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Executive Summary

Title: Modern Piracy: The Impact on Maritime Security

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Thesis: Although acts of piracy are generally criminal as opposed to terrorist in nature, its unpredictable time and location of occurrence, the spectrum of target vessels, and its increasing frequency creates an opportunity for terrorists to use its methods as a means to achieve their goals and creates a destabilization of maritime security.

Discussion: This paper will provide a brief historical perspective of piracy, examine its modern dimensions, and analyze the impact of modern piracy on the U.S. maritime security. It examines the efforts that U.S. and foreign governments, military, business and civilian organizations expend to combat the problem and discusses its tangible cost in capital resources to treat the symptoms. It analyses the significance of a piratical acts unpredictability, geographic distribution and frequency, creating the opportunity for terrorists to exploit this criminal activity to fund their activities or even to obtain and deliver a WMD.

The sea, a largely unregulated space, is potentially a safe haven for criminals and terrorists to act unopposed by military or law enforcement efforts. Although piracy is generally not politically motivated, it is invariably linked to the prevailing political conditions and the proximity of weak or failed states.

Since the terrorist attacks in the U.S. in 2001, the international community has been forced to assess the vulnerabilities of maritime security. The United States and its global partners are rising to meet an endless myriad of piratical incidents worldwide.

In the post 9/11 and USS Cole attack period, there has been a resurrection of worldwide piracy incidents that have significant implications on maritime security. The increase of attacks has demanded the attention of global maritime trade and international partners. The possible use of the maritime environment by terrorists poses a real and credible threat to all nations. Similar to commercial aircraft being used as missiles, the terrorist threat that manifests itself in the control of a maritime vessel could potentially be used as a weapon against any seaboard city in the world.

Conclusion: The United States and her maritime partners are constantly working toward achieving a secure global maritime environment. There are numerous initiatives focused to assist failed and failing states create functional government agencies in an effort to develop their law enforcement and coast guard forces. Until those weak and lawless lands can maintain control of their territorial waters, the global maritime partners will be required to maintain naval and law enforcement assets on constant patrol in these 'piracy hot spots' to prevent a further escalation of robbery, violence and potentially, terrorist acts.

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Preface

This paper addresses the roles that U.S. Military, Interagency and international organizations must assume to achieve security from the maritime threat of terrorism. I chose this topic because as a U.S. Naval officer, I have dedicated thousands of hours on deployment and in home port to the detection, tracking, intervention and disabling of illicit, piratical and possibly terrorist activities on the water. I realize the necessity of cooperation between all countries in order to achieve a secure environment. The threat from terrorism and the economic and human impact of criminal activities including piracy is not a new threat and will only increase in scope and severity if the global maritime partners do not achieve supremacy in the future.

I would like to acknowledge the following individuals for their expert advice, incredible patience, and superb tutelage: Dr. Otis, Dr. Shibuya, and Lieutenant Colonel Pete Yeager.

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Situational Analysis

Since the 2001 attacks on the World Trade Center, the international community has been forced to assess its vulnerabilities. The security of the U.S. commercial aviation system was the initial focus of improvements in security; all avenues of the global transportation system are vulnerable, including that of maritime security. Subsequently, there has been a dramatic increase in maritime piracy incidents worldwide that have captured the attention of global maritime trade organizations and international partners for maritime security.

In the United States, 95 percent of the overseas cargo moves through seaports, and similar quantities are typical of any nation worldwide.¹ With the economy of the globe resting on maritime transportation, any disruption of shipping can have dramatic consequences.

There are accounts of piracy incidents as far back as 2000 B.C. amongst the Phoenicians and Greeks.² It is rumored, that in 75 B.C. Julius Caesar was captured by pirates, only to escape and then return to crucify his captors.³ Piracy has threatened maritime transportation since the earliest days of man's quest to cross the sea for transportation, commerce and war.⁴ During these periods, seafarers experienced low economic prosperity and in the constant presence of criminal activity, piracy manifested itself as a legitimate occupation (either private or state sponsored).⁵

Generally not politically motivated, piracy has historically been a regional threat whose relevance has been marginalized due to its criminal nature. In 2001, at the beginning of the Global War on Terrorism (GWOT), the U.S. Navy assumed the responsibility to act as the international police of the maritime realm on a scale that dwarfs that of the Cold War era.

For centuries, piracy remained between two categories: unprovoked criminal acts or state sponsored privateering, which was often justified as an exercise of territorial rights. Some countries have always threatened shipping by seizing vessels passing near their coast, often claiming violations of fishing rights and demanding fines be paid for the vessels release.⁶ During the Middle years, 800 to 1800 A.D., the surges in piracy were defeated by a foreign navy that rose to meet the maritime threat and retake the sea for the safety of commerce.⁷

Although, modern manifestations of piracy in Southeast Asia and the Horn of Africa bear little resemblance to the traditional Black Beard stereotype of ruthless men sailing a ship flying the skull and crossbones. Today's pirates attack from small fast speedboats, use machine guns and rocket propelled grenades to force a merchant vessel to slow, then use ropes and grappling hooks to board the vessel. In the majority of contemporary piracy incidents, the thieves have no desire to seize the entire vessel, crew and cargo, but only to conduct armed robbery of personal items, electronics, sometimes cargo and food. There are instances where the pirates abduct the crew to enable them to drive the vessel to an anchorage near land so that further pillaging of the cargo can occur, and then likely attempt to receive a ransom for the vessel and return of the crew. Violence during pirate attacks is on the rise.⁸

The unpredictability of piratical events, the spectrum of targeted vessels, and the increasing number of piracy events creates instability in the maritime domain. These indicators create a larger concern that a terrorist will use an act of piracy to obtain a vessel for the employment of a weapon of mass destruction (WMD) or the intentional collision or grounding in a maritime choke point that would disrupt maritime transportation and have a catastrophic impact on the global economy.

Assessing Maritime Vulnerabilities

The global economic expansion of recent decades has created a rich environment for criminals acting on the cross-border exchanges of commerce, people and information. It is estimated that 90 percent of the global economic bulk transport utilizes the oceans. This greater economic activity creates more incentive and opportunity for criminal and terroristic acts of piracy to occur. Maritime chokepoints (figure 3), a narrow passage between two shores that is less than 15 nautical miles across, are key hunting grounds for pirates. Since the number of choke points, where the highest probability of pirate acts occur remains constant, and as the number of vessels that pirates target increases, the number of attacks is increasing.⁹

Historically, pirate activity has been a regional threat that has been managed by local authorities. Globalization is encroaching on the previously unnoticed activities that occur in remote areas of the world, and bringing these illicit activities to light. The global number of piracy incidents may have increased over the past 15 years, peaking between 2002 and 2006, but the real significance is how the number of events has increased in particular areas. In Somalia, for example, the situations suddenly and very quickly became one of the most serious piracy problems in the world with dozens of attacks and hundreds of attempts occurring each year.¹⁰ Similarly, in Nigeria piracy incidents increased 350 percent between 2006 and 2007.

Since there is little probability that piracy will be eliminated through offensive measures entirely, the necessity to keep a robust defensive system is required. There are certain types of vessels that are more effective as terrorist vehicles than others. Moreover, certain types of cargo are more attractive as weapons than others (Figure 1). Fundamentally transportation that is

under the radar is also a prime target of terrorist networks to allow transnational communication of people and material.

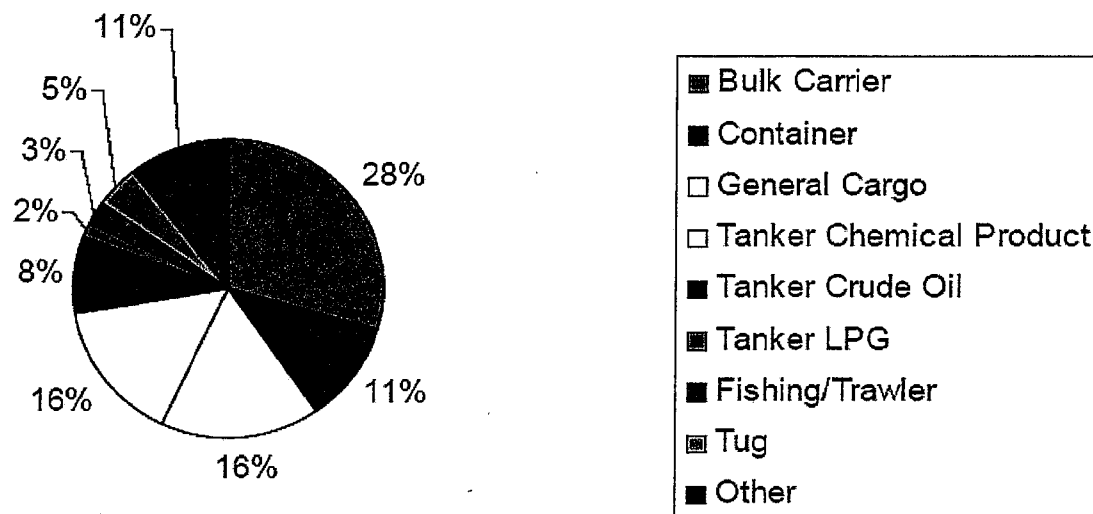


Figure 1: Categories of vessels being attacked

Source: International Chamber of Commerce, Commercial Crime Bureau.
<http://www.eurocrime.it/site/Piracy%20and%20Terrorism.pdf>

Piracy, simply put, is any unlawful depredation at sea.¹¹ The statistical recording of maritime predation has been misrepresented largely due to a simple difference in the accepted definition of piracy. Many piratical acts that occur in the gray area between international and territorial waters, at anchor or in ports have gone undocumented due to the lack of standardization between these definitions.

Historically, the United Nations Convention on the Law of the Seas (UNCLOS) Article 101 restricted the definition of piracy to the high seas (the area outside of the 12nm territorial waters of a country). This restriction reduces the number of incidents that are reported and

misrepresents the scope of the problem. The International Maritime Bureau defines 'Piracy and Armed Robbery against Ships' as;

An act of boarding or attempting to board any ship with the apparent intent to commit theft or any other crime and with the apparent intent or capability to use force in the furtherance of that act.¹²

The definition includes actual and attempted attacks whether the ship is berthed, at anchor or at sea. In 2007, UNCLOS adopted the spirit of this wording, which previously did not include attempted attacks.¹³ The progress made in the synchronization of definitions is important to the organizations that collect, report and analyze the data, such as: the International Maritime Organization (IMO), a specialized agency of the United Nations (UN), and the International Maritime Bureau (IMB), a specialized agency of the International Chamber of Commerce (ICC), provide regular statistical data and reports of acts of piracy and armed robbery against ships.¹⁴ The analysis of these annual reports reveals a distinct increase in the number of pirate incidents between 1994 and 2005 and increasing dramatically in the past few years (Figure 2).

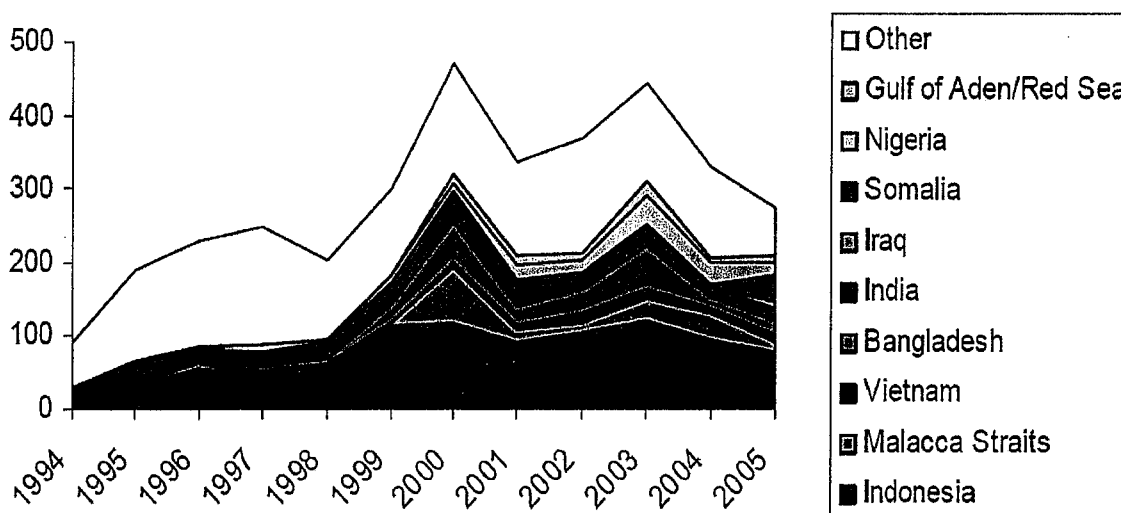


Figure 2: Trends of Piracy Activity 1994-2005

Source: International Chamber of Commerce, Commercial Crime Bureau.
<http://www.eurocrime.it/site/Piracy%20and%20Terrorism.pdf>

The IMO and other agencies monitor piracy incidents and organizations like the ICC conduct regular conferences on the activity and threat. The increased emphasis, redefined reporting criteria, and the courage of the shipping industry (which in the past did not report many unsuccessful acts of piracy in order to avoid increases in insurance), has resulted in a better understanding of the broad geographic dispersion of piracy (Figure 3). The greater data has allowed for better analysis into the location, number of pirates, weapons used, time of day, and methods of boarding. What is surprising about this data is the boldness that pirates exhibit when conducting their attacks. The maritime chokepoints are heavily traveled and patrolled by security forces, but this presence does not deter the pirates from attacking vessels with a few miles of authorities and even in broad daylight.

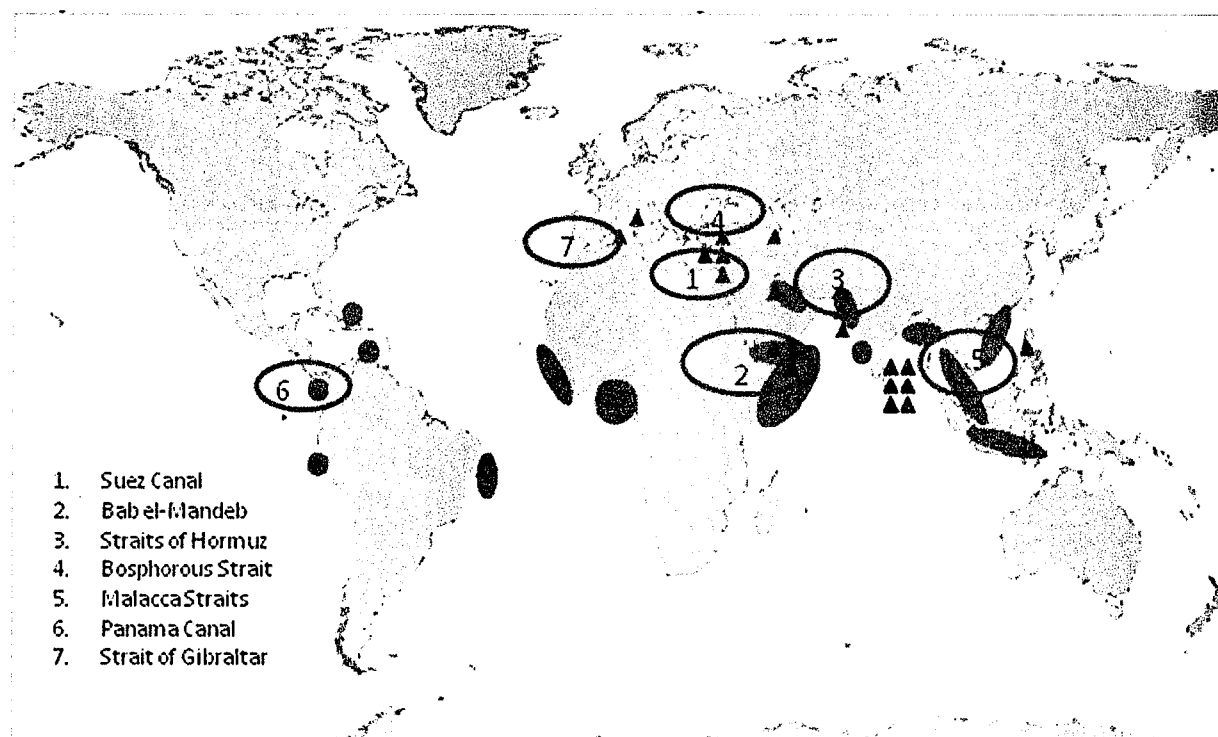


Figure 3: Key Maritime Choke-points / Piracy Hot Spots

Source: International Chamber of Commerce, Commercial Crime Bureau.
<http://www.eurocrime.it/site/Piracy%20and%20Terrorism.pdf>

The contributing factors in piracy prone regions including: cultural acceptability of piracy and crime; proximity to failed or failing states; presence of a weak legal apparatus; favorable maritime geography (archipelagos or choke points); internal conflict in the state; weak or non-existent navy, coast guard, or law enforcement; and the opportunity of reward for the act. Despite significant improvements in maritime surveillance and increased presence of coalition forces and local maritime authorities, figures 1 and 2 depict a broadening geographic distribution and frequency of piratic activity.

The landscape for piracy is changing quickly. In 2000, the number of pirate attacks off the coast of Somalia increased dramatically, but since August 2007 the waters off of Nigeria are surpassing the still increasing number of incidents associated with the Somali clans. Pirate activity in Brazil is also increasing and is expected to surpass the number of incidents that occur in Southeast Asia in 2008.

The geography of Southeast Asia provides an ideal environment for piracy. Historically, there are more incidents of piracy reported here than anywhere else in the world. The geographical advantage is simple; the pirates hijack a vessel in one country's territorial waters, dispose of the cargo in another, while the men involved are based in a third state.¹⁵ Not only do the archipelagos support the staging of small bands of pirates, but the reefs, shifting shoals, and sandbars require intimate knowledge to be safely navigated and inhibit the pursuit of pirates by authorities. This underwater topography canalizes shipping, creates choke points, and allows pirates who generally operate in shallow draft speed boats, easy cover to escape. In many instances, authorities are right on top of the pirates, but are unable to continue pursuit due to the danger of running aground.

In Indonesia specifically, the world's largest archipelagic state, more incidents of piracy occur than in any other country. Surprisingly, it is Indonesia that has demonstrated the least interest in suppressing piracy. Their concerns are more centered on the smuggling of people and goods, as well as the detrimental effects of over-fishing, which is estimated as costing the country over \$4,000,000,000 annually.¹⁶

The majority of piracy incidents are conducted against vessels traveling between local ports. This suggests that the pirates are familiar with the vessels that they take control of. In any case, it is dangerous to distract the crew of a large vessel or a vessel transiting through a narrow strait or passage, because the vessel could have a collision or run aground.¹⁷ An analysis of pirate attacks reveals not only geographic hot spots, but also different methodologies and seasonally influenced activity. Adverse weather or high sea state conditions prevent a pirate from conducting the act of piracy, but pirates will operate in heavier seas than would be expected. These key maritime chokepoints are ideal hunting grounds for pirates to operate.

The U.S. government is working with the Indonesian and Malaysian governments to increase their capacity to conduct maritime security by providing seven new search radars that will help those countries track shipping transiting the Malaccan Strait and has also agreed to give 15 fast patrol boats to the Indonesian national police to improve their maritime security efforts.¹⁸

Somalia, characterized by its lack of state government, has no control over its coastal waters, and piracy is directly connected to the lawless internal situation of the state. In Somalia, pirates are assaulting shipping out to 200nm off the coast, hundreds of miles from any port or choke point.

The aggressiveness of the Harardhere pirates (Figure 4) presents the new method that draws the most attention from international navies. The Harardhere pirates live in camps on the coast and make routine patrols off the coast seeking any vessel that ventures too close. The IMO and ICC have issued warnings to mariners to remain 50nm away from the East African coast and 200nm away from the Somalia coast.¹⁹ These measures worked initially, but the pirates figured out that the target vessels were changing their patterns and recently have used a mother ship to stage and sustain their attacks at sea and wait for shipping far off of the coast. Somalia is a piracy hotspot but it has only been a proving ground that there is a lot of careful planning ahead. Piracy can disappear for years and then return in full vigor.

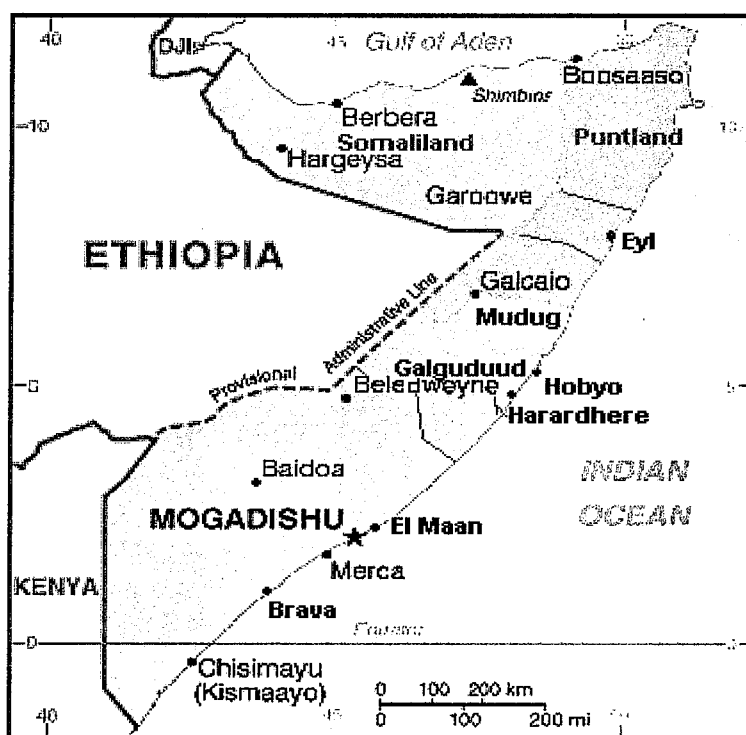


Figure 4: Map of Horn of Africa - Somalia

Source: Protocol 2006,
<http://www.protocolsecurity.eu/gfx/download/protocol%20somalia%20piracy%20fact%20file.pdf>

In 2000, there were 23 incidents of piracy recorded in the Red Sea, Aden, Somalia region, a third of the African total. This level was sustained through 2001. The number of reported piracy incidents then declined over the following three years – in 2004, only ten were recorded. It is possible that the arrival in 2001 of the U.S.-assembled multi-national Coalition Task Force (CTF) 150 to patrol the seas between Pakistan and Somalia, mustered with the purposed of finding escaping high-ranking members of al-Qaeda, contributed to the decline. But, the interval was brief. In 2005, pirate attacks had resumed in earnest off the Somali coast, aided by continued warlordism on land.²⁰

Even with significant military presence patrolling directly off the coast of the Horn of Africa, the pirates were not deterred in their ability to continue their illicit activities. It would be expected that with the increased coalition force presence there would be a statistically relevant downward trend in piracy. However, the suppression of piracy is a localized phenomenon, and it has not materialized to be the case in this region, particularly because of the absence of a stable government in Somalia and Southeast Asia.

Maritime Threat

The terrorist attack on the USS COLE in 2000 was an eye-opening event that brought to light just how vulnerable a ship is to terrorist attack. The commercial airliner attacks on September 11, 2001 prompted a large-scale assessment of the nation's vulnerabilities, with particular focus on its transportation systems. As a result, the security of the commercial aviation industry was overhauled and systems and procedures were implanted to prevent future use of that system for an attack. Unfortunately, the other transportation systems offer both valuable targets and opportunities of access for those who seek to harm America through asymmetric warfare, in general, and terrorism, in particular.

The unpredictability of a piracy attack forces the reality that future piracy is not preventable. The global distribution of lawless coastlines compounded by the absence of state

authority, lack of control of coastal waters, and the inability for international navies to patrol the vast oceans allows pirates to operate generally unopposed in many areas of the world. Because of the unpredictability of these factors, it is impossible for international naval forces, and even states with organized coast guards or police, to prevent all piracy from occurring, opening the door for the terrorist to use acts of piracy to proliferate WMD or use the pirated vessel as a weapon.

Terrorists have discovered the ease of attacking merchant ships as in the case of the French oil tanker, Limburg, off of Mukalla, Yemen in 2002. On October 6, according to investigators, a small boat packed with explosives rammed the tanker, setting it ablaze and releasing more than 90,000 barrels of oil into the sea. One Bulgarian crew member died in the incident but the others escaped.

The persons perpetrating these crimes are generally willing to use all force necessary to escape capture, even if it is at the risk of their own life. Secondly, these crimes are usually conducted at or near the territorial waters of a foreign country and the Navy must coordinate to enter those waters in pursuit or coordinate to turn-over the pursuit to the host nation's security forces. Modern militaries use helicopters to cover great distances in patrol and pursuit, but the ocean is too large to rely on these forces to be the total solution. Only in rare circumstance has the U.S. Navy been in exactly the right spot at the right time to interdict a piracy act in progress.

As the GWOT restricts terrorists' ability to generate legal funds, terrorists have turned to crime and often find themselves working side-by-side with professional criminals and even fighting for the same monies. This situation creates an environment where criminals and terrorists inevitably find themselves cooperating to achieve different ends. This common link between

terrorists and criminals can result in common criminal activities: drug smuggling, counterfeiting, kidnapping, extortion, bank robbery, illicit charity organizations and ransom.²¹

While the impacts of piracy can range from the theft of personal belongings, electronic equipment, and human abduction to the hijacking of the entire vessel, the real threat deduced from this analysis is not the impact on the local maritime trade or even the possible injury to ships' crews, but rather the disruption of key maritime chokepoints, environmental disaster, or a terrorist attack such as delivery of a weapon of mass destruction (WMD). All of these concerns will drive the world's maritime military, police and coast guard components to invest heavily in the tracking and interdiction of ships' movements.

Frequent piracy incidents are not necessarily a direct indicator of terrorist activity, but it is an indication of weak security in an area. As the world economy, and more specifically a local economy weakens, there exists a greater likelihood that criminals will seek to benefit from pirate activity. Thus, the chance of piracy acts is higher during weaker economic periods, but the probability of a terrorist using a piracy act to further their goals remains high regardless of the economic situation and could occur anywhere and at anytime.

The most primitive tribal groups are conducting successful piracy of vessels right in front of authorities. Non-state actors, or actors from non-states like Somalia, can operate under apparently lawless conditions inside the country's territorial waters. They benefit from a legal advantage in that law-abiding entities, such as the coalition units, must respect the territorial waters of a country, even Somalia, although it has no functioning government. Yet, the criminals can operate in this area unimpeded by the same lack of government. This is a significant challenge to overcome, especially in the case of the country doing nothing to enforce international law. In the

case of Somalia pirates, when captured there is even more difficulty because there is no government or court to bring a case to trial. Effectively, the pirates become detainees without a country to hold them accountable for their actions.

It is critical that we establish mutually supporting relationships with countries that are combating conflict and disorder. Especially those countries, whose strategic location, potentially has great influence on the surrounding states ability to establish security in the territorial waters of the region. The long term objective is to help all countries establish security in their coastal waters, especially those with failed and failing governments, to establish appropriate law enforcement, naval and coast guard efforts in order to prevent pirates from operating unrestricted in their water space.

Responding to the Threat

The United States and its global partners must employ a full range of operational assets and capabilities to prevent the maritime domain from being used by terrorists, pirates, and belligerent states to commit hostile acts. Failure to establish effective strategic policies and operationalize the global offensive and defensive attack against this global threat will result in significant instability throughout the maritime domain.

In response to this threat, in September 2005 President Bush issued The National Strategy for Maritime Security which is a plan that blends the public and private security efforts on a global scale with the federal, state and local efforts. In addition to this, the Departments have developed eight supporting plans that are mutually linked and reinforcing.²² These plans include:

- National Plan to Achieve Domain Awareness
- Global Maritime Intelligence Integration Plan
- Interim Maritime Operational Threat Response Plan
- International Outreach and Coordination Strategy
- Maritime Infrastructure Recovery Plan
- Maritime Transportation System Security Plan
- Maritime Commerce Security Plan
- Domestic Outreach Plan

Additionally, the President issued a National Security Presidential Directive (NSPD-41) and a Homeland Security Presidential Directive (HSPD-13), each directing several agencies as the lead in developing strategies, plans and programs to prevent and respond to threats from the maritime domain. These policies create the strategic framework that embrace the concept of unity of effort. To operationalize these plans is no small task.

Modern naval forces are not fully trained and equipped to solve all of the problems that arise when confronted with a piracy situation. The lessons learned from the USS Cole attack taught us that allowing an unknown vessel to come too close to a warship can have catastrophic consequences. Military vessels prefer to conduct their mission from a distance using long range weapons and avoid coming close to the unknown vessel. When a warship is taking action to interdict a pirated vessel, the ship itself is being placed in danger of attack by coming close to a possible threat.

Additionally, the U.S. Navy does not have the capacity to respond to all piracy acts globally and requires the assistance of partner nations' maritime assets. Even with a thousand

ship world navy, there would not be enough warships to prevent or interdict every act of piracy. The solution is in sustaining an effective offense and defense. The offense is centered on the military and other agencies that can detect, deter and destroy piracy in the maritime domain. The defense is centered on the local maritime businesses, empowered by state and local authorities and in cooperation with the federal agencies ability to share information about vessels and cargo destined for the U.S. and being able to detect and track a vessel that is either not registered or has questionable intent.

In very broad terms, two theoretical approaches are required to achieve maritime security, an offensive suppression of piracy and comprehensive defensive measures of tracking the maritime domain. The necessity to maintain an active and effective offensive campaign against piracy worldwide is critical to the development of state self-sufficiency in their region.

Ultimately it is the responsibility of the countries closest to the attack to respond and interdict the pirates. Moreover, it is the responsibility of those countries where pirates establish bases to interdict the pirates on land before they have the ability to attack. This is fundamentally the most important factor to the future of reducing piracy worldwide. The strengthening of every country's maritime security capabilities will be the broad deterrence, detection and disrupting force that will make this threat manageable.

Coast guard, customs, and law enforcement elements across the globe must be integrated and networked utilizing the speed necessary to react to information of a pirated vessel, to result in effective standardized levels of detection, tracking, intercept and interdiction. Notification of the owner of the vessel, the country of registry and obtaining the response of countries to a possible interdiction inside or near their territorial waters is a necessity. Just as global positioning systems

(GPS) can track a vehicle to alert authorities and medical assistance to an automobile accident; automated systems must be able to alert international networks to a vessel that has been hijacked and track the vessel's movement in order to intercept and interdict.

Since 9/11 container security has received a lot of attention, as analysts have raised the possibility of a dirty bomb being smuggled into the U.S. via a container.²³ The U.S. requires that every container and every ship destined for a U.S. port register prior to departure from its origination port. The current system of sealing containers at the point of origin is being upgraded to a system of electronic container seals that have a higher level of confidence. This measure should be a requirement for all ships and containers worldwide. Since these added security measures are expensive and increase the responsibility of the point-of-departure country to develop oversight of vessels leaving their ports, the U.S. and the U.N. should develop a system that rewards countries for taking the steps to increase container security.

The traditional terrorist may not venture into the maritime regime due to lack of experience, difficulty and lack of necessity. The future terrorist may be forced to pursue the seas as an alternative area of operations for the planning and execution of terrorist attacks.

Since the exact target is unknown and the exact vessel is unknown the only solution is to be diligent in our measures to track and monitor every vessel that has the potential to be used as a weapon. There have been advances in technology that are contributing significantly to the tracking of merchant vessels while transiting. Recent modifications to a collision avoidance system, now called Automatic Identification System (AIS), that transmits a unique ship identifier, location and colored symbology, based on the ship's course, speed and position, allow for continuous

monitoring of the vessel's position. In 2005 the IMO made it mandatory for all vessels that are 299 gross tons (GT) or larger to have the system installed.

The development and installation of these automated GPS tracking and position reporting systems is beneficial and keeps the honest people honest. The negatives to this breakthrough is that the system can be turned off, broken or even purposely modified to transmit incorrect information that can be used to evade authorities. Also, since the equipment is not mandatory for all vessels, there are many smaller vessels that do not have the system installed. This system, although not as comprehensive as Federal Aviation Association's (FAA) regulation of the airline industry's air controllers ability to control, monitor, and track commercial aircraft, is the foundation of a system that will address most of the requirements to monitor shipping. But, it is only as good as the signal that it transmits. It is an appropriate system for owners, insurance companies, the International Maritime Organization, and International Commerce Bureau to track cargo from one port to the next. In the future, it will be necessary for all vessels to have these devices installed for a more complete surveillance of maritime traffic.

To further assist in monitoring maritime activity, global maritime shipping lanes could be designated, such as air routes are already defined, which would improve the tracking of vessels in the maritime space. Any vessel that diverged from an authorized route would immediately become suspect and investigated. This could allow military, police or coastal security forces to interdict a vessel within some reasonable time of the route violation.

Diligent monitoring and the comparison of the maritime sensors is required to determine if a vessel is transmitting incorrect information or no signal at all will improve maritime situational awareness, and in turn, security. Terrorists could be amongst the vessels that are being tracked or

they could be operating below the radar. The terrorist may turn off or modify any self reporting and beacon type homing devices that keep the vessel monitored by its owner, operator and insuring agency.

The civilian intelligence agencies must improve their systems of collection, tracking and monitoring and incorporate the global navies information into their collective network in order for an effective deterrent and ultimately interdiction to occur. Cooperation must occur on three levels amongst the global community to improve maritime security: enforcement of international laws, improve intelligence sharing networks, and enforce standards for operating in the maritime environment.²⁴ Mapping the shipping activity in all areas of the maritime realm will enable maritime security forces to recognize a change in activity. Additionally, customs agencies must diligently monitor the internal workings of shipyards in order to be able to detect subtle changes that may indicate a criminal or terrorist influence on the normal operations of a merchant vessel.²⁵

Conclusion

The impact of piracy on the maritime security process is substantial. The solution is a balance of responsibility between civil, federal, state and local authorities. The elimination of piracy at sea is impossible, so the goal should be the long term reduction of the pirate's ability to organize on land. Piracy, like crime in any city, will never be eliminated. The evidence of piracy in history indicates that it will only be pacified to arise again at some later date and at some other place that is not controlled. The earth's oceans are too vast to preclude the elimination of piracy completely. Solving the modern day piracy dilemma is a one that will require action from all entities that can provide support in the framework.

END NOTES

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- ³ Ormerod, p. 55.
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- ⁵ Guingona, Teofisto T. Jr. Honorable. "Philippine Vice President and Secretary of Foreign Affairs." *First ASEAN-EU Experts' Group Meeting on Maritime Security*. Manila, Philippines: Maritime and Ocean Affairs Center, Philippine Department of Foreign Affairs, 2002, p. 3.
- ⁶ Guingona, p. 3.
- ⁷ Guingona, p. 3.
- ⁸ IMB, p. 22.
- ⁹ Murphy, Martin N. *Contemporary Piracy and Maritime Terrorism The threat to international security*. Routledge, 2007, p. 76.
- ¹⁰ Murphy, Martin N. *Contemporary Piracy and Maritime Terrorism The threat to international security*. Routledge, 2007, p. 25.
- ¹¹ Murphy, 11.
- ¹² IMB, ICC International Maritime Bureau. *Piracy and Armed Robbery Against Ships: Annual*. Annual Report: 1 January - 31 December 2007, London: ICC Publishing, 2008, p. 3.
- ¹³ IMB, ICC, p. 3.
- ¹⁴ CCB, ICC Commercial Crime Bureau. www.eurocrime.it. 2005.
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- ¹⁵ Murphy, p. 26.
- ¹⁶ Murphy, p. 26.
- ¹⁷ Murphy, pp. 26-28.
- ¹⁸ Office of Naval Intelligence (ONI), Maritime Security Report, 23 JAN 2008.
- ¹⁹ IMB, p. 22.
- ²⁰ Murphy, p. 29.
- ²¹ Murphy, pp. 76-77.

²² POTUS. "The National Strategy for Maritime Security." *The White House*. September 2005.
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²³ Helmick, p. 2.

²³ Williams, Phil and Ernesto U. Savona. *The United Nations and Transnational Organized Crime*. Portland, OR: Frank Cass & Co, Ltd., 1996, p. 80.

²³ Helmick, p. 2.

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