Anticipating the Waiting Weapon: U.S. Ports and Terrorist Sea Mining

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The purpose of this group study was to investigate the possibility of a specific terrorist attack involving the U.S. maritime and transportation industries while focusing on the port of New York/New Jersey as an example. This group identified mining of the littoral environment as a well-tested tactic that has the potential to be exploited by the terrorist. The fear, uncertainty, and disruption which these cost-effective weapons of attrition can create was evaluated and a proposed scenario for an attack on New York Harbor was created. The study details the history and use of sea mines, the types of mines currently available, methods of delivery, potential strategies, political, social, and economic results of such an attack, capabilities for prevention, and proposed measures for mitigation.


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Anticipating the Waiting Weapon: U.S. Ports and Terrorist Sea Mining

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INTRODUCTION

Mining of the littoral environment is a well-tested tactic that has been used for centuries and which today has the potential to be exploited by the terrorist. Mines are extremely cost-effective weapons of attrition which can effectively inflict fear, uncertainty, and disruption in a maritime nation (Hartmann 5). The fusion of cost factors, inconspicuousness, advanced technologies, and potential harm come together to create not just a specialized threat, but a valid danger, and in our opinion, a critical vulnerability.

In our textbook, *Terrorism and Counterterrorism*, the first chapter addresses the issue of the definition of terrorism. While there are several approaches to explaining the meaning of the term, more than half of the published definitions include political objectives as a goal of terrorism. Sea mines give the potential terrorist a vehicle by which to achieve significant political and economic devastation, on a scale so large in magnitude it would be difficult to fully comprehend. While future predictions are often hard to make, it seems inescapable that goods and materials will continue to move from place to place by sea. The necessity of transporting bulk commodities by sea is a constant and the concept of terrorist mining of major harbors and waterways poses a significant threat to the safety of shipping and the continuity of the U.S. economy and political system.
THESIS

Through our study, we hope to understand the history and use of sea mines, the types of mines currently available, methods of delivery, potential strategies, political, social, and economic results of such an attack, and capabilities for prevention. We will also detail one potential scenario for an attack of this nature, which will serve not only to better understand the threat itself, but the technical and material requirements that are necessary for its success.

HISTORICAL UTILIZATION

The impetus for the creation of the sea mine stemmed from the realization that a ship is more vulnerable to an explosive attack below the waterline than it is to one that is above. In 1777, Bushnell created the tactical idea to destroy ships remotely by underwater explosions. Unfortunately for him, he lacked the supplies and technology to
bring his invention to fruition; such things as insulated wire, batteries, electrical
detonators, and high explosives (Truver 230). During the Civil War, a handful of isolated
attempts were made with moored contact mines, but it was not until 1904 during the
Russo-Japanese War that mines became a serious tactical weapon in their own right.

With this background in mind, it becomes clear that the entire operational history
of sea mines is quite brief, ranging from 1904 to the present day. This period includes
the Russo-Japanese War, World War I (Dardanelles, Dover Straits, and the North Sea),
World War II (both Pacific and European theatres, plus limited German use off the coast
of the United States), the Korean War (Wonsan), the Vietnam War (inland/coastal
waterways and Haiphong), the Falkland Islands War, and both Persian Gulf Wars.
THE MODERN THREAT

Within the last thirty years, mine warfare has developed into an effective tool in the hands of disadvantaged states, terrorists, and nations desiring to spread political intimidation. Examples include the use of sea mines in the Falkland Islands War of 1982 and in 1984 in Nicaragua, reportedly by the U.S. Central Intelligence Agency (Truver 229). Further research uncovered use by Libya’s Mummar Qaddafi and in recent years in the Persian Gulf, which has posed serious difficulties for both merchant and naval traffic. Perhaps the most appropriate example is the USS Samuel B. Roberts (FFG-58), which struck a World War I era mine in April of 1988 in the Persian Gulf and nearly broke in half (NavSource)!

What these historical references and anecdotes seek to impart is the fact that sea mines remain a threat to be reckoned with and are to be taken seriously. The words of Mr. R. D. Bennett, the director of the Naval Ordnance Laboratory during World War II, ring as true today as they did when they were spoken: “The effectiveness of the submarine mine has not decreased with the coming of the space age. So long as cargo ships cross the sea, this unspectacular weapon will remain a major factor in control of the approaches to harbors, and the shallow straits between seas” (Duncan 57). This fact is recognized by the terrorist and we must remain vigilant of the ever-present threat.
TYPES OF MINES

There are a number of sea mines with technology differentiating them as shown below. Most important, it is vital to understand the parameters of each device to better determine which mine will work more effectively; i.e. creating the most damage:

(Diagram courtesy of the Royal Australian Navy)

There are three different types of sea mines: ground (bottom), moored, and contact (floating). While moored and contact mines cannot be overlooked as options to the terrorist, we have chosen to focus our research on ground (bottom) mines.

Bottom mines are most effective in comparatively shallow waters. With a large negative buoyancy, ground mines come to rest on the ocean floor and stay there. In very deep waters, surface vessels may pass over the mine without actuating the firing mechanism; if it does actuate the passing ship typically sustains little damage. Bottom mines fall under three categories of detonation: anti-invasion contact, influence, and
controlled. In addition, both influence and controlled mines have sub-categories. Influence mines utilize pressure, acoustic, magnetic, and combination detonation while controlled mines utilize sonar and cable detonation.

Moored mines are effective against submarines as well as surface ships and are placed at pre-determined depths under the water. The explosive charge and firing mechanism in a moored mine is housed in a positive-buoyancy case and a cable is attached to an anchor on the bottom, holding the case at a predetermined depth below the surface. Moored mines fall under two types of detonation: static and non-static. The sub-categories for static moored mines are influence and contact. Influence has two different types, acoustic and magnetic, while non-static moored mines fall under drifting, homing, and rising.

The mere threat of a mine is often just as potent at the actual sinking of a ship, as the presence or threat of mines requires the necessary countermeasures to sweep or neutralize them. Consequently, this causes delays in shipping schedules which may require that ships use alternate routes and port areas. As defensive weapons, mines may be planted in ports, harbors, channels, anchorages, bays, estuaries, or open waters to protect against enemy offensive seaborne attacks into these areas (FAS). With several options and the potency of a mere threat, the appeal to the potential terrorist is clear.

MINE TECHNOLOGY

Our research has shown that mines are becoming increasingly complex, and most of the advances can be attributed to the technology incorporated into their firing systems. While technology has made mines more complex in several ways, it has also streamlined
and simplified processes and components. Newer mines, for example, have features which make assembly, testing, and stowing much easier and safer than was possible with older, not-so-complex mines.

Sea mines located in shallow waters prove to be the most difficult to locate, therefore we have decided to strategically place mines in various locations throughout the New York Harbor area. Mine components that we will need to deal with include the main charge, booster, detonator, priming device, firing mechanism, battery, acoustic transducer, magnetic sensor, and calibrated holes (Jane’s).

METHOD OF DELIVERY

There are three principal methods of delivery for a sea mine: aircraft, surface, and submarine. Our work is concentrated on the surface delivery method through the use of a small vessel. It is worth noting, however, that surface-laid mines are no longer in the U.S. stockpile of active military weapons. Almost all air and submarine laid mines, however, can be adapted for surface laying if the need arises. Surface laying is the most economical method of delivery because of the sheer number of mines that can be carried in the vessel, however there are several unacceptable constraints, such as conspicuousness, stealth, and time, which often necessitate the utilization of the other methods of delivery. Our case study uses a relatively small mine requiring limited manpower and incorporates a creative delivery method which will facilitate inconspicuous surface delivery.
DETONATION AND COMPONENTS

Target influenced mines seek to detect ships or submarines using magnetometer, hydrophone, or pressure devices. Influence mines can be calibrated to detonate only near ships of a certain size. Controlled mines are remotely operated by a cable connected to the shore.

Typical bottom mines consist of an explosive case and firing mechanism, and more complicated mines may be outfitted with a variety of other features. Some of these include: batteries for electronic mines, an arming device to make a mine active only after it has reached a certain depth, a ship counter that allows the mine to let a certain number of targets pass before detonating, and a clock delay and sterilizer that make the mine potent for a certain length of time, after which the mine shuts down.

Moored mines use an anchor that is located on the front of the mine. Once the mine reaches the bottom the anchor section breaks away and the rest of the mine rises upwards on a tether cable until it reaches its pre-described depth. Moored influence mines contain a magnetometer, search coil, and hydrophone which allow them to target specific classes of ships.

Magnetic mines utilize a magnetic search coil or magnetometer to detect passing ships. Newer magnetometers are often used in moored mines and can detect ships or submarines in any direction.

Acoustic mines employ a hydrophone to detect the sounds emanated by ships and submarines, specifically engine and propeller signatures. Such sounds must meet certain
criteria, including frequency band, and must increase in volume at a prescribed rate or the mine will ignore them.

Pressure mines use electro-hydraulic pressure sensors to detect ships or submarines. The pressure sensor waits for the pressure drop underwater associated with the passing of a vessel and if the target vessel is displacing enough water, the mine will actuate (FAS).

MINE SIZE AND COST

The weapon that we will be using is comparatively smaller than most mines currently available. The size of our selected mine is 3.2 feet in diameter and 1.5 feet in height. The size of this mine will make it easy to transport through the small compartments of a yacht as well as making it easier to plant.

The cost of producing and laying a mine is usually between 0.5% and 10% of the cost to remove it; and it can take up to 200 times as long to clear a minefield than to lay it (Naval Mine). We feel that we could subsidize our covert operation through an integrated shadow business, which we will detail in the following pages.

MINE SELECTION

There are numerous types of mines that are known to be in development around the world. The type of mine that will be used in this operation will be the Italian Manta Mine. Some of the other mines that we were considered throughout the course of our research include the SM G2, the SIGEEL/400, and the MR-80 Sea Mine. The following details the specifications of these various weapons:
1. Germany’s SM G2
   a. A heavyweight, non-magnetic ground influence mine designed for blocking
      shipping lanes and for laying defensive minefields in coastal waters and sea
      areas.
   b. The mine is comprised of an equipment section incorporating acoustic,
      magnetic and pressure influence sensors as well as signal processing
      electronics and an explosive charge section with detonator and safety devices.
      The sensors detect target signatures which are then analyzed by the signal
      processor and compared with preprogrammed data held in the computer’s
      programmable memory. Parameters are fed into the onboard computer via the
      testing and programming units and particular tactical parameters can still be
      programmed into the weapon just prior to laying.
   c. Specifications:
      i. Length: 2 meters (6.56 feet)
      ii. Diameter: 600 millimeters (1.97 feet)
      iii. Weight: 750 kilograms (1,653.47 pounds)

2. Iraq’s SIGEEL/400
   a. A bottom mine that is designed for laying in both deep and shallow water for
      use against medium and large sized surface targets. It can be launched from
ships and helicopters. The mine is supplied with both safety and sterilizing devices.

b. Specifications:

   i. Height: 850 millimeters (2.79 feet)

   ii. Diameter: 700 millimeters upper (2.30 feet); 980 millimeters lower (3.22 feet)

   iii. Weight: 535 kilograms (1,179.47 pounds)

   iv. Charge: 400 kilograms (881.85 pounds)

3. Italy’s MR-80 Sea Mine

   a. A general-purpose ground influence mine. This mine is a cylindrical seabed mine which can be laid by any type of platform, is actuated by a combination of influences (magnetic, pressure, low-frequency acoustic, audio frequency acoustic) from the target and is able to damage or sink surface vessels of all types, and either conventional and nuclear power. The body is of epoxy resin and glass fiber, which renders the mine extremely resistant to corrosion and makes it lighter than previous generation mines. The fore part contains the explosive charge, while the tail section contains all the actuation, priming and operating devices. It is closed by means of a cover which houses the acoustic, magnetic and pressure sensors together with the safety and arming device. All influence devices are connected to a central unit, where all delay functions, safety intervals, sterilization, influence combinations, ship counting, anti-
removal and firing control are located. The sole plate supporting all of the
electrical modules and the magnetic sensor is linked to the cover by slides that
run inside the tail section. By unscrewing the bolt at the rear, the tail cover is
easily removed with all the devices linked to it; in this way every part of the
mine is accessible for assembly and adjustment operations.

b. Specifications:
   i. Length: 2750 millimeters (9.02 feet), 2096 millimeters (6.88 feet), and
      1646 millimeters (5.40 feet)
   ii. Diameter: 533 millimeters (1.75 feet)
   iii. Weight: 565-1035 kilograms (1,245.61-2,281.78 pounds)
   iv. Charge: TNT, HBX-3 - 380-865 kilograms (837.76-1,907.00 pounds)
   v. Service depth: 5-300 meters (16.40-984.25 feet)
   vi. Operational life: 500-1000 days

4. Italian Manta Mine (Team Bravo Selection, reaffirmed by COMINEWARCOM)
   a. A shallow water ground influence anti-invasion mine that operates between
      2.5 and 100 meters (8.2 and 328.08 feet), and has dual influence: acoustic and
      magnetic. This mine can remain effective underwater for more than a year
      and its weight and shape are such that it rests firmly on the sea bottom even in
      running or tidal waters. The mine is equipped with all the safety devices
      needed for handling and transport. The priming device keeps the detonator
      away from the explosive until the operating depth is reached so as to prevent
      an unwanted detonation. The mine is laid by surface vessels or by frogmen.
b. Electric circuits include:
   i. Delay circuit: started by priming device, this enables an actuation delay from 0 to 127 days adjustable by steps of half a day to be set.
   ii. Pre-alarm device: this detects the noise caused by the passage of the targets and energizes the sensing circuit.
   iii. Sensing circuit: activated by the pre-alarm circuit, this actuates the firing circuit.
   iv. Sterilizing circuit: this sterilizes the mine after an adjustable preset time.

c. Operational status: In production and service. A number acquired by Iraq were cleared from Kuwaiti waters following Operation Desert Storm/Desert Shield in 1991.

d. Specifications:
   i. Diameter: 980 millimeters (3.22 feet)
   ii. Height: 470 millimeters (1.54 feet)
   iii. Weight: 220-240 kilograms (485.02-529.11 pounds)
   iv. Charge: 150 kilograms TNT (330.69 pounds) or 180 kilograms HBX-3 (396.83 pounds)
Manta shallow water ground influence mine. Key to diagram: (1) main charge (2) booster (3) detonator (4) priming device (5) firing mechanism (6) battery (7) acoustic transducer (8) magnetic sensor (9) calibrated holes

Italian Manta Mine (Jane’s)

MINE ACQUISITION AND PRODUCTION

The Manta Mine is in production but considering the nature of this operation we have decided to produce and to lay both real and dummy mines.

Our research led us to understand that many countries use, produce, sell, and export mines. Denmark, for example, is a country that produces mines under government contract, however no private company has been issued a license to produce parts for such weapons since 1983 (Paamand). Today, there are several Danish companies that at one point had a contract and are suspected of still producing mines. Suspected mine-producing companies include those who have made mines before or have close connections to mine-producing companies such as parts and device manufacturers. The following is a list of suspected mine-producing companies: DISA Technologies A/S, Dansk Industri Syndikat A/S, Eimepar A/S, H. Brusch Maskinfabrik A/S, Niro-Bola A/S, and A/S Wejra (Paamand).

The Manta Mine parts will be shipped to various post office boxes throughout the United States including California, Idaho, New Mexico and Arkansas. When the parts arrive, a delegated individual will pick up the shipments and forward them to New Jersey where they will arrive to a post office box in Hoboken. Team Bravo will then proceed to transport the parts to our basement headquarters in Brooklyn. We will then begin to reverse engineer operational Manta Mines with the help of an experienced accomplice.

The mines will be assembled in stages. The Manta Mines will be set on time delays so that all the mines will go active in a similar time frame. This will also ensure our safety during the placement process. As an additional tactic, we will be producing
live mines as well as dummy mines. This tactic, endorsed as effective by the U.S. Navy’s Mine Warfare Command, has the potential to create just as much havoc as a live mine!

Another aspect of the threat that mines pose is the size of the mine field itself. We will be strategically placing numerous mines throughout New York Harbor causing more delays and requiring more manpower in order to clear the fields. In our operation, the ratio of the live mines to dummy mines will be approximately one to four. We expect to plant twenty to twenty-five mines in each mine field.

MINE STORAGE

The mines will be stored in our basement headquarters in Brooklyn, New York. Care will be taken to ensure the separation and proper labeling of live and dummy mines. Our research has uncovered the sensitivity and attention to detail required when handling these devices, and we need to remain vigilant as we prepare the weapons.

STRATEGIC DELIVERY PLAN

Team Bravo has created a scenario detailing the potential terrorist sea mining of New York Harbor, the Port of Los Angeles/Long Beach, the Port of Houston, or another strategic U.S. port. The act could be completed simultaneously with all ports being mined at the same time or they could be separately targeted. As a result of our proximity to the locale and the scale of our research capability, we have chosen to focus on the terrorist sea mining of New York Harbor exclusively.

The mining will be executed just prior to the months of September, October, and November, as these are the months of peak import cargo volume as a result of the
approaching holiday season. As far as disruption to the greatest number of people possible is concerned, we feel that this tactic could be highly effective. If the harbor is closed due to mine clearance and/or ship destruction in a channel, vessels will be put to anchor or diverted, creating extensive delays and disruption to the intermodal transportation system. We have elected to target The Narrows (the tidal strait separating the boroughs of Staten Island and Brooklyn), the Red Hook cruise ship terminal (opposite Governors Island, accommodates the Queen Mary 2), selected anchorages, and the main shipping channel.

YACHT BUSINESS ANALYSIS

The cover business for our terrorist plot is Bravado Dinner Cruises. This dinner cruise company will acquire one yacht that will go out into the harbor and under the cover of bona fide entrepreneurship will lay mines in our strategically selected locations. The mines will be brought on the boat along with the stores and taken forward to the master cabin. The master cabin, outfitted with a moon pool to allow covert placement of the devices, will be easily isolated from the guests aboard the vessel. All mine positions will be recorded and plotted on a master chart as to ensure no overlapping. Most importantly, the mines are set to be activated during a specific time frame so that they will go active when the laying operation is complete and have no risk of detonation as we complete the planting process.

We feel that there is enough demand for this type of dinner cruise service during this time period that our cover operation will have little trouble finding business and making a profit. Assuming that this would be the case and that we were able to operate
on a set, permanent schedule, it would be possible to lay mines according to a specific plan.

VESSEL MODIFICATION

As indicated above, our yacht will be outfitted with a moon pool. This addition will enable us to achieve our true aim of mine planting without disruption or notice. Moon pools are common to many research vessels and undersea platforms. A room, with an airtight door, will have an open floor that extends right through the bottom of the hull. A moon pool allows researchers to lower their instruments, in shirt-sleeved comfort, even if the ship is in high seas or surrounded by ice. Our moon pool will be constructed under the master bed with dimensions of six by six feet, which will allow us to easily drop Manta Mines. Our research has shown that a modification of this type will pose no problems to the vessel’s stability.

Note the moon pool on the underside of this research vessel.
YACHT SCHEDULE

The Manta Mine has a programming limit of 127 days, therefore the mines will begin to be laid during the beginning of May so that the mines will go active at the beginning of September, so as to achieve the strategic objectives indicated earlier.

The first real and dummy mines will be laid on 1 MAY and all live mines will become active on 4 SEP. We project getting underway on average three times per week and laying one to two real and two to four dummy mines during each voyage.

We anticipate the following figures by the end of August:

18 weeks x 3 times per week = 54 dinner cruises

Real Mines:

54 dinner cruises x 1 mine per cruise = 54 real mines laid

or

54 dinner cruises x 2 mines per cruise = 108 real mines laid

Dummy Mines:

54 dinner cruises x 2 mines per cruise = 108 dummy mines laid

or

54 dinner cruises x 4 mines per cruise = 216 dummy mines laid

TOTAL: 162 - 324 mines planted
While several variables factor into the feasibility of these figures, such as availability, production, manpower, interruptions, and more, we feel that this remains a possibility. In our initial assessment, these figures were highly inflated, and following our conference with the U.S. Navy’s MINEWARCOM, we have adjusted the number of mines to a more feasible threshold.
THE BRAVADO QUEEN

Year Built: 2006
LOA: 70 feet
Beam: 18 feet
Dry Weight: 105,800 pounds
Hull Shape: Displacement
Fuel: Diesel
Fuel Capacity: 1,215 gallons
Water Capacity: 360 gallons

Max Draft: 5 feet, 3 inches
Hull Material: Fiberglass
Engine: Inboard
Horsepower (total): 3,140.00 hp
Holding Tank Size: 95 gallons

The blue portion represents the moon pool location while the red indicates our secondary drop point option, which would see extremely limited utilization.

Team Bravo
MARITIME SIGNIFICANCE

As midshipmen at the United States Merchant Marine Academy, we are tasked with serving the economic and defense interests of the United States in our Armed Forces and merchant marine, but also with contributing to the intermodal transportation system that ties America together. The past three and a half years of study coupled with our extensive practical sea time has served to give us unique exposure to the true depth and breadth of our Nation’s transportation system. The 361 public ports in the United States handle over ninety-five percent of our overseas trade (Sparks 15). Current trends indicate that over the next twenty years trade volumes will likely double! The primary mode of transportation for world trade is ships, which carry eighty percent of world trade by volume (Sparks 15). The United States is the world’s leading maritime trading nation, responsible for nearly twenty percent of the annual world ocean-borne overseas trade, which accounts for twenty-five percent of the U.S. Gross Domestic Product (Frittelli 3).

MARITIME ACCESS

The issue at stake when considering terrorist mining of U.S. harbors is the preservation of continuous open access. This is perhaps the greatest threat posed by these weapons, and is why they have the potential to single-handedly cripple our economy. Approximately 7,500 foreign ships enter U.S. ports every year, several of which are strategic sealift ports of critical importance whose availability must be continuously ensured (MTSA). The Department of Defense and the Department of Transportation have designated seventeen U.S. seaports as strategic as they are necessary for use by the Department of Defense in the event of a major military deployment (MTSA).
PORT OF NEW YORK AND NEW JERSEY

The Port of New York and New Jersey is the third largest port in the United States, and the largest on the east coast of North America. It is also the closest port of entry to several major consumer markets and a gateway to others in the mid-Atlantic and Midwest. Cargo transiting its wharves can reach almost one-third of the U.S. population within twenty-four hours, and in 2005, the Port handled over 4.4 million TEUs and more petroleum production than any other port in the Nation (Breskin 2).

IMMEDIATE ECONOMIC RAMIFICATIONS

As we learned from our DTRA Liaison this term, if Port Elizabeth were to be shut down for a period of one day, the economic ramifications would amount to somewhere between $700 and $800 million. As another example of the potential economic impact that reduced access to a port could create, we researched the result of the ten day 2002 West coast longshoreman strike and discovered that the first five days of the strike equated to a loss between $1 and $2 billion, and that the final five days saw a rise in this figure (Shaiken)! It is important to realize that in this example access was not completely denied, merely slowed. The economic and strategic threat posed by terrorist sea mining of New York Harbor is significantly magnified when viewed in this context.

GOVERNMENT STRUCTURE/RESPONSE

U.S. COAST GUARD

Through research and interviews of government officials and agencies as well as contacts in the private maritime security sector, we sought to ascertain the scope and
capability of our government’s to deter and respond to the threat of terrorist sea mining.

The attacks of September 11, 2001 resulted in the creation of the Department of Homeland Security (DHS). The new department realigned several government activities and over twenty separate agencies into one with the primary mission of protecting the homeland. Most significant to our research was the transfer of the U.S. Coast Guard from the Department of Transportation to the DHS. In accordance with the Coast Guard Maritime Strategy for Homeland Security, the maritime security mission of the Coast Guard is to “protect the U.S. maritime domain and the U.S. marine transportation system and deny their use and exploitation by terrorists as a means for attacks on U.S. territory, population, and critical infrastructure” (USCG 2002 Maritime Strategy 9). Since they are at all times both an armed force of the United States (14 U.S.C. 1) and a law enforcement agency (14 U.S.C. 89), their capabilities are uniquely valuable and applicable to this threat. Their small size, lack of resources, and capability constraints, however, can prove to be obstacles.

Our meeting with Commander Frank Fiumano of USCG Sector NY on 6 OCT 2006 was an illuminating glimpse into the current programs and initiatives that are being undertaken by the Coast Guard to keep our waterways safe, however their ability to counter a specialized threat such as terrorist sea mining is doubtful. The impression we received from CDR Fiumano is that what the Coast Guard is relying on is their ability to interdict the terrorist prior to the actual placement of mines. This approach is rooted in the concept of Maritime Domain Awareness, and is supported by several Coast Guard programs described by CDR Fiumano: Field Intelligence Support Teams (FIST), the Blue Force Tracking System, the Ports and Waterways Safety System (PAWSS), and
America’s Waterway Watch. What is important to realize, however, is that the Coast Guard has zero capability to conduct the specialized mission of mine countermeasures.

The Coast Guard seems to understand that it does not have the equipment, manpower, or expertise to handle all threats, with mining being a prime example, and their structure has been created with that in mind. If faced with a mission deemed outside of their ability, they can request assistance from the Department of Defense under the provisions of the Department of Defense Directive 3025.15, Military Assistance to Civil Authorities. Under this directive, the Secretary of Defense has three specific circumstances under which DoD assets would be involved in homeland defense and civil support missions. It is under this authorization that the Coast Guard would request specialized assets from the Navy to conduct mine clearance operations to enable access to the threatened port to be restored.

U.S. NAVY

Perhaps the highlight of our investigation and research for this project was the opportunity to speak with an assembled collection of officers from the U.S. Navy’s Mine Warfare Command (MINEWARCOM) on 29 SEP 2006. In a country with over 300 ports, seventeen of which have been designated as strategically significant, what we found to be a glaring problem is that the Navy has positioned all of its mine countermeasures ships and one-half of its mine countermeasures helicopter squadrons in Ingleside, Texas. This consolidation took place in 1992 in a reorganization that resulted in Commander Mine Warfare Command (COMINEWARCOM) being given operational commander status of all mine forces, followed by the establishment of the South Texas
Mine Warfare Center of Excellence (Mine Warfare Command History). This was mostly a result of deficiencies identified during Operation Desert Storm and the realization that a mine force consisting of two active and eighteen reserve mine force ships spread out in twenty different ports primarily in the event that a port was mined by the Soviet Union was no longer necessary. The Navy determined instead that the future capability of mine countermeasures was founded in having a deployable mine countermeasures package that could be surged wherever needed around the globe. So, having identified the shortcomings, the Navy consolidated all mine countermeasures assets in a single home port along with the entire maintenance infrastructure in order to enhance training and readiness.

Our teleconference with MINEWARCOM intensified the threat in our minds and reaffirmed our belief not only in our operational plan, but our choice of weaponry. The Manta Mine has many advantages to the potential terrorist, and these have been recognized by these mine warfare specialists as well. Perhaps most frightening was the description of Ford Expedition with Texas registration found in Iraq on Uday Hussein’s property that contained several Manta Mines! We found the group to be extremely knowledgeable regarding mine technology, global trends, and operational plans, and came away with several interesting perspectives. Chief among these is the fact that buried Manta Mines are virtually impossible to detect, and just one would take forty-five to sixty minutes to prosecute and disable once found. We were warned about the dangers of sympathetic detonation, and informed that our minimum separation should be no less than 1,000 yards apart. Perhaps most fascinating is the fact that current detection technology cannot discern between a real mine and a fake mine!
What we have identified as the biggest obstacle to the resolution of a terrorist sea mining incident is the single port location of MINEWARCOM. While perhaps logical in 1992, today this arrangement simply does not support the potential threat to homeland security posed by the current global war on terror. Where the previous threat of the Soviet Union mining U.S. harbors facilitated the stationing of mine countermeasures assets in a variety of ports on both coasts, the terrorist threat now presents a similar situation with the same economic and strategic implications as Soviet mining. The bottom line is that in the event of a mine incident, the time required for the necessary surface assets to deploy from Texas and arrive at the threatened port could be weeks. In addition, once on the scene, the process is extremely slow and laborious, as described to us by MINEWARCOM. As an example, during Operation Iraqi Freedom in 2003, it took ten ships and four helicopters ten days to conduct the clearance of thirty miles of waterway leading to the port of Umm Qasr, Iraq!

CONCLUSION

The past few months have afforded us the opportunity to approach a unique and novel idea from an interesting angle…the mind of a terrorist. In this capacity, we have brought the idea before several individuals and scanned as much public information as possible in order to determine our true vulnerability to such a threat. Our initial view of the threat was one that was feasible, but most likely not a reality. Our research has left us convinced of its viability, unsure as to our government’s capability for quick resolution, and inspired to inform and to educate whomever we can as to the viability of this threat. U.S. intelligence officials believe Al Qaeda is in possession of mines after a U.S. spy...
plane discovered scores of acoustic sea-mines had disappeared from a naval base in
North Korea. It is believed that the mines could be aboard twenty-eight “terror ships”
Osama bin Laden has assembled (English). In addition, one cannot help but consider the
ingenuity of the current insurgency in Iraq to create improvised explosive devices (IEDs)
which lay in wait for passing convoys…could this be indicative of similar applications in
the maritime domain? As Americans we must not only recognize this threat, but remain
vigilant in our awareness and in our attempt to provide protection. What is of paramount
concern is not merely the recognition of the overt threat to port access that terrorism
poses, but the covert, highly exploitable threat of littoral mining. While addressing a
separate threat, a recent statement by President Bush clearly and concisely indicates what
our research into this subject has demonstrated to us and the necessary frame of mind for
our survival: “America must not ignore the threat gathering against us. Facing clear
evidence of peril, we cannot wait for the final proof, the smoking gun that could come in
the form of a mushroom cloud.”
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