When Terrorism Goes to Sea: Terrorist Organizations and the Move to Maritime Targets

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Introduction

Attacks against maritime targets by terrorists are very rare. The Global Terrorism Database (GTD) only notes 199 out of 98,000 attacks in 40 years, which is less than 0.2% of the total.1 Even rarer are attacks on water where the terrorists need to have some maritime capability to reach their targets. Only a handful of attacks over the 40 years covered by the GTD are similar to an attack carried out by the ethnonationalist group the Tamil Tigers when they “forced a Jordanian ship, MV Farah III carrying 14,000 tons of Indian rice to run aground. LTTE robbed the rice and removed all radio communication equipment, radar, lights and generators from the vessel.”2 Given the relatively novel capabilities – an ability to operate vessels and engage in attacks on the water rather than land – and innovations – a desire to attempt an attack that is unlike standard land-based bombings, kidnappings, small arms attacks and the like – required for a terrorist group to engage in maritime terrorism, it is worth asking what would lead terrorist group to venture outside of the standard repertoire of violence.

In this paper we explore the question of why terrorist organizations would carry out this kind of attack, focusing on organizational factors related to ideology and organizational capability. The article is divided into several sections. In the first, we present the problem: while there is a standard literature on maritime terrorism, there is little quantitative work done on what it takes for groups turn to maritime attacks. There are good reasons on both sides of the debate about why terrorist might or might not want to stage attacks on the water. In the second and third sections, we go into greater detail about how organizational characteristics – both general capability and ideology – might or might now influence the capacity and motivation for groups to engage in maritime terrorism. In the fourth and fifth section, we present and discuss our data and results. As suggested by the fact that during the time period under investigation (1998-2005) no organization without access to the sea employed maritime attacks, we argue that this kind of violent behavior is driven by capability. Certain organizational characteristics of terrorist groups – territorial control, involvement in the drug trade, organizational size, and connections with other groups – provide groups with the capabilities that make maritime attacks both realistic and desirable. Terrorist groups’ ideology – what they believe, and what their goals are -- does not have the same impact, with the possible exception of groups affiliated with al-Qaeda. Finally, we conclude with implications for future research.
The Problem

The literature on maritime terrorism has focused mostly on assessing the threat of maritime terrorism, with various reasons offered for why maritime targets are attractive to terrorist groups, and counterarguments offered for why they are not. It is not intuitively obvious that terrorist organizations would want to go to sea, for several reasons. First, Peter Lehr argues that terrorist groups are operationally conservative, and are prone to copying tactics and targets that have worked in the past. Even if they move into a new operational environment, which the maritime domain would be, they are likely to test their capabilities in this new environment before moving to complicated, innovative attacks. As a result, terrorists, should they choose to engage in maritime attacks, would focus on “high probability, low impact” attacks rather than high-risk spectaculars, and transfer attack methods that worked on land to the sea. This is why the majority of maritime attacks (in his study) have been improvised explosive devices (often guided by suicide attackers) that were rammed into or placed on slow-moving or stationary ships. Given the inherent risk-aversion and conservativeness of terrorist groups, turning to maritime attacks (no matter how conservative those attacks) at all would seem to be a major turn from the tried and true, and it is worth asking what organizational characteristics are associated with the move.

Second, attacking a seaborne target is outside the logistical and training competence of many terrorist organizations. While putting together attacks on land involving a car bomb, a suicide vest, or even a massed ambush with small arms have long been part of the terrorist repertoire (and thus part of the standard training for terrorist groups), attacking a target at sea requires materials – such as boats, large quantities of fuel (if the target is far from land), possibly seaworthy communications and navigation equipment – and training -- such as maritime navigation and ship operations – that are not necessarily widely known among traditional terrorist groups. Even when terrorist groups do attempt to attack seaborne targets, their lack of maritime knowledge has inhibited the success of the operation. In the case of the al-Qaeda’s attempted attacked on the USS The Sullivans in 2000, for instance, the boat al-Qaeda used was so overloaded with explosives that it sank before it reached its target, a tactical error that more experienced seamen would not have made. Given the time and effort needed to acquire the skills and supplies necessary for a large-scale terrorist attack at sea, many terrorist groups may simply decide that such an attack is not worth it compared to what they are able to accomplish on land.

Second, the very reason that attacking a seaborne target may be logistically challenging – its distance from land – may also make it unattractive to terrorist groups. Ships out at sea, after all, are also removed from large civilian populations and out of easy reach of news cameras and camera phones. Cargo ships, or even warships, are also targets that the vast majority of the civilian population does not encounter as part of daily life, decreasing the sense of terror that a given terrorist attack might inculcate in the target population. With the exception of passenger ferries, the potentially loss of life from simply attacking a cargo ship (for example) is not high, defeating any casualty maximization strategy. Al-Qaeda’s bombing attack on the MV Limburg in the Gulf of Aden in 2002, for instance, only killed one person besides the suicide bombers.

On the other hand, attacks on maritime targets may be attractive to innovative and capable terrorist groups. This, as Peter Chalk argues, is for several reasons. First, commercial firms offering marine training and equipment have increased the opportunities of terrorist groups to acquire the capabilities necessary for maritime terrorism. Second, for those terrorist groups that have seen the economic disruption that strategically placed attacks can cause (even if they
do not result in a high body count), attacks on the commercial shipping “could potentially trigger vast and cascading fiscal effects.”

The heavily networked structure of the global shipping industry, with massive transshipment hubs and minimal margins for shipping times, renders the industry vulnerable to well-placed attacks. Finally, as with airplanes, some maritime targets, such as passenger ferries and cruise ships, have contained spaces where civilian casualties can be maximized relative to the explosives used. Abu Sayyaf Group’s Superferry 14 bombing in Manila Bay in 2004, for instance, started a fire on the ferry that trapped the passengers at sea, and killed 116 people. The combination of reasons of why it would make sense for a terrorist group to attack a maritime target, and why it might not, means that maritime terrorism is rare but nonetheless exists.

The diverging reasons for terrorist groups to go to sea (or not) has led to work that has focused on analyzing the risk of terrorist attacks against different categories of seaborne targets (such as commercial shipping, passenger ferries, and cruise liners). One of the most comprehensive studies of maritime terrorism breaks up the discussion of risk into three overlapping categories – the vulnerability of a particular maritime target to attack, and the intention and capability of terrorist groups to attack maritime targets. The study argues that the on-board bombings of ferries and cruise ships combine the greatest vulnerability with the greatest threat (in terms of terrorist capabilities and intentions). Container ships, on the other hand, were assessed to be most useful to terrorists as transportation with the possibility of containerized dirty bomb attacks against port facilities or other coastal targets representing the great possibility of economic harm, even if the probability of terrorist groups actually carrying them out is low.

Terrorism in the maritime domain is also of interest to many authors in large part because the sea is where terrorism intersects with organized crime, in particular maritime piracy. Given the prevalence of maritime piracy in many of the areas of the world where major terrorist groups are also active – South Asia, Southeast Asia, South America, and the Middle East (particularly the Horn of Africa), a number of authors have also investigated potential connections between maritime piracy and terrorism, especially maritime terrorism, if only to express skepticism about those links. While actual cooperation between pirates and terrorists is unlikely, terrorists can reach into maritime criminals’ bag of tricks in other ways to support their operations.

Taking advantage of the same skills, techniques, and equipment used by pirates and smugglers, terrorists could use maritime platforms for logistical and transportation support, enabling them to acquire supplies and access areas they would otherwise have been denied without access to the sea. They could then use those capabilities to stage maritime attacks. The Liberation Tigers of Tamil Eelam (LTTE), for example, formed a naval subgroup, the Sea Tigers, in 1984 to perform the vital task of smuggling supplies to the LTTE. Over time, it expanded its operations and began targeting the Sri Lankan Navy. For over two decades, it engaged in isolated attacks and took part in major combined arms operations. The LTTE ended up destroying at least 30 Sri Lankan Navy boats, as well as damaging or destroying civilian cargo ships. It has also been suspected of hijacking several civilian ships in international waters. The Tamil Tigers’ control of the northern and eastern coasts of Sri Lanka during the long civil war and their ownership of a small fleet of cargo ships and speedboats allowed them to transport weapons and supplies from bases in Southeast Asia directly to the territory they controlled, and to engage in fairly sophisticated naval operations, including amphibious landings, coordinated attacks at sea, and suicide boats.

Jemaah Islamiyah and the Abu Sayyaf Group in Southeast Asia have likewise
used small boats (either their own, or illicit ferries) to escape across international boundaries, and smuggle weapons to their target countries.9

Terrorists could also raise money through piracy, either by hijacking ships (for sale or ransom) or robbing crews on their own (termed ‘political piracy’ by analysts),10 or by contracting with pirates to do it for them, although to be fair, many analysts are skeptical about how often this would actually happen.11 Terrorist organizations do not necessarily need to hire pirate syndicates to carry out robberies or even hijackings, provided they have the right logistical support and minimal technical knowledge. The move into pirate attacks by some members of the Free Aceh Movement in the Malacca Strait in the early 2000s, and the current Niger River delta pirate attacks against foreign oil companies by various insurgents fighting the Nigerian government both show that if terrorist and insurgent groups really want to raise money via piracy, they can simply do it themselves.

There is surprisingly little literature on the organizational characteristics of the terrorist groups that might engage in maritime attacks; the literature on the relationship between terrorist organizational characteristics and target selection and attack method is generally focused on other aspects. Certain types of terrorist organizations appear to be more likely to engage in suicide attacks, for instance, notably religiously motivated organizations (or more specifically, organizations that provide club goods for their members).12 While the general trend has been for terrorist groups to shift their targeting to softer targets, such as business and private parties, in the face of defensive counterterrorism measures,13 organizations that provide club goods also appear to be more likely to attack hard targets, defined as targets where the probability of being stopped or apprehended is high.14 Organizations that are larger, that are better connected to other terrorist organizations, and that control territory are also more likely to engage in attacks with higher lethality.15 The organizational dynamics that lead to attacks on specific types of targets with specific attack methods, other than soft versus hard targets, or civilian versus military targets, have yet to be explored.

In addition, studies of maritime terrorism have been largely qualitative – by and large, they have been threat assessments, with analysis of exemplary cases of maritime terrorism, such as the *USS Cole*, the *MV Limburg*, the *Achille Lauro*, and *Superferry 14*.16 Quantitative studies of maritime piracy, for their part, have largely ignored maritime terrorism as such, and have focused instead on external factors (such as state failure and commodity prices) that might lead to changes in aggregate levels of maritime piracy.17 Other quantitative studies of piracy have attempted to dive into pirate organizational characteristics, either the relationship between internal structure and the ‘sophistication’ of the pirates’ operations,18 or how pirate organizations’ ability to conduct operations have changed over time, through experience, or changing external circumstances.19

This article thus aims to make two primary contributions to the terrorism literature. First, as one of the first quantitative articles on maritime terrorism, we complement the rather extensive literature devoted to threat assessment and qualitative analysis of the maritime activities of terrorist organizations. Second, we move forward the literature on the relationship between the organizational characteristics of terrorist groups and their targeting choices and attack methods. Given that maritime targets are relatively unusual targets, requiring methods of attack that are not exercised (or apparently possessed) by most terrorist groups, organizations do engage in maritime terrorism may differ from the average terrorist group in systematic ways.

**Organizational Factors and Maritime Terrorism**
Organizational characteristics potentially relevant to maritime terrorism can roughly be divided into the two categories traditionally used to conduct threat assessments (either of states or terrorist organizations) – the capabilities of terrorist organizations that would allow them to engage in maritime attacks, and the ideas held by terrorist organizations that might lead them to want to engage in maritime attacks. In this we necessarily lump ‘pure’ terrorist organizations and insurgent groups into one pot. At first glance, it is not clear what categorizations would distinguish them, inasmuch as the specific organizational characteristics listed below can all apply to either terrorists or insurgents (however defined) – ‘pure’ terrorist organizations might at some point control territory, while insurgent groups are not all of the ethno-separatist variety ideologically (although certainly many are). One advantage of our metrics of capacity and ideology is thus that they allow us to cut across perhaps artificial distinctions between terrorism and insurgency when it comes to the tendency to engage in maritime attacks.

Here we investigate a few simple metrics of capacity – state sponsorship, size of the terrorist organization, the degree to which the terrorist group is networked with other terrorist organizations, involvement in the drug trade, and whether the terrorist group controls specific chunks of territory. All five could plausibly lead to the move to maritime targets. State sponsorship of a terrorist organization gives it financial, material, and personnel resources (such as help with training and recruiting) that it would not have absent that support. These resources can be used for (potentially more logistically complex) attacks on targets at sea. The sponsoring state may also find it useful for its client to attack the maritime assets of its state adversary (in an undeclared naval war). Similarly, larger terrorist organizations are likely to have more financial, logistical, and personnel resources than small groups, and can turn those resources to maritime attacks (or other unusual, potentially risky attacks) without stinting on the more typical bombs and gun attacks. Involvement in the drug trade may also be associated with maritime attacks, in that the group has transportation resources and economic links that both use and are dependent on the maritime environment, and has incentives to protect the (often seaborne) smuggling routes that fund its operations.

But other factors may also affect capability. If terrorist organizations are enmeshed in networks, thus maintaining contacts with other terrorist groups, these connections may give them a wider population from which to obtain the personnel, material resources and training for a maritime attack, as well as encourage the transmission of ideas – strategies and tactics – that include the notion of maritime attacks, and how to carry them out. Finally, a terrorist group’s connection to territory may affect both its capacity and desire to engage in maritime terrorism. Groups that are able to capture and hold on to territory in the face of attacks from the state adversary demonstrate military capabilities that outstrip those of territory-less terrorist groups. Moreover, it may be a ‘virtuous’ circle, in that control of territory may allow the terrorist group to augment its ability by establishing safe havens where it can train recruits without interference, liaise with other terrorist groups, plan attacks and, if it is actually governing the territory, generate income from ‘taxing’ the inhabitants and their commerce. Groups may also directly augment their ability to carry out maritime attacks by controlling territory on the coast, allowing them areas from which to launch the attacks, and a hinterland to support those attacks logistically.

Yet attachment to territory may also create the desire to engage in maritime terrorism. Terrorist group territorial claims can encompass both land and sea, and groups with such claims have an incentive to patrol their purported waters, attack enemies in the area, and otherwise build up their maritime capabilities to augment those claims. Aside from state sponsors encouraging (or ordering) them to, and ideational connections to territory that needs to be defended
(symbolically and physically), the ideological basis for a terrorist group’s campaign may have an effect. Ethnic separatist groups, for instance, generally have fairly specific state adversaries (and thus state targets), and a nascent state that needs to be defended, on both land and sea, while religiously motivated groups may have an abstract, expansive understanding of the enemy (and thus of the targets that are acceptable and would be useful to their cause), and may be willing to try unusual tactics (such as maritime attacks). Religious groups like al-Qaeda have a keen awareness of the symbolic importance of their targets, and to the extent that they perceive maritime targets as emblematic of the global economic system dominated by the West, they may view such target as desirable.

Ideology or Capabilities?

Terrorism is often seen as an ideologically motivated activity. For example, while some terrorist organizations traffic in drugs most don’t even though they have the capability to engage in both terrorist and criminal behavior. For organizations the frame they see the world is important for understanding their organizational choices. The use of violence by terrorists is justified by ideological claims and grievance claims. When Al Qaeda decided to use terrorism against the United States it was explicit in the fact that this choice was motivated by its ideological goals and its anger at the United States. Al Qaeda and its leaders gave a very clear list of reasons tied particularly to the behavior of the enemy when they argued that, “We say that the prohibition against the blood of women, children, and the elderly is not an absolute prohibition” and declared war on the United States because America’s forces “oppress and attack Muslims.” There is growing evidence that indeed the likelihood of terrorist organizations to kill a large amount of people is tied to the type of ideology that it has and that religious organizations are more lethal than others. Researchers who have studied the environmental and animal rights movements have pointed out that the ideologies of these organizations have played a key role in constraining the type of violence they will use. There is also a large literature stemming from research on the use or pursuit of CBRN terrorism that argues that ideology can push organizations to adopt certain tactics.

We believe though that when it comes to maritime terrorist attacks the key issue should be capabilities. Drawing from the civil conflict and social movement literature about capabilities, we argue that maritime terrorist attacks should not be driven by ideology but by the ability to get to the sea and the organizational capacity to plan and carry out a maritime terrorist attack. Unlike CBRN attacks or the choice to kill or not kill we see no reason why ideology should have an impact on whether a terrorist organization should attack targets on the water.

Instead we believe that the key factors explaining maritime attacks will be having the capability, knowledge and talent to conduct maritime attacks. Be it capability in terms of size, network connections, or the ability to conduct illicit trade efforts like drug smuggling, we think that the stronger and more capable an organization is the more likely it is to be able to expand its range of activities and include maritime attacks. The prima facie evidence that capability should be the key factor in whether or not a terrorist organization will conduct maritime attacks is that no organization during the time period under study that did not have easy access to the sea conducted a maritime attack. While we believe that all of the capability factors should be important, we believe that network connections should have the largest impact. We argue that network connections should have the strongest impact because alliance connections allow for the transfer of knowledge and capabilities as well as coordination which could be very
useful for planning attacks on the high seas. Our analysis focuses on the following three hypotheses:

**H1**: Ideology will not have an impact on whether or not a terrorist organization conducts maritime attacks.

**H2**: Organizations with more resources, understood to mean state sponsorship, size, control of territory, and connection to the drug trade, will be more likely to carry out maritime attacks.

**H3**: Organizations with more network connections will be more likely to conduct maritime attacks.

**Data and Analysis**

The Global Terrorism Database (GTD), which is funded by DHS and maintained by START, has one variable – target type – that explicitly deals with the maritime sphere. The ‘maritime’ category within the ‘target type’ variable includes attacks on maritime ports and maritime facilities, as well as terrorist attacks on civilian ships. Attacks on fishermen themselves are placed in the ‘private citizens’ category, and attacks on naval vessels are placed in the ‘military’ category. According to the GTD, between 1970 and 2010, there were 181 attacks where maritime facilities or civilian ships were the primary targets. While the majority of the attacks consisted of armed assaults and bombings (as with attacks on land-based targets), hijacking and hostage taking, tactics considerably less common in ‘normal’ terrorist attacks, were also commonly used.

<table>
<thead>
<tr>
<th>Attack Type</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Armed Assault</td>
<td>61</td>
</tr>
<tr>
<td>Bombing</td>
<td>68</td>
</tr>
<tr>
<td>Hijacking</td>
<td>27</td>
</tr>
<tr>
<td>Hostage Taking</td>
<td>20</td>
</tr>
<tr>
<td>Assassination</td>
<td>8</td>
</tr>
<tr>
<td>Facility/Infrastructure Damage</td>
<td>6</td>
</tr>
<tr>
<td>Unknown</td>
<td>9</td>
</tr>
</tbody>
</table>

To capture the organizational features of terrorist groups we draw data from the Big Allied and Dangerous dataset (BAAD). The dataset includes organizational data on 395 terrorist organizations from 1998-2005 (there is one observation for each variable for the time period covered). The main source for BAAD1 is the Memorial Institute for the Prevention of Terrorism’s Terrorism Knowledge Base (MIPT-TKB 2006). Since we are restricting our analysis to organizations that have maritime access our analysis includes data on 366 organizations. In order to see if any particular ideology might have an impact on the use of piracy as a strategy we include variables for the most dominant ideologies for organizations that have maritime access – religious ideology (28.42% of the organizations), leftist (but not religious or ethnonationalist) ideology (24.5% of the organizations) ethnonationalist ideology (37.7% of the organizations).
We should note that these ideology measures are not mutually exclusive except for leftist, so an organization could be coded as both ethnonationalist and religious – like Hamas. Examining organizational capability we use variables that indicates whether the organization has a state sponsor, whether they control territory, what the general reported membership of organization is and the number of network connections they have. The first two variables are binary variables. The third variable relating to organizational size is ordinal and is coded using the scale in table 2 taken from the BAAD codebook.\textsuperscript{37} We also use a control variable found in the BAAD codebook which controls for the level of uncertainty of the number of members in small organizations or organizations for which there is very little information. The variable for network connections is operationalized as a count and varies from a high of thirty-three and a low of zero for organizations that have maritime access.\textsuperscript{38} In addition to the existing BAAD variables we also coded a binary variable that examined whether or not a terrorist organization was involved in the drug trade as either a grower or smuggler of illegal drugs.

To capture the impact of country level factors we used data from Polity IV that captures the durability of the existing regime and its level of democracy.\textsuperscript{39} We use the Polity IV measure that varies from -10 to 10 and captures different levels of democracy, autocracy and anocracy as well as the Durable variable that is coded for how long the state has remained with a similar regime type which varies in the countries where the maritime accessible terrorist organizations reside from 0 to 188. Given the fact that the data is one observation for each organization for the period from 1998 to 2005 we use Polity IV measurements for each variable at the start of our time period in 1998.\textsuperscript{40} Table 3 provides descriptive data for each of our variables including the dependent variable for all organizations that had maritime access.

**Table 2. Organizational membership size coding**

<table>
<thead>
<tr>
<th>Coding</th>
<th>Size intervals</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>0-100 &amp; low confidence</td>
</tr>
<tr>
<td>1</td>
<td>100-1000</td>
</tr>
<tr>
<td>2</td>
<td>1000-10,000</td>
</tr>
<tr>
<td>3</td>
<td>10,000 or more</td>
</tr>
</tbody>
</table>

**Table 3. Descriptive Statistics**

<table>
<thead>
<tr>
<th>Variable</th>
<th>Obs</th>
<th>Mean</th>
<th>Std. Dev.</th>
<th>Min</th>
<th>Max</th>
</tr>
</thead>
<tbody>
<tr>
<td>Piracy</td>
<td>366</td>
<td>0.0410</td>
<td>0.1985</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Drug involvement</td>
<td>366</td>
<td>0.0956</td>
<td>0.2945</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Regime durability</td>
<td>366</td>
<td>36.3743</td>
<td>34.0698</td>
<td>0</td>
<td>188</td>
</tr>
<tr>
<td>State sponsorship</td>
<td>366</td>
<td>0.0792</td>
<td>0.2705</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Organizational size</td>
<td>366</td>
<td>0.5000</td>
<td>0.8134</td>
<td>0</td>
<td>3</td>
</tr>
<tr>
<td>Network connections to other terrorist orgs</td>
<td>366</td>
<td>1.4180</td>
<td>2.5966</td>
<td>0</td>
<td>33</td>
</tr>
<tr>
<td>Hold territory</td>
<td>366</td>
<td>0.0984</td>
<td>0.2982</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Polity</td>
<td>366</td>
<td>5.5546</td>
<td>6.4897</td>
<td>-10</td>
<td>10</td>
</tr>
<tr>
<td>Religious ideology</td>
<td>366</td>
<td>0.2842</td>
<td>0.4516</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Ethnic ideology</td>
<td>366</td>
<td>0.2459</td>
<td>0.4312</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Leftist ideology</td>
<td>366</td>
<td>0.3770</td>
<td>0.4853</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Low Confidence variable</td>
<td>366</td>
<td>0.1913</td>
<td>0.3938</td>
<td>0</td>
<td>1</td>
</tr>
</tbody>
</table>
Our variable of interest is a binary variable that identifies if a terrorist organization was involved in maritime terrorism between 1998 and 2005. This kind of behavior is fairly rare, with 4.1 percent of our groups (15 out of 366 that fit our criteria) being involved in this kind of behavior. Since our unit of analysis is one observation for the time period and our variable is binary, we used a logistic regression controlling for possible country level effects by using the cluster command in Stata. To derive a list of groups engaged in maritime terrorism, we ran a search for attacks between 1998 and 2005 in the Global Terrorism Database where the attacks were on boats or ships or otherwise took place on a river, lake, or ocean (such that attacks on land against maritime-related targets, such as ports, were excluded). We then coded the groups that both had maritime attacks and were listed in BAAD1 as 1 (see List 1). The rationale for this coding scheme was to include only groups that engaged in innovation vis-à-vis the maritime environment, both in terms of operational capabilities (the ability to attack on the water) and targeting (the desire to attack targets on the water). 41

**List 1. Groups that conducted at least one maritime attack (1998-2005)**

- People's Revolutionary Army (Colombia)
- Aden Abyan Islamic Army (AAIA)
- Tawhid and Jihad
- Palestinian Islamic Jihad (PIJ)
- Sudan People’s Liberation Army
- Liberation Tigers of Tamil Eelam (LTTE)
- New People's Army (NPA)
- Jemaah Islamiya (JI)
- Abu Sayyaf Group (ASG)
- Moro Islamic Liberation Front (MILF)
- Free Aceh Movement (GAM)
- National Liberation Army (Colombia)
- Revolutionary Armed Forces of Colombia (FARC)
- Hamas
- al-Qaeda

To be clear, by this metric we are only able to estimate the probability that a terrorist group will engage in any maritime attacks at all (whether 1 or 100) between 1998 and 2005, given certain organizational characteristics. This approach has certain limitations. First, since the dependent variable is binary, we do not distinguish between groups that engage in maritime attacks frequently and those that only engage in one attack. Once groups have crossed the threshold of maritime attacks, it is possible that a different calculus holds when they are deciding what the frequency of their maritime attacks should be. Instead, we are primarily interested in why groups cross the threshold of maritime terrorism at all.

Moreover, since the results are probabilistic, there is always the possibility that a group could have all traits that strongly suggest an ability to engage in maritime attacks, but for other factors unmeasured in our model, they choose to refrain from maritime terrorism. This is possible, but we would argue, all else being equal, that such groups are at significant risk for turning to maritime terrorism in the future. Finally, given the short time period under question, it is possible that long-existing terrorist groups with the capacity to engage in maritime attacks did
not do so between 1998 and 2005, or, put another way, some terrorist groups that operate over several decades (as was the case for several Irish republican groups) may have attacked maritime targets at some point in their history, but the frequency is so low that they are missed in the time period under question. Strictly speaking, such groups would not be included because we do not in this article have data on group organizational characteristics outside of that time period. Given that the Global Terrorism Database shows 11,817 terrorism incidents occurring worldwide between 1998 and 2005, however, there should be sufficient data to find patterns in the organizational characteristics that are associated with maritime terrorism, even if certain groups with extremely infrequent attacks are excluded.

To check for possible collinearity problems we ran a VIF test and no collinearity issues were raised. Since our dependent variable is a rare event we ran a rare event logit as well using the relogit command in Stata. The results were substantively the same in terms of significance and we report here the results of the regular logistic regression. We used the prchange command in Stata to generate probabilities. Table 4 reports the results of our analysis and the change in probability of each significant variable on the dependent variable when the independent variable moves from its minimum value to its maximum value.

As one can see from the results, of the ideological variables, only religious ideology has an impact -- and only a minimal impact at that. No other ideology or state context variable was significant (we also ran the model with a GDP measure and it too was not significant). Amongst the capability variables, state sponsorship is insignificant but drug involvement, organizational size, territorial control and network connections are significant and positive, with network connections having by far the largest impact of all the variables (see Table 4).

Table 4. Logistic Regression and probabilities

| Piracy                                      | Coef.     | Std. Err. | P>|z|  | % Probability change when variable moved from min to max |
|---------------------------------------------|-----------|-----------|-----|---------------------------------|
| Drug involvement                            | 1.2331*   | 0.6987    | 0.078 | 1.86%                           |
| Regime durability                           | -0.0013   | 0.0134    | 0.925 | NS                              |
| State sponsorship                           | 0.2131    | 0.9746    | 0.827 | NS                              |
| Organizational size                         | 0.6386*   | 0.3834    | 0.096 | 3.56%                           |
| Network connections to other terrorist organizations | 0.1403** | 0.0683    | 0.04  | 42.01%                          |
| Hold territory                              | 2.0369*** | 0.6594    | 0.002 | 4.56%                           |
| Polity 2                                    | -0.0338   | 0.0458    | 0.46  | NS                              |
| Religious Ideology                          | 1.8670**  | 0.9303    | 0.045 | 2.75%                           |
| Ethnic Ideology                             | 1.6067    | 1.2945    | 0.215 | NS                              |
| Leftist Ideology                            | 0.3306    | 0.8103    | 0.683 | NS                              |
| Low Confidence variable                     | 0.2474    | 1.5476    | 0.873 | NS                              |
| _cons                                       | -6.4402   | 1.4023    | 0     | NA                              |
| Number of obs                               | 366       |           |       |                                 |
| Wald chi2(11)                               | 164.68    |           |       |                                 |
| Prob > chi2                                 | 0         |           |       |                                 |
| Pseudo R2                                   | 0.4478    |           |       |                                 |

*p<0.10 one tailed significance
**p<0.05 one tailed significance
***p<0.005 one tailed significance
Discussion

The evidence that the overall motivations of terrorist groups might affect their ability or desire to engage in maritime terrorism is mixed at best. Neither ethnic nor leftist motivations were significant, suggesting that groups with those motivations were not necessarily more or less likely to engage in maritime terrorism than anyone else. While religious motivations are statistically significant, the effect is not large. It may not be the case that religion per se is the issue in maritime attack innovation. Every single one of the religious terrorist groups in the dataset that carried out a maritime attack between 1998 and 2005 is Islamic. Moreover, all but one (the Free Aceh Movement) have ties or at least ideological sympathies with al-Qaeda, suggesting it may not be religion, or even Islam, that is the ideological driver, but information sharing with or inspiration from al-Qaeda. Inasmuch as overall network ties were also found to be significant, religious ideology as understood in the model may be capturing the tendency of groups connected to al-Qaeda to adopt its innovative tactics (or, theoretically, for al-Qaeda to adopt the innovative tactics of lesser known groups). And indeed, to check for this, we ran the same model as above, but substituted a dummy variable for Islam instead of general religious ideology. The results were substantively the same, and Islam was statistically significant at the 5% level (results available on request), suggesting that it is Islam that is being picked up in the model.

With the possible exception of al-Qaeda-linked groups, given a menu of potential modes of attack, and potential targets, maritime targets are not necessarily ideologically distinguishable for any other targets. Maritime targets can be either civilian or military targets, either soft or hard, meaning the general shift in terrorist attacks towards civilian, soft targets over the past several decades would not necessarily affect maritime targets one way or another. As a result, the beliefs that may lead some groups to attack different types of targets with certain modes of attack, such as religious groups being more willing to attack civilians, or more likely to attack hardened targets with suicide attacks may be less relevant for maritime targets.

Capability is important. Larger terrorist groups appear to be more likely to turn to maritime terrorism than smaller groups. Group size has been positively associated with the lethality of terrorist attacks. It would be unsurprising if the ability or desire to stage certain types of more sophisticated attacks in positively correlated with group size. However, state sponsorship (the primary effect of which is to provide a group with training, financial resources, and weapons that it would not otherwise have) appears to have no effect on the propensity of groups to engage in maritime. This suggests that it is not an infusion of general resources that leads to maritime terrorism, or, at the least, that the states that sponsor terrorists do not seem to have any more desire to attack maritime targets than non-state terrorist groups do. Brute force – having large quantities of supplies and knowledge in general – may be less important to a group engaging in maritime terrorism than have the right supplies and knowledge. This is suggested in the other results.

Control of territory was significant and in the expected (positive) direction. Since all terrorist groups based in landlocked territories were excluded from the models, we were specifically looking at groups that are based in a country with access to the ocean, and control at least some territory in that country. To a certain extent, this is unsurprising – terrorist groups with control of territory can use coastline (should they control coastline) to launch maritime attacks without interference on land, although they may still be subject to sea-based interdiction.
But there may be deeper issues here. Groups that want to control territory, or that even end up controlling territory, may also be the kinds of groups that are wont to set up territorial governance structures and build their economic and transport infrastructure to support their fight, both materially and ideologically (inasmuch as they are now providing a ‘alternative’ state). This support infrastructure could also include maritime transportation capabilities. The exercise of these capabilities could then logically lead to the ability and desire to carry out maritime attacks.

Two of the groups who did engage in maritime attacks in the dataset illustrate this. The Liberation Tamil Tigers Eelam (LTTE) controlled the northern and eastern coastline of Sri Lanka during much of its 1975-2009 ethnic insurgency against the Sri Lankan government. During the time period in which it controlled territory, the LTTE set up courts, tax collection, schools, and many of the other institutions that would be expected from a government, including transportation infrastructure such as ports and airfields (although there were no large ports on the coastline controlled by the LTTE). The LTTE also adopted state-like conventional warfare tactics and fought government forces in pitched battles, in addition to innovating terrorist tactics such as suicide bombers. The LTTE was effectively operating as a quasi-state under siege rather than a traditional non-territorial terrorist group.49

Based as it was on an island, the LTTE had no way to get supplies for its quasi-state except by ship (or by somehow acquiring them from within Sri Lanka itself). This led the group to build up a small shipping fleet that was eventually able to bring in weapons from as far away as Southeast Asia and East Africa. Sri Lankan government naval forces attempted to launch a blockade of the LTTE-controlled coastline, threatening to cut off supplies. The LTTE’s maritime wing, the Sea Tigers, thus engaged in both smuggling and offensive attacks against Sri Lankan naval vessels and bases, and Sri Lankan and other merchant vessels designed to weaken the Sri Lankan military and maintain the LTTE’s ability to receive supplies from outside.50

Similarly, in Southeast Asia, the height of the insurgency fought by the Free Aceh Movement (Gerakan Aceh Merdeka, or GAM in Indonesian) between 1976 and 2005 saw an increase in kidnappings for ransom on the Indonesian side of the Malacca Strait from 2002 to 2005, relative to ship and cargo seizures.51 This was the same period in which GAM controlled the most territory and population in Aceh relative to that controlled by the Indonesian government. Between 2000 and 2004, in fact, GAM controlled an estimated 80% of the villages in Aceh, and like the LTTE, set up the rudiments of state governance, particularly tax collection.52

Like the LTTE, GAM was surrounded on three sides by water (and the fourth by a hostile government), so developed a maritime capability. Throughout the insurgency, GAM used small boats to bring in supplies by ship and transported members out of Aceh by sea (specifically, it brought in weapons from Thailand Malaysia, and smuggled fighters into and out of Malaysia).53 Controlling territory was helpful in maintaining security for these trips, and for eventually launching attacks on ships near Aceh. In GAM’s case, however, these attacks were primarily about raising money through ransom, rather than attacking the Indonesian naval vessels forming a blockade against Aceh in the Malacca Strait. While GAM as an organization denied carrying out most, but not all, of the attacks, there were widespread suspicions that GAM was either operating on the basis of plausible deniability, or low-level GAM members were freelancing. It is interesting to note that in neither case did the groups begin maritime attacks until after they had already set up a maritime supply capability. GAM had been using boats since almost the beginning of the insurgency in 1976, but kidnappings for ransom do not seem to have begun
until the early 2000s. Likewise, the LTTE acquired seaborne smuggling capabilities in the early 1980s, but launched its first seaborne attack in July 1990.

Interestingly, involvement in the drug trade is positively associated with maritime attacks. This could be for reasons similar to why groups with territorial control are more likely to engage in maritime terrorism. Organizations involved in the drug trade need specific smuggling capabilities and transport infrastructure to successfully get their drugs to their destinations and raise money. Drug traffickers have developed maritime capabilities that can take advantage of sea routes, such as the submarines that ply the waters from the western coast of South America up into Central America, several of which were reportedly built by the Revolutionary Armed Forces of Colombia and seized in September 2011. A terrorist group that is involved in the drug trade is thus also likely to have the ships and personnel necessary to carry out maritime attacks. They are also likely to have the desire to carry out maritime attacks, since they need to protect their smuggling routes, and more generally have more freedom of action at sea than non-drug trafficking groups might. GAM, for example, sold ganja to raise money across the Malacca Strait on the island of Batam, and maintaining the capacity to move boats out of Aceh would thus have been important to it, while the existence of FARC submarines, as opposed to just boats, is indicative of the lengths to which FARC was willing to go to maintain its drug trafficking routes. Staging maritime attacks may be part of that strategy.

Finally, the number of connections with other terrorist organizations is positively associated with maritime attacks. This again could speak to the importance of specific kinds of opportunity and capabilities. More connected groups, even if they are not large, are able to draw on the tactics, strategies, expertise, and even personnel of other groups, which could lead to bringing in the idea of engaging in maritime attacks (maritime targets, as seen above, are not necessarily intuitive obvious as targets for all terrorist groups), and the specific capabilities necessary for those attacks. More generally, better connected groups may be more enmeshed in networks that diffuse new ideas and capabilities, with al-Qaeda being a particularly good example of this (as seen above). Al-Qaeda’s (original) function as something approaching a venture capital firm and training clearing house for other terrorist groups may have allowed it to bring in new ideas about targets and attack modes, which led to its maritime attacks, notably the attacks on the MV Limburg in 2002 and the USS Cole and the USS The Sullivans in 2000. Likewise, the Abu Sayyaf Group’s attack on SuperFerry 14 in 2004 in Manila Bay was made possible by its connections with several other organizations. A member of the allied group Rajah Solaiman Mujahidin actually planted the bomb on board the ferry, having been trained by Jemaah Islamiyah operatives under the protection of Moro Islamic Liberation Front members in the southern Philippines. On the other hand, it is possible that connections themselves are not the primary issue. Potentially, al-Qaeda had many connections precisely because the group was known for being innovative in its attack modes and targets (such as with the attacks on September 11, 2001), and drew other groups into its orbit as a result. In that case, attacking maritime targets and network connections would both be the result of some inherent organizational creativity and innovation.

**Conclusion**

Why do some terrorist organizations attack maritime targets? In the end, our analysis suggests that terrorist groups turn into maritime terrorism threats largely because they can. While this may seem trite, our conclusion underlines several deeper issues. First, with the exception of religious groups (specifically Islamic groups) largely linked to al-Qaeda, what terrorist groups
believe -- their ideology and to a large extent their goals -- seemingly has little to do with whether they go to sea. As a result, attempting to differentiate among the goals of different groups in a given area, say the Gulf of Aden, may tell us little about which one is likely to attempt an attack on a maritime target. Second, some of the organizational characteristics that help to determine the likelihood or lethality of certain types of attacks are less relevant when we look into maritime terrorism. State sponsorship does not make a group more (or less) likely to attack at sea. It is not resources in the aggregate that are associated with a greater propensity to engage in maritime terrorism, but specific types of capability. From this it follows that focusing counter-maritime terrorism efforts on groups with access to state resources may not be the most efficient use of resources. Finally, the organizational characteristics that are significant -- organizational size, drug trafficking, control of territory, and network connections -- suggest that it is relatively specific capabilities that lead to maritime terrorism. A terrorist group that has control of territory has the political breathing room and possibly the infrastructure to launch maritime attacks, while involvement in drug trafficking may lead terrorist groups to build up the capability to operate at sea, both to smuggle and to protect those smuggling routes. Finally, a well-connected terrorist group may bring in new strategies and capabilities that would give it the desire and the ability to carry out attacks.

A number of questions remain to be answered. While we have focused on terrorist groups that engage in actual attacks against maritime targets, this does not capture the full spectrum of terrorist maritime activity. If a terrorist group were actually to contract out attacks to a maritime piracy syndicate (for whatever reason), this would not show up in our data, and would in any event lead to questions about why pirates would cavort with terrorists, given the political sensitivity and the possibility of states turning against the pirates' business model. Terrorists also may have ways of using the maritime sphere without staging attacks there -- Lashkar-e-Taiba's attack on Mumbai in 2008 came from the sea, and used commandeered boats, but was not an attack on a maritime target. Terrorists can also use the sea as a source of supply, as the Provisional Irish Republican Army did in smuggling weapons from the US and continental Europe during the Troubles. Again this would not show up in the data. More generally, there remains much work to be done on how, when, and why terrorist organizations innovate and expand their operations into new environments (such as the sea), thus creating new dilemmas for the states fighting them.

1 The Global Terrorism Database can be found at the University of Maryland website at: http://start.umd.edu.
6 Jayant Abhyankar, “Piracy and Armed Robbery and Terrorism At Sea,” (Delhi, India, ORF Workshop on Maritime Counter Terrorism, November 29, 2004); Peter Lehr, (ed.), Violence at Sea: Piracy in the Age of Global Terrorism (London, Routledge, 2007); Martin Murphy,

14 Berman (see note 12 above); Berman and Laitin, “Hard Targets” (see note 12 above).


25 Asal and Rethemeyer (see note 15 above).


29 Dolnik (see footnote 26 above); Gurr and Cole (see footnote 27 above); Stern (see footnote 27 above); Tucker (see note 27 above).

30 Ackerman (see note 26 above); Taylor (see note 26 above).


36 Asal and Rethemeyer (see note 15 above).

37 The BAAD code can be found at: http://www.albany.edu/pvc/data.shtml

38 Asal and Rethemeyer (see note 15 above).


40 Ibid.

41 While al-Qaeda in the Arabian Peninsula was initially coded as having engaged in maritime attacks, given the complex operations of al-Qaeda and its affiliates during this period, in the end we coded al-Qaeda itself as having carried out attacks, and excluded AQAP from the analysis.

44 (Brandt and Sandler (see note 12 above).
46 Berman (see note 11 above).
47 Asal and Rethemeyer (see note 15 above).
51 Hastings, “Geographies of State Failure” (see note 18 above).
57 “Colombians seize $2m Farc drug submarine,” British Broadcasting Corporation, September 26, 2011.