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TERRORIST MINES IN THE UNITED STATES MARITIME DOMAIN: A CREDIBLE THREAT?

by

Frank J. Dowd Lieutenant Commander, USN

A paper submitted to the Faculty of the Naval War College in partial satisfaction of the requirements of the Department of Joint Military Operations.

The contents of this paper reflect my own personal views and are not necessarily endorsed by the Naval War College or the Department of the Navy.

Signature: _____

09 February 2004

Abstract of

TERRORIST MINES IN THE UNITED STATES MARITIME DOMAIN: A CREDIBLE THREAT?

The purpose of a threat assessment is to approximate the consequences and probability of an event as accurately as possible, in order to prioritize limited resources for maximum benefit. The economic consequences of a terrorist mine attack on the United States have the potential to be enormous, but unlike a WMD attack, they would only be temporary. The damage done would be closely related to the speed of the response effort in opening the port and channels to shipping. Navy capital ships and military sealift ships enter and exit port infrequently enough to plan coordinated force protection procedures should intelligence require it. While we should never completely discount the mine threat, or Al Qaeda's capabilities, there are ways to reduce vulnerability and mitigate the consequences with the resources already allocated.

Introduction

The unimpeded flow of commerce through domestic waters is the lifeblood of the United States' economy, and the efficiencies provided by open access to our ports from sea lines of communication have been largely responsible for America's rise to the preeminent economic power in the world.¹ The attacks of September 11 served notice that this same openness and integration now has the potential to serve as a conduit for terrorist access and leaves strategic military and commercial assets and infrastructure vulnerable to attack. The challenge, primarily for the Departments of Transportation, Homeland Security, and Defense, is to increase security in the domestic maritime domain without impeding the free flow of commerce. Hindering this process is the scope of the task and the interdependency of the global economy. Not only is the area expansive, but international agreement and cooperation are required to implement our domestic policies, many of which could directly affect our trading partners. Further, most of the technology and infrastructure needed to implement various maritime security measures does not exist and will need to be developed. This process will be expensive and lengthy. The bottom line is that true maritime security, if achievable at all, is years away from fruition, and the window of opportunity for maritime terrorism is probably sooner than we think. The problem facing military and civilian planners is to figure out how terrorists could exploit our maritime vulnerabilities to threaten the United States, and what to do about it given limited resources. The government has sponsored and ordered numerous threat, vulnerability, and critical infrastructure assessments.² The primary focus of these assessments has been on human infiltration, Weapons of Mass Destruction (WMD), and the use of ships themselves as instruments of terror. Little is mentioned and nothing has been published concerning the threat of sea-mines

in domestic waters as instruments of terror. At first glance it appears that mines would be an ideal weapon for terrorists to employ against U.S. targets. In keeping with Al Qaeda's demonstrated strategy, mines could enable them to strike directly at specific strategic military and economic targets and generally disrupt military deployments and commerce. The research question then became; do sea-mines, delivered surreptitiously by a global terrorist organization, present a credible threat to the United States maritime domain?

The purpose of this paper is to provide a critical assessment of the sea-mine threat from international terrorist organizations, in domestic water. Specifically, I will examine why mines should be considered, terrorist objectives and capabilities, and potential impact. Additionally, I will analyze scenarios based on terrorist objectives, and provide conclusions and recommendations for operational level planners.

Terrorism has many definitions, each with its own flavor. Title 22 of the U.S. Code defines terrorism as "Premeditated, politically motivated violence perpetrated against non-combat targets by sub-national groups or clandestine agents, usually to influence an audience." Significant about this definition is a clause which states that attacks on military installations or armed military personnel when a state of military hostilities does not exist are also considered terrorism.

Mines

There are many reasons why mines should be considered when analyzing threats to the U.S. homeland, primary of which is their effectiveness. Whether the objective was to sink ships, prevent movement, or to simply cause disruption through fear and uncertainty, history is rife with examples of mines controlling the sea.³ Many of these examples are of weaker states effectively controlling the movement and operation of far superior navies.

Twice mines have played a significant role in thwarting major U.S. amphibious assaults, first at Wonsan, Korea in 1950 and most recently during Operation Desert Storm. In fact, mines are the ultimate asymmetric weapon in terms of cost effectiveness and effort to counter. In 1988 the USS Samuel B. Roberts (FFG-58) struck an obsolete World War I-era mine that had been laid in the main shipping channel East of Bahrain by Iranian Revolutionary Guards. This mine, estimated to cost \$1,500, broke the keel of the Roberts, and only heroic damage control kept her from sinking. The Roberts' repairs ultimately cost \$96 million.⁴ This asymmetry extends to the effort required to lay mines versus that required to counter a mine threat. "There are no means to prevent surreptitious mining of strategic sea areas, and once these areas have been mined, or are *thought* to have been mined, significant efforts are required to ensure safe passage of ships."⁵ Mine countermeasures (MCM) is a slow, tedious, and resource intensive discipline, involving specialized personnel and equipment. Expensive and unglamorous, the Navy has shown a propensity to neglect MCM when it is not required, which has affected MCM readiness. Furthermore, current MCM force home-porting reflects an administrative posture and is not well suited to rapid response for domestic operations. Finally, mines should be considered when assessing terrorist threats because they have and will continue to proliferate. U.S. success in Operation Iraqi Freedom will spur international demand for mines in order to deny access or delay movement of U.S. forces which cannot be countered conventionally. More than 50 countries currently possess mines and mining capability, up 40% from 1986. At least 30 of these countries possess the capability to produce mines, and 20 have attempted to export them. We will see continued proliferation of the mine threat and we should expect to encounter new and greater numbers of mines in future conflict.⁶ In summary, mines are effective, they are available, and the United States is

vulnerable to their use, all of which leads to the conclusion that the mine threat needs to be addressed further.

The Threat

"The threat that showed itself on 11 September, however, was neither random nor existential. It was particular and historical. A sensible program of countermeasures would target this threat specifically, carefully tailoring responses to its character."⁷ An essential task for any specific threat assessment is properly identifying the enemy, which aids in minimizing assumptions and maximizing facts in order to get the most accurate assessment. As stated by President Bush in the National Security Strategy, "Al Qaeda remains America's most immediate and serious threat, despite our success in disrupting its network in Afghanistan and elsewhere."⁸ This section will examine Al Qaeda more closely to determine if the potential exists for them to employ mines in U.S. domestic water. Since terrorism is considered a crime, a useful construct is to analyze Al Qaeda in criminal terms. A close examination of Al Qaeda's motives, means to commit the act, and opportunity to do so should shed light their potential to carry out a mining operation in U.S. waters.

There is debate about Al Qaeda's strategic objectives in its global campaign of terror, but their operational objectives against the United States are clear. As evidenced by September 11th, the USS Cole (DDG-67) bombing, and the African embassy bombing in 1998, they seek high profile political, economic, and military targets. According to Professor Steven Koonin, Chairman of the JASON group that advises the Department of Defense (DOD) on national security issues, their motives, among others, are to diminish U.S. stature, diminish military capabilities, and disrupt or destroy the economy. According to Koonin, "Disrupting the economy is more central to terrorists' strategy than killing a large number of people...."⁹ Al Qaeda has certainly demonstrated the motive to attack the types of targets found in U.S. ports and approaches, and many experts think that as U.S. air and land security tightens, terrorists will pursue the maritime domain.

Determining if Al Qaeda has the means to pull off a domestic mining operation is more difficult. They will need mines and a method of delivery. There is no open-source documentation proving that they possess a mine capability, but they have been linked to state-sponsored and sub-national terrorist organizations that have access to mines. In fact, U.S. intelligence has reported that Al Qaeda has had ties for more than 10 years to an Islamist militant training branch of the Iranian Revolutionary Guard, the same group that mined the Persian Gulf in the 1980s.¹⁰ Iranian President Khatami has no control over the Revolutionary Guard, which answer directly to the supreme religious leader, Ayatollah Ali Khamenei. It is not a stretch to say that Al Qaeda could get mines if they wanted them.

The means to deliver mines to U.S. domestic waters is closely related to the opportunity afforded by our open maritime trade practices and the corrupt nature of the international shipping industry. According to Andrew Linnington of the British National Union of Marine Aviation and Shipping Transport Officers, international shipping is "a murky world of corruption, bribes, lawlessness and flags of convenience. It is an industry ripe for penetration by hardened terrorist cells bent on finding new ways of wreaking havoc. Central to the problem are the states that shipping firms use as flags of convenience. A lot of the industry itself is based on quite a lot of corruption and deceit that fosters anonymity and allows unscrupulous operators."¹¹ Most ship owners have little idea who is manning their vessels, and often crews are brought in from the poorest nations for the lowest fees, making

infiltration a real possibility. Fake certificates for ships and crew are also easily obtained.¹² In April, 2003, the Coast Guard arrested a drug dealer in Florida for selling false crewmember papers to leaders of a Philippine terrorist group with ties to Al Oaeda.¹³ Al Oaeda is suspected of owning or controlling up to 20 aging freighters, none of which has ever been found.¹⁴ It is probable that these ships conduct legitimate commerce most of the time, but in 1998 one of them delivered the explosives to Africa that were used to bomb U.S. embassies in Kenya and Tanzania¹⁵. The significance of these ships is the fact that Al Qaeda is in the shipping business, which means they understand the shipping industry and could use this knowledge to gain access to the United States. Despite new initiatives by U.S. Customs and the Coast Guard, gaps still exist in security. Al Qaeda's modus operandi is to operate within the rules, so it is unlikely that administrative screening efforts for personnel and cargo will be successful. Also, the U.S. Customs Service more than doubled its effort in shipping container searches in 2003, yet still only managed to inspect 5.4% of the estimated 6 million that entered.¹⁶ Although Customs insists they are examining the right 6%, maritime fraud experts suggest there are ways of making illicit cargo appear legitimate, something organized crime "syndicates" have been doing in SE Asia for years. As international efforts to tighten security improve, terrorists could seek off the shelf solutions provided by these syndicates to import weapons into the United States.¹⁷

It is a safe assumption to say that Al Qaeda has the motive and opportunity, and can acquire the means to conduct offensive mining in American water. It is time to examine the impact these operations might have on the United States.

Impact

There are a broad range of possible consequences that flow from the offensive use of mines in domestic water, depending primarily on the enemy's objective, scope of the mining effort, and speed of U.S. reaction. It is important to note that a significant factor in mine warfare effectiveness is the psychological influence mines have on human behavior. "The psychological threat from a minefield arises from the inability to know with certainty the true threat and, second, from the risk of dire consequences if the threat is underrated."¹⁸ The detonation of one mine gives no indication that the field is clear of danger, in fact, it confirms the presence of a hidden threat, and it is this uncertainty that exaggerates the likelihood of more serious consequences in a decision maker's mind.¹⁹ Experiments have shown that given a choice under conditions of uncertainty, a decision maker will tend to exaggerate the likelihood of the more serious consequence.²⁰ This exaggerated fear is the deterrent effect that keeps ships from moving, and it can be achieved with very few mines. It is theoretically possible to achieve this deterrent effect with a no mines at all, but a credible threat could be achieved with one detonation.

The potential for economic disruption is enormous. A few well placed mines in a large harbor chokepoint could foul the channel and prevent movement of commerce until the ship could be removed and the mine danger cleared, a process that could days to weeks. Closing a strategic port in this manner, even for a few days, would effectively stop the flow of commerce and would have a ripple effect across the economy. The ten-day West Coast Longshoremen's strike in September 2002 provides an interesting parallel. Due to the interconnected global economy and just-in-time delivery practices, the cost of the strike grew exponentially over time.²¹ Trains and trucks had no cargo to move, major retailers ran low

on merchandise, and industry quickly ran out of supplies, which threatened layoffs, bankruptcy, and consumer spending.²² Further delay would have impacted earnings and affected the stock market with a potential slump in the economy. A similar effect was felt throughout the Asian-Pacific region, where many countries rely almost exclusively on exporting to the United States. A coordinated, surreptitious mining campaign against several ports, combined with a good disinformation plan could have a similar, regional effect in the United States. Any delay in mine clearance efforts would exacerbate the economic situation. With the exception of one helicopter squadron in Norfolk, VA, all U.S. CONUS based surface and airborne mine countermeasures forces are located in Ingleside, TX. While the helicopters could respond relatively quickly, it would probably take 10 days for the surface vessels to reach New York once notified, and far longer to reach the West coast.

Mines could also have a significant impact on military targets. A directed strike at a particular Navy vessel could be devastating. Many naval bases are collocated in commercial ports and share the same narrow and shallow shipping lanes, ideal for mining. A command activated mine could be placed in exactly the right spot and wait until the target came to it. More indiscriminate mines would strike whatever target tripped its firing method, but either way, the channel could be blocked or the psychological effect would close the harbor. Such a tactic could also be used to prevent or delay a naval deployment or the logistical surge or sustainment mission of the strategic sealift ships in support of troops overseas. Additionally, in all of these scenarios there will be a level of environmental damage to manage.

Analysis

Having established the possibility that Al Qaeda could conduct limited offensive mining in U.S. domestic waters, the task now is determine how likely it is to happen. A

useful technique is to examine scenarios based on enemy objectives, from the enemy's point of view, comparing risk versus reward.

Objective: Destruction of a U.S. Navy Capital Ship

Targeting a specific ship or type of ship with mines is difficult because most mines are indiscriminate and will detonate on any ship that meets its firing logic. Once the first ship detonates a mine, all other traffic will probably stop, diminishing the likelihood of success. Unless they relied completely on luck, a command activated mine would be the best method to ensure the correct target is struck. This type of mine would probably require a team on the ground to build, plant, and detonate. A large number of mines would be required to increase the probability of kill, but more mine laying activity increases the risk of exposure. A few very well placed mines in a restricted channel offer a better chance of success, as well as more risk of exposure. Also, it takes a significant warhead to sink a hardened Navy warship, which means larger mines that are harder to conceal. Although the value of the target to the terrorist would be extremely high, so would the risk of the mission, which lowers the probability. Force protection measures, including intelligence, Operational Security (OPSEC), and precursor mine-hunting would lower the risk. Objective: Delay or denial of movement of Navy or Strategic Sealift ships

This mission could be accomplished with a few mines and a demonstration, such as one mine set at a low sensitivity threshold. After that, the psychological affect would likely keep the fleet in port until the area could be searched. It is interesting to note that when the targets are warships rather than merchant vessels, some experts believe that it takes less mines to hold up operations because Commanders are loathe to risk their high value ships.²³ This mission would be relatively easy to accomplish and the payoff could be huge, but it

would require good intelligence to time correctly. The drawbacks are that the effects would be temporary unless it was timed perfectly with a critical deployment or sustainment mission. Also, if suspected, the fleet could easily counter the threat prior to departure as a force protection method. The risk is lower for this objective, but the probability of success is dependent upon good timing, and should be countered with planned force protection measures such as precursor sweeps. Also, this mission doesn't fit the operational profile of Al Qaeda because it lacks the visibility they usually seek.

Objective: Economic disruption

Terrorists have an incentive to attack a port because U.S. reaction would be to increase security and inspection, which would slow commerce and damage the economy, exactly their intended effect. This mission could vary in scope dependent upon the resources Al Qaeda could gather and coordinate. The greatest damage would come from mining approaches to multiple harbors, combined with a force multiplying disinformation plan to sow the seeds of doubt in places not mined. Access may be easier due to the higher volume of traffic into the larger ports, but the chance of detection would increase. They would need quite a few mines in narrow channels and a demonstration for credibility. The psychological effect would likely prevent all but the most daring Captains from getting underway. The best case would be a ship sunk and fouling a channel, which would delay movement even further and give the mission visibility. This is an operation where bigger is better. The more places they put mines in the water translates into more uncertainty and fear, and dilutes U.S. MCM force response, delaying the recovery effort. There could also be significant environmental issues that would demand attention and resources. The large scale version of this mission would require a lot of resources, perhaps beyond the level Al Qaeda is comfortable with.

The more people who know about the plan, the easier it could be compromised. This mission has great potential to cause serious economic damage and loss of prestige, but the effects could be temporary. The United States has great flexibility and can reroute shipping to other ports. There is significant risk of detection involved in laying a large number of mines, which might force them to a smaller scale operation. The mining of any ship near a large city would still serve their purpose by generating fear and creating publicity to diminish U.S. stature. While the reward of a successful mission is high, it is also a temporary condition. The reduced risk and considerable payoff involved with a more localized operation makes it the most likely.

Objective: Mines in a secondary role as part of another operation

Mines could be used in an adjunct role as part of a suicide mission. In this role they would be used to delay and deter first responders in order to maximize the damage and confusion caused by the primary mission. Because of the suicidal nature of the mission, there is little risk in using mines, and a potentially large payoff, so the probability of their use in this manner is high.

Conclusion

At first glance, mines look like an ideal weapon for terrorists to employ against the United States. Inexpensive, covert, and non-attributable, they seem to offer a weaker organization the means to strike and control a superior power. Effective offensive mining, however, is not an easy process, especially when it needs to be covert. It is unlikely that a terrorist organization would be able to lay an extensive minefield in U.S. water. Short of that, they would have to try to place a smaller number of mines in strategic locations to attack specific targets, or lay random mines while transiting a port or channel. Given the risk inherent in these missions and the low potential for success, it seems unlikely that they would attempt them. Nuisance mining for a temporary effect does not fit the Al Qaeda profile that we have witnessed. They would be more attracted to the spectacular and permanent effects of a Weapons of Mass Destruction (WMD) incident in the Continental United States (CONUS). Another reason that mitigates their use of mines in domestic U.S. water is that all the same objectives are available overseas, much closer to their bases of support. Al Qaeda is more likely to attempt a strike at U.S. targets by mining a strategic chokepoint. The Strait of Hormuz is by far the world's most important oil chokepoint, and any attempt to close it would affect world oil prices and the U.S economy immediately. Al Qaeda's ships ply these waters daily with impunity and could plan and lay a much more extensive minefield. Doing so would almost guarantee a U.S. response, bringing U.S. warships.

The purpose of a threat assessment is to approximate the consequences and probability of an event as accurately as possible, in order to prioritize limited resources for maximum benefit. The economic consequences of a terrorist mine attack on the U.S. have the potential to be enormous, but unlike a WMD attack, they would only be temporary. The damage done would be closely related to the speed of the response effort in opening the port and channels to shipping. Navy capital ships and military sealift ships enter and exit port infrequently enough to plan coordinated force protection procedures should intelligence require it. While we should never completely discount the mine threat, or Al Qaeda's capabilities, there are ways to reduce vulnerability and mitigate the consequences with the resources already allocated.

Recommendations

"Homeland Security is a concerted national effort to prevent terrorist attacks within the United States, reduce America's vulnerability to terrorism, and minimize the damage and recover from attacks that do occur."²⁴ This definition of homeland security provides the framework from which to approach ways to improve MCM responsiveness during a crisis. Prevention

Intelligence and interdiction are the keys to prevention. The focus should be preventing mines from entering the water. Navy and Coast Guard intelligence need to be seamless in order to pass and share critical information quickly. The Navy tracks mine intelligence to determine who has them, where they're stored, and when they move. This data needs to be available both ways. Mine recognition is a must for any boarding party. Deterrence

Since September 11, awareness and deterrence have increased ten fold due to new legislation, international agreements, the formation of the Department of Homeland Security, Coast Guard initiatives, and other government agencies. With time to mature and the introduction of new technology, awareness and deterrence will continue to grow. Reaction

Failing prevention and deterrence, the focus needs to be on reducing the Mine Countermeasures tactical timeline from discovery to notification, detection, prosecution, and neutralization. Timely action and recovery is also important in retaining public confidence in the government. -Relocate Surface and Airborne MCM forces to coastal ports. This is the number one priority to speed recovery efforts. The current response times from Texas to East or West coasts are measured in days to weeks.

-Make MCM forces TACON to United States Coast Guard (USCG) for Homeland Security. We must clarify this issue and start to develop FUNCPLANS for mining contingencies. Terrorist operations are criminal activities and they fall under the operational umbrella of the Department of Homeland Security. The USCG is designated as the Lead Federal Agency for Maritime Homeland Security and is more likely to be in a position as a first responder. -Conduct exercises with MCM forces periodically in various strategic ports. This allows the tactical assets to become familiar with the environment and with the other agencies they must work with.

-Conduct bottom mapping operations to a baseline reference from which to compare Mine-Like-Objects. Coordinate plan with NOAA to supplement bottom mapping with interoperable equipment. These actions will significantly decrease mission analysis time. -Plan for an Information Operation program to reassure public and commercial shipping sector in the event mines are found.

-Plan for MCM precursor sweeps for Navy Capital ships.

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