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# Maritime Security in the Arctic: The threat from non-state actors

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**Abstract:** This paper addresses what some RAND analysts have termed Tier I national security threats – those from "non-state actors" – in the Arctic region. It explores the credibility of assertions that terrorists, pirates, criminal gangs, and drug and human traffickers could exploit the Arctic region to their ends, and assesses the ability of the Arctic nations to respond to such threats. At the same time, the paper explores other non-state maritime threats, which include natural disasters and accidents (considered security threats because of the economic damage and loss of life they can cause). Using a Probability-Impact Matrix, the paper suggests a preliminary assessment of the non-state threats to the region, noting that maritime accidents should currently be considered of greatest concern for the Arctic.
**Keywords:** Maritime security, Arctic, non-state actors, accidents, piracy, terrorism, natural disasters, smuggling, trafficking

## 1. Introduction

Observable climate changes in the Arctic, and predictions for the future, have led to a renewed economic, environmental and geo-strategic interest in the region. The declining ice pack opens up potential new avenues for trade, energy and fisheries exploration and exploitation. Although estimates vary significantly on when, for example, the Northwest Passage will be able to sustain an ice-free summer shipping season, optimistic estimates, including that of Canada's defense agency, place this as soon as 2015 or 2020. Others push this farther back, to 2050. More advanced models presented at a 2007 meeting of the American Geophysical Union anticipated an ice-free Arctic in the summer as early as 2013. Similar expectations exist for the Northern Sea Route, and with the proposed development of an "Arctic Bridge" connecting ports in Russia and Canada, it is clear many nations anticipate the use of the Arctic as a routine seasonal maritime trade route, saving up to 4,000 nautical miles on some voyages.

At the same time economic interests anticipate positive benefits from the opening of the Arctic to trade and economic development, some military and national security strategists worry, for example, that terrorists could use the newly ice-free waterways to infiltrate and attack

countries in the region, or that the new Arctic trade routes could become conduits for human smuggling, drug trafficking and organized crime.

This paper will address what some RAND analysts have termed Tier I national security threats – those from "non-state actors" – in the Arctic region. It will explore the credibility of assertions that terrorists, pirates, criminal gangs, and drug and human traffickers could exploit the Arctic region to their ends, and will assess the ability of the Arctic nations to respond to such threats. At the same time, the paper will explore other non-state maritime threats, which include natural disasters and accidents (considered security threats because of the economic damage and loss of life they can cause).

### 1.1 Maritime security threats: RAND framework

According to RAND analysts, security threats can be categorized in three tiers based on the primary belligerent actor. Tier I threats are non-state threats and include natural phenomenon (such as hurricanes, rogue waves, and tsunamis), criminal activity (including piracy), as well as terrorist movements. Tier I threats are by far the most common threats to the maritime domain, though some feel their economic consequences tend either to be small or transitory

Tier II threats stem from failed, failing, or rogue states (states whose internal and external behavior is considered by most countries to be outside the internationally accepted norm). These states may serve as safe-havens for the types of activities that make up the Tier I threats and, in the case of rogue states, the state may actually be the sponsor of such criminal activity. Tier III threats consist of state-to-state conflict or state-level threats in which national actors may use coercion or force to advance national interests by threatening or using force. Unresolved historic and emerging tensions increase the risk of this type of threat. Tier II threats (failed and rogue states) are not currently present in the Arctic region, and are unlikely to be at any time in the foreseeable future. Tier II and Tier III threats are beyond the scope of this paper, which will focus exclusively on Tier I threats (non-state actors) to the Arctic region.

## 2. Non-State Threats in the Arctic

While RAND has tended to limit its discussion of Tier I threats to natural phenomenon (tsunamis), criminal activity, and terrorist movements, work done with students in several of my courses at the California Maritime Academy (particularly *GMA 330: Maritime Security*, and *GMA 395: Polar Politics*) has shown that there is value in expanding this definition to include greater levels of criminal activity – including drug, human and weapons trafficking/smuggling – and also including maritime accidents along with natural phenomena such as tsunamis, rogue waves, and hurricanes as well. The rationale for including maritime accidents is that they can be as devastating to human life, economic infrastructure, and the marine environment as many of the other types of events included in Tier I threats. The *Exxon Valdez* oil spill, and the British Petroleum *Deepwater Horizon* tragedy are two recent examples that come quickly to mind.

## 2.1 Maritime Piracy

The probability of maritime piracy occurring in any region of the world depends on a number of conditions. For example, according to Jon Vagg, maritime piracy is most likely to occur when three conditions are met: 1) "Economic dislocation" due to rapid economic development, 2) a "cultural acceptance" of maritime piracy by people in the region, and 3) opportunity [1]. By economic dislocation he means that periods of rapid economic growth – as might be seen in the Arctic as trade and development increase – are rarely evenly distributed among the population. Those who feel "left behind" by the increase in regional economic wealth may resent those who are doing well by the economic boom. This resentment may turn to theft and crime of all sorts, including the robbing of merchant vessels. While we are used to maritime piracy following the pattern off Somalia, with dramatic attacks on ships far offshore, the reality is that many ships are attacked and robbed while at anchor or in port. Attacks on stationary vessels are much more the norm for piracy in regions of the world such as West Africa and Latin and South America.

"Cultural acceptance" infers that people do not see maritime piracy necessarily as a crime, but may actually be supportive of the wealth it brings to an impoverished community, particularly since robbing a vessel from another country, and from a rich shipping company, may be seen as a "victimless crime;" that is, those who are harmed economically by the act are typically insured and do not bear the full economic burden of the crime. There are very few places in the world where maritime piracy is so pervasive that it is seen as culturally acceptable by the local population. In all cases, it is in regions or countries where the state is generally considered unable to meet the basic demands of its population. That is, cultural acceptance of maritime piracy is more likely to occur in failed or failing states or regions of the world. There is absolutely no evidence that crime of any sort is considered culturally acceptable in any peoples of the Arctic; it is therefore unlikely that there would be any cultural acceptance of maritime piracy at any time in the foreseeable future.

Lastly, Vagg suggests that maritime piracy depends on opportunity; that is, there must be ships to attack to make piracy worth pursuing. While commercial transits of the Arctic are currently very limited, some studies show a rapid increase in maritime traffic by 2030. One study estimates by 2030, of a projected total trade estimate of 3.9 million TEU from the Tokyo hub, 1.4 million TEU could be transported across the Arctic during the sailing season. This amounts to 480 transit voyages (one way) for the summer of 2030. Looking ahead to 2050, the trade estimates rise to 2.5 million TEU across the Arctic, or 850 transit passages. The predicted amount of containers transported across the Arctic could correspond to about 8% of all container trade between Asia and Europe in 2030, and about 10% in 2050 [2] Shipping across the Arctic Ocean]. At this point, if these projected transits for the summer shipping season are realized, there will be more opportunity for maritime criminal activity in the Arctic region with the understanding, of course, that an increased opportunity to rob and attack vessels does not necessarily lead to maritime piracy.

## 2.2 Maritime Terrorism

The prospect of maritime terrorism in the Arctic has received much attention lately, particularly with the recent release of a declassified document from the Canadian Integrated Threat Assessment Centre, which included analysis from representatives of

the Canadian Security Intelligence Service, the RCMP and other agencies. The report, titled "The Canadian Arctic: Threat from Terrorists and Extremists," followed on a January 2009 US presidential directive on US Arctic Policy noting the possibility of security threats from the region. It said Washington had fundamental homeland security interests in "preventing terrorist attacks and mitigating those criminal or hostile acts that could increase the United States vulnerability to terrorism in the Arctic region."

The report notes that the population of the Arctic has climbed 16 per cent over the last decade, and the region draws an increasing number of tourists, with some 15 cruise ships operating regularly in its waters. Security agencies are increasingly wary of threats from both within Canada and beyond its borders, particularly from "issue-based activist groups" protesting in the Canadian Arctic [3].

The report goes on to mention that Al Qaeda has identified Canada as a target on more than one occasion; those familiar with the report note that "foreign extremists" could take advantage of "spotty surveillance" in the region as a means of entering North America [4]. While there was a tendency for the report to be somewhat discounted by other security analysts at the time of its release, it did nonetheless draw attention to the key fact of a lack of security infrastructure in the Arctic region. For example, it noted that labor market shortages in the Arctic have prompted employers to turn to a foreign work force, which is often not subjected to security screening prior to entering Canada [5].

Maritime terrorism can take many forms, some of which may be more or less likely in the Arctic. For example, according to a recent IAMU study [6], maritime terrorist events can be grouped into five different classifications or types: 1) Hijacking and hostage taking for political purposes (ie., not economic gain), 2) direct attacks on vessels (typically suicide attacks), 3) using the ship as a weapon, 4) using the ship as a "vector" to carry goods and materiel on behalf of terrorist organizations, and 5) sinking a ship to block a chokepoint or important trade route.

The likelihood of each of these occurring varies, but given that there are very few terrorist groups operating in the world today with known maritime capabilities, and given that there are no known terrorist groups currently operating in the Arctic, the possibility of many of these events occurring is quite small.

Hijacking and hostage taking is always a possibility, but the hijackers would almost certainly have to be onboard the vessel for this kind of event to occur, given how few active ports there are in the Arctic or places of embarkation for terrorist attacks to originate. Given the heightened levels of security on ships since the 9/11 attacks in the United States – particularly security on passenger and cruise ships – it is unlikely that hijackers could pose as members of the crew or passengers. A similar consideration mitigates against suicide attackers attacking vessels directly; not only would there have to be terrorist groups in the vicinity with maritime capabilities in the Arctic environment, they would have to have mastered the logistics of attacking a vessel in port, or more unlikely, at sea. Both are improbable at the moment.

Using the ship as a weapon – hijacking a vessel then using that vessel to attack a port or critical infrastructure (this is the "weaponization of transportation" scenario developed from the aviation attacks on the World Trade Center and Pentagon) – meets with similar objections; as does hijacking a ship and sinking it in a critical sea lane. There would have to be terrorist groups in the area with the capability of operating in the Arctic marine environment, and sufficient skill to hijack a ship.

While it is not impossible for this to develop at some future point, this is not a likely near-term scenario.

The use of a ship as a vector to carry weapons and/or materiel for terrorist groups is probably the most likely of the maritime terrorism scenarios. Guns, weapons, etc could be loaded on board a container almost anywhere in the world, and placed on a ship destined for the Arctic trade routes. Given that many ships transiting the Arctic in the future are expected to be in transit passage, and not making port calls along the way, the destination of the terrorist cargo is likely to be a distant port well outside the Arctic. Additionally, the "bomb in a box" scenario – a bomb placed in a container, timed to detonate at a certain future place and time – is not wholly unlikely, but again the "target" is more likely to be a port of destination than a sea lane transit. (And it should be noted that while this is one of the "nightmare" scenarios for maritime security analysts, and the focus of many maritime security drills, the bomb in a shipping container has yet – to our knowledge – to occur anywhere in the world, let alone in the Arctic.)

### 2.3 Criminal Exploitation

Criminal exploitation refers to a broader set of illegal activities that are done for largely financial ends, and are not necessarily related to making a political statement, or achieving a political outcome, as we see in terrorist incidents. The kinds of criminal activities of particular concern to the maritime domain include arms, human, and drug trafficking and smuggling. These represent some of the most pervasive exploitation of the maritime domain throughout the global supply chain. Drugs are routinely shipped from all continents of the world, primarily to markets in Europe and North America. To give a sense of the scope and size of the problem, looking only at US Coast Guard figures for the United States; from 1997 to the present the US Coast Guard (responsible for all US maritime drug interdiction) seized 806,469 pounds of cocaine and 333,285 pounds of marijuana, and accounted for 52% of all US government cocaine seizures. [7].

Arms smuggling occurs freely and openly throughout many parts of the world as well, particularly in Africa and Asia, with the shipping industry wittingly or unwittingly carrying many of these illegal cargoes. Maritime transport accounts for the majority of seizures and suspect shipments of military equipment, dual-use goods and missile technology to and from Iran and North Korea. Merchant shipping is also a primary means of delivering large shipments of heavy conventional weapons and military equipment to failed and failing states in the developing world such as the Democratic Republic of the Congo (DRC) and Sudan. Additional studies have found that sea transport has been the primary means of illegal deliveries of small arms and light weapons to non-state actors in Colombia, Somalia and Sri Lanka. [8] To the extent that any of these weapons flows are originating from, or being delivered to, countries that could benefit from reduced shipping times through the Arctic trade routes, the Arctic nations would have to expect that they would do so.

While it can be very difficult, if not impossible, to determine exactly who has bought and who has sold illegal weapons cargoes in all cases, a recent report by Stockholm International Peace Research Institute (SIPRI) has attempted to do so. Instead of using the ship's flag as a means of noting "ownership" of a vessel, they have instead noted the "beneficial owner" of the vessel, considered the ultimate

owner of the ship (individual, company, group or organization), and the ultimate beneficiary from its commercial operations [9]. The "beneficial owners" most often associated in illicit arms control seizures between 1991 and 2011 were (in order) Germany, Greece, United States, North Korea, Panama, Iran, Norway, Russia, Belize, Netherlands, Denmark and Japan [10]. Many of these countries are currently using the Arctic trade routes; many more of these countries are expected to do so in the future, leading to the conclusion that Arctic state authorities must be prepared to intercept and encounter illegal weapons trafficking through their northern waters.

Finally, human trafficking is an increasingly tragic example of the exploitation of – primarily – women and children globally, with many transported by sea. Human trafficking is estimated to be the third largest criminal enterprise in the world behind illegal drugs and arms trafficking. According to the CNN Freedom Project, trafficking in humans is believed to generate upwards of $32 billion dollars [11]. Globally, between 600,000 and 800,000 people are trafficked across international borders annually [12]. Major source countries now include Ukraine, Russia, Romania, Bosnia, Brazil, Myanmar and the destination countries are mostly the United States and Western Europe. The modes of transportation used to traffic humans around the world are numerous and include transporting people across borders hidden in cars or trucks as well as people trafficked into countries as stowaways or packed into shipping containers. Human traffickers are currently exploiting the maritime domain by using vessels as means to transport the victims of human trafficking. Smugglers and traffickers are also using passenger ferries as a way to transport people across bodies of water. They are hidden among crates to avoid detection from officials [13].

The lack of sufficient or routine security patrols, inspection infrastructure, and security infrastructure – coupled with predicted increases in maritime traffic, particularly containerized traffic – mean that the Arctic cannot be considered immune as a transit route for illegal cargoes of all kinds. In fact, the *Canadian* Integrated Threat Assessment Centre report cited above noted that "In recent years, vessels with links to human smuggling, drug trafficking, and organized crime have attempted to access the Canadian Arctic" [14].

## 2.4 Natural Disasters

Natural disasters as Tier I threats typically include rogue waves, tsunamis, cyclones and hurricanes in the maritime environment (with earthquakes, forest fires, etc being added as land-based events). Many of these either are, or may become, prevalent in the Arctic, with additional predictions of freak storms, and unpredictable ice movements impacting port infrastructure and/or individual ships. It should be noted that fierce storms – that would be called hurricanes in lower latitudes – have already hit the Arctic. In November 2011 an "historic" storm of "near record magnitude" with winds of 100 mph hit the coast of Arctic Alaska, with sea levels predicted to be three to five feet above normal. This created a substantial problem for coastal erosion in many Alaskan native villages, including the village of Kivalina, already facing severe erosion due to climate change [15]. More such storms – especially if they occur before the protective barrier of winter sea ice forms in the Fall – could contribute to the already precarious state of many villages in the North. It should be noted that Alaska alone has nearly 100 villages deemed "at risk" from climate and weather

events, with twenty-six designated as "priority action communities" (including the most threatened communities of Kivalina and Shishmaref) [16].

Rogue waves and tsunamis are not uncommon in the northern oceans, and the largest rogue wave in recorded history occurred in US Arctic waters. On 9 July 1958, an earthquake caused a giant landslide at the entrance of Lituya Bay in Alaska, generating a wave with an initial amplitude of 524 meters (1,719 ft). This is the highest wave ever recorded, and surged over the headland, stripping trees and soil down to bedrock. Three other historic tsunamis over 100 feet occurred in Lituya Bay: in 1854 (395 feet high), 1899 (200 feet), 1936 (490 feet), as well as 1958 (1740 feet). Rogue waves are not uncommon in Arctic waters as well, with some being captured on video [17]. As more and more ships use the Arctic trade routes, they will be increasingly subjected to the possibility of more severe weather events, many of which are currently poorly understood in these waters.

## 2.5 Accidents

Maritime shipping accidents are considered to be by far the most likely of the Tier I threats due to hazardous and unpredictable sailing conditions and the possibility that some shippers might try to stretch the sailing season (starting either too early or too late in the sailing season). Additionally, there is the problem of delays in rescue due to the scarcity of search and rescue infrastructure in the region, which could further compound the impact of the accident, particularly in the case of an oil spill or other hazardous leak.

According to recent studies, the melting of the ice and the opening of the Arctic to greater levels of maritime shipping is likely to lead to greater probabilities of accidents. Somewhat counter-intuitively to many, the increasingly reliable seasonal melt of the Arctic ice pack may actually create dangers posed by unpredictable and often dramatic worsening in local ice conditions, which can lead to shipping accidents in the Arctic seas. These include "ice compressions, intensive ice drift – ice rivers, narrowing channel behind icebreaker, collisions with stamukhas and icebergs, unusually early freezing of sea areas, intrusion of sever ice into shipping lines, icing of vessels and sticking of snow-ice pillow to them" [18].

Along with ice conditions creating poorly-understood hazards to navigation, mariners and meteorologists point to the fact that fog and poor visibility conditions are likely to increase with the warmer weather. Incompletely charted waters may be a factor as well; especially in those areas where the sea lanes follow the specific pattern of the seasonal ice melt and may not be in exactly fixed locations from year to year. In short, some Arctic consequences of climate change may include:

- Changing physical and mechanical properties of sea ice;
- More calving, leading to more, but smaller (and harder to detect), icebergs;
- Higher waves and more sea spray icing in ocean areas that will become ice free;
- More summer fog;
- Changed tracks of cyclones and anticyclones in the Arctic.

Shipping accidents are not new in the Arctic. In addition to the well-known Exxon Valdez accident (which technically did not occur in the Arctic but is often discussed in the context of the difficulties of oil spill response in remote and frigid waters), there have been several other noted maritime incidents in the Arctic:

- The *Spirit of Glacier Bay*, July 7, 2008: A small cruise ship, the *Spirit of Glacier Bay* ran aground in poor weather at the head of Tarr Inlet (southeast Alaska); no casualties or injuries were reported, and the hull was not compromised. Passengers were removed by air, and the ship was towed back to port without incident;
- The Clipper Adventure, August 29, 2010: Another cruise ship, the Clipper Adventure was carrying approximately 200 passengers and crew on a cruise from Greenland when it ran aground in three meters of water in Nunavut, near the Northwest Territories. The cruise operator claimed the ship ran aground on an uncharted rock. A Canadian Coast Guard icebreaker successful removed all the passengers after taking two days to reach the stranded vessel. There were no injuries or negative environmental impacts reported, although the ship remained grounded for two months before being salvaged;
- The Arctic Rose, April 3, 2001: One of the worst commercial fishing accidents in an industry that routinely kills at least 70 fishermen a year, the *Arctic Rose* sank in heavy weather will all 15 crew on board. In 24 foot waves, it took at least 30 hours to reach the stricken vessel, approximately the length of time an individual can last in a survival suit in the frigid Arctic waters. While there is still some dispute about the exact cause of the accident, it is believe it was due to human error – a back hatch had remained open.

As can be seen by these few short case studies, response time in the Arctic can be delayed due to poor weather conditions and the lack of readily available search and rescue infrastructure. According to a recently-released report by the US National Oceanographic and Atmospheric Administration (NOAA) and the University of New Hampshire, "the existing infrastructure for responding to maritime accidents in the Arctic is limited and more needs to be done to enhance emergency response capacity as Arctic sea ice declines and ship traffic in the region increases" [19].

Specifically, the report recommends:

- Strengthening multinational plans and agreements for all types of responses;
- Improving logistical support capabilities for disaster responders;
- Updating weather data and navigational charts for the Arctic;
- Studying the behavior of oil in cold water and improving technologies for spill response in Arctic conditions;
- Designating potential ports in the Arctic where damaged vessels can be taken to safeguard them against the Arctic's harsh environmental conditions and reduce the risk of harm to the environment.

## 3. Probability-Impact Assessment

A means of assessing relative severity or importance of a multitude of threats is a "probability-impact matrix." For each event under consideration, a relative (not absolute) probability is determined, along with a relative impact (usually determined by the cost in human lives and economic toll). A brief exercise in my Fall 2011 *Polar Politics* class at the California Maritime Academy assessed Tier I threats in the Arctic; from this assessment, the following matrix was determined (the probabilities and impacts for the specific events appear in Appendix I). Events which cluster towards the bottom right of the matrix are the most severe, and those which shipping companies, government officials, and policy makers should focus on first [20].

| | Probability → | | | | |
|---|---|---|---|---|---|
| Impact ↓ | 1 | 2 | 3 | 4 | 5 |
| 1 | | | | | |
| 2 | | | | 1 | |
| 3 | 2 | | | 8 | |
| 4 | 3, 4, 5 | | 6, 10, 11 | 9 | 12 |
| 5 | 7 | | | | |

According to the assessment done with these twelve events, the following are determined to be of the greatest risk and highest importance:

- Terrorism: Ship as a vector: Event #6, Risk Value 12
- Human trafficking: Event #10, Risk Value 12
- Natural disasters: Event #11, Risk Value 12
- Accidents: Event #12, Risk Value 20

Clearly this is just a very preliminary exercise to give a sense of the relative importance of the various Tier I threats that could occur in the Arctic in the future. To have full value, this exercise should be repeated by those with a clear stake in Arctic shipping and economic development, in order to plan for those threats most likely to occur as the Arctic trade routes are used more routinely by the global trading community.

## 4. Conclusion

At the moment, accidents are the most likely security threat in the Arctic and can be mitigated by training, given how many maritime accidents are caused by human error. Additionally, the Manila Amendments to the STCW Convention and Code call on additional levels of Arctic training for mariners. However this level of training and preparation for expected increases in Arctic shipping should be extended to maritime education and training (MET) not just for mariners, but for shipping companies, insurance companies, and related industries doing business in the Arctic as well. Most importantly, the Arctic nations should identify the threats most likely to occur in their waters and continue to develop joint mitigation, response and recovery plans. Cooperative effort is essential due to the current insufficiencies in response infrastructure as any incident will likely affect all Arctic nations, and will require joint and cooperative response.

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## Appendix I

| Event | Probability | Impact | Risk Value (PxI) |
|---|---|---|---|
| 1. Maritime Piracy: Theft at anchor or in port | 4 | 2 | 8 |
| 2. Maritime Piracy: Attack at sea | 1 | 3 | 3 |
| 3. Terrorism: Hijacking and Hostage Taking | 1 | 4 | 4 |
| 4. Terrorism: Direct Attack on vessels | 1 | 4 | 4 |
| 5. Terrorism: Ship as a weapon | 1 | 4 | 4 |
| 6. Terrorism: Ship as a vector | 3 | 4 | 12 |
| 7. Terrorism: Ship closing chokepoints | 1 | 5 | 5 |
| 8. Drug smuggling | 4 | 3 | 12 |
| 9. Weapons smuggling | 4 | 4 | 16 |
| 10. Human trafficking | 3 | 4 | 12 |
| 11. Natural disasters | 3 | 4 | 12 |
| 12. Accidents | 5 | 4 | 20 |