

# PERSPECTIVES ON EMERGENCY RESPONSE IN THE CANADIAN ARCTIC

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*Sinking of the MS Arctic Sun in  
Cumberland Sound, Nunavut*

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## **PART B: THE RESPONSE TO THE HYPOTHETICAL SCENARIO**

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*Cover image courtesy of David Kilabuk*

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A partnership between the Canada Centre for Global Security Studies at the Munk School of Global Affairs, University of Toronto, and the Walter and Duncan Gordon Foundation, the Munk-Gordon Arctic Security Program's vision "is for peacefully resolved disputes in the Arctic, global environmental security that supports a healthy Arctic environment, and an Arctic foreign policy that centres on the needs of those who live there." To achieve this vision the Program undertakes original research and hosts interactive gatherings.

### *EMERGENCY PREPAREDNESS IN THE ARCTIC*

This paper is one of a three-part series focused on a hypothetical sinking of the MS Arctic Sun in Cumberland Sound, Nunavut, Canada. The series is part of a larger project on Emergency Management Preparedness in the Arctic being undertaken by the Munk-Gordon Arctic Security Program.

By exploring current emergency management preparedness capacity in the Arctic, including methods of communication, collaboration, resource-sharing, authority and jurisdiction, the question "are we ready?" for emergencies ranging in scope from the local to the international will be answered. A combination of baseline issue research, participatory action research and scenario assessment will inform the development of policy recommendations to prepare for emergency management responsibilities in the 21st-century Arctic.



## ACKNOWLEDGMENTS AND THANKS

The author would like to thank all the individuals who contributed to this project. Their insights and candor have ensured a more accurate, and therefore useful, assessment of the gaps and future needs in this important area of public policy. The study is all the stronger for their generous participation.

The author would also like to extend a special thank you to the people of Pangnirtung, NU, and in particular, to its former senior administrative officer (SAO), Ron Mongeau. Pangnirtung's generosity in "hosting" this scenario as well as its citizens' sincere commitment to the safety and well-being of all who enter the waters of Cumberland Sound are a credit to the community and its citizens.

## THE COMMUNITY OF PANGNIRTUNG, NUNAVUT

The sinking of the Arctic Sun takes place 31 kilometres from the hamlet of Pangnirtung, NU. Pangnirtung is a picturesque community of just over 1,400 people, primarily of Inuit origin, situated on the south shore of Pangnirtung Fiord, off Cumberland Sound on Baffin Island, Nunavut. Evidence of Inuit habitation of the Cumberland Sound region dates back millennia to the Thule and Dorset peoples, predecessors of the Inuit, indicating continuous occupation of these lands and waters since time immemorial. The search for the Northwest Passage brought the first European explorer, John Davis, to "discover" this area in 1585. Several centuries later in 1835, a Scottish whaler named William Penny and his guide Eenuoloapik "rediscovered" the entrance to Cumberland Sound, triggering an era of Scottish and American bowhead whaling. The Inuit way of life would be forever changed as families left their traditional camps to work at the whaling stations at Nuvuyen and Kekerten Island in Cumberland Sound.<sup>1</sup>

Today the hamlet is a regional centre for the territorial departments of health and education, and boasts an active and growing fishing industry, a new small craft harbour and a fish plant employing 38 people both full-time and seasonally. Also renowned for its artists and craftspeople, the Uqurmiut Centre for Arts & Crafts supports a vibrant arts community and has made Pangnirtung internationally famous for its tapestries, printmaking and crocheted "Pangnirtung hats."

<sup>1</sup> "History," Hamlet of Pangnirtung, accessed February 10, 2014, [www.pangnirtung.ca/history](http://www.pangnirtung.ca/history), 2014.

# THE SINKING OF THE MS ARCTIC SUN IN CUMBERLAND SOUND, NUNAVUT: HYPOTHETICAL SCENARIO



Image courtesy of Mike Beauregard

Are we ready? This pivotal question launched a year of research into Canada's ability to respond in an effective and timely manner to a major disaster in the Canadian Arctic. The analysis was accomplished through the lens of a hypothetical cruise ship sinking in the waters of Cumberland Sound off Baffin Island near the hamlet of Pangnirtung, Nunavut, Canada. The exercise brought into sharp focus the unique challenges to emergency management posed by the vast geography of the Arctic, the changing social and institutional patterns of its communities and the multi-jurisdictional nature of the authorities that currently govern disaster response in the Arctic.

*A summary of the incident under study is as follows:*

## CASE STUDY SCENARIO: THE SINKING OF THE MS ARCTIC SUN

On the morning of Saturday Aug. 13, 2014, the MS Arctic Sun is travelling north up the east coast of Cumberland Sound off Baffin Island, Nunavut, Canada, en route to the hamlet of Pangnirtung. Aboard are 114 passengers – Arctic policy experts, marine biologists and government officials from the eight circum-polar states – all participating in a two week “floating

*“I’ve seen a lot of search and rescue from a medical perspective and 90 per cent of response in terms of timeliness and appropriateness comes from the communities”*

– **Nurse in Nunavut**

think-tank” exercise aimed at developing a framework agreement to govern the future commercial fishing industry in the Arctic. Fifty-four crew members are also on board, bringing the total manifest to 168 persons.

On this Saturday morning in August the skies in Cumberland Sound are heavily overcast, the temperature is hovering around 5 degrees C and the winds are blowing out of the east at 14 knots. The Canadian Ice Service (CIS) reports indicate the north end and much of the northwest side of the Sound are solidly blocked with pans of 3/10 to 8/10 ice, forcing the Arctic Sun to keep to the far eastern coast of the Sound. The CIS has also reported three large icebergs in the vicinity of the ship, with the most significant one tracking south as it emerges from the mouth of Pangnirtung

*“Canada’s landscape is one of the most challenging in the world in which to conduct search-and-rescue operations, and the area in which search-and-rescue professionals work is the largest in the world – it extends over 15 million square kilometres of land and sea and encompasses the world’s longest coastline.”*

**– Prime Minister Stephen Harper**

Fiord. As the ship makes its approach to round the head and travel down the fiord toward the hamlet, the ship’s radar picks up the image of an iceberg lying directly ahead in the ship’s path; evasive action will be required to avoid a collision.

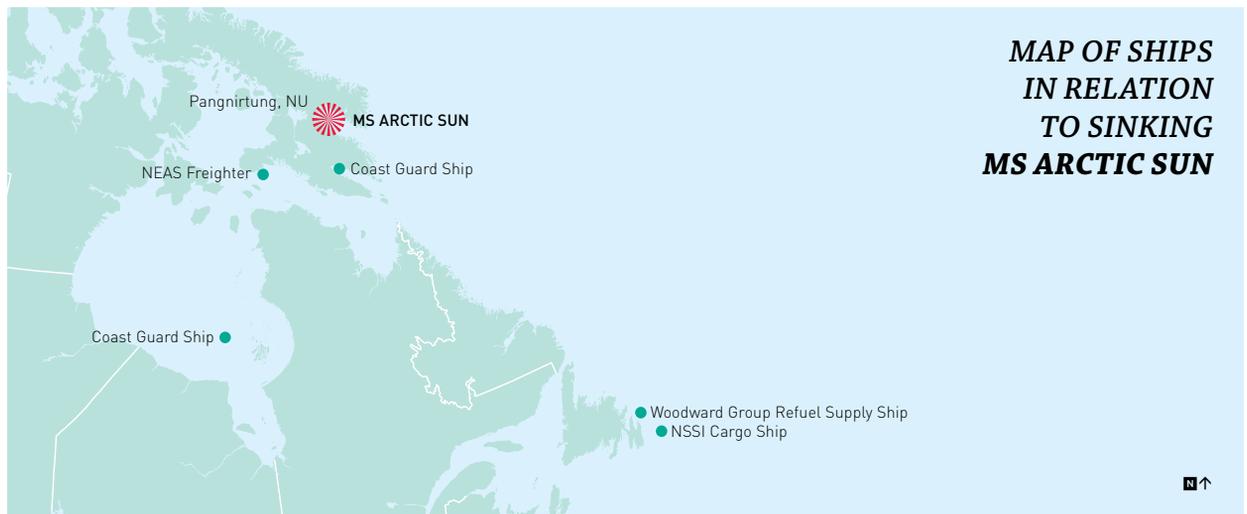
With extensive ice cover to the north and west, there is not enough open water to manoeuvre the ship far enough to port to safely bypass the iceberg, nor is there sufficient time to turn the vessel around and retreat south. The captain makes the only decision possible: at ship’s time 10:21, he orders the ship’s course to be altered further to the east, directing the vessel to the farthest line of soundings possible in an attempt to ensure enough distance from the iceberg and avoid any possibility of collision. Without forward-looking sonar, the instruments

on the bridge are only capable of identifying objects above the waterline and with 90 per cent of the iceberg submerged, the captain aims to give it wide berth. The approaching low tide is not in the ship’s favour and the vessel crawls forward at a cautious two knots per hour.

At 10:46, disaster strikes. The vessel hits a rocky shoal just beneath the surface, sending a violent shudder throughout the ship. Passengers and crew are jolted by the impact and a 64-year-old professor who is descending a ladder between decks at the time is thrown to the ground, breaking his leg. Other passengers are badly shaken but uninjured. After issuing appropriate orders to the bridge, the captain orders all passengers and crew to muster stations for the roll to be called and instructs the chief engineer to sound all tanks and check for damage.

A quick inspection indicates that tank number 6, carrying 87 m<sup>3</sup> of diesel, has been breached. Not long after, a large fuel slick is sighted off the starboard side to the rear of the ship, but of greater concern is the seawater flooding into the mechanical room. Within an hour of the grounding, despite the use of bilge pumps, the water is threatening to swamp vital electrical and mechanical components. The captain broadcasts a Mayday call and informs MCTS in Iqaluit that they are abandoning ship.

All passengers and crew are instructed to don survival suits and directed into four large 50-man lifeboats. During this process, the 62-year-old cook complains of severe chest pains. The transition into the boats is complicated by the need to accommodate the injured professor. Concern grows over the condition of the cook, but eventually all are secured and the boats move away from the foundering vessel.



## FURTHER VARIABLES AFFECTING THE RESPONSE

During the summer in which this incident occurs, the Canadian Coast Guard (CG) is operating five ice-breakers in the Arctic region. On the day of the sinking, the closest of these is in Iqaluit awaiting mechanical parts to be flown in to allow for the repair of an engine. The next closest CG vessel is situated in Hudson Bay, several days' sail away. The three remaining CG ships are on assignment in the western Arctic.

Several other cargo and fuel resupply ships are also traveling in the Arctic at this time of the season. An NSSI cargo ship departed Montreal Aug. 4 and is currently off the east coast of Newfoundland. The NEAS freighter left Valleyfield, Que., on Jul. 23 and is 90 kilometres east of Cape Dorset. A Woodward Group fuel resupply ship headed for Pangnirtung is just leaving the dock in St. John's, Newfoundland.

The weather at the time of the ship's evacuation is holding steady around 9 degrees C, but the rain continues. The winds over the course of the afternoon begin to shift to the southwest, gusting up to 20 knots, and interrupting flight service in Pangnirtung, where the location of the airport in relation to the mountains makes landings and take-offs highly subject to weather. Eventually a warm front moves in from the southwest and by 23:00, Cumberland Sound is coated in thick fog. The temperature has risen to 14 degrees C.

The heavy fog blankets Cumberland Sound for three days, cutting off all outside access to the region. Finally, on Aug. 16, a cold front from the north-west pushes in, dispelling the fog but bringing winds that gust up to 30 kilometres per hour.

For a more detailed description of this event and the summary of timelines, please see *Part A: Sinking of the MS Arctic Sun in Cumberland Sound, Nunavut – Hypothetical Scenario*.

## INTRODUCTION

The purpose of the Arctic Sun scenario is to catalyze discussion around the current state of emergency preparedness and management in the Canadian Arctic. The scenario provides a tool through which to gather the perspectives and insights of first responders, emergency managers and residents in the Arctic and southern Canada, in order to predict the possible outcome of a major marine disaster that would trigger a multi-jurisdictional response. How well the responding agencies and Arctic communities might collaborate in the event of a mass casualty situation serves as

one of the central questions of this exercise.

The focus of this study has been limited to only those agencies and individuals who would be involved in the first critical hours of the incident and prior to the “all of government” response that would likely result after a disaster of this magnitude. It reflects the importance of these early hours to the success of an Arctic rescue and highlights the role that local responders and citizens might play in events that occur in close proximity to their communities.

## JURISDICTIONAL ARRANGEMENTS OF EMERGENCY MANAGEMENT IN THE ARCTIC

Any discussion or assessment of the response to the sinking of the Arctic Sun first requires some overview of the complex web of authorities and mandates that govern emergency management (EM) in the Far North in general and the territory of Nunavut in particular.

Responsibility for emergency services in the Arctic is spread among a wide array of federal and territorial agencies, including several branches of the military, the Coast Guard and the RCMP, as well as local volunteer associations such as the Canadian Coast Guard Auxiliary and municipal search and rescue teams. In Nunavut, it involves lands that are owned or co-managed by:

- The Government of Canada — Crown land and National Parks equalling approximately 90 per cent of the land mass of Nunavut;
- Nunavut Tunngavik Inc. — Inuit-owned lands (IOL) awarded to Inuit citizens of Nunavut through the land claim; and
- Government of Nunavut — all lands within the boundaries of Nunavut that fall under territorial authority.

Given these distinctions, the precise location of an incident in Nunavut can be a factor in determining what level of government should respond, and at what stage. The complexity of this arrangement is at times a source of confusion and frustration for responding organizations and, in particular, volunteers and community officials who are often first on scene in a crisis. As this scenario will demonstrate, the complexity of jurisdictional arrangements in the Arctic and uncertainty over the delineation of precise boundaries of EM authority can present significant challenges to the management of complex emergencies.

## MANDATES AND STRUCTURE

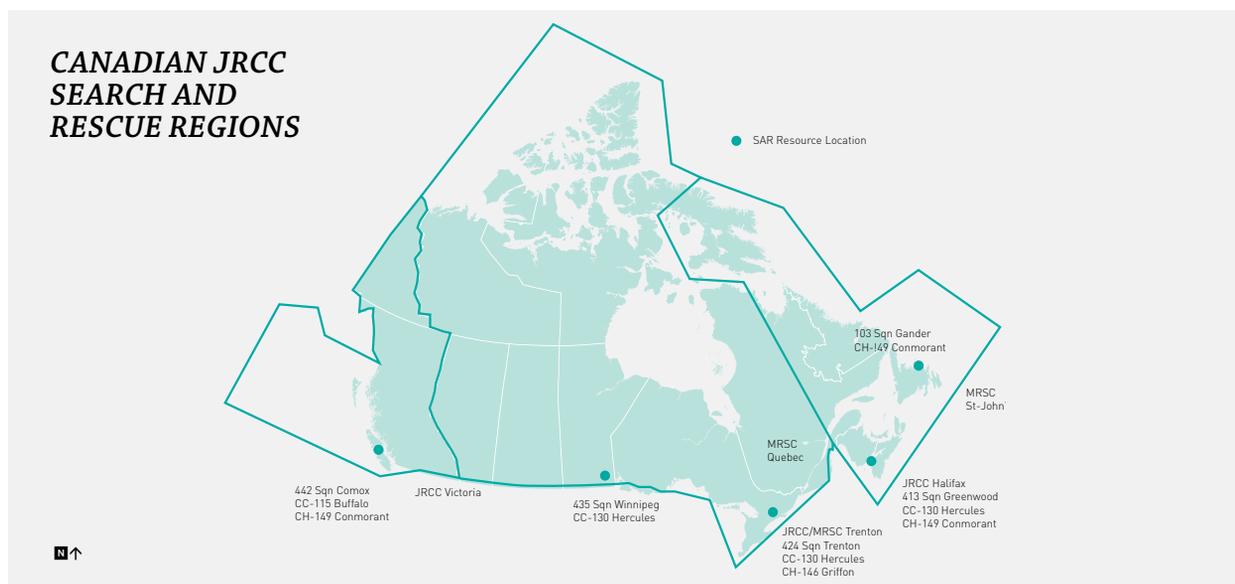
The primary responsibility for marine search and rescue throughout Canada, including the Arctic, falls to the Department of National Defence (DND). This mandate is carried out through the Royal Canadian Air Force (RCAF) with the support of the Canadian Coast Guard (CG) and its assets (e.g., ships) and volunteer members of the Coast Guard Auxiliary, a not-for-profit organization manned by marine SAR volunteers. The Coast Guard falls under the jurisdiction of the Department of Fisheries and Oceans. To facilitate emergency response and ensure effective collaboration between the two ministries, Joint Rescue Co-ordination Centres (JRCCs) manned by RCAF and Coast Guard personnel have been established in Halifax, N. S., Trenton, Ont. and Victoria, B. C.. The total geographic area of Canada, including its territorial waters, has been divided into three corresponding jurisdictions running north to south and each JRCC is responsible for all aerial and marine search and rescue within its respective boundaries. In the case of the *Arctic Sun* incident, responsibility for the rescue would fall within the purview of JRCC Halifax.

In the event of a marine rescue, the responsibility of the JRCC and/or the Coast Guard ends once the rescued individuals are delivered safely to the nearest community.<sup>2</sup> These individuals are either released on their own recognizance or, if further medical attention is warranted, into the care of the health care

professionals in the receiving community. If those rescued belong to an organized group, such as the passengers and crew of the *Arctic Sun*, they remain the responsibility of the ship owner and/or tour operator. In practical terms however, the unexpected influx of a large group of rescued passengers into an isolated Arctic community becomes the immediate concern of that community, its municipal officials (mayor, SAO, etc.) and, by extension, the Emergency Management Office of the Government of Nunavut. Where injuries or health issues are involved, responsibility for care falls to the Health Centre in the receiving community, and associated costs are assumed by the territorial government.

Responsibility for the containment and remediation of all environmental spills in Canadian territorial waters falls under the jurisdiction of the Canadian Coast Guard through its Environmental Response (ER) branch. It should be noted that containment and clean-up are administered through a different branch of the Coast Guard than that concerned with search and rescue, and environmental response does not fall within the mandate of the JRCC or DND. All Coast Guard ice breakers are equipped for spill response as well as search and rescue, however, and ships may be tasked with both duties should the need arise, search and rescue taking the obvious priority.

At the time of this exercise, Nunavut had just completed the development of a series of municipal, regional and territorial emergency management plans



<sup>2</sup> The exception to this would be in the case of a major disaster where further military support for the incident is formally requested by the premier through the federal minister of national defence, often following the declaration of a territorial state of emergency.

<sup>3</sup> Ambulance services and medevac are operated on a cost recovery basis for non-Nunavut residents. In the event of a mass casualty situation, a state of emergency would likely be declared and territorial and/or federal medical support transferred in, or patients transferred out, as quickly as possible, although in many cases this support might be hours or days away, depending on the availability of assets, as well as weather conditions.

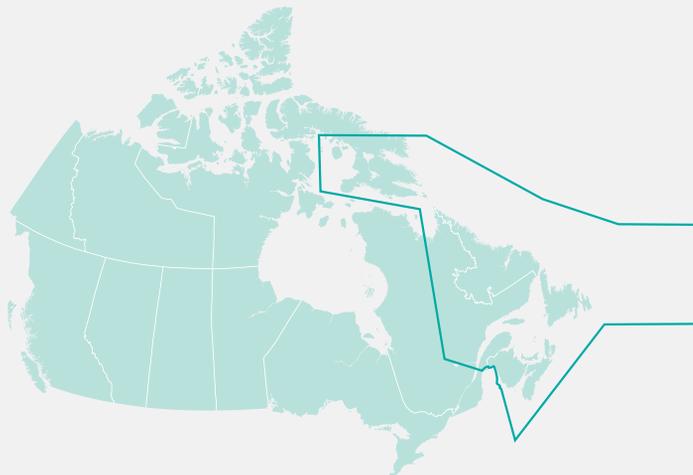
designed to strengthen the capacity of emergency response within the territory. Following the tragic air crash in Resolute in 2011, the critical need for greater emergency planning became evident, especially at the community level, and resources were allocated to the Emergency Management Office (EMO) in Iqaluit to undertake the steps necessary to address that gap. A lengthy consultation and development process was carried out with, and in, all communities in the territory to ensure the EM protocols were properly designed, well understood by those responsible for their implementation, and addressed the real hazards faced by Nunavut citizens. Each community's final emergency plan was adopted as a bylaw by its respective municipal council and registered with the Nunavut Government.<sup>4</sup>

For the Arctic Sun scenario, it is important to note that the community Emergency Response Plan gives authority for the management of community emergencies to a local official, usually the SAO, who is designated as the "Emergency Management Officer" and operates under the authority of the respective mayor and council. Technically, this authority is limited to emergencies (fires, floods, infrastructure failures, etc.) that occur within municipal boundaries, and does not include marine rescue. However, confusion can exist in practical terms, as indicated by this hypothetical case study, over where the authority of municipal officials ends when it is local citizens who are acting as the first responders. The determination of territorial boundar-

ies, and therefore designated authorities, can be further confused in the Arctic by factors such as ice, which in practical terms, changes Nunavut waters from "marine" to a solid mass contiguous to land on a seasonal basis.

The lines of responsibility for emergency management in Nunavut are further complicated by the history of ground search and rescue (GSAR) in the territory. The primary mandate for ground searches has historically fallen within the purview of the RCMP. The clause in the federal-territorial policing agreement that awards that agency jurisdiction has, however, over the past decades been interpreted<sup>5</sup> by both the RCMP and the territorial government to allow responsibility (and associated costs) for ground search and rescue to be undertaken by the territory. The impetus for this arrangement was allegedly driven by a RCMP-led search that ended in tragedy with the death of two young Nunnavummiut in the 1980s, and further supported by the belief of many residents of Nunavut that local responders, with their life-long experience and intimate knowledge of the land, would be more competent in undertaking ground searches that extended beyond the community than the young RCMP officers posted to the region from the south. This led to the establishment and training of volunteer ground search and rescue teams in each Nunavut community, with the teams falling under municipal direction and the authority of the Government of Nunavut. GSAR has largely been considered a territorial responsibility since that time.

### **JRCC HALIFAX SEARCH AND RESCUE REGION**



<sup>4</sup> At the time of writing, Pangnirtung and two other communities in Nunavut had yet to pass their emergency response plans through their councils.

<sup>5</sup> The relevant clause in the policing agreement stipulates that when a search has gone past a "normal search," the commanding RCMP officer will contact the Minister of Justice for approval and all costs shall be billed back to Nunavut. Over time, a "normal search" has been interpreted as the regular investigation the RCMP would conduct in response to a report of a "missing person" and is limited to the community. When the need for a search exceeds the boundaries of this "normal" investigation, for example, when a hunter out on the land is reported as overdue and therefore "missing," responsibility for that broader ground search falls to the municipality and is undertaken by the local volunteer GSAR team with the support of the Nunavut government.

In practice, however, the management of ground searches can vary significantly from community to community depending on the personal competence, experience and interests of individual municipal officials and SAOs, the local SAR volunteers and the local RCMP members. In some communities it is entirely a municipality-based activity; in others, the RCMP are more heavily involved. Nunavut's Emergency Management Office has recently developed a GSAR protocol that attempts to rationalize these disparate approaches by specifying the roles and obligations of the RCMP, SAOs and volunteer GSAR responders with regard to ground searches, but to date that protocol has yet to be implemented in all communities. While this lack of consistency in approach to GSAR may seem to frustrate all principles of public administration, it does nonetheless ensure that, in most cases, the most able and competent people in each community, whether RCMP, SAR volunteer or other, provide the leadership in search and rescue, thereby providing the victims with the greatest chance of discovery and survival.

In all cases, should a municipal ground search prove unsuccessful after several days' effort, or exceed the capacity and resources of a local community, the local Canadian Rangers can be tasked to participate in the search and/or the JRCC responsible for that territory called upon to provide assistance. Likewise, should a call for a search go out in a community and insufficient SAR volunteers come forward to participate, the SAO or official in charge can ask the local RCMP to request Joint Task Force North (JTFN) to activate the local Canadian Rangers to undertake that initial effort, thus turning a local GSAR mission into an official military operation that by definition precludes the participation of local SAR volunteers.

The lines of jurisdictional authority created by federal, territorial and municipal emergency management policies can be further complicated in major Arctic emergencies by simple facts of geography and timing. The distance of JRCCs and their assets from Arctic incidents, challenges to communications and the transportation time required for JRCC SAR technicians to arrive on scene can all frustrate attempts at efficient rescue. Likewise, pragmatism might sometimes trump policy when responding to major emergencies in or around remote communities in the Arctic and northern sensibilities regarding authority and legitimacy do not always align with perceptions in the south. That being said, with increasing communications capacity in the Arctic and the formalization of local emergency management and first responder

roles through ERPs and organizations such as the Coast Guard Auxiliary and the Canadian Rangers, there is evidence that more structured protocols for emergency management are gaining currency, however uneven their adoption.

## QUESTIONS FOR EXAMINATION: THE SINKING OF THE ARCTIC SUN

Given the breadth and complexity of evaluating emergency preparedness in the Arctic, it was imperative for the purpose of this study that some triage be performed to determine a manageable scope and focus for the Arctic Sun exercise. To that end, the study concentrated primarily on those elements of emergency management theory that have been identified as most critical to an effective response. Paramount among these were issues of leadership, authority and jurisdiction. Who would take charge of the incident? Do all parties to the incident recognize and agree to that command? If perceptions vary, what were the reasons for that divergence? Are all EM roles and responsibilities clearly defined and understood? What were the implications for the success of the response?

Implicit in this line of inquiry was an examination of the range and depth of relationships that exist among the various responding agencies. Do the individual leaders and responders respect each other and understand the boundaries of their respective jurisdictions? Have they met or worked together prior to this emergency? Do they share the same culture, experience, education and values? What impact would these "intangibles" have on the outcome of the response?

Next, the study looked to the northerners themselves: what issues related to this incident in particular and emergency management in general caused them the greatest concern? Are these concerns unique to the Arctic? Are they well understood by others outside the Arctic?

## METHODOLOGY OF THE STUDY

The approach of this emergency response exercise deviates from that of most standard tabletop formats, where all actors typically gather in one place to negotiate their way through a hypothetical disaster scenario. In this case, the author met separately with representatives of each of the first-responder organizations in Nunavut and southern Canada and with officials and responders in the community of Pangnirtung. All were presented with the same scenario and

questions and their responses, opinions and perspectives on how they would see the response unfold were independently recorded. In some cases, participating individuals or agencies were contacted a second time by email or phone for clarification. The responses were then collated and analyzed to determine if the responding federal and territorial EM agencies and the officials and responders in the community of Pangnirtung were in agreement on the general protocol and if the respective roles, policies and culture of each responder or stakeholder group were well known and understood by all others.

In the description and analysis of these responses, you will note that no names or affiliations have been attributed to the supporting quotations. A list of the participating organizations is annexed and all interviews have been appropriately recorded and documented, but the exact identity of each spokesperson has been withheld. While in no case was confidentiality promised to any participant, this measure has been taken to preclude any negative consequences in the event the opinion of an individual might differ from the official policy of his or her employer or where candour and passion have led to the expression of strong opinions or statements that might not otherwise have been shared in a public forum.

The strength of this approach, particularly in a multi-jurisdictional situation that covers vast geographical distance, lies in gaining the perspective of individual responders on their role in situ where they live and work, as they would be in a real emergency. Each describes their role as they understand it at the moment the scenario is presented and reacts according to their own protocols, personality and perceptions of their role and jurisdiction. A series of “snapshots” is thus produced that allows for comparisons of the various perspectives and an assessment of any inconsistencies or gaps.

By contrast, tabletop exercises generally bring together all responding parties in one location where the response is “negotiated” among the participants present. This standard model is extremely useful in acquainting different responders, establishing working relationships and straightening out any jurisdictional overlaps. The exercise is conducted with the benefit of a facilitator in a collegial atmosphere with relatively little pressure and is therefore not typical of a real-life crisis situation. In most actual large scale events, the various agencies responsible are indeed geographically separated, many have not met previously and most are operating within their own “silos.”

The independent interview methodology employed

*Hierarchy, and the unquestioning acceptance of it by everyone in the organization, is the only hope in a crisis...*<sup>6</sup>

– **Peter Drucker**

here, however, is not without its own limitations. While perhaps more representative of the independence and geographic distance between various Arctic responders, it does not allow for any of the normal communications that would be expected to take place among the various actors in a real emergency. While this methodology might be highly effective in identifying gaps or inconsistencies through a comparison of the various interviews or “snap shots,” it is perhaps a poor predictor of how quickly issues or conflicts would be resolved or accommodated between parties once direct communications were established.

## UNDERLYING PRINCIPLES: SYSTEMS THEORY OF EMERGENCY MANAGEMENT

It is an old maxim that theory without practice is lame and practice without theory is blind. Such wisdom compels us to explore, however briefly, some of the fundamental concepts in emergency management theory that inform the practice today and identify a few of the critical standards against which to assess the current state of emergency preparedness in Canada’s Arctic in general and the response to this incident in particular.

The providence of most emergency management protocols in practice in North America today can be traced back to a model originally known as (and in many jurisdictions still referred to as) the Incident Command System (ICS). Originating in United States in the 1970s, the system was born of necessity in response to disaster. The situation at the time was this: California’s wildfire problem had grown steadily throughout the 1950s and 60s and by the fall of 1970 the blazes were so severe they had completely overwhelmed the state’s wildfire protection system. Most critically, there was no plan or mechanism in place to allow co-ordination of the many disparate first responder agencies that were implicated by the scope and severity of the fires.

Author Dana Cole, a former assistant fire chief in that state, provides a succinct summary of the negative out-

<sup>6</sup> Peter F. Drucker, *Management challenges for the 21st century*. (New York: Harper-Collins, 1999), 11.

<sup>7</sup> Dana Cole, *The Incident Command System: A 25 year Evaluation by California Practitioners*, (St. Helena, California: California Department of Forestry, 2011), 209.

comes that resulted from this lack of EM co-ordination, gaps that drove the creation of the ICS system:

In all, 885 homes were destroyed and 16 people killed. The economic loss was approximately \$233 million (FEMA, 1987). But the numbers do not tell the story of the total chaos that enveloped the dozens of emergency services agencies that responded to these fast moving, erratic wildfires. A primary reason for the confusion was the sheer number of agencies involved, each with its own jurisdictional mandate. This resulted in a “stovepipe” management mentality in which each jurisdictional unit had its own vertical structure of policies and protocols, communications and feedback. In hindsight, responding departments recognized that the emphasis on vertical flow inhibited the sharing and coordination of information between jurisdictions. This meant that as fires burned across and out of one jurisdiction to another, individual jurisdictions were often “flying blind” and forced to improvise management response with no clear organization of authority between departments, no predetermined rules for collective decision-making, and no co-ordination of even the most basic communications.<sup>7</sup>

Out of the obvious need to address these organizational deficiencies was born a coherent, systems-based model of emergency management still considered by many to be the gold standard in the field. Though ICS was originally developed to manage the multi-jurisdictional response to one type of crisis, specifically wildfires, the model has been adapted and applied worldwide to disasters of all types and magnitudes. It has also been updated to incorporate and exploit a range of new technologies such as the internet, social media and GPS, all of which have come into popular use since its creation. Though an entire field of academic research has now grown up around the theory and science of emergency management, the fundamental principles of the ICS approach and the management framework it suggests remain valid and are the basis of many, if not most, emergency response systems in place throughout the world today, including many of those found in the Arctic.

It is for this reason that ICS emergency management principles were chosen to guide the assessment of this case study. Among the chief tenets of that

system are the following:

- 1 that leadership be quickly established and recognized by all parties;
- 2 that jurisdiction and response protocols of all responders be clearly understood and their efforts co-ordinated;
- 3 that communications, to the greatest extent possible, be centralized, accurate and consistent through a “one voice” approach; and
- 4 that systems be constantly tested and refined through simulations and tabletop exercises.

## EMERGENCY MANAGEMENT IN CANADA: THE BROADER CONTEXT

There have been numerous assessments of Canada’s capacity to respond effectively to emergencies or disasters in Canada’s Arctic.<sup>8</sup> All have generally come to similar conclusions — that despite the best efforts and competence of Canada’s search and rescue specialists, the location of DND’s Joint Rescue Co-ordination Centers (JRCCs) in southern Canada, as well as the location of all the supporting SAR assets at air bases in the south, would make it extremely challenging to provide timely rescue in the event of a major disaster in the Canadian Arctic.

Recent research undertaken on response times on behalf of the National Research Council places the earliest aircraft from the south on scene at an incident in the Far North, depending on the location of the emergency, at somewhere between 13 and 27 hours, assuming ideal flight conditions.<sup>9</sup> This figure is understandable when considering the geographic range and scope of responsibility assigned to the three SAR centres. JRCC Halifax covers an area roughly 5.2 million square kilometres, reaching from Quebec City to the middle of the Atlantic Ocean and from Nova Scotia to halfway up Baffin Island, including Cumberland Sound. They do so with Hercules aircraft based at an RCAF airfield in Greenwood, Nova Scotia and helicopters based in Gander, Newfoundland, with the next available assets located at air bases thousands of kilometres west in Southern Ontario.

On the marine side, it should be noted that Canada has no vessels based in the Arctic for search and

<sup>8</sup> Please see “Emergency Management in the Arctic: The Context Explained” on the Munk-Gordon Arctic Security Program website (<http://www.gordonfoundation.ca/north/munk-gordon-arctic-security-program/emergency-management>) for a more comprehensive description of Canada’s legislative framework for Search and Rescue as well as a more detailed review of recent assessments of Canada’s SAR capacity.

<sup>9</sup> Alison Kennedy, ; Jack Gallagher and Katie Aylward, “Evaluating Exposure Time until Recovery by Location”, Technical Report OCRE – TR-2013-036 (Ottawa, Ontario; National Research Council Canada, Ocean, Coastal and River Engineering Division, , 2013)

rescue as a primary function. When required, marine rescue can be provided by the five or six Coast Guard (CG) ice breakers located in the Arctic for other purposes during the summer months. These ships cover the territory of all three JRCCs, along with eight smaller vessels normally located in the Mackenzie River area to maintain buoys on that waterway. The proximity of any of these vessels to incidents can therefore vary substantially. A recent study concluded that when marine resources (e.g. Coast Guard ships) alone are considered in a response in Canadian Arctic waters, the maximum low-range exposure time for those awaiting pick-up is at best a minimum of 48 hours.<sup>10</sup> Weather and ice conditions can further frustrate a response. Further, with SAR being a secondary function for Canadian Coast Guard ships, other obligations, such as research and charting, dictate their location and tasking, often placing these vessels great distances from the busiest Arctic marine traffic routes.

To add to these logistical challenges, much of the equipment the military and Coast Guard utilizes for Arctic rescue is more than a half-century old and, in many cases, pushing the boundaries of its serviceable life. Such aging equipment is often in need of servicing and repair. The modest range of SAR assets available and the mechanical challenges associated with the ones they have regularly require JRCCs to marshal aircraft from one region to another to ensure adequate response; aging icebreakers likewise require constant repair, straining already limited marine resources. Given these realities, the challenge faced by the JRCCs in fulfilling their SAR mandate might best be described as a constant battle to cover a very large elephant with a very small blanket – the result being that some areas are always exposed, especially at the margins.

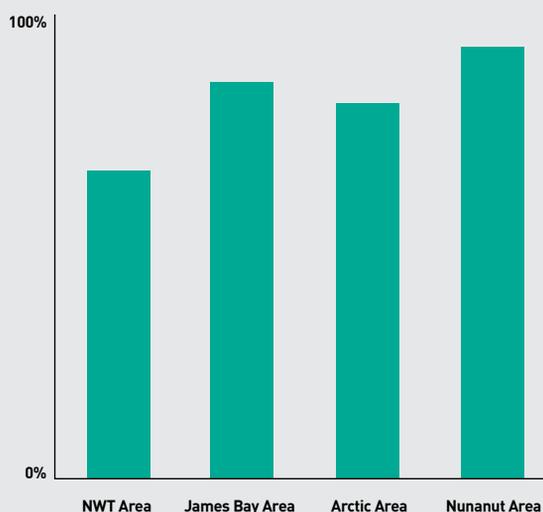
The issue of placing an airbase in the Arctic to improve response times and ensure that Canadians in the Arctic have SAR standards more in keeping with those of the south is by now a well-worn issue. The cost of establishing a JRCC in Yellowknife or Iqaluit with sufficient personnel and equipment to bring the Arctic region up to current southern Canadian standards comes with a price tag in the millions of dollars. Some argue that the relatively low number of SAR cases in the Arctic, estimated at approximately 5-10% of the national figure, and the relatively high success rate of current marine response — 69.23 per cent for the waters of the Northwest Territories Area; 86.67 per cent for the James Bay Area; 81.48 per cent

for the eastern Arctic Area; and 93.10 per cent for the Nunavut area — does not support a cost-benefit argument in favour of establishing a northern SAR presence, especially in times of government restraint and military downsizing.

The more salient arguments in favour of an Arctic SAR presence draw a link between Canada's assertion of sovereignty over its Arctic lands and waters and the fundamental requirement of states to provide effective search and rescue capabilities throughout their sovereign territory. This is further entrenched by the responsibilities and commitments undertaken by Canada as a signatory to various international agreements, including the *Arctic Council's Agreement on Cooperation on Aeronautical and Maritime Search and Rescue*<sup>12</sup> which places a significant slice of the circumpolar world under Canada's protection. Likewise, the position held by many in the Arctic is that as Canadian citizens, they deserve SAR services at least equal to those of their southern neighbours, especially given the many hazards of climate and geography they face.

The general feeling of many of the northerners interviewed for this study was that the majority of the efforts by the current federal government to address the needs of Arctic search and rescue and the reports generated by various agencies on this subject, such as the Office of the Auditor General, were largely “smoke and mirrors.” They felt these studies were crafted to

### Success Rate of Current Marine Response



<sup>10</sup> Ibid.

<sup>11</sup> Canadian Coast Guard, “Search and Rescue Needs Analysis, 2007”, last modified July 9, 2013, accessed February 10, 2014, <http://www.ccg-gcc.gc.ca/e0003782>.

<sup>12</sup> Agreement on Cooperation on Aeronautical and Maritime Search and Rescue, Can.-Den.-Fin.-Ice.-Nor-Rus.-Swe.-U.S.2011, accessed October, 2013, <http://www.ifrc.org/docs/ldr/N813EN.pdf>.

give the appearance of action, recommending token changes around the margins, but failed to address the bold fact that Canada's capacity for Arctic SAR might be woefully inadequate in the face of any large-. To date, with the exception of the plane crash in Resolute, Nunavut, where the military and their equipment were immediately on hand due to an ongoing Operation Nanook exercise in that community, the Arctic has mercifully yet to experience any mass casualty situations. Many interviewees speculated it was only a matter of time before "something big" would happen in the Arctic and only then, with the Emperor's lack of clothing revealed, might the unique needs of Arctic SAR begin to be adequately addressed.

## PERSPECTIVES ON LEADERSHIP AND AUTHORITY

According to emergency management theory, one of the principle requirements for an effective response to any emergency is a clear understanding by all responders of who will take charge of the rescue and co-ordinate the response. All emergency response protocols (ERPs) identify a person or position as the leader "in charge" and that individual in turn is supported at the command post by a critical team composed of representatives of all first responder organizations and stakeholders. Co-ordination of purpose and action is assured through this "nerve centre" arrangement.

The ERPs in place throughout the territory of Nunavut reflect this standard emergency management model, with the SAO taking the lead as the "Emergency Management Co-ordinator" and members of the RCMP, health centre, public works, firefighters, etc. as part of Community Control Group (CCG) present at the command post (formally, the Emergency Operations Center) to support and advise as required.

The military (JRCC) has its own protocols and procedures to identify the authority in charge of a SAR operation, usually the Officer-in-Charge at the JRCC, supported by subordinates and SAR techs, with JRCC headquarters serving as the command post. All direction of the response emanates from that location until, if required, a satellite post is established at the scene.

In the case of the hypothetical sinking of the Arctic Sun in Cumberland Sound, those interviewed for the study were all able to identify who they believed would, and should, take overall command of the incident. Unfortunately, when the responses were collated, the answers showed widely differing opinions as to who that critical individual and authority would be. This suggested a potentially critical gap given the importance to the

success of any response attributed in all EM literature to the establishment of a recognized "leader."

Further exploration of the results suggested some possible reasons for this disparity of opinions. Answers fell typically, though not entirely, into two categories. The majority of respondents operating under or associated with a federal authority or the military — officers and SAR techs associated with JRCC Halifax and members of Joint Task Force North (JTFN), members of the Marine Communications and Traffic Service (MCTS) in Iqaluit and of other branches of the Coast Guard (CG), and the leadership of the Pangnirtung Coast Guard Auxiliary (GCA) — all recognized JRCC Halifax and by extension, the officer-in-charge (OIC), as the one who would, and should, take command of this incident. They identified the location of the command post as the JRCC headquarters in Halifax.

In contrast, members of the Pangnirtung's Community Control Group, almost all Pangnirtung responders and citizens, and some regional Nunavut Government officials assumed the Senior Administrative Official (SAO) in Pangnirtung would be the person in charge. The main command post was identified as the hamlet office in Pangnirtung.

One territorial official believed the Director of Emergency Services for the Nunavut Government would take command, placing the command post in Iqaluit; others felt that authority would be shared between the JRCC and the Pangnirtung SAO; and still others resolved the issue with a somewhat pragmatic "whoever gets there first."

Both the "commanders" most commonly cited by respondents, the OIC of JRCC Halifax and the SAO in Pangnirtung at the time, posited strong, logical rationale as to why they should be in control of the effort. Both admitted they had not had the opportunity to meet or work together prior to being presented with this scenario or an opportunity to work out any conflicts or overlaps between their respective policies or procedures through a tabletop exercise. Both could point to authorities, albeit differing, to support their position as the one in charge.

Most importantly, these results indicate that on the key question of leadership and authority, there was, at the time of this exercise, a significant gap in many responders' understanding of which protocols and authorities would be triggered by a major marine disaster at this location, and confusion over where the ultimate authority for command of the rescue should lie, regardless of JRCCs mandated authority. If the Arctic Sun scenario were a real event, this situation might, at best, have led to some initial confusion and inefficiency while



through VHF radio. In this small isolated community, news of the impending arrival of the ship would be everywhere and, despite the inclement weather, it was thought likely some residents would be on the water tracking its approach. All agreed municipal officials would be advised within minutes of the incident through informal channels.

It was also unanimously agreed that local people would respond to the crisis immediately regardless of formal mandates or training. Boats already on the Sound would converge at the site, others would leave from the community; all would do whatever was necessary to rescue the stranded passengers. The following comments from officials and members of the Pangnirtung community suggest the response would be spontaneous and immediate:

*“whether we have the resources, whether we have the training, people are going to respond and that is by far the fastest, quickest and most appropriate way to rescue those passengers...”*

*“...I am very optimistic people will go out and help even though they are people who they have never met before in their lives...”*

*“the point I am trying to make is that no matter how they are trained, there are always going to be Inuit out there who are going to risk their lives to save people, that is just the way they are...”*

Once word of the sinking reached Pangnirtung, municipal officials, and more specifically the SAO, would take charge immediately to mobilize the hamlet’s Emergency Response Plan, set up a command centre in the hamlet office, contact the members of the Community Control Group and identify and execute the tasks necessary to rescue the victims and contain the fuel spill. The SAO’s status as the designated official in charge of the response is a delegated authority through the Mayor and Council. All members of the emergency management group (CCG) and other hamlet employees appeared to acknowledge and respect the SAO’s authority to direct this effort and many expressed confidence in his competence and ability to manage the situation.

There was no clear indication in discussions with hamlet officials if anyone, other than the SAO, would be directing the rescue effort on the water, although some

mention was made of the competency of Coast Guard Auxiliary (CGA) members.<sup>13</sup> Neither was there any doubt that community members would require much direction. It was presumed these individuals would simply use their own knowledge, equipment and maritime experience to do what was required to save the lives of the people at risk. Contact with the hamlet would be maintained through VHF radio. The most critically injured would be evacuated into fishing boats and brought as quickly as possible back to the community. Nurses would establish a triage station at the beach and prepare for these and other incoming casualties. The remainder of the Arctic Sun’s passengers and crew would most likely be piloted back in the lifeboats<sup>14</sup> by local community members whose intimate knowledge of the waters of Cumberland Sound would ensure these vessels would not come to any harm during that transit.

Once the safety of the passengers and crew was assured, local citizens would turn their attention to the fuel spill. Environmental response equipment has been cached in Pangnirtung and several other Arctic communities by the Emergency Response (ER) branch of the Coast Guard, who hold responsibility for spills in federally-regulated waters. This equipment is intended for the use of ER personnel only, although no ER specialists are resident in Pangnirtung, and at the time of the exercise, no keys were left in the community that would allow access.<sup>15</sup> In the face of this spill, however, hamlet officials agreed they would have no hesitation in cutting the lock to the sea-kan in which the equipment was stored and retrieving what was necessary to support the community in its attempt to contain the spill. All were aware it could be many hours or days before the appropriate ER specialists would arrive by air or ship and given the impact that this pollution might have on the welfare of their community, they agreed that when it came to accessing the Coast Guard’s ER equipment, they would act first and ask forgiveness later.

In the case of a local spill response, here too it was felt the SAO would be the one most likely to provide immediate oversight and direction. Although the members of the emergency response committee (CCG) clearly recognized that the Environmental Response division of the Coast Guard holds primary responsibility for spills Arctic waters, they argued no ER personnel were in position in the community to take command of the spill response nor have local citizens been trained

<sup>13</sup> Although the competence of the three CGA members was recognized, no reference was made to them taking a leadership role or in any way assuming on-site control of the rescue

<sup>14</sup> Lifeboats are equipped with motors and sufficient fuel to cover the 31-kilometre distance from the site of the sinking ship to the community of Pangnirtung. In most cases, lifeboats remain at the scene to aid rescuers in locating them and to avoid further danger posed by unknown terrain (shoals, rocks, etc.) or shorelines. In this case, the extensive knowledge of these waters by Inuit mariners would ensure the safe transit of the lifeboats to the community and preclude any danger of further groundings; it also assumes all lifeboat motors would be operational.

<sup>15</sup> For a more detailed discussion of the issues regarding environmental response in the Arctic, please see Part C.

in ER to act as proxies. While no doubt ER personnel would be in communication with the hamlet as soon as they were advised of the spill and would be mobilizing their own resources and technicians to respond, it was to the local leadership on scene who the responders would turn for direction and the SAO who would be expected to take charge in such a crisis.

## THE NORTHERN PERSPECTIVE: A RATIONALE FOR LOCAL LEADERSHIP

“Everybody would recognize Sakiasie and Mongeau — first class! You need to rely on old northern personage....”

The rationale behind local authorities taking primary control of the rescue was based largely on pragmatism. Inuit know the vagaries of Cumberland Sound. They are the closest responders to the scene and, despite a lack of formal training in marine rescue, are highly experienced mariners. They come from a culture and value system where most would not hesitate to attempt to rescue others in danger, even if it meant placing themselves at personal risk. In the midst of a large-scale emergency such as this, they would do what needed to be done and look to the local leadership, if anywhere, for direction. Further, the community ERPs now give form and structure to emergency response in the community and given the proximity of the incident to the hamlet and the need to impose some order on the response, the likelihood of the SAO assuming the “emergency officer” role and taking command of the incident seemed most logical to those interviewed in Nunavut.

There was also evidence of a strong frontier mentality and culture of independence in the community’s inclination to favour local leadership. Many shared the following perspective on the question of where the control of the response should be placed:

*“...the issue is who is in the best position to save lives – that’s who’s in charge! Not someone who is ten hours away under any kind of circumstances that I can imagine....”*

*“...look at a case like this with an accident 30 km from Pang and look at southern resources somehow deluding themselves to think that they can somehow command.... It flies in the face of reality....”*

Officials in Pangnirtung were not unaware that the Joint Rescue Coordination Centre (JRCC) would be alerted to this incident and presumed they would be mounting some form of a response from the south. Their expectation was that JRCC would be co-ordinat-

ing with the territorial EMO in Iqaluit and then rendering whatever assistance they could when they arrived on the scene many hours later. In their estimation, the distance of the JRCC command from the scene of the incident and their lack of immediate experience in the region, as compared with local mariners and officials, made them a poor choice for command in this instance. Given the remoteness of the location and the local presence at the scene, the most natural and logical solution from the community’s perspective was therefore to have the SAO take charge.

It is important to note that at the time of this exercise, officials in Pangnirtung had no working relationship with JRCC Halifax. The community’s only interaction with the JRCC in recent memory at the time of the interviews had been during an aerial rescue of hikers in nearby Auyuittuq National Park. Several Pangnirtung residents recounted how, on that occasion, the offer of assistance from local residents who knew exactly where the injured individuals were located was refused by the JRCC SAR techs, who were confident in their own technology and ability to find the hikers. Sometime later, the SAR techs had to return to the community to ask for help, having been unable to locate the injured parties. Although the SAR was ultimately successful, this incident, and the reports and rumours that circulated in the community as a result, appear to have left an unfavourable impression among some citizens regarding both the competence of the JRCC and their lack of respect for the indigenous knowledge of the local people. It did not appear to predispose the community to rely on JRCC leadership in the context of this scenario.

Given this perspective and the tendency to self-reliance and independence endemic to remote communities, it was perhaps not surprising that the suggestion that the Officer-in-charge (OIC) of JRCC Halifax might be the authority legitimately in charge of directing this response, or that there might be some requirement for officials in Pangnirtung to vet or coordinate their actions through the JRCC, was not entirely welcomed by the community. Some felt such hierarchy smacked of paternalism and was the product of a broader colonial mentality. It solicited some strong reactions:

*“I get so angry at these pissing matches. Get out of my way, we have a job to do [up] here and if nobody can recognize that the primary focus has to come from the community, then we’ve got real problems... because if these guys [JRCC] think they can assume control in any meaningful way...”*

*it's the people on the ground who understand the land, who understand the weather conditions, who understand the environmental conditions... [If you want JRCC in control] then put a person in Iqaluit and deal with it."*

This attitude also reflects the sentiments of many who feel the Government of Canada, in not making the required investment to locate SAR personnel and assets in the Arctic to support their public security responsibilities, have forfeited the right to take control from afar of rescue efforts being initiated and managed by local communities.

This perspective, though pervasive, was not shared by everyone in the Pangnirtung community. In fact one potentially critical point of divergence in the understanding of who should take charge of the response came from the Canadian Coast Guard Auxiliary (CGA). The CGA member interviewed was well versed in the official protocol for marine response, citing JRCC Halifax as the authority in charge, and clearly aware of what role and under whose authority the Coast Guard Auxiliary members would respond to this incident.

*"It is only after we get the order from my Director in Hay River that I would respond to a distress call, regardless of whether that was a local fisherman in distress or a bigger boat that requires our assistance."*

The member went on to indicate that any order to assist in the response would need to be formalized through the assignment of a "tasking number" by his Director in Hay River, NWT, and he was confident contact with that Director would be quickly established in this instance, an assertion not entirely corroborated by others.<sup>16</sup> It should be noted that the assignment of a tasking number can be made directly by JRCC to the CGA members, although in this case, longstanding relationships with the Hay River leadership may have influenced this member's response. The "tasking number" serves to identify the incident, authorize the CGA's involvement and ensure the members' vessels will be covered by CG Auxiliary insurance and reimbursements made for fuel and other expenses associated with the rescue.

While the involvement of trained Coast Guard Aux-

iliary in a marine disaster would definitely be an asset, the fact that the Auxiliary was the only group in the community who diverged from the general assumption that the SAO would be coordinating the response represents a potentially serious point of confusion. It suggested a situation where the only three trained marine rescuers in the community would be answering to an outside authority while all other responders would be looking to the SAO for direction, and was indicative of the divided loyalties evident elsewhere in the findings. In an ideal world, this issue would be quickly and amicably resolved among the parties and some working consensus quickly established that all could support. There was every indication that the SAO at the time and the head of the CGA were well acquainted and as such, could be expected to work out any differences. Should control of the response become an issue between them however, it was felt the fallout from that disagreement would reverberate at many levels within the community and held the potential to affect relations in that isolated hamlet long after the rescue had ended.

## THE JRCC PERSPECTIVE: A MANDATE FOR SAR COORDINATION

The official notification system for marine incidents in Canada is among the best in the world. The Coast Guard's Marine Communications and Traffic Services (MCTS) centre based in Iqaluit tracks all ship traffic circulating in Arctic waters. All vessels over 300 gross tonnage, tugs pulling or pushing vessels with a combined weight of 500 gross tonnage, or vessels carrying dangerous or hazardous goods are compelled by law to file their route with NORDREG (Northern Canada Vessel Traffic Services Zone) and report in by radio to the Iqaluit centre daily. In the event of a marine incident, MCTS has a well-defined protocol for notifying the appropriate JRCC, other emergency management authorities and all relevant government departments and agencies.

In the Arctic Sun scenario, MCTS would, upon receiving the distress call from the ship's captain, immediately relay the information by telephone to JRCC Halifax. It would provide them with critical details regarding the ship, the number of passengers, the extent of the damage, the fuel leak and other relevant information. Standardized forms outlining critical

<sup>16</sup> It was reported during interviews with territorial officials that the Hay River CGA leadership was on occasion, especially during the summer months, unreachable by telephone for days at a time.

<sup>17</sup> MCTS has noted a strong tendency for captains to delay requests for assistance during groundings or other emergencies based on fear of the significant costs that would be incurred to ship owners should resources be mobilized to assist, e.g. ships of opportunity, tugs, etc., with ships preferring to attempt to rectify the situation themselves before notifying authorities of trouble; professional embarrassment has also been cited as a factor in the delayed reporting of accidents. The result is that ships are often in serious danger before MCTS authorities are authorized to request assistance or a Mayday is issued.

data would also be sent by e-mail in support of this initial voice contact. Depending on when the Captain of the vessel reported the grounding and damage to the authorities at MCTS, JRCC might be alerted to the impending crisis prior to the actual Mayday call or the abandonment of the ship.

On receiving news of the incident, JRCC Halifax would also follow a prescribed protocol for response. The airbases at Greenwood and Gander would immediately be alerted to prepare necessary aircraft and equipment for departure, SAR teams would be mobilized and assessments made of all assets that might be required. Given this event occurs on a Saturday, the expectation would be that SAR crews would be assembled and “wheels up” within 2 hours of notification (departure times during weekday business hours are set at 30 minutes). In light of the number of potential victims involved in this incident and the international composition of the manifest, it is likely JRCC assets from other regions would also be mobilized. Any Coast Guard ships in the region or other large “vessels of opportunity”<sup>18</sup> (e.g. other tourist ships) would likewise be identified and directed to the site to aid in the response, although according to the facts of this scenario, all vessels large enough to assist would be many days’ sail away.<sup>19</sup> Given the distance of all SAR aircraft and technicians from the actual scene of the event, JRCC Halifax would also begin identifying privately-owned assets (helicopters, airplanes, etc.) that might be available for hire in the Baffin Island region. The Officer-in-Charge of any JRCC has financial authority of up to \$1 million to charter boats, planes or equipment (e.g. fuel) deemed essential to any rescue.

JRCC Halifax would also attempt to contact the Coast Guard Auxiliary (CGA) personnel in Pangnirtung to gain situational information and task them with the initial search. Although the Pangnirtung CG Auxiliary member interviewed seemed to believe the tasking associated with this rescue would come through the Regional Director in Hay River, JRCC Halifax confirmed they would liaise with the CGA members directly by phone. Limited cell lines into the community and pressures on the existing communications systems imposed by such an event would likely make the maintenance of telephone linkages challenging, but the JRCC were confident they could maintain contact throughout.

At the time of the interviews, JRCC Halifax officers had not had many opportunities to meet or work with

Pangnirtung CG Auxiliary members. Although aware that the territorial government has emergency plans in place that might be triggered in the event of a large scale disaster such as this, they were not specifically familiar with the Emergency Response Plans governing the community’s response or how the Coast Guard Auxiliary’s protocols might align with these local instruments. In fact, the CGA does not sit on the hamlet’s ERP Community Control Group, an oversight at the municipal and territorial level that could have significant implications for the coordination efforts between north and south in the case of a major marine disaster.

It should also be noted that Pangnirtung has only three CGA members. This small a contingent would be under significant pressure to successfully affect a marine SAR of the magnitude of the Arctic Sun sinking, even with the direction of JRCC Halifax and assistance of local mariners. This provides an example of the lack of capacity in remote communities to respond to major marine incidents in the Arctic in the absence of an available ship of opportunity or Coast Guard vessel in the immediate vicinity.

Should JRCC Halifax, for whatever reason, be unable to contact the local CG Auxiliary members either directly or through MCTS, their next option would be to work through the local RCMP detachment. While it could be presumed these constables would be fully occupied in the community during a crisis, they carry radios that allow them to be reachable by outside authorities at all times. Unlike the CG Auxiliary however, the RCMP are not equipped with boats nor do they hold any mandated responsibility for marine rescue. They are, nonetheless, a federal agency and the police force of the Arctic and as such, a logical point of contact for the military.

Unlike the CGA, the RCMP are members of the Community Control Group within their respective communities. It is presumed if JRCC Halifax were to contact the local constabulary, they would be apprised of the community’s efforts to manage the response and put in direct contact with the SAO. Whether that contact would result in collaboration or conflict over who should command would depend on many factors. Among these are the personalities of the individuals involved, the timing of that initial contact, the existence, or not, of a working relationship between the two leaders and their mutual understanding of the authorities and obligations under which each is operating.

<sup>18</sup> Vessels of opportunity are ships (cruise, large fishing, merchant, etc.) that happen to be in the vicinity of the vessel in distress at the time of the Mayday call and are able to render assistance. International law under the International Maritime Organization (IMO) compels these vessels to respond to a distress call, regardless of their other obligations.

<sup>19</sup> See “Further variables affecting the response” cited earlier in this paper.

While both principals involved had a clear understanding of their respective mandates and responsibilities, there was no indication they were familiar with the details of those of each other, a situation that would require, at the very least, a conversation at the height of the crisis to establish an appropriate working relationship. This would suggest the need for further resources to be dedicated to education and training to preclude any future misunderstandings around issues of jurisdiction and command in advance of an incident and pre-empt any such confusion or tensions at the time of a crisis.

## CONCLUSION

In response to the central question of “who is in charge” of the response to the sinking of a cruise ship in the Arctic waters of Cumberland Sound, this study suggests there was no clear consensus on leadership or loyalty.

Many factors contributed to this confusion. The military SAR assets and technicians stationed in the south would be too geographically distant from the scene to affect a timely rescue or exert much immediate control over local efforts to do so, at least in the first critical hours of the response. Essential relationships that might support efficient collaboration between responders in the Arctic and those based in southern Canada were not robust at the time of the exercise, suggesting they could falter under the complexity and pressure of a major event. There was evidence of some confusion over emergency management boundaries and jurisdictions, indicating a need for clarification and education on the precise role and purview of the various responding agencies and actors.

Members of the Pangnirtung community would be quickly on scene but, with a few exceptions, are untrained in marine rescue or spill response. The SAO in the community at the time, with the support of Council, would have taken charge of the response under the authority of the hamlet’s Emergency Response Plan but was resistant to the notion of JRCC giving direction in the absence of any personal acquaintance with the OIC or prior working relationship. The requirement to defer to federal oversight of the operation was seen by some as unduly paternalistic given the proximity of the incident to the community and the immediate involvement of Pangnirtung citizens in the rescue.

Meanwhile, the officers of JRCC Halifax would be exercising their authority to direct the response, and while

they were confident they could work cooperatively with the community, they did not anticipate the extent of some northerners’ antipathy and resistance to the command of a distant authority. There was evidence in all aspects of the event of tension between the pragmatic response to the crisis of those on scene in Cumberland Sound (e.g. containment of the spill, local leadership, etc.) and the formal policies, mandates and approaches of various federal government departments.

The spill response, like the rescue, would have been initiated by members of the community, but Cumberland Sound being federally-regulated waters, responsibility for spill containment and clean-up falls under the jurisdiction of the Canadian Coast Guard through its Environmental Response (ER) division. The nearest ER specialists to the scene would likely be based in Iqaluit. It is unlikely the Coast Guard would support local involvement in the containment of the spill, or condone the use of ER’s cached equipment by non-authorized individuals. Community members would likely be ordered to stand down until trained ER personnel could arrive on scene or a CG icebreaker could reach the site. This delay, according to local fishers, would be unacceptable to the community, creating another potential source of tension.

These collective observations suggest that in this instance, the first two tenets of effective emergency management — that leadership be quickly established and recognized by all parties and that jurisdictions be clearly understood and coordinated — would likely not have been realized in the early hours of this response. Though it is entirely probable that the intervention of the people of Pangnirtung would have ensured the timely rescue of the Arctic Sun’s passengers and the containment of the spill, there remain indications of some significant gaps and anomalies that run counter to the principle tenets of sound emergency management theory and the Incident Command System. Among these are the following:

- 1** Lack of clarity of command, i.e., no immediate agreement among responders as to “who is in charge” of the rescue and spill;
- 2** Lack of awareness and/or understanding among the various responders of each other’s obligations, mandates, and protocols;
- 3** Absence of SAR and ER personnel and/or assets located in the Arctic capable of effecting a timely response to a major disaster;

- 4 Insufficient Coast Guard Auxiliary personnel in the community to adequately respond to a major marine disaster;
- 5 The absence of Coast Guard Auxiliary membership on the municipality's emergency response Community Control Group (CCG), thus complicating the communication and coordination between JRCC and local EM officials;
- 6 No established working relationship between community officials and JRCC Halifax that would foster trust and support cooperation in responding to a major marine disaster;
- 7 A lack of continual opportunity for communities, JRCCs and other EM agencies to work through jurisdictional issues and build relationships through tabletop or simulation exercises in the Arctic; and
- 8 Differences in attitude, culture, language, local knowledge, education, and life experience that would foster distrust and suspicion among different responding agencies and individuals.

These and many of the other challenges identified in the study would be greatly mitigated by the placement of full-time military SAR personnel and assets in the Arctic. The current distance between JRCC centers and northern communities does not encourage the building of mutual trust or a shared culture and that in turn fosters the sort of misunderstandings over jurisdiction and authority that were suggested by this exercise. More EM training for community members and SAOs is strongly desired by Arctic communities and should be deemed essential in the absence of federal SAR professionals stationed in the territory.

Inter-jurisdictional exercises such as this, and on a grander scale, DND's Operation Nanook, can be highly instrumental in identifying and addressing these and any other gaps in emergency response in the Arctic. Simulations and tabletop exercises involving all EM partners are an essential component of the ICS-based model and can be instrumental in highlighting jurisdictional challenges and other anomalies before they are writ large during a real emergency.

Communities in the Arctic are, whether acknowledged in policy or not, the bulwark of Canada's Arctic responders. This study has demonstrated northern residents' willingness to respond to an emergency that is within reach of their community. But for a rescue to be

truly streamlined, all responders need to be integrated, both in policy and in practice, into a larger EM strategy for Canada. Until that critical gap is both recognized and addressed, Canada's state of readiness for emergency response in the Arctic will remain in question.

## EPILOGUE

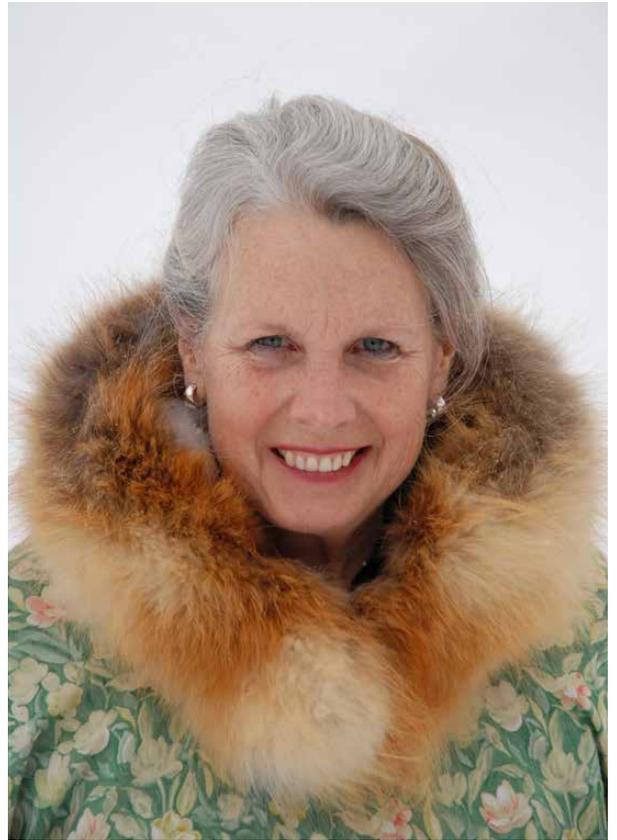
On Oct. 9, 2013, the Munk-Gordon Arctic Security Program held a Roundtable on Emergency Preparedness in Iqaluit, Nunavut. Representatives of every EM agency and organization interviewed for the study were invited to gather to discuss the state of emergency management in the territory and review the findings of the Arctic Sun scenario. Throughout the course of the day, many of the inter-jurisdictional issues and challenges related to this scenario were discussed and, happily, many were resolved. A general consensus emerged on the direction EM managers and responders in Nunavut would like future public policy to take in this important area. Most importantly, a representative from JRCC Halifax, albeit a different member than the officers interviewed for this exercise, and the SAO of Pangnirtung had an opportunity to meet face-to-face and discuss their respective positions and challenges. Not surprisingly, those discussions led to a better understanding of how they could collaborate constructively in emergency response in the future and forged the beginnings of a working relationship.

JTFN has likewise committed to finding opportunities for JRCC Halifax to participate on EM exercises in the Arctic, such as Operation Nanook 2014, and to help the Centre build stronger relationships with the communities and first responders in the northern region of their territory. The JRCC representative also identified some constructive options, such as appointing an Arctic liaison officer, to help the Centre establish stronger links with the Arctic communities within its jurisdiction.

These were all positive outcomes of the Pangnirtung exercise and suggested the value of integrating Arctic communities and their emergency management officials more consistently in national discussions on disaster response in the Arctic. While many of the structural and financial issues surrounding this important area of public policy cannot be easily resolved, the recognition of the role of communities in this important multijurisdictional area and their potential as effective first responders in remote emergencies will hopefully continue to be supported and encouraged within Canada's national SAR framework.

## ABOUT THE AUTHOR

Liane Benoit, B.A., B.Ed, M.P.A., F.R.C.G.S. is founder and President of Benoit & Associates, an Outaouais-based public affairs company which for 25 years has worked with senior clients in government, aboriginal and Arctic communities and the corporate and non-governmental sectors on issues of public policy and accountability, environmental management and social justice. Liane has participated in several royal commissions and legislative reviews, including two studies published by the Royal Commission of Inquiry into the Sponsorship Program and Advertising Activities (“The Gomery Commission”). In 1996, Liane was elected a Fellow of the Royal Canadian Geographical Society in recognition of her expeditionary work in the Far North, and in particular, her role in re-establishing traditional Inuit sled dogs in the Nunavik region of Northern Quebec. A former attaché to the governor general, ministerial aide to the speaker of the House of Commons, writer and teacher, Liane has played a role on numerous national boards, advisory councils and committees, and was instrumental in founding both the Jeanne Sauve Youth Foundation and the Arctic Children and Youth Foundation. She currently resides with her son and husband on a farm near Wakefield, Quebec.



## APPENDIX I: LIST OF ACRONYMS

<b>CCG</b>	Community Control Group
<b>CG</b>	Coast Guard
<b>CGA</b>	Coast Guard Auxiliary
<b>CIS</b>	Canadian Ice Service
<b>DEFAIT</b>	Department of Foreign Affairs and International Trade
<b>DFO</b>	Department of Fisheries and Oceans
<b>DND</b>	Department of National Defence
<b>EM</b>	Emergency Management
<b>EMO</b>	Emergency Management Office
<b>ER</b>	Environmental Response
<b>ERP</b>	Emergency Response Plan
<b>GSAR</b>	Ground Search and Rescue
<b>ICS</b>	Incident Command System
<b>JRCC</b>	Joint Rescue Coordination Centre
<b>JTFN</b>	Joint Task Force North
<b>MCTS</b>	Marine Communications and Traffic Service
<b>MEMC</b>	Municipal Emergency Management Coordinator
<b>NORDREG</b>	Northern Canada Vessel Traffic Services Zone
<b>NSSI</b>	Nunavut Sealink and Supply Inc.
<b>NTI</b>	Nunavut Tunngavik Inc.
<b>NU</b>	Nunavut
<b>OIC</b>	Officer-in-charge
<b>PMO</b>	Prime Minister's Office
<b>RCAF</b>	Royal Canadian Air Force
<b>RCMP</b>	Royal Canadian Mounted Police
<b>SAO</b>	Senior Administrative Officer
<b>SAR</b>	Search and Rescue
<b>SAR TECH</b>	Search and Rescue technician

## APPENDIX II: LIST OF INTERVIEWS

The following represents the list of organizations interviewed in support of this hypothetical case study and analysis. In some cases, several interviews were conducted with representatives of one organization and/or follow-up interviews were conducted by telephone. In all cases, recordings (with permission) and notes were taken to ensure accuracy.

Senior Administrative Officer (SAO),  
Hamlet of Pangnirtung

Members, Community Control Group, Pangnirtung  
Municipal Council officials, Hamlet of Pangnirtung  
Director, Population Health, Department of Health and Social Services, Baffin Region, Government of Nunavut

Nurses, Health Centre, Pangnirtung  
Fire Chief, Pangnirtung  
Local outfitter, Pangnirtung  
Parks Canada, Pangnirtung  
Management, Auyuittuq Lodge, Pangnirtung  
Local citizens, Pangnirtung  
Canadian Rangers, Pangnirtung  
Coast Guard Auxiliary, Pangnirtung  
Protection Services (EMO), Department of Community and Government Services, Government of Nunavut  
Emergency Planning Department, Department of Health, Government of Nunavut  
Marine Communications and Traffic Services, Iqaluit  
Lawyer, Department of National Defence  
Joint Task Force North, Iqaluit  
RCMP, Division V, Nunavut  
Coast Guard, Operations, DFO  
Kenn Borek Air Inc.  
Joint Rescue Coordination Centre, Halifax  
Coast Guard, Halifax  
Hammurabi Consultants (marine EM experts),  
Halifax  
Geoff Green, Students on Ice

