a suite of modular, flexible seabed-deployed encapsulated effectors generating options by integrating sensors and weapon systems into a cohesive, networked seabed capability



See: CAPT Hans Lynch USN and Scott C. Truver, Toward a 21st-Century US Navy Mining Force, Defense One, 22 August 2018,

<https://www.defenseone.com/ideas/2018/08/toward-21st-century-us-navy-mining-force/150709/>