

# WHEN EVERY MINUTE COUNTS

MARITIME  
SEARCH AND RESCUE



SENATE | SÉNAT  
CANADA

REPORT OF THE STANDING COMMITTEE  
ON FISHERIES AND OCEANS

The Honourable Fabian Manning, Chair  
The Honourable Marc Gold, Deputy Chair

NOVEMBER 2018



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## MEMBERS OF THE COMMITTEE

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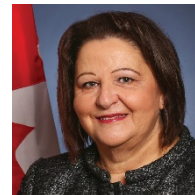
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*The committee would like to recognize the following senators whose contribution to the study was invaluable:*

The Honourable Senators: Hubley (retired), Enverga (deceased), Raine (retired) and Watt (retired).

#### **Ex-officio members of the committee:**

The Honourable Peter Harder, P.C. (or Diane Bellemare), (or Grant Mitchell), the Honourable Larry W. Smith (or Yonah Martin), the Honourable Yuen Pau Woo (or Raymonde Saint-Germain), the Honourable Joseph A. Day (or Terry M. Mercer)

#### **Other senators who have participated in the study:**

The Honourable Senators: Ataullahjan, Bovey, Busson, Coyle, Deacon, Doyle, Duffy, Dyck, Eaton, Forest, Frum, MacDonald, Marshall, Martin, McIntyre, Pate, Ringuette, Sinclair, Stewart Olsen, Tkachuk, and Wallace (retired).

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## ORDER OF REFERENCE

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Extract from the *Journals of the Senate*, Thursday, April 14, 2016:

The Honourable Senator Manning moved, seconded by the Honourable Senator Wells:

That the Standing Senate Committee on Fisheries and Oceans be authorized to examine and report on Maritime Search and Rescue activities, including current challenges and opportunities; and

That the Committee report from time to time to the Senate, but no later than November 30, 2017, and that the Committee retain all powers necessary to publicize its findings for 180 days after the tabling of the final report.

After debate,

The question being put on the motion, it was adopted.

ATTEST

Charles Robert

*Clerk of the Senate*



Extract from the *Journals of the Senate*, Tuesday, November 28, 2017:

The Honourable Senator Gold moved, for the Honourable Senator Manning, seconded by the Honourable Senator Mégie:

That, notwithstanding the order of the Senate adopted on Thursday, April 14, 2016, the date for the final report of the Standing Senate Committee on Fisheries and Oceans in relation to its study on Maritime Search and Rescue activities, including current challenges and opportunities be extended from November 30, 2017 to June 30, 2018.

The question being put on the motion, it was adopted.

ATTEST

Nicole Proulx

*Clerk of the Senate*

Extract from the *Journals of the Senate*, Thursday, April 26, 2018:

The Honourable Senator Manning moved, seconded by the Honourable Senator Raine:

That, notwithstanding the order of the Senate adopted on Tuesday, November 28, 2017, the date for the final report of the Standing Senate Committee on Fisheries and Oceans in relation to its study on Maritime Search and Rescue activities, including current challenges and opportunities, be extended from June 30, 2018 to December 31, 2018.

The question being put on the motion, it was adopted.

ATTEST

Richard Denis

*Clerk of the Senate*



## LIST OF ACRONYMS

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AMSA:	Australian Maritime Safety Authority
CAF:	Canadian Armed Forces
CASARA:	Civil Air Search and Rescue Association
CCG:	Canadian Coast Guard
CCGA:	Canadian Coast Guard Auxiliary
CCGC:	Canadian Coast Guard College
CLI:	Canadian Lifeboat Institution
CMAC:	Canadian Marine Advisory Council
DFO:	Fisheries and Oceans Canada
DND:	Department of National Defence
EPIRB:	Emergency Position Indicating Radio Beacon
GPS:	Global Positioning System
IMO:	International Maritime Organization
IRB:	Inshore Rescue Boat
JRCC:	Joint Rescue Coordination Centre
MCTS:	Marine Communications and Traffic Services
MRSC:	Maritime Rescue Sub-Centre
OBS:	Office of Boating Safety
RAMSARD:	Risk-Based Analysis of Maritime Search and Rescue Delivery
RCAF:	Royal Canadian Air Force
RCM-SAR:	Royal Canadian Marine Search and Rescue
RHIOT:	Rigid Hull Inflatable Operator Training
RNLI:	Royal National Lifeboat Institution
SAR:	Search and Rescue
SCFVSQR:	Standing Committee on Fishing Vessel Safety for the Quebec Region
SOA:	Special Operating Agency
SOLAS:	International Convention of the Safety of Life at Sea
SRR:	Search and Rescue Region
SSA:	Separate Statutory Agency
TC:	Transport Canada
TSB:	Transportation Safety Board of Canada
UNCLOS:	United Nations Convention on the Law of the Sea
VHF	Very High Frequency (Radio)



## RECOMMENDATIONS

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- 1a)** The committee recommends that the Canadian Coast Guard establish additional primary search and rescue stations in the Canadian Arctic to meet the growing demand in areas where marine activity is forecasted to increase.
- 1b)** The committee also recommends that the final decision on the location of these search and rescue stations be made in consultation with local communities.
- 2a)** The committee recommends that the Canadian Coast Guard establish the Coastal Nations Search and Rescue Course as a permanent training program at its Rigid Hull Inflatable Operator Training School in Bamfield, British Columbia.
- 2b)** The committee also recommends that the Canadian Coast Guard, in consultation with stakeholders, expand this course to other coastal and Indigenous communities, particularly in the Canadian Arctic.
- 3a)** The committee recommends that the Canadian Coast Guard, in collaboration with the Canadian Coast Guard College, expand and intensify its human resource recruitment strategy to target a broader audience.
- 3b)** The committee recommends that the strategy have a particular focus on attracting and retaining Indigenous cadets and employees within the Canadian Coast Guard organization.
- 3c)** The committee recommends that Indigenous employees proficient in Inuktitut be recruited by the Canadian Coast Guard in the Canadian Arctic.
- 4.** The committee recommends that the Canadian Armed Forces seize the opportunity afforded by the *Defence Investment Plan 2018* to increase and diversify its search and rescue workforce to respond to the increased demand for search and rescue.
- 5.** The committee recommends that, as a pilot project, the Department of National Defence authorize a civilian helicopter operator to provide aeronautical search and rescue coverage in the Canadian Arctic and in Newfoundland and Labrador. The assessment of the pilot project, including its costs and benefits, should be made public.
- 6.** The committee recommends that the National Arctic Search and Rescue Roundtable be reinstated as soon as possible and that similar roundtables be created in other search and rescue regions to help address regional and local issues.
- 7.** The committee recommends that the Canadian Coast Guard increase the Canadian Coast Guard Auxiliary's funding in order to, at a minimum, offset higher operational expenses, and to ensure that Auxiliary members maintain training in accordance with the national competency standards.

- 8.** The committee recommends that the Canadian Coast Guard establish a Maritime Search and Rescue Fund to support the purchase of equipment and services needed by regional Canadian Coast Guard Auxiliary organizations.
- 9.** The committee recommends that the Canadian Coast Guard assist regional Canadian Coast Guard Auxiliary organizations to diversify their funding sources.
- 10.** The committee recommends that the Canadian Coast Guard establish additional Canadian Coast Guard Auxiliary units in the Arctic Region, with funding dedicated to recruitment, operations, equipment, training, and where appropriate, vessels.
- 11.** The committee recommends that Transport Canada amend its regulations to extend the mandatory use of emergency position-indicating radio beacons (or EPIRBs) to vessels in all fishing fleets. A timeline of two years should be given to the fishing industry to achieve mandatory EPIRB carriage.
- 12.** The committee recommends that Transport Canada develop and disseminate user-friendly information regarding vessel stability to reduce unsafe practices in the commercial fishing industry.
- 13.** The committee recommends that Fisheries and Oceans Canada ensure that its regulations and practices give priority to fish harvester safety.
- 14.** The committee recommends that, through the Canadian Marine Advisory Council, Transport Canada, Fisheries and Oceans Canada, and the Canadian Coast Guard work with fishery safety organizations and fish harvesters to develop a national action plan on safety in the commercial fishing industry. This action plan should be provided to the Committee within three years of the tabling of this report in the Senate of Canada.
- 15.** The committee recommends that Transport Canada transfer the responsibility of search and rescue prevention and recreational boating safety back to the Canadian Coast Guard along with the associated funding.
- 16.** The committee recommends that the Government of Canada, through the Canadian Coast Guard, and in collaboration with Canadian Coast Guard Auxiliary units, local communities, and other partners, increase radio coverage in Canada's Arctic and in other remote communities.
- 17a)** The committee recommends that the Canadian Coast Guard be established as a separate statutory agency reporting to the Minister of Transport.
- 17b)** The committee also recommends that capital planning be extended to 20 years to reflect the need for the fleet's renewal, upgrade, and modernization.

## INTRODUCTION

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In May 2016, the Standing Senate Committee on Fisheries and Oceans (the committee) began a comprehensive study on maritime search and rescue (SAR) in Canada pursuant to an order of reference received from the Senate, which reads as follows:

*That the Standing Senate Committee on Fisheries and Oceans be authorized to examine and report on maritime search and rescue activities, including current challenges and opportunities.<sup>1</sup>*

In response to this broad and complex mandate, the committee adopted a three-pronged approach to help guide the study. First, a literature review was conducted to gather information and recommendations made over the past 10 years by various entities in relation to maritime SAR in Canada and to identify recurring challenges. Second, public hearings were held in Ottawa (Ontario), Halifax (Nova Scotia), and St. John's (Newfoundland and Labrador),<sup>2</sup> and site visits were undertaken in several regions across the country<sup>3</sup>, to obtain local perspectives on maritime SAR, including specific strengths and needs. Third, site visits were conducted in England, Ireland, Norway, and Denmark<sup>4</sup>, and information on maritime SAR in Australia and New Zealand was examined, to identify how other maritime nations have improved their SAR programs in response to challenges that are similar to those faced by Canada.

Canada is bordered by three oceans, and its population and economy make significant use of waterways for commercial and recreational purposes. The marine environment, however, can be extremely dangerous. The committee learned that Canada has one of the world's largest, most challenging and diverse maritime search and rescue regions. Moreover, Canada has more ice floating on its oceans and waterways than any other nation, which presents unique challenges for marine traffic. As a result, there is maritime SAR activity on every Canadian coast, every day. On an average day, 27 SAR incidents occur, 15 lives are saved, and 52 people are assisted as a result of: vessel fires; vessels run aground; vessels disabled or broken down; vessels taking on water; capsized vessels; vessels lost in fog; person(s) overboard; or medical emergencies. Fortunately, the work of Canada's SAR personnel is outstanding: they serve around the clock to assist mariners in distress. They are the "rescuers of last resort," getting called out in some of the worst weather, to some of the most remote parts of the country, when others no longer have the means to respond. SAR is considered a "no-fail mission" and SAR personnel put their lives at risk to save others. SAR personnel are highly skilled, and require expert knowledge, courage, and dedication. The committee applauds the work of all

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<sup>1</sup> Senate of Canada, [Journals of the Senate](#), 1<sup>st</sup> Session, 42<sup>nd</sup> Parliament, 14 April 2016, p. 378.

<sup>2</sup> The Committee heard from over 80 witnesses throughout the hearings.

<sup>3</sup> Site visits within Canada were conducted in: Nova Scotia (Halifax, Dartmouth, Sambro, Sydney, and Greenwood); Newfoundland and Labrador (St. John's, Gander, and Goose Bay); British Columbia (Comox and Victoria); Nunavut (Iqaluit); and Quebec (Québec City and Kuujuaq).

<sup>4</sup> Site visits outside Canada were conducted in: England (Southampton, Fareham, Lee-on-Solent, and Selsey); Ireland (Dublin); Norway (Oslo, Reitan, and Bodø); and Denmark (Copenhagen, Helsingør, Aarhus, Grenaa, and Frederikshavn).

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those who respond to distress calls at sea. The committee heard it repeatedly and believes it wholeheartedly: “They are the best of the best.” In the committee’s view, the life and death consequences of SAR operations demand that SAR authorities remain committed to continuous improvement.

Overall, the committee’s assessment suggests that the delivery of maritime SAR in Canada has, to date, been very effective. Some areas for improvement do exist, however, and are discussed in the report. These areas include: coverage, capacity, prevention, and governance.



# 1: SEARCH AND RESCUE

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*Search and Rescue comprises the search for, and provision of aid to, persons, ships or other craft which are, or are feared to be, in distress or imminent danger.<sup>5</sup>*

## 1.1 International Legal Framework

Canada is a member of several international organizations and complies with three important international conventions that govern maritime SAR: the *International Convention for the Safety of Life at Sea, 1974 (SOLAS)*<sup>6</sup>, the *International Convention on Maritime Search and Rescue, 1979* (the Hamburg Convention)<sup>7</sup>, and the *United Nations Convention on the Law of the Sea, 1982 (UNCLOS)*<sup>8</sup>. These conventions require, among other things, that:

- Vessels at sea must respond to distress situations to the extent they can do so without undue risk (these vessels are called “vessels of opportunity”);
- Countries must make arrangements for the provision of adequate SAR services in their coastal waters;
- Countries must delineate, through bilateral agreements with bordering nations, the search and rescue regions for which they are responsible;
- Neighbouring countries must cooperate and coordinate their efforts to rescue persons in distress at sea no matter where an incident occurs; and
- Countries must establish rescue coordination centres and sub-centres, communication systems, and develop operating procedures to be followed in the event of alerts and during SAR operations.

Government representatives from the four countries the committee visited suggested that these international conventions have contributed to the development of relatively similar maritime SAR systems around the world. However, they noted that countries also have the flexibility to establish their maritime SAR programs based on the demands of their country’s environment (e.g., the geography and length of the coastline, the level and type of maritime activity, the climate, the form of government). They stressed that there are opportunities for countries to learn more from one another, and that there is always room for improvement. In Canada’s context, improvement means the effectiveness of maritime SAR and its capacity to respond are largely dictated by the country’s vast size and the diversity of its regions. Accordingly, ensuring that SAR assets are located

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<sup>5</sup> Canadian Coast Guard (CCG), [Maritime Search and Rescue \(SAR\) in Canada](#), 26 March 2014.

<sup>6</sup> International Maritime Organization (IMO), [International Convention for the Safety of Life at Sea, 1974](#).

<sup>7</sup> IMO, [International Convention on Maritime Search and Rescue, 1979](#).

<sup>8</sup> United Nations, [United Nations Convention of the Law of the Sea, 1982](#).

strategically to respond to maritime incidents in a timely manner wherever they occur is a key measure of effectiveness.

## 1.2 Search and Rescue Jurisdiction in Canada

In Canada, SAR is a shared responsibility across all levels of government – federal, provincial/territorial, and municipal – and is delivered with the support of volunteer organizations as well as the private/commercial sector. Maritime and aeronautical SAR are a federal responsibility, while the responsibility for ground and inland water SAR rests with the provinces/territories and municipalities, except when they occur on federal Crown lands and waterways (see Table 1.1).

During the study, the committee learned that, despite the divided responsibilities, the lines between ground, maritime, and aeronautical SAR are often blurred. For example, the federal government can assist in ground SAR efforts, medical evacuations, and other humanitarian incidents, if asked to do so by the responsible provincial/territorial or municipal authority. Similarly, response to maritime incidents may require aeronautical SAR assets, and vice versa. Moreover, when an incident occurs on sea ice, there may be confusion as to whether the incident requires a land SAR or maritime SAR response. The committee heard that confusion has, in the past, contributed to delays in rescue. As a result, it is important to acknowledge that the risk for serious injury and death increases as SAR response time increases.

**Table 1.1 – Canada’s Search and Rescue Authorities**

Type of SAR Incident and Location	Lead Authority
<b>Aircraft Incidents</b> <ul style="list-style-type: none"> <li>Anywhere in Canada</li> </ul>	Canadian Armed Forces, Department of National Defence
<b>Maritime Incidents</b> <ul style="list-style-type: none"> <li>On the oceans</li> <li>Coastal waters</li> <li>On the Great Lakes/St. Lawrence River</li> </ul>	Canadian Coast Guard, Fisheries and Oceans Canada
<b>Ground and Inland Water Incidents</b> <ul style="list-style-type: none"> <li>On land (e.g., hikers, hunters, lost persons)</li> <li>On inland waterways (e.g., pleasure boaters, anglers, paddlers)</li> </ul>	Provincial/territorial governments; usually delegated to the police force of the jurisdiction

<p><b>Incidents in National Parks, National Historic Sites and Marine Conservation Areas</b></p> <ul style="list-style-type: none"> <li>• On land (e.g., hikers, mountain bikers)</li> <li>• On inland waterways (e.g., anglers, paddlers)</li> </ul>	<p>Parks Canada Agency</p>
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Source: Government of Canada, [Quadrennial Search and Rescue Review](#), December 2013, p. 10.

### 1.3 Federal Responsibility for Aeronautical and Maritime Search and Rescue

*(...) in terms of responding to and tasking and coordinating the maritime and air side of the equation, we do have one boss and that is the SAR commander. The SAR commander is always from the Armed Forces, but there is a SAR commander in each of our three SAR areas (...) Those three SAR commanders are responsible overall to coordinate and task our assets from the Coast Guard, the auxiliary, vessels of opportunity, and under the Law of the Sea they have to respond. We actually do have one boss for every SAR call in Canada. [Gregory Lick, Director General, Operations, Canadian Coast Guard (4:16-17)]<sup>9</sup>*

The federal government has accepted overall responsibility for maritime and aeronautical SAR within Canada under international conventions. In turn, it appointed the Minister of National Defence as the federal lead for SAR in 1976. The Department of National Defence (DND), through the Canadian Armed Forces (CAF), is responsible for the coordination and provision of aeronautical SAR. The CAF also provides aeronautical SAR in support of maritime incidents. Responsibility for the provision of maritime SAR rests with Fisheries and Oceans Canada (DFO) through the Canadian Coast Guard (CCG). Since DND has responsibility for all federal operational SAR matters, maritime SAR operations are coordinated jointly by the CAF and the CCG. This joint coordination is facilitated through three Joint Rescue Coordination Centres (JRCCs), located in Halifax (Nova Scotia), Trenton (Ontario), and Victoria (British Columbia). A Maritime Rescue Sub-Centre (MRSC) located in Québec City (Quebec) is affiliated with the Halifax and Trenton JRCCs, while another MRSC, reopened in St. John’s (Newfoundland and Labrador) in 2018, supports the Halifax JRCC. The committee learned that these MRSCs do not simply add maritime SAR capacity, they also provide local knowledge and expertise against the backdrop of dialect, geography, cultural nuances, meteorological and environmental characteristics, and other variables unique to these regions. The JRCCs and the MRSCs operate 24 hours per day, 7 days per week, and 365

<sup>9</sup> Please note that, in this report, the testimony received from witnesses and printed in the Minutes of Proceedings and Evidence of the Standing Senate Committee on Fisheries and Oceans is referred to only by issue number and page number in brackets within the text.

days per year (24/7/365). The JRCCs are staffed with both CAF and CCG personnel, while the MRSCs are operated by CCG staff only.

To fulfill its maritime SAR functions, the CCG also operates 12 Marine Communications and Traffic Services (MCTS) centres across the country.<sup>10</sup> These centres monitor distress communications and relay those distress calls to the JRCCs for action. The JRCCs then examine the assets that are available to coordinate a proper response to the incident. Most MCTS centres operate 24/7/365, but some function seasonally. In addition to monitoring and responding to distress calls, MCTS centres also broadcast maritime safety information (weather and navigational warnings), screen vessels entering Canadian waters, deliver information and advice to regulate marine traffic movement, and take appropriate actions to ensure the safe and efficient movement of vessels. Through these centres, the JRCCs have increased knowledge of persons or vessels in distress, mariners at risk at sea have greater opportunity to be detected, and the CCG has enhanced information on vessel transit for maritime security domain awareness. The committee heard repeatedly that MCTS officers are “the eyes and ears of Canadian marine traffic” and, as such, they play a critical role in maritime SAR.

#### 1.4 Canada’s Search and Rescue Region

*No other country on earth provides search and rescue coverage for 18 million square kilometres. [Michael Fry, Director Commercial — SAR/EMS, Global, CHC Helicopter (9:15)]*

The land and sea boundaries delineating Canada’s Search and Rescue Region (SRR) were determined through international conventions and bilateral agreements with neighbouring nations and extend well beyond national territorial limits/waters. Canada’s SRR is immense, stretching across almost 18 million km<sup>2</sup> of land and water. Canada’s SRR is further divided into three smaller SRRs, named after their respective JRCC (see Figure 1.2).

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<sup>10</sup> MCTS centres are located in Nova Scotia (Dartmouth and Sydney), Newfoundland and Labrador (Goose Bay, Placentia Bay, and Port aux Basques), Ontario (Sarnia and Prescott), Quebec (Québec and Les Escoumins), Nunavut (Iqaluit), and British Columbia (Victoria and Prince Rupert).

**Figure 1.2 – Canada’s Search and Rescue Regions**



Source: Canadian Coast Guard, *Follow-up Questions from the Standing Senate Committee on Fisheries and Oceans on Maritime Search and Rescue in Canada*, June 2016.

Each SRR is a different size with unique geographical and environmental characteristics, creating different challenges for maritime SAR.

- The **Halifax SRR** covers some 5 million km<sup>2</sup>, which includes 2.3 million km<sup>2</sup> of Canada’s exclusive economic zone (EEZ) and 2.7 million km<sup>2</sup> outside the 200-mile limit, and a coastline that is 40,000 km long. Eighty percent of this SRR is covered by water. The region comprises all four Atlantic provinces, the eastern half of the Province of Quebec, the southern half of Baffin Island in Nunavut, and a large area of the western North Atlantic Ocean. In this SRR, long coastlines and deep waters combine with often tempestuous weather, very active, often high-risk fishery operations, and increasing cruise ship and pleasure craft traffic. Parts of this region are characterized by long ice seasons and extreme weather conditions. Of note, the Halifax SRR is home to the Canadian Coast Guard College, in Sydney (Nova Scotia). This maritime training facility, the only institution of its kind in Canada, develops and trains CCG navigation and engineering officers.
- The **Trenton SRR** encompasses more than 10 million km<sup>2</sup>; about 30% of the area is covered by water. This SRR, the largest in Canada, encompasses the bulk of the country’s land mass, plus Hudson’s Bay, James Bay, and the Canadian portions of the Great Lakes and the Arctic Ocean. It extends east to Québec City and west to the Alberta–British Columbia border. From south to north, it extends from the Canada–United States border to the North Pole. It covers most of Nunavut, except the southern half of Baffin Island (70° north latitude), which is part of the Halifax SRR. The busiest time of the year for maritime SAR provision in this SRR is the summer,



the season of pleasure boating on the Great Lakes and the lesser waterways of the region, and the period of deployment of icebreakers assigned to Arctic operations. For operational purposes, the CCG (but not the CAF) recently redefined the geographic boundaries of the Trenton SRR to create a specific sub-region for the Arctic. It was explained that the Canadian Arctic is the largest maritime space in Canada and the most difficult place to conduct SAR operations. Perhaps more notably, this region has the least SAR infrastructure in Canada.

- The **Victoria SRR** is the smallest of the three. It consists of approximately 2 million km<sup>2</sup> of the mainly mountainous terrain of the Yukon and British Columbia and 687,000 km<sup>2</sup> of the ocean extending to approximately 600 nautical miles offshore, including 27,000 km of coastline. About 32% of the area is covered by water. The region attracts extensive activity that can give rise to maritime SAR incidents such as cruise ships, fly-in fishing, kayaking, and pleasure boating. As well, the region includes Vancouver, one of the largest shipping ports of North America. The rugged coastline and often inaccessible terrain, severe weather, and large expanses of sparsely populated areas make the Victoria SRR a demanding region. Marine navigation occurs 12 months a year, whereas maritime traffic is more seasonal in the two other SRRs. Late spring – May and June – is the busiest time of the year for maritime SAR provision.



Senators visited the JRCC during its fact-finding mission to Victoria, British Columbia.

## 1.5 Maritime Search and Rescue Incidents

In 2017, the three JRCCs responded to 10,003 SAR calls, of which about 62% related to maritime incidents (see Table 1.3). The Trenton JRCC had the highest volume of maritime SAR activity. The committee learned that fishing vessels account for the majority of maritime SAR incidents in the Halifax SRR, while the majority of maritime SAR incidents in the Trenton and Victoria SRRs involve pleasure boaters. The committee also heard that the Halifax SRR has experienced an increase in pleasure craft incidents over the years.

**Table 1.3 – Search and Rescue Incidents in Canada, by Type and Region, 2017**

JRCC	Total	Aeronautical <sup>a</sup>	Maritime <sup>a</sup>	Humanitarian <sup>a</sup>	Other <sup>b</sup>
Halifax	<b>2,896</b>	477	1,741	224	454
Trenton	<b>4,016</b>	1,023	2,295	363	335
Victoria	<b>3,091</b>	379	2,122	443	147
<b>Total</b>	<b>10,003</b>	<b>1,879</b>	<b>6,158</b>	<b>1,030</b>	<b>936</b>

Notes: a. Aeronautical, maritime and humanitarian totals include false alarms.

b. Other includes unknown cases as well as incidents outside the Canadian area of response.

Source: Table prepared using data provided to the committee by the Canadian Armed Forces, 28 March 2018.

The fact that incidents of a maritime nature far outnumber all other aeronautical and terrestrial type incidents, combined with the sheer size of the Canadian SRR, underscores the need for strong and effective maritime SAR capacity and response from coast to coast to coast. We must not forget that Canada is a maritime nation.



Senators were given a tour of the Royal Canadian Marine Search and Rescue facility and able to see CCG and RCM-SAR assets.

## 1.6 Delivery of Maritime Search and Rescue

*SAR response in Canada is a system of systems with the ultimate aim of responding as quickly as possible, with the assets most readily available. [Major-General William Seymour, Chief of Staff Operations, Canadian Joint Operations Command (31:6)]*

A distress incident at sea can occur suddenly and without warning, as a result of injury, mechanical failure, environmental conditions, lack of safety equipment, or human error. Once the incident has occurred, the person in distress (or a nearby vessel witnessing the event) must signal for help. A JRCC is notified of an incident by a call from a marine radio or cell phone, or a distress signal transmitted through a satellite-based system from an emergency locating beacon (or EPIRB) on a vessel, or by a MCTS centre. After receiving the distress call, the SAR Commander at the JRCC investigates to determine the nature of the distress call. JRCC staff records all available information about the person(s) in danger and determines the location of SAR resources



Senators visited the 444 Squadron, based at 5 Wing Goose Bay, Newfoundland and Labrador.

that could assist. SAR Commanders are trained to evaluate various situations and send the most effective resources, of which they have a vast network. In fact, the committee learned that SAR works as a “system of systems.” While the CAF and the CCG coordinate the response to distress calls across Canada, they are not necessarily the first responders to SAR incidents. In addition to their assets and personnel, the CAF and the CCG can count on volunteers, the private sector, and vessels/aircrafts of opportunity to assist. The JRCCs

have access to all these resources and they will task the most suitable resource to respond as quickly as possible; volunteers often play an important role in this regard.

A distress incident at sea can sometimes be resolved almost as quickly as it started. This is particularly true when other vessels (i.e., vessels of opportunity) are nearby. Other incidents can evolve into complex situations that require many maritime and aeronautical resources. Some incidents – particularly those in remote locations, those in hard to reach locations, or those with little SAR capacity – can have lengthy SAR response times. Unfortunately, some SAR incidents develop into recovery operations.

## 2: MARITIME SEARCH AND RESCUE CAPACITY IN CANADA

As previously stated, the federal government is responsible for maritime SAR. Its capacity to respond to maritime SAR incidents depends on several factors, including the number and location of available assets as well as the amount of personnel involved in the mission. This response capacity rests with the CCG and the CAF and varies from one SRR to another, and even within a SRR. The CCG provides maritime SAR assets in the form of a wide variety of vessels with crews trained to several tasks, including rescue specialists. The CAF provides aeronautical SAR assets in support of maritime SAR in the form of fixed-wing and rotary-wing aircrafts with highly skilled flight crews, including SAR technicians (SAR techs).

The CCG and the CAF have organized their resources into three levels: primary, secondary, and other. In the event of a maritime incident, the JRCC determines the resources that will be tasked to respond based on the exact nature of the incident. The determining factors include: location; weather conditions; the number of people involved; the severity of the incident; accessibility of the incident; and, the availability and capabilities of the resources.



The CCGS *George R. Pearkes*, a light icebreaker and buoy support vessel docked in Newfoundland and Labrador.

### 2.1 The Canadian Coast Guard's Maritime Search and Rescue Assets

#### 2.1.1 The Fleet

The CCG is the provider of primary maritime SAR response and uses different categories of vessels to conduct this function. **Primary SAR vessels** are specially designed, equipped, and crewed and have SAR as their main responsibility. These vessels, which include motor lifeboats, cutters, air cushion vehicles, and inshore rescue boats (IRBs), are stationed in areas that have a high risk of SAR incidents. Depending on the area of operation, some of these vessels operate seasonally, whereas others are



in use throughout the year. Primary SAR vessels maintain a maximum reaction time of 30 minutes, but are typically ready to respond the moment an alert is received.

**Multi-tasked SAR vessels** can deliver maritime SAR and at least one other operational program (e.g., icebreaking). They therefore must remain within a specific SAR area. They also maintain a maximum 30-minute reaction time. It was explained to the committee that multi-tasked vessels increase fleet utilization, reduce costs to the government, and stand in for primary SAR vessels when necessary.

**Secondary vessels** are CCG vessels whose primary function is not SAR (such as those used for fisheries enforcement, offshore patrol, and research). These vessels may be used when their proximity to an incident or the nature of the incident makes them the most effective option; they have a reaction time of one hour. The CCG also relies on vessels operated by other federal departments or agencies as secondary vessels, such as the Royal Canadian Navy and the Royal Canadian Mounted Police (RCMP), as well as the Canadian Coast Guard Auxiliary (see Section 3). Finally, the CCG can task a **vessel of opportunity**, which is any other vessel not mentioned above, but that is close enough to provide assistance to a vessel in distress. A list of the vessel types and other assets used by the CCG in each SRR is provided in Table 2.1.

The committee is concerned, however, by the aging of the existing CCG fleet. Committee members understand that the SAR vessels are younger than the rest of the fleet because of investments made in the 1990s as well as the procurement of 15 new lifeboats to be delivered to the CCG over the next few years. But the rest of the CCG's fleet – the multi-tasked and secondary vessels which can also be used for maritime SAR – is aging. In fact, the committee learned that the fleet is one of the oldest in the world. Nationally, 29% of the large vessels are more than 35 years old and close to 60% of the small vessels are older than their design life of 20 years.<sup>11</sup> They require major and lengthy repairs that reduce their time in service. The fleet urgently requires renewal.

Although the CCG has established a long-term fleet renewal plan and that the federal government has implemented the National Shipbuilding Procurement Strategy, undercapitalization and delays in the procurement of new vessels and in the modernization or refurbishment of existing ones, continue to create challenges for the delivery of CCG programs, including maritime SAR. Moreover, the committee heard that the schedule for the building of the new CCG icebreaker – the multi-purpose Polar icebreaker CCGS *John G. Diefenbaker* – was delayed due to priority being given to the procurement of the joint support ships for the Royal Canadian Navy. Initially scheduled for delivery in 2017, the new icebreaker is not expected to be delivered before 2022. To address these concerns, the CCG has decided to lease five icebreakers over the next two decades as its existing ones undergo repairs.

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<sup>11</sup> Government of Canada, [Pathways: Connecting Canada's Transportation System to the World](#), Volume 1, 2015, p. 222.



**Table 2.1 – Assets of the Canadian Coast Guard by Search and Rescue Region, March 2016**

Assets	Halifax	Trenton	Victoria
Large Vessels	18	14	11
Small Vessels	9	8	5
SAR Lifeboats	14	18	13
Air Cushion Vehicles	0	2	3
Training Vessels	2	0	0
Helicopters	8	7	6

Source: Table prepared using data obtained from the Canadian Coast Guard, *Search and Rescue Program*, Document tabled with the committee, 10 May 2016, p. 5.

During the committee’s study, the federal government made the following improvements to CCG’s SAR capacity as part of the Oceans Protection Plan:

- Newfoundland and Labrador: the construction of two new SAR lifeboat stations in Twillingate and Bay de Verde, and the refurbishment of the lifeboat station in St. Anthony (as well as the reopening of the MRSC in St. John’s);
- Nunavut: the creation of one Inshore Rescue Boat (IRB) station in Rankin Inlet, to provide seasonal (June to September) SAR capabilities in that region – including a nine-metre, all-weather, enclosed rigid-hull inflatable boat – to be operated by Indigenous students from Arctic communities who were trained by the CCG; and
- British Columbia: the addition of four SAR lifeboat stations in the areas of Victoria, Hartley Bay, Port Renfrew, and Nootka (this is in addition to the Kitsilano CCG base, which was reopened in 2016 with an expanded mandate and a new SAR vessel).

The committee welcomes the establishment of the new stations; they help these coastal communities be better prepared to deal with maritime SAR. It was explained that the location of these stations was determined using a new methodology adopted by the CCG, referred to as the Risk-Based Analysis of Maritime SAR Delivery (RAMSARD).<sup>12</sup> The methodology provides a structured and consistent way to assess maritime SAR risks and informs decision-making with respect to SAR coverage expansion or reconfiguration. Even though the times and locations of distress situations are not 100% predictable, and no amount of resources can guarantee that all people will be saved,

<sup>12</sup> Canadian Coast Guard, *Risk-based Analysis of the Maritime Search and Rescue Delivery*, 2<sup>nd</sup> Edition, November 2017.

this new methodology is a sound approach that will enhance SAR capacity and the committee encourages its use.

Furthermore, the committee appreciates the CCG’s improved collaboration with a number of coastal and Indigenous communities in Nunavut and British Columbia that increases SAR capacity through new rescue boats and equipment, and through training that helps local community members enhance the important role they already play in maritime SAR. But more communities require investment in SAR capacity, particularly in the Canadian Arctic.

The CCG told committee members that operating costs for additional IRB stations in the Canadian Arctic would be low and could most likely be absorbed within its current budgetary allocations. Unfortunately, the capital costs associated with establishing new IRB stations in that region are high – about \$1 million – due to the required one-time investments in wharf facilities and accommodations for staff as well as investments in vessels and other equipment. The committee has seen, first hand, the positive impacts a CCGA unit can have on a community’s SAR capacity and encourages the establishment of additional CCGA units and IRB stations in the Canadian Arctic. Therefore:

**1a) The committee recommends that the Canadian Coast Guard establish additional primary search and rescue stations in the Canadian Arctic to meet the growing demand in areas where marine activity is forecasted to increase.**

**1b) The committee also recommends that the final decision on the location of these search and rescue stations be made in consultation with local communities.**

## 2.1.2 Personnel

*Personnel shortages and training challenges limit the ability of the Canadian Forces and our Coast Guard to maintain search and rescue operations. [Andrew Parsons, Minister, Department of Justice and Public Safety, Newfoundland and Labrador (11:9)]*

During its study, the committee learned that the CCG faces challenges in all three SRRs in recruiting and retaining personnel who play a role in the delivery of maritime SAR – rescue specialists, MCTS officers, JRCC SAR coordinators, and more. The expected retirement of 25% of marine personnel who operate CCG vessels, over the next five years, was also noted. A government report even suggested that the CCG currently lacks adequate staff to respond, “in any part” of its areas of responsibility “at any time,” including maritime SAR.<sup>13</sup> During fact-finding missions across the country, committee

<sup>13</sup> Government of Canada (2015), p. 222.

members were told that the shortage of personnel has had an impact on current staff who experience increased workloads, stress, burnout, and low morale. CCG representatives told the committee that recruitment is typically a challenge in the maritime environment because working at sea is not for everyone. Moreover, they indicated that the CCG faces stiff competition from the private sector, offshore industries, and the Royal Canadian Navy for those who are attracted to a life on the water.

All CCG personnel are trained at the Canadian Coast Guard College (CCGC), located in Sydney (Nova Scotia). Opened in 1965, the CCGC is the only institution of its kind in Canada and its bilingual training programs are unique. The committee toured its campus, which sits on 110 acres and comprises an academic building, simulator areas, residential wings, a waterfront training complex, and a marine engineering training facility. The college trains rescue specialists, MCTS officers, environmental response personnel, ship officers for marine navigation and marine engineering, and marine maintenance and equipment technology personnel.

In addition to the CCGC, the CCG runs the Rigid Hull Inflatable Operator Training (RHOT) School in Bamfield (British Columbia).<sup>14</sup> The course is designed to train people in the operation of rigid hull-type vessels in extreme weather conditions, and maritime SAR. This course is physically and mentally demanding. Course duration is approximately 70 hours with many night lectures and night operations. During the fact-finding mission at the Victoria SRR, the committee learned that the Bamfield RHOT School also offers the Coastal Nations Search and Rescue Course, with funding provided under the Oceans Protection Plan. This course is offered to members of coastal and Indigenous communities in the province. These people are often the first to arrive on the scene when incidents arise near remote coastal areas; however, they are limited in their response by training and equipment. Training under the Coastal Nations Search and Rescue Course is intentionally delivered close to home; the aim is to avoid taking people out of their communities to send them to the CCGC in Sydney, which was identified as a barrier for some who were interested in attending. The course includes four training sessions annually consisting of six days of intense boat training at the school and some 20 SAR exercises in the communities themselves. As of March 2018, 43 members from nine different First Nations across the province had been trained in Bamfield. Along with training, the communities receive at their dock a container loaded with SAR equipment and supplies, including life vests, searchlights, defibrillators, handheld marine radios, and advanced first aid kits. The container is restocked by the CCG as equipment and supplies are used. All SAR stakeholders, including trainees themselves, spoke positively about the course. However, the committee was told that the course is presently a pilot project; people expressed the hope that it will become a permanent program.

The CCGC is located on the East Coast and is not easily accessible to members of coastal communities from the West Coast, who prefer to train closer to home. The committee sees a real opportunity to enhance maritime SAR capacity by providing regional course delivery, such as that provided by the RHOT School. Moreover, expanding the training audience to people living in coastal and Indigenous

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<sup>14</sup> The RHOT School course is not equivalent to the CCGC's Rescue Specialist training, but is meant to enhance maritime SAR capabilities in coastal communities.

communities through such regional training may give them an incentive to undertake a career with the CCG. Given the valuable experience gained to date by members of coastal and Indigenous communities as part of this course and the high demand for this training, the committee sees the Coastal Nations Search and Rescue Course as an excellent opportunity to improve maritime SAR response on the West Coast. The committee heard remarkable stories where Indigenous peoples were actively involved in maritime SAR incidents. Similar courses could be provided in other regions, including, for example, coastal communities in the Canadian Arctic that are experiencing an increase in maritime activity. Indigenous peoples living in remote coastal communities are and will continue to be the first responders to marine incidents in their waters. It is the view of the committee that the time has come to meaningfully develop the capacity of local peoples willing to help respond to maritime SAR incidents in their regions as they arise. For example, the CCG could partner with the Nunavut Arctic College, located in Iqaluit (Nunavut), to offer maritime and SAR-related training programs. The CCG could also utilize the college's facilities to provide maritime SAR-specific training to CCGA members in the North. Therefore:

**2a) The committee recommends that the Canadian Coast Guard establish the Coastal Nations Search and Rescue Course as a permanent training program at its Rigid Hull Inflatable Operator Training School in Bamfield, British Columbia.**

**2b) The committee also recommends that the Canadian Coast Guard, in consultation with stakeholders, expand this course to other coastal and Indigenous communities, particularly in the Canadian Arctic.**

Above all, it is important to acknowledge that the CCGC remains the unique provider of CCG-specific training, including maritime SAR. The training offered by the college supports the production of seafarers and marine personnel to address federal responsibilities related to safe and secure waters, and to comply with Canada's requirements pursuant to international conventions. The need for the CCGC is not in question. However, the committee heard about a lack of public visibility and exposure: both the CCG and the CCGC do not yet have a strong presence in elementary and secondary schools and other forums where they could attract more potential applicants. The committee was also told that the CCG's strategic human resource plan was not developed to the point where it should be.

The shortage of human resources at the CCG has been an issue of concern for several years and, in the committee's view, may present challenges to the delivery of maritime SAR in the near future. This shortage of personnel must be addressed immediately. Members of the committee were told that the CCG needs to work with the CCGC to develop and implement a short-, medium-, and long-term strategic staffing plan. Moreover, members know that Canada has the longest coastline in the world, which is also the home of Inuit and First Nations. It is natural that they become full partners in maritime SAR and that we gain their knowledge. One solution envisioned to improve recruitment by the CCG is to target coastal residents, particularly in Indigenous communities.

Finally, the committee recognizes how important it is for MCTS centre staff to communicate effectively with local people and those in distress. Members of the committee heard that at the MCTS centre in Iqaluit, none of the employees speak Inuktitut, a language spoken by most of the local population. The committee learned that this capacity once existed at the MCTS centre in Iqaluit and that the CCG is looking into restoring it.



MCTS Centre in Iqaluit, Nunavut.

The committee encourages the CCG to recruit people who speak local languages and understand local dialects, such as Inuktitut in Iqaluit, to ensure MCTS centre staff can effectively communicate with locals and those in distress. Therefore:

- 3a) The committee recommends that the Canadian Coast Guard, in collaboration with the Canadian Coast Guard College, expand and intensify its human resource recruitment strategy to target a broader audience.
- 3b) The committee recommends that the strategy have a particular focus on attracting and retaining Indigenous cadets and employees within the Canadian Coast Guard organization.
- 3c) The committee recommends that Indigenous employees proficient in Inuktitut be recruited by the Canadian Coast Guard in the Canadian Arctic.

## 2.2 The Canadian Armed Forces' Search and Rescue Assets

*Let there be no mistake: The relationship between military search and rescue and our mariners is a deep one. But there are issues. [Ryan Cleary, President, Federation of Independent Sea Harvesters of Newfoundland and Labrador (11:52)]*

### 2.2.1 The Fleet

As previously noted, maritime SAR in Canadian waters under federal jurisdiction is not the sole purview of the CCG; the CAF provides primary and secondary aeronautical assets in support of the execution of maritime SAR operations. This includes two types of rotary-wing aircrafts, the CH-149 Cormorant and the CH-146 Griffon, and two types of fixed-wing aircrafts, the CC-130 Hercules and the CC-115 Buffalo. These assets are located at squadrons across the country (see Table 2.2).

- The **CC-130 Hercules** is a four-engine, fixed-wing turboprop aircraft that has a maximum range of 7,222 km and a cruising speed of 556 km per hour. Capable of short take-offs and landings on unprepared runways, it can respond to SAR emergencies on almost any terrain and under the most challenging weather conditions. The first Hercules entered service in 1960, while the next generation was purchased in 1996.



While visiting Comox, British Columbia, Senators were able to witness a search and rescue exercise involving a CH- 149 Cormorant.

- The **CH-149 Cormorant** is a helicopter acquired in 2001 and dedicated to SAR. It can operate in the most severe conditions, making it ideal for Canada's challenging geography and climate. Powered by three engines, the CH-149 Cormorant has exceptional long-range capabilities and can fly for over 1,000 km without refuelling. It can carry 12 stretchers or a load of 5,000 kg.



The Cormorant can also start and stop its rotors in very windy conditions (reaching over 50 knots). Its advanced systems help to provide a stable hover for critical hoisting operations and an ice protection system allows it to operate in continuous icing conditions. The Cormorant routinely conducts rescues that would have been impossible for its predecessor, the CH-113 Labrador.

- The **CH-146 Griffon** is a light utility helicopter that has been in service since 1995. It is used primarily for transport of troops and material during military flight operations and exercises. It has been adapted from battlefield use into different roles, including SAR missions and humanitarian relief operations. The aircraft can carry up to 13 people (two pilots, a flight engineer, and 10 passengers) and has a maximum gross weight of nearly 5,400 kg. It can reach speeds up to 260 km per hour.
- The **CC-115 Buffalo** is a dedicated fixed-wing SAR aircraft and well-suited for the rough coastlines and mountainous terrain of the Victoria SRR. Able to fly as slow as 70 knots with great maneuverability and plenty of excess lift and power, it can also land and take off from short, soft runways, as short as a soccer field.<sup>15</sup>

In the Halifax SRR, the CAF provides support to the JRCC through 14 Wing Greenwood (Nova Scotia), as well as through 9 Wing Gander and 5 Wing Goose Bay (Newfoundland and Labrador). 14 Wing Greenwood is home to 413 Squadron, the primary aeronautical SAR unit covering Atlantic Canada and eastern parts of Quebec. To carry out its missions, the unit has at its disposal three Hercules and five Cormorants. 9 Wing Gander is often the first responder to maritime SAR incidents in Newfoundland and Labrador, where the number of SAR cases is twice the national average. Its 103 Squadron is close to major fishing grounds and shipping routes; it is thus not surprising that the majority of its SAR missions in the province are maritime-based.<sup>16</sup> The 103 Squadron operates three Cormorants. 5 Wing Goose Bay is one of Canada's most northern major air bases and the closest major air base to the Northwest Passage. Its 444 Combat Support Squadron is currently equipped with three Griffons. These helicopters are used primarily for transport of troops and materials during flight operations and exercises, but they can also be used in aeronautical and maritime SAR operations, including rescuing civilians in the High Arctic.

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<sup>15</sup> Royal Canadian Air Force (RCAF), [CC-130 Hercules](#); [CH-149 Cormorant](#); [CH-146 Griffon](#); and [CC-115 Buffalo](#).

<sup>16</sup> Royal Canadian Air Force (RCAF), [103 Search and Rescue Squadron](#).

**Table 2.2 – Primary and Secondary Aeronautical SAR Assets in Canada, February 2018**

Regions	Fixed-Wing		Rotary-Wing	
	CC-130 Hercules	CC-115 Buffalo	CH-149 Cormorant	CH-146 Griffon
<i>Primary SAR Assets</i>				
442 Squadron Comox	0	6	5	0
435 Squadron Winnipeg	4	0	0	0
424 Squadron Trenton	4	0	0	5
413 Squadron Greenwood	3	0	5	0
103 Squadron Gander	0	0	3	0
<i>Secondary SAR Assets</i>				
417 Squadron Cold Lake	0	0	0	3
439 Squadron Bagotville	0	0	0	3
444 Squadron Goose Bay	0	0	0	3

Source: Table prepared using data obtained from Royal Canadian Air Force, *Presentation to the Senate Committee on Fisheries and Oceans*, 27 February 2018.

In the Trenton SRR, the CAF provides primary aeronautical SAR support to the JRCC through 8 Wing Trenton (Ontario) and 17 Wing Winnipeg (Manitoba). 8 Wing is home to 424 Squadron, which carries out its missions with four Hercules and five Griffons. At 17 Wing Winnipeg, 435 Squadron utilizes four Hercules. The CAF also provides secondary SAR support to the Trenton JRCC through 3 Wing Bagotville (Quebec) and its 439 Squadron and 4 Wing Cold Lake (Ontario) and its 417 Squadron; both squadrons operate three Griffons.

In the Victoria SRR, the CAF provides primary SAR support to the JRCC through 19 Wing Comox (British Columbia). Its 442 Transport and Rescue Squadron carries out SAR operations with six Buffalo aircrafts and five Cormorants. 19 Wing is home to the Canadian Forces School of Search and Rescue, the CAF national school that trains SAR techs. The school also operates the Sea Survival Detachment, located 10 km from 19 Wing, which trains approximately 250 staff annually in order to increase their ability to survive in the sea environment under emergency conditions. The 19 Wing will soon house a new fixed-wing search and rescue training centre, where Royal Canadian Air Force (RCAF) aircrews,

SAR techs, and maintenance personnel will be trained for the newly acquired fixed-wing SAR aircraft – the C-295W from Airbus. The first of the 16 procured C-295W is scheduled to be delivered in 2019, with final aircraft delivery expected in 2022.<sup>17</sup> These aircrafts will replace the current fleet of Hercules and Buffalos. During the transition to the new SAR aircrafts, the existing fixed-wing SAR fleet will continue to be maintained and operated to carry-out its SAR responsibilities.

During fact-finding missions within Canada, the committee had the opportunity to visit four CAF bases, including Greenwood, Gander, Goose Bay, and Comox. CAF personnel explained that each region is provided with the type of aircraft suited for its specific needs. In general, the fixed-wing SAR assets are used for rapid search, location, and airborne deployment of SAR techs and equipment, while the rotary-wing assets are used for the rescue or recovery portion and for specific search scenarios. Committee members were told that, in many situations, helicopter rescue crews can access remote areas that vessels cannot: heavy waves, bad weather, and sea ice can create considerable challenges for CCG vessels and other ships attempting rescues at sea or in coastal waters. Accordingly, rescue helicopters are important for maritime SAR in Canada. However, the current SAR helicopter fleet has a much shorter range than the fixed-wing aircrafts; the latter is therefore needed to cover greater distances.

The committee heard concerns regarding the reliability and coverage of the existing CAF SAR fleet. Primarily, the problems stem from the age of the fixed-wing fleet, which creates frequent maintenance challenges and reduces their availability for SAR. These problems, in turn, are compounded by the fact that the CAF now only has 13 Cormorants, down from 15 when they were first purchased. Further aggravating the situation is the fact that the Cormorant requires lengthy maintenance, which reduces their availability for SAR operations and training. In 2005, the CAF reassessed its SAR needs based on capacity and decided to relocate all the Cormorants used by 424 Squadron to the other SRRs and to assign more Griffons to 424 Squadron to fill the gap on a temporary basis. However, issues were raised regarding the use of the Griffons in the region, including capacity limits, range, and all-weather and over-water operations. According to CAF representatives, although the Griffon is not as capable as the Cormorant, its use has proven to be an adequate interim SAR platform. To date, the use of the Griffons continues as a temporary solution.

During the study, the committee also heard both positive and negative comments about the new C-295W. For example, the committee was told that the C-295W travels at lower speeds and, therefore, will take longer than the existing fixed-wing aircrafts to arrive on the scene of a SAR incident. This is of concern, particularly when an incident occurs in the Canadian Arctic, because aircrafts are based in the south. Survival in the Arctic is very time-sensitive. However, the committee was told that the C-295W will be equipped with forward-looking infrared radar<sup>18</sup> which should be very efficient in several regions across the country, and particularly in the Arctic, given the temperature differential and the lack of obstacles. A number of witnesses expressed concern that the CAF will not deploy any

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<sup>17</sup> Public Service and Procurement Canada, [Procurement Timeline: Fixed-Wing Search and Rescue Aircraft](#).

<sup>18</sup> Forward-looking infrared radar uses a technology that detects infrared radiation typically emitted from a heat source, such as hot engine parts or a person's body heat. The technology can detect, identify, and classify objects and people in low light and bad weather conditions.

of the new C-295W SAR aircraft in Canada's North. It has been decided that they will be stationed in Comox, Winnipeg, Trenton, and Greenwood. Some witnesses recommended that one existing or new aircraft be stationed in the Arctic, such as Yellowknife, Iqaluit, or Rankin Inlet (the SAR needs in the Canadian Arctic are discussed in more detail in Section 4 of this report). A number of witnesses from Newfoundland and Labrador also recommended that one of the new fixed-wing aircraft be staged in Gander to help improve the SAR response to the high number of maritime incidents in the province.

Overall, the committee was told that despite upgrades, retrofits, and maintenance challenges of the existing aeronautical SAR assets, as well as a lengthy procurement process, the CAF is able to remain operational for SAR missions at all times. Committee members were told that its ability to respond may have been temporarily delayed on a few occasions and, in the few situations when a primary SAR asset was not available, aircraft from other regions or secondary SAR assets would have been tasked. This is of concern to the committee, since the location of the primary SAR squadrons are separated by significant distances. Moreover, committee members are concerned by gaps in coverage that may be created due to the existing fixed-wing fleets reaching the end of their design lives while waiting for the delivery of the new fleet. It was stressed, however, that the CAF can rely on the Civil Air Search and Rescue Association (CASARA), a volunteer organization that provides light fixed-wing aircrafts with visual spotters and basic homing capabilities. These aircrafts do not have the ability to drop airborne personnel, but do provide large, geographically dispersed search and localization functions. The CAF can also contract commercial aircraft operators to conduct the rescue and/or recovery portion of a SAR tasking.

### **2.2.2 Personnel**

While visiting 19 Wing Comox, the committee had the opportunity to tour the Canadian Forces School of Search and Rescue – the only school in Canada that trains SAR techs. Eleven SAR techs graduated from the school in 2017 and only members (regular and reserve) of the CAF can apply. They must also have worked for CAF a minimum of five years and be of a corporal rank. The committee heard that SAR techs must be extremely fit – both physically and mentally – and go through a series of tests. SAR operations may require parachuting, helicopter hoisting, mountain climbing, swimming, and diving to reach people in distress. Once they graduate from the one-year SAR course in Comox, SAR techs need to be experts in each category, in addition to completing the necessary medical training. They must maintain advanced skills that even paramedics across Canada do not practice, such as administering antibiotics, and they train every day.

Unfortunately, the CAF faces significant challenges in recruiting and retaining SAR techs. In addition, the CAF experiences pilot shortages due, in part, to work-life balance issues. It was explained that pilots are required to move from one base to another and this makes it difficult for spouses and families. Pilots do not want to move as frequently and would like to have more stability. Moreover, it was noted that the CAF is losing personnel (both SAR techs and pilots) to commercial airlines.

The committee also learned that the CAF face difficulties in recruiting people to become JRCC aeronautical SAR coordinators. The CAF is unable to externally source candidates (as noted above,

all candidates must be from the military) and must maintain priority manning for the JRCC. Overall, understaffing is a primary factor that impacts the efficiency and economy of SAR coordination.

To meet its aeronautical SAR requirements, the CAF must be ready and able to effectively perform SAR operations and to coordinate aeronautical and maritime SAR. The CAF's aeronautical SAR resources are needed given the high number of SAR incidents that occur in the Canadian SRR. The CAF would not be in a position to respond to a Canada-wide increase in SAR incidents and would not be able to add a new aeronautical SAR base without additional personnel (e.g., SAR techs, pilots, flight engineers, aircraft maintenance personnel, and SAR coordinators at JRCCs). For these reasons, the committee is concerned about recruitment challenges at the CAF for SAR purposes.

As part of its defence investment plan, DND recently committed to increasing the number of CAF personnel to ensure that it has “dedicated, motivated, and highly skilled people” to conduct the full range of its operations, including SAR, which is a priority for the department.<sup>19</sup> The investment plan also insists on recruiting and retaining a diverse workforce, with a focus on women and Indigenous peoples, among others. The committee welcomes DND's new recruitment and retention approach. In the committee's view, the CAF must build on this momentum to strengthen its SAR workforce and its capability to respond to the increasing SAR demands in some regions of the country. Therefore:

- 4. The committee recommends that the Canadian Armed Forces seize the opportunity afforded by the *Defence Investment Plan 2018* to increase and diversify its search and rescue workforce to respond to the increased demand for search and rescue.**

## 2.3 Reaction Time and Response Time

*Once considered having one of the greatest search and rescue systems in the world, Canada has been slipping behind most industrialized countries in its response capabilities. Search and rescue [reaction] time in Canada has been far behind many progressive nations in the world. Standby posture for hours outside of normal working days, holidays and weekends is very substandard by international standards. [Mervin Wiseman, Retired Rescue Coordinator, Marine Rescue Sub-Centre, St. John's, (11:129)]*

During the study, the committee learned that “reaction time” is defined as the time between when a SAR resource (vessel or aircraft) is tasked and when the resource departs for the tasking, whereas “response time” corresponds to the time it takes a SAR resource after being tasked to reach the scene of an incident. The committee was informed that the CCG has a reaction time of 30 minutes for its primary SAR and multi-tasked vessels and of one hour for its secondary SAR vessels 24/7/365 (except for those that operate seasonally). However, the committee heard that these assets are

<sup>19</sup> Department of National Defence, [Defence Investment Plan 2018](#).

usually underway in less than 15 minutes because they are often already on the water. In comparison, the CAF, which provides aircrafts and helicopters to assist in maritime SAR missions, has a reaction time of 30 minutes during working hours (eight hours per day, five days per week, for a total of 40 working hours per week) and of two hours during all other times (such as quiet hours and statutory holidays). Like the CCG vessels, the CAF SAR crews are often airborne sooner than the targeted reaction time, around 20 minutes during working hours and one hour outside of working hours.

The reaction time adopted by the CCG was not put into question during the committee’s study. However, there was considerable discussion regarding what witnesses called the CAF’s “two-tier reaction time.” It was stressed that the two-hour reaction time guaranteed outside of working hours had lengthened the response time and resulted in missions becoming recovery-oriented instead of rescue-oriented. In their view, the CAF should have a reaction time of 30 minutes, 24/7/365, like the CCG.



Discussing the details of SAR operations on the tarmac at 19 Wing Comox, British Columbia.

CAF representatives told the committee that the concern over reaction time has been addressed to the extent possible. More precisely, an adjustment has been made to provide the 30-minute reaction time to match peak periods for incidents, reflecting both the days of the week and seasons when more potential SAR incidents occur. It is the responsibility of the SAR Commanders in each of the three SRRs to align the 30-minute reaction times so they coincide with periods of greatest maritime SAR activity. This adjustment varies between the SRRs and even between regions within an SRR. For example, the 30-minute reaction time can be maintained between 10 a.m. and 6 p.m., from Monday



to Friday (rather than between 8 a.m. and 4 p.m.). Similarly, the 30-minute reaction time can be maintained between 8 a.m. and 4 p.m. from Wednesday to Sunday. Overall, the committee was told that shifting the regular weekly schedules without increasing the total number of hours worked (40 hours per week) has improved readiness for SAR and has allowed the CAF to respond to a larger percentage of SAR incidents with a 30-minute reaction time (from 60% to 80% in the Halifax SRR).

Unfortunately, it is not possible for the CAF to maintain a 30-minute readiness at all times. It was explained to the committee that the pilots and SAR aircrew members have a limit on how long they can engage in flying operations. A 30-minute reaction time requires aircrews to remain poised to launch from the flight line, while crews and technicians hold a recall standby away from the squadron under the two-hour SAR readiness. The two-hour reaction time allows the pilots and aircrews to be “fresh” and able to deliver a SAR response for up to 14, 16, 18 hours, which allows them to then go longer, further distances. Moreover, the increased level of readiness would require more aircrafts, add more maintenance, and necessitate infrastructure upgrades.<sup>20</sup>

The committee understands the call by witnesses for a 30-minute reaction time at all times to ensure that mariners in distress can count on a timely SAR response. Committee members appreciate the progress achieved by the CAF in realigning its reaction time in various regions within the three SRRs to improve its state of readiness. However, Canada is still not at par with other countries. During its international fact-finding missions, committee members learned that Canada has a longer reaction time: after being tasked, the aeronautical SAR assets operated in the United Kingdom, Ireland, and Denmark respond within 15 minutes during the day and between 30 and 45 minutes at night. Members of the committee realize that it is presently not possible to impose similar reaction times on the CAF, given shortages in SAR techs, pilots, and flight engineers, but hope that the CAF will reconsider its reaction time once its workforce shortages are adequately addressed as part of the *Defence Investment Plan 2018*.

The committee asked the question: if it is not currently possible to improve the reaction time, what can be done to improve SAR response times? After all, the reaction time represents only a portion of the overall time involved in a SAR incident. Due to the extensive geographic size of the Canadian SRR, response time can be a significant portion of the overall time required to arrive at the scene of an incident.

The committee was told that, to reduce response time, the CCG could modify its operations and move its vessels to areas of anticipated greater need. For example, where the fishing season is active in the Halifax SRR or during intensive recreational boating in the Trenton SRR. Similarly, depending on availability, the CAF could move its assets between regions during periods of increased maritime activity. Committee members were told, for example, that during Nova Scotia’s dumping day in lobster fishing areas 33 and 34 (i.e., the last Monday of November), the CAF deploys a Cormorant from Greenwood and stations it at the Halifax airport, which is closer to the fishing areas.

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<sup>20</sup> Senate of Canada, [Proceedings](#), 1<sup>st</sup> Session, 42<sup>nd</sup> Parliament, 10 May 2018 (Lieutenant-Colonel Jonathan Nelles, Senior Staff Officer, Search and Rescue, 1 Canadian Air Division, National Defence and the Canadian Armed Forces).

The committee appreciates that the CCG and the CAF move their assets between regions during times of increased maritime activity. Nonetheless, Canada is vast with large expanses of water. There are regions within the Canadian SRR with insufficient or very little SAR coverage. For instance, the northern portions of the Trenton SRR, particularly the Canadian Arctic, represents a huge geographic area with an increase in both industrial and recreational/tourism activity, but with no dedicated year-round SAR assets. Similarly, there are portions of the Halifax SRR with inadequate SAR coverage, more particularly the waters off Newfoundland and Labrador. Moreover, the Cormorants are currently undergoing mid-life upgrades and the Griffons are on a life extension project to extend their operating lives to 2030, thus potentially creating gaps in coverage in all three SRRs.

Unlike the CCG, which now uses RAMSARD to establish new lifeboat stations and determine their location, the CAF's SAR assets continue to be positioned based on historical incident distribution. While historical incidents are a good indicator of the need for service in general, their usefulness diminishes if underlying conditions change (such as increased marine traffic in new areas), and they are not good predictors for rare events (such as a major ferry accident). Therefore, the risk analysis of current and projected maritime traffic can also be a useful tool for planning aeronautical SAR assets and making decisions about their location.

Repositioning current aeronautical SAR assets is not feasible for better strategic coverage at this time because the fleet is fully utilized. Accordingly, additional aeronautical SAR assets are needed. The committee repeatedly heard that maintaining the status quo should no longer be the only option. SAR stakeholders from Canada and other countries (see Table 2.3) presented us with possible solutions, including the following:

- Increasing the size of the SAR aircraft fleet operated by the CAF; this would be a multi-year, mega-government dollar capital procurement project;
- Privatizing aeronautical SAR and replacing government-owned and operated SAR aircrafts with a private civilian service provider through a multi-year contract (like in Australia, Ireland, and the United Kingdom);
- Using a private civilian service provider to temporarily fill the gap in coverage during upgrades of the existing fleet and/or procurement of new assets (like in Norway).
- Using a private civilian service provider to supplement existing government SAR assets and expand coverage.

**Table 2.3 – International Examples of Aeronautical Search and Rescue Provisions**

Country	Experience
United Kingdom	A private helicopter company took over the former military air SAR service. It was explained to the committee that the significant capital commitment needed to replace the Sea King fleet could not be justified. It was also stated that the private SAR helicopter company provides value for money to the taxpayers. For example, the company operates fewer bases and the new helicopters are faster than the Sea Kings and can fly further. The private SAR helicopters display Her Majesty Coastguard’s red and white livery.
Ireland	Ireland entered into a 10-year contract with a private helicopter company to provide SAR. The private helicopters are all badged with the Irish Coastguard insignia and the staff operating them wears the Coastguard uniform. It was explained to the committee that acquiring military SAR aircrafts to fully meet the requirements of the Irish SRR was not recommended because of significant delays with procurement and the high initial capital cost. It was further stressed that SAR is an international function governed by international conventions and agreements; SAR remains the responsibility of the national government, even though it is provided by a private company.
Norway	Due to delays in procurement, the Norwegian Ministry of Justice and Public Security recently signed a contract with a private company to provide, on a temporary basis, SAR helicopters and personnel. These helicopters are stationed at various military bases.
Australia	The Australian Maritime Safety Authority (AMSA) has a long-term contract with a private company for the provision of fixed-wing aircrafts and personnel in support of its SAR operations. AMSA also has a contract with a private SAR helicopter operator that provides SAR support on an as needed basis.

The committee does not believe that privatization of aeronautical SAR (like in the United Kingdom, Ireland, and Australia), or another large government capital expenditure project for additional SAR aircrafts (or to rebuild the older ones), fit Canada’s unique requirements. However, the committee believes that alternative service delivery – in the form of public-private partnerships that leverage the best of both public and private capabilities/resources – could offer, in the short- and medium-terms, an innovative and cost-effective solution to supplement SAR resources in regions with little or insufficient coverage.

## 2.4 Alternative Service Delivery

*Canadian Forces aircraft and helicopters are in need of maintenance and replacement, and alternative service delivery models must be in place to ensure that there is no gap in service for midlife overhaul of equipment. [Andrew Parsons, Minister, Department of Justice and Public Safety, Newfoundland and Labrador (11:9)]*

During the study, the committee often heard that an effective SAR response relies on having the right capabilities at the right time, in the right location. These capabilities include suitable equipment, highly skilled personnel, and detailed and standardized procedures, enabling SAR resources to provide the most effective SAR response to the greatest number of potential incidents. As noted above, SAR coverage is not satisfactory in some parts of Canada and cannot be improved with existing SAR assets and personnel. Gaps include:

- **Canadian Arctic:** There are currently no year-round dedicated SAR assets in the Canadian Arctic, even though the region is the most difficult place in the country to conduct SAR operations. SAR assets are based in the southern portions of the country where accidents are more likely to occur, due to population density. While the CCG provides maritime SAR to the Arctic region on a seasonal basis by deploying its icebreakers between June and November (and establishing one seasonal IRB in Nunavut), the CAF responds to SAR incidents in the region by tasking its fixed-wing and rotary aircrafts located at military bases in the south. It has been estimated that, in a best-case scenario, it can take two to eight hours before the CCG or the CAF can reach an incident scene and begin assisting. Marine traffic in Canada's Arctic more than doubled over the past 40 years, and some parts of the Arctic could see doubling of current traffic levels by 2020. SAR incidents in the region are increasing, evidenced by the Akademik Ioffe, a passenger ship that ran aground near Kugaaruk, Nunavut in August 2018. Staging a private SAR helicopter provider in the Canadian Arctic could significantly improve SAR coverage and response in this vast region.
- **Newfoundland and Labrador:** This province has the longest coastline (28,000 km) in Canada and the severity of its weather is second only to the Canadian Arctic. Some of the most severe sea conditions include heavy ice, icebergs, freezing spray, storms, and fog. The marine climate is also marked by considerable seasonality, often with sudden changes to weather patterns that can be difficult to predict and pose a serious threat to mariners. During the hearings in St. John's, the Committee heard that the province has endured its share of tragic events over the years. In fact, the number of SAR cases in the province is estimated to be twice the national average, and the majority of these incidents are maritime-based. On average, 600 lives are saved while 18 others are lost every year off the coast of Newfoundland and Labrador. Committee members were also told that there is a shift in the way the fisheries are conducted in the province, with a higher number of vessels being on the water more frequently, longer fishing seasons, and fishing activities further from the shore. There is also

an increase in offshore oil and gas development, more recreational boating, and growing large-passenger vessel activity. Given the lack of a CAF fixed-wing SAR aircraft in the province, having a private aeronautical SAR asset staged at proximity of these marine activities could reduce SAR response times and improve outcomes.

- **Trenton SRR:** SAR coverage in the Great Lakes region is provided by the Griffons, but they are currently on a life extension project to extend their operating life to 2030. A private SAR provider could be contracted to bridge the gap in coverage during the life extension project.
- **Halifax and Victoria SRRs:** The Cormorant helicopters operated by the CAF in these regions need to undergo mid-life upgrades. These upgrades will necessitate taking aircrafts out of front-line service for extended periods, thus potentially creating a coverage gap in SAR capability. A private SAR operator could deliver interim SAR capability until the Cormorants have been modified and are back to operational status.

The committee had the opportunity to meet with different private helicopter SAR providers both in Canada and in other countries. The committee also held discussions with SAR authorities in the countries that have contracts with such commercial operators. They enumerated the following advantages of public–private partnerships for the government:

- the short time on delivery of a contract helicopter compared to the delay on delivery of a purchased military aircraft;
- the flexibility a private contractor has to recruit experienced crew and to pay a market rate for the job compared with the difficulty of the military to train and retain pilots and maintenance personnel;
- the fact that there is no front-end cost to the contract compared with the heavy initial capital commitment required by the purchase option;
- there are no additional capital costs to the government in developing a permanent SAR helicopter base since such costs are born by the contractor within the contract fee; and
- should a contractor lose a helicopter, the company would be obliged (by contract) to replace it promptly at no additional cost to the government (if a military aircraft was lost, the government would have to meet the cost of replacement).

One major caveat was noted, however, that a private SAR helicopter company could seek to recruit its expertise directly from the CAF, which is currently having trouble in recruiting and retaining staff. It was stressed that a private company would need to become self-sustaining and generate its own workforce. It was also indicated that the private operator could have mixed crews with the CAF who could fly its helicopters. Military and civilian SAR personnel could also train together on a regular basis. Perhaps more importantly, the civilian operator would remain under the command and control of the CAF. The suggestion of establishing a public-private partnership as a pilot project was discussed throughout the committee’s public hearings and fact-finding missions, and was seen as a possible way of evaluating the benefit and cost of such a proposal.

In the committee's view, it is reasonable to require an improved SAR service for Canada. The committee believes that private helicopter companies could fill some gaps in SAR coverage, most particularly in the Canadian Arctic and in Newfoundland and Labrador. The committee also believes that a public-private partnership initiated as a pilot project would help assess its feasibility, cost and benefits. The concern over SAR response times in these regions – and the related need to improve aeronautical SAR capabilities and coverage – is not a new topic and should be addressed now. Committee members consider public-private partnerships to be sound policy, as well as a practical and an economically sound solution in the short- and medium-terms. Therefore:

- 5. The committee recommends that, as a pilot project, the Department of National Defence authorize a civilian helicopter operator to provide aeronautical search and rescue coverage in the Canadian Arctic and in Newfoundland and Labrador. The assessment of the pilot project, including its costs and benefits, should be made public.**

## **2.5 Working Together**

While conversing with local SAR volunteers in Canada's Arctic, it was clear to committee members that volunteer organizations, like CASARA, are invaluable to SAR efforts. However, although the JRCC can task volunteer organizations and their assets, these volunteer organizations do not seem to clearly understand their roles and responsibilities within the greater SAR model and how they complement the CCG's assets and personnel. For example, what is a volunteer organization's role once CCG assets and personnel are deployed or arrive on scene?

The committee heard that this confusion was exacerbated after 2016 by the discontinuance of the National Arctic Search and Rescue Roundtable meetings. Benefits of these meetings included, but were not limited to: direct communication between JRCC staff, volunteer organizations and other partners; optimizing the use of regional resources; and discussions about common challenges and how to overcome them. In the committee's opinion, roundtables can also help break down silos between partners and help them understand what each partner contributes and learn how to best work together when the need arises. Therefore:

- 6. The committee recommends that the National Arctic Search and Rescue Roundtable be reinstated as soon as possible and that similar roundtables be created in other search and rescue regions to help address regional and local issues.**



## 3: VOLUNTARY SEARCH AND RESCUE ORGANIZATIONS

*I can assure you that the volunteers have a significant impact on the SAR system in this country (...). They have a significant impact on the outcomes of search and rescue in Canada.*

[Randy Strandt, National Chair, Canadian Coast Guard Auxiliary (5:19)]

### 3.1 What is the Canadian Coast Guard Auxiliary?

The Canadian Coast Guard Auxiliary (CCGA or Auxiliary) is a private not-for-profit organization and a federally registered charity that was created in 1978 to augment maritime SAR coverage and capability, and to promote safety on the water. Its membership includes over 4,200 volunteers who operate some 1,100 vessels throughout the country. Like CCG SAR personnel, volunteers have a 30-minute reaction time and are on call 24/7/365. The CCGA has lifeboat units that are located strategically between CCG stations; they often cover areas where marine traffic is dense and the risk of incident is high. Their presence helps ensure that there is suitable coverage in some remote regions, more particularly in areas where the CCG has difficulty providing its own resources.

The CCGA is currently organized into five regional organizations – Newfoundland and Labrador, Maritimes, Quebec, Central and Arctic, and Pacific – and one national umbrella organization. Each regional auxiliary is a unique, incorporated entity that delivers maritime SAR to meet national objectives within its region. Table 3.1 provides statistics for each region of the CCGA, including vessels, members, and taskings.

**Table 3.1 – Canadian Coast Guard Auxiliary Statistics, by Region, 2016**

Region	Vessels	Members	Taskings
Pacific	57	1,130	796
Central and Arctic	100	923	318
Quebec	97	665	584
Maritimes	467	794	167
Newfoundland and Labrador	337	705	101
<b>Total</b>	<b>1,058</b>	<b>4,217</b>	<b>1,196</b>

Source: Table using data from the Canadian Coast Guard Auxiliary, [CCGA Statistics \(Operations\), Summary 1979–2016](#) [accessed 1 June 2018].

The CCGA in Newfoundland and Labrador (CCGA–NL) serves the whole province, while the CCGA in the Maritimes (CCGA–M) serves New Brunswick, Nova Scotia, Prince Edward Island, and the Magdalen Islands. The CCGA–NL and the CCGA–M only receive federal funding and the vast majority of their volunteers are commercial fish harvesters who donate their time and vessels to assist in the provision of maritime SAR. The CCGA in Quebec (CCGA–Q) has units distributed along the navigable waterways of Quebec. A number of boats (17) belong to the CCGA–Q itself and are loaned to the local units, while the others are owned by pleasure boaters and commercial fish harvesters. In Nunavik (Northern Quebec), the CCGA–Q can count on 14 boats adapted to the climatic conditions, which are the property of local communities. In addition to federal funding, the CCGA–Q has entered into agreements with a number of municipalities that provide funding, free office space or free mooring. It also obtains funding from financial donations and legacy and benefits from vessel or equipment donations. The CCGA in the Central and Arctic Region (CCGA–CA) covers four provinces and two territories and its volunteer base includes a high proportion of pleasure boaters. Most of its funding comes from the federal government. It is interesting to note that, like the CCG in this region, the region covered by the CCGA–CA has recently been split into two to establish a new regional CCGA specific to the Arctic Region. As of May 2018, 14 Auxiliary units had been created in this region. Finally, in the Pacific Region, the Royal Canadian Marine Search and Rescue (RCM–SAR) operates community lifeboats. Its funding base is diversified and includes provincial government funding, fundraising and donations, in addition to the federal contribution. RCM–SAR volunteers conduct year-round operations, in contrast to volunteers in the other regions who operate more seasonally.

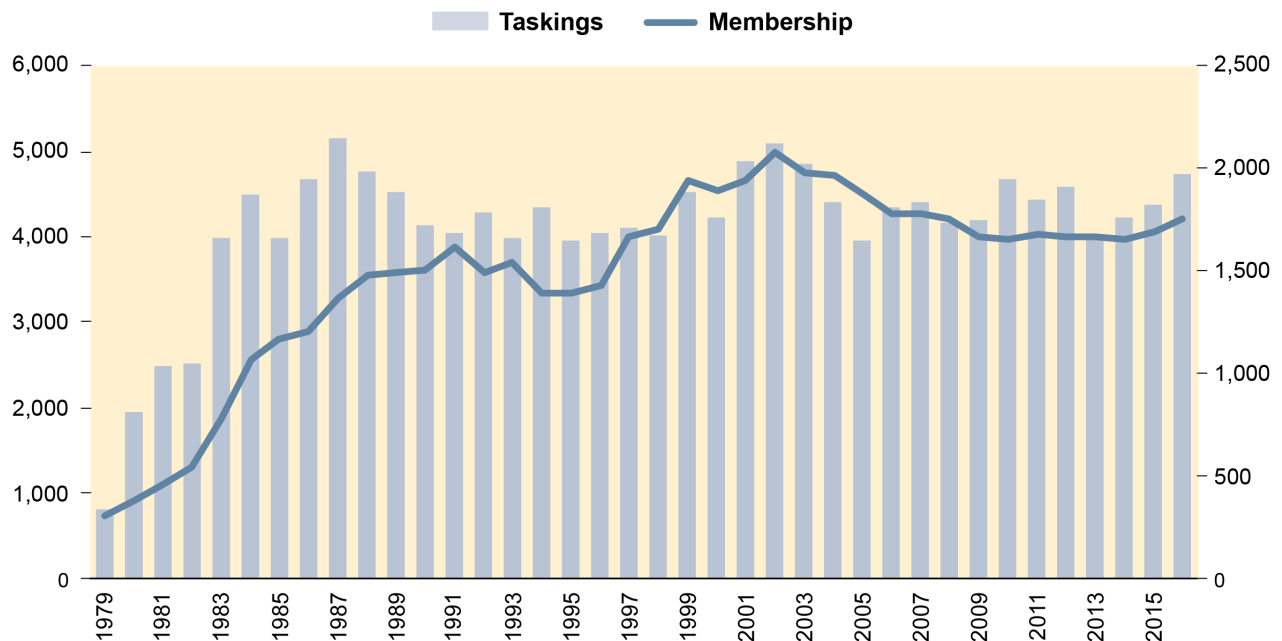
Once a JRCC/MRSC is notified that a vessel or person(s) is in danger at sea, the SAR coordinator begins to plan and manage the logistics of the rescue. This is when a member of the Auxiliary may be tasked if seen as the most effective means of responding to the incident. The committee learned that, on average, the CCGA participates in 25% of all maritime SAR missions annually<sup>21</sup> and is, at times, the sole responder. This translates into more than 200 lives saved each year. As such, the Auxiliary represents a critical partner that makes valuable contributions to maritime SAR.

Figure 3.2 shows the trend in CCGA membership in comparison with the evolution in maritime SAR taskings during the period of 1979 to 2016. These statistics suggest that membership has been declining since 2002 while the number of taskings has been more or less stable. On several occasions, witnesses raised concerns over the availability of CCGA members should there be similar decreases in the future.

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<sup>21</sup> In Newfoundland and Labrador, the Auxiliary responds to approximately 40% of the maritime SAR incidents.

**Figure 3.2 – Canadian Coast Guard Auxiliary, Taskings and Membership, 1979–2016**



Source: Figure using data from the Canadian Coast Guard Auxiliary, [Statistics \(Operations\), National 1979–2017](#) [accessed 1 June 2018].

The committee appreciates how adaptable the Auxiliary model is across the country, ranging from the owner/operator model in the CCGA–NL where over 90% of the membership is involved in the commercial fishing industry, to the RCM-SAR in the Pacific Region which operates community boats from more than 40 marine rescue stations.

However, additional regional flexibility is required. While visiting Kuujjuaq (Quebec), the committee heard that CCGA–Q rules do not allow its members to carry firearms in rescue boats. However, these may be required during SAR missions in northern areas to protect both the CCGA members and the people they are trying to rescue from wildlife such as polar bears, who are commonly seen in the area. The committee encourages CCGA regional organizations across Canada to adapt rules and procedures in regions, as required.

Committee members applaud the courage, dedication, and commitment of Auxiliary members and their contribution to maritime SAR. During the fact-finding missions across the country, the committee learned that many Canadians are not aware of the substantial volunteer component of maritime SAR, and that even fewer are aware of the investment – both in terms of time and money – that this commitment demands of Auxiliary members. In 2018, the CCGA celebrated 40 years of dedication to maritime SAR in Canada. Given the key role played by the Auxiliary, the committee strongly believes that supporting its volunteers must be a priority.

## 3.2 Funding and Training of the Auxiliary

*The government should examine the model for the Royal National Lifeboat Institution [RNLI] (...) in the UK that has been operational for over 100 years. (...) Funding of the RNLI is a combination of public donation, legacy bequeathal, and through result of merchandizing and sales along with government investment. There may be opportunity to study the funding mechanisms and marketing used by the RNLI as an option to assist with Auxiliary funding to expand interest and sustain operations.<sup>22</sup>*

The CCG funds the CCGA through five regional contribution agreements, totalling approximately \$5.5 million annually; funding is provided under the Canadian Coast Guard Auxiliary Contribution Program. This contribution permits the CCGA to cover operational and administrative costs, training, and insurance. Table 3.3 presents data on the federal contribution received by each CCGA region between 2012–2013 and 2016–2017. As can be seen, since 2015–2016, the CCGA received an additional \$500,000 per year; the purpose of this funding is to expand membership in 20 coastal communities in Nunavik and Nunavut.<sup>23</sup>

**Table 3.3 – Federal Contribution to the Canadian Coast Guard Auxiliary by Region**

Region	2012–2013	2013–2014	2014–2015	2015–2016	2016–2017
Pacific	1,117,000	1,311,800	1,312,600	1,324,149	1,316,600
Central and Arctic	715,000	909,800	957,600	1,204,474	1,204,472
Quebec	728,000	922,800	884,600	1,138,964	1,133,986
Maritimes	730,000	924,600	924,600	919,475	919,471
Newfoundland and Labrador	757,000	951,800	941,600	946,474	946,471
National Office <sup>a</sup>	1,043,000	–	–	–	–
<b>Total</b>	<b>5,090,000</b>	<b>5,020,800</b>	<b>5,021,000</b>	<b>5,533,536</b>	<b>5,521,000</b>

Note: a. As of 2012–2013, the CCG no longer funds CCGA nationally. However, a CCGA national council is funded by the five CCGA regions.

Source: Table prepared using data from the Receiver General for Canada, [Public Accounts of Canada](#), “Transfer Payments,” Volume III, Section 6, various years.

<sup>22</sup> Captain Chris Hearn, Director, Centre for Marine Simulation, The Fisheries and Marine Institute of Memorial University of Newfoundland, [Brief to the Committee](#), 8 March 2017.

<sup>23</sup> DFO, “[Enhancing the Arctic Search and Rescue Capacity](#),” *Backgrounder*, 30 July 2015.

As previously noted, some regional CCGA organizations also receive, in addition to the federal contribution, some funding from their respective provincial governments, corporate sponsors, or individual donations. However, the committee was told that this funding mechanism is problematic for a number of reasons, including:

- CCG funding is static and does not take inflation into account and does not reflect rising costs of fuel and insurance, for example. As a result of static federal funding, regional CCGA organizations have reduced reimbursement rates for SAR missions and training. They have also employed mitigation measures, including: reducing the number of centrally advanced first aid courses; reducing member support and development activities; diminishing support to local special events and SAR prevention and awareness; and no longer paying for phone/pager costs.
- CCG funding is insufficient and simply does not cover all the costs. While some regional CCGA organizations have been able to perform fundraising activities to meet their SAR mandates, the money raised is insufficient. Even though the Auxiliary in some regions also receives provincial government funding, this source of funding is variable and not guaranteed from year to year.
- The current funding model is vulnerable to program changes beyond the control of CCGA regional organizations.
- Funding is not in line with competency standards. In 2017, the CCGA adopted new national competency standards that focus on SAR operational requirements.<sup>24</sup> These standards relate to fitness, certification, and training and must be met or exceeded by each CCGA regional organization; they were approved by the CCG. CCGA representatives expressed that current federal funding is not sufficient to ensure that Auxiliary members maintain training in accordance with the national competency standards.

During the study, the committee learned that the CCGA generates substantial savings to the federal government. More precisely, it has been estimated<sup>25</sup> that every dollar invested by the CCG in the CCGA results in the cost avoidance of approximately \$43. Without the support of the CCGA, the CCG would need to spend \$337 million to purchase a similar fleet of vessels and an additional \$200 to \$300 million annually in salaries and benefits. In the committee's view, maritime SAR could not function efficiently in Canada without the important work carried out by volunteers. The CCGA provides value for money, as well as a highly effective service, to the CCG. Committee members believe that an adequate level of funding must be provided to cover operational expenses and to ensure continued participation in training. Training develops and keeps SAR skills up to date, enables volunteers to work safely, and nurtures the team spirit that is so important to SAR operations. Therefore:

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<sup>24</sup> Canadian Coast Guard Auxiliary, *2017 National Competency Standards*, 2017.

<sup>25</sup> Evaluation Directorate, Fisheries and Oceans Canada, [Canadian Coast Guard Search and Rescue and Canadian Coast Guard Auxiliary Evaluation Report](#), Final Report, February 2012.

**7. The committee recommends that the Canadian Coast Guard increase the Canadian Coast Guard Auxiliary’s funding in order to, at a minimum, offset higher operational expenses, and to ensure that Auxiliary members maintain training in accordance with the national competency standards.**

During hearings in St. John’s (Newfoundland and Labrador), the committee heard about the Search and Rescue New Initiative Fund (SAR NIF) – a federal contribution program managed by Public Safety Canada that aims to enhance SAR prevention and response in all jurisdictions across the country. It provides annual funding for new projects or initiatives undertaken by SAR stakeholders that will improve ground, aeronautical, and maritime SAR in Canada. The CCGA may obtain some funding to purchase equipment that may be needed during maritime SAR missions, but funding is simply insufficient to obtain all the equipment that is needed for all its members. CCGA–NL members told the committee that they do not have sufficient funding to supply their vessels with SAR equipment. They provided the following list of equipment that could be carried onboard their vessels to improve SAR effectiveness and response: de-watering diesel pump, re-boarding device (Jacob’s ladder), self-focusing waterproof binoculars, SAR transponder, automated external defibrillator, first aid kit, tow rope, and buoyant rescue bag.

The committee recognizes that regional CCGA organizations have different capacities and needs. For example, it heard that the CCGA–NL needs more SAR equipment, while Auxiliary members in Nunavut need lifeboats. Moreover, several Auxiliary units need money to maintain or repair their vessels. It is believed that a fund – similar to SAR NIF – could be helpful in retaining maritime SAR volunteers. Therefore:

**8. The committee recommends that the Canadian Coast Guard establish a Maritime Search and Rescue Fund to support the purchase of equipment and services needed by regional Canadian Coast Guard Auxiliary organizations.**

During international fact-finding missions, the committee found that maritime SAR volunteer organizations in other countries are more financially self-sufficient than in Canada; they rely to a greater extent on corporate sponsors and fundraising activities: For example:

- In the United Kingdom, the committee met representatives from the Royal National Lifeboat Institution (RNLI) at their Selsey station. This volunteer organization relies on private support. In fact, very little funding is provided by government. The income of the RNLI reached £192 million in 2016. Legacies accounted for 68% of their income, while donations amounted to 27%. In 2015, the RNLI received an important legacy (in fact their largest-ever legacy of £8.5 million) which allowed them to purchase a few very large SAR vessels. A number of stations have full-time staff. The Selsey station operates a small shop where it sells souvenirs; all profits go to rescue operations. All SAR volunteers who give their time to the RNLI are equipped with an Emergency Position Indicating Radio Beacon or EPIRB and, if it is used and the mission is successful, the company will replace it for free.



- The RNLI also operates in Ireland where it only receives a very small sum from government; the organization depends in large part on donations for its income.
- In Norway, the committee was told that the most important maritime SAR assets are volunteers from the Norwegian Society for Sea Rescue (NSSR). In 2015, they handled 55% of all maritime SAR incidents. The organization is well funded through membership and fundraising activities. Only 15% of its funding is provided by government. NSSR representatives explained that, in the past, fishers held bazaars to raise funds, but today it is totally different. Now, Norway’s top sports stars promote its activities; the shipping industry has donated a considerable number of its ships and vital equipment; and ship owners and the maritime industry support the NSSR. Some NSSR vessels carry the names of the Norwegian ship owners who donated them. Pleasure craft owners can sign up for a “total membership,” which includes a service and assistance package. The NSSR’s official mascot is “Elias the Little Rescue Boat,” who is the main character of an animated series on national television, books and merchandise. Elias is used by local chapters of the Society to teach children about safety at sea.
- In Denmark, the Danish Sea Rescue Society is funded through membership fees, sponsors, private funds, and public donations.

The committee believes that lessons can be learned from the success of the maritime SAR volunteer organizations in the United Kingdom, Ireland, Norway, and Denmark in raising funds from private sources, and the committee strongly encourages CCGA members, with support from the CCG, to examine alternative funding approaches. The committee is aware, however, that regional CCGA organizations have different capacities and fundraising cultures. Therefore:

**9. The committee recommends that the Canadian Coast Guard assist regional Canadian Coast Guard Auxiliary organizations to diversify their funding sources.**

### 3.3 A Canadian Coast Guard Auxiliary for the Arctic Region

*(...) search and rescue in the Arctic has always been and will remain best left to those who understand the land and the communities they live in. Their traditional knowledge combined with modern technology enables them to overcome most obstacles. [Ed Zebedee, Director of Protection Services, Department of Community and Government Services, Government of Nunavut (32:8)]*

The Canadian Arctic is the largest maritime space in Canada and the most difficult place to conduct SAR operations. The vast majority of maritime SAR incidents in this area have been, and continue to be, during traditional hunting, fishing, and inter-community travel. Being able to safely hunt, fish, and travel across the water, ice, snow, and land is vital to the health, economic well-being, and cultural identity of those who reside there. In addition, marine traffic in Canada's Arctic more than doubled between 1974 and 2015, and some parts of the Arctic could see doubling of current traffic levels by 2020. Air traffic in the region is also growing. Accordingly, the possibility of maritime SAR incidents ranging from small to large-scale emergencies are expected to increase alongside this development.

At present, due to the CCG's and the CAF's inadequate SAR capacity in the region, SAR response is largely dependent on volunteers, with high rates of burnout. Many of the volunteers wear many hats, being an Auxiliary, a Canadian Ranger, and a volunteer firefighter. These volunteers also spend considerable time on the land following a traditional hunting and fishing lifestyle to support their families. The committee was told repeatedly that the volunteer base for SAR in the region must be expanded, with better support, training, and equipment. As previously noted, since 2015-2016, the CCGA has been receiving an additional \$500,000 annually to expand membership in the Canadian Arctic, and a new CCGA chapter has been established in the Arctic Region. However, this funding is only provided for five years and is only available to 20 communities (with only 14 Auxiliary units created to date), even though there are 50 coastal communities in the region. Perhaps more importantly, the committee was told that the Auxiliary is the first point of contact in a community in the formal chain of command for the JRCC in the event of a maritime incident, if such auxiliary units exist.

Although the committee acknowledges that the CCG has bolstered maritime SAR capacity in the Canadian Arctic by establishing an IRB station in Rankin Inlet (Nunavut), which will provide seasonal SAR capacity in that region, this remains the first and only IRB station in Canada's Arctic. There is a need to support and expand the number of maritime SAR volunteers in the region while the CCG and the CAF are taking steps to further augment their own SAR assets. Therefore:

**10. The committee recommends that the Canadian Coast Guard establish additional Canadian Coast Guard Auxiliary units in the Arctic Region, with funding dedicated to recruitment, operations, equipment, training, and where appropriate, vessels.**

While visiting Kuujjuaq (Quebec), committee members heard that the model used to recruit CCGA members in the rest of the province is not effective in the Nunavik region. In part because communications between communities and communications between CCGA units and CCGA-Q are often cut-off due to bad weather and poor communication networks. As a result, members recruited in remote communities are often not provided timely training or any follow-up communications, leading them to lose interest. The committee is concerned by this possible loss of local volunteers and encourages the CCGA-Q to revise its recruitment process for the Nunavik region.



Senator Gold on the water with dedicated Canadian Coast Guard Auxiliary members during their fact-finding mission in Kuujjuaq, Quebec.

### 3.4 A Small and Unique Voluntary Search and Rescue Organization

*(...) I think our role fills a niche that is valuable to the Coast Guard, in that we can be the eyes on the water, not just on call outs when somebody is in extremis but when there are large activities occurring. [Brian Cook, Vice-President, Canadian Lifeboat Institution (26:9)]*

During the study, the committee learned about the work of the Canadian Lifeboat Institution (CLI or the Institution). CLI is a small, federally registered charity comprised entirely of volunteers and founded in British Columbia in 1981 as a SAR organization dedicated to promoting marine safety and assisting mariners in distress. Its volunteer base includes some 30 crew members – coxswains, engineers, and deck crew – who have specific SAR skills and can operate its vessels, as well as “society members” who may help with fundraising, finance, maintenance, and public relations. The Institution operates two all-weather rescue vessels, primarily in the Lower Fraser River and the southern Strait of Georgia:

- The *Fraser Lifeboat* is owned by the Institution; it was purchased in 2013 from the United Kingdom RNLI which had been operating it since 1982. The vessel was purchased for \$64,000 with the help of a donor contribution. It is moored in the fishing village of Steveston. The captain of the vessel, Brian Cook, is a retired Royal Canadian Naval Officer. In March 2017, the *Fraser Lifeboat* went through a series of electronic upgrades.
- The *Delta Lifeboat* was built in 1944 and was used by the U.S. Navy. It was purchased by John and Mary Horton in 1988 and brought into Canada where it was modernized to maritime SAR standards. Since then, the Hortons have leased their boat to CLI. Mr. Horton, the captain of the vessel, is also a retired Officer of the Royal Canadian Navy. The *Delta Lifeboat* is anchored in Ladner and also underwent major repair and refit activities in 2017.

CLI's structure differs from that of the RCM–SAR and the other four regional voluntary organizations that make up the CCGA in two important ways. First, its funding and operational model follows that of the RNLI (i.e., the CLI is funded by corporate and personal donations without any direct federal government support). Second, the Institution is not an on-call organization available 7/24/365 to be tasked for a SAR mission by the JRCC–Victoria. Rather, it is event-driven; its rescue vessels go on the water ahead of fishery openings or major sailing races. For example, it provides assistance by warning fishing vessels to clear their nets or clears a course as an escort. It also conducts patrols at sea and provides volunteer boating safety checks for pleasure boaters.

CLI's rescue vessels are on the water when there might be no CCG or RCM–SAR vessels nearby. Their presence on the water helps prevent accidents from occurring and, should an incident happen, they are close by and can provide assistance immediately. This may include escorting a vessel during thick fog, pumping out a flooded vessel, towing a vessel, and providing emergency first aid. Since its inception, CLI has participated in more than 4,000 maritime incidents. CLI has also contributed to the saving of lives at sea and the prevention of injuries, while working in close cooperation with other maritime SAR organizations.

This small and unique organization acts as the eyes and ears of the CCG, being present at events and seeing what is happening. In fact, CLI boats always inform the MCTS when they are out patrolling or training. Moreover, the lifeboats often encounter developing situations before the JRCC–Victoria hears about them; they inform the MCTS and proceed to the distress incident. The committee believes that the CCG and the RCM–SAR strongly need and benefit from this additional support. The presence and effort of all these volunteers – and all the donors who make CLI's operations possible – cannot be overstated. Without them, Canada's waters would be much less safe. Sadly, the committee learned that this very helpful volunteer organization faces many unexpected increases in its operational costs that make it difficult to operate as effectively as it could. These cost increases (listed below) make little sense, given that CLI is conducting an activity of great benefit to the public.

First, CLI was asked by the Canada Border Services Agency to pay a 25% import duty following the purchase of the *Fraser Lifeboat*. A large amount of the money that was initially raised to purchase, refit, and upgrade the lifeboat had to be diverted to pay this duty. Although it paid the duty in full, the Institution has made the case that it did not purchase the boat for pleasure – it is a volunteer

organization raising its own funds to promote safety at sea and provide assistance to mariners – and asked for a discretionary decision, based on fairness. The committee supports CLI’s request for a revised import duty which, in its view, should be revoked or, at the very least, reduced to the lowest amount possible. It seems both unreasonable and excessive to impose such an import duty to a self-financing, private charitable organization whose free-of-charge services directly supplement and facilitate the federal maritime SAR program.

Second, CLI must pay an annual charge for mooring the *Fraser Lifeboat* in Steveston, whereas the mooring costs have always been waived for the *Delta Lifeboat* anchored in Ladner. Since the Ladner and Steveston harbours are both small craft harbours operated by DFO, CLI intends to ask the Steveston Harbour Board to consider waiving the fee. The committee supports this endeavour.

Third, CLI is no longer offered a low-cost moorage and free barrack accommodations at the HMCS Quadra, a sea cadet summer camp attached to 19 Wing Comox. Since 2014, it is required to pay commercial rates in the surrounding community. As CLI cannot pay these additional costs, it no longer provides a safety escort for the roe herring fishery in the region. It is the committee’s hope that 19 Wing Comox will reverse its decision and give CLI access to low cost moorage and free barrack accommodations. The Institution ensures the safe coexistence of the roe herring fishery and other marine traffic (e.g., tugs, barges, ferries) and lessens the need for maritime assistance by the CCG and the RCM–SAR.

Finally, the committee also learned that CLI provides training to its volunteers to a standard acceptable to the CCG. Moreover, the CCG includes these volunteers in many SAR training exercises. It was explained that this training allows volunteers to “gain valuable experience in interoperability”. It was stressed that more frequent training exercises are needed for CLI volunteers to remain useful to the CCG. The committee strongly encourages the CCG to invite CLI volunteers to joint training and exercises.

## 4: FISHING VESSEL AND PLEASURE CRAFT SAFETY

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*(...) changes in the regulations might reduce the number of accidents and fatalities at sea and, as a consequence, reduce the demands on search and rescue resources. [Kathleen Fox, Chair, Transportation Safety Board of Canada (25:10)]*

As noted in Section 1, fishing vessels account for the majority of maritime SAR incidents in the Halifax SRR, whereas a higher proportion of pleasure boaters are involved in SAR incidents in the Trenton and Victoria SRRs. Clearly, there is a need to improve safety at sea for those involved in commercial and recreational activities. This will help reduce the demand for maritime SAR.

### 4.1 Fish Harvesting – An At-Risk Occupation

*[The fishing industry] is often known for its history of tragedy, loss of life, acceptance of risk and resistance to change. [Stewart Franck, Executive Director, Fisheries Safety Association of Nova Scotia (7:100)]*

During the study, the committee learned that the commercial fishing industry has the highest fatality rate among all other employment sectors in Canada – an average of one death every month. The committee was told that the number of fatalities has remained relatively constant, even though the number of licence holders and active fishing vessels has declined over time. Several factors were said to contribute to this high fatality rate, including: an unpredictable and often hostile marine environment, unstable work platforms, unsafe operating practices, a lack of safety and survival equipment, operations farther from shore, fatigue due to intense and prolonged working activity, and human error.

The recurring finding of an average of 12 deaths per year in the commercial fishing industry is of great concern to the committee. The persistence of this number indicates that something must change. Along with witnesses, members of the committee believe that real and lasting improvements in fishing safety can be realized through changes to fishing vessel regulations, commercial fisheries management, and prevention.



### 4.1.1 Fishing Vessel Regulations

*When the regulations are developed, they have to be acceptable, in terms of technical feasibility, but also in terms of the relative cost for an industry. [Donald Roussel, Senior Advisor to the Assistant Deputy Minister, Safety and Security, Transport Canada (27:27)]*

Transport Canada (TC) is responsible, under the *Canada Shipping Act, 2001*,<sup>26</sup> for the regulations and enforcement related to the safety of all vessels and marine personnel. In July 2017, TC issued the *Fishing Vessel Safety Regulations*<sup>27</sup> which require, among other things, that commercial fishing vessels of a certain size and length of voyage (distance from shore) carry EPIRBs on board. Once activated, an EPIRB transmits an emergency signal to alert SAR authorities that a ship is in distress. It does this by transmitting a coded message on the 406 MHz distress frequency via satellite and earth stations to the nearest JRCC. Perhaps more importantly, EPIRBs often have a built-in global positioning system (GPS) which enables SAR authorities to accurately locate the ship in distress. This feature, the committee was told, “takes the search out of the search and rescue,” and thus greatly reduces response times.

The committee often heard that these EPIRB regulations do not apply to small fishing vessels which comprise the vast majority of the commercial fishing fleet in Canada. It was argued that not carrying a EPIRB on board small fishing vessels endangers the safety of crew members and results in loss of life. Accordingly, several witnesses recommended that all fishing vessels be required to carry EPIRBs on board, regardless of size.

The committee supports the mandatory use of EPIRBs on board all fishing vessels, small and large. This recommendation was also made by the Transportation Safety Board of Canada (TSB) in 2000. The committee acknowledges, however, that regulations can be costly to the industry. For this reason, the committee enquired about the cost of EPIRBs and obtained different estimates, ranging from about \$250 to \$1,000 per beacon, depending on the device’s features. In the committee’s view, this cost appears reasonable when considering the cost of lives being lost at sea and the cost of the federal maritime SAR program. However, committee members are also mindful of the potential financial impact the additional cost may have on some operators in certain fishing fleets. Therefore:

<sup>26</sup> [Canada Shipping Act, 2001](#), S.C. 2001, c. 26.

<sup>27</sup> [Fishing Vessel Safety Regulations](#), C.R.C., c. 1486.

- 11. The committee recommends that Transport Canada amend its regulations to extend the mandatory use of emergency position-indicating radio beacons (or EPIRBs) to vessels in all fishing fleets. A timeline of two years should be given to the fishing industry to achieve mandatory EPIRB carriage.**

The *Fishing Vessel Safety Regulations* also contain provisions that relate to fishing vessel stability. These regulations apply to new fishing vessels of a certain size and require that a mandatory stability assessment be undertaken when a small fishing vessel is modified (although it is left to the vessel owner to determine if the modification/modifications made to the vessel will affect its stability). Over the years, the TSB has investigated several fishing vessel accidents and found that modifications to existing fishing vessels and overloading were often identified as contributing factors to capsizing events. It is the view of the TSB that TC should amend its regulations to ensure that all commercial fishing vessels, large and small, have their stability assessed when they are modified.

The committee understands the importance of assessing the stability of new vessels and of undertaking vessel stability assessments when existing vessels are modified. Again, committee members are cognizant of the cost to be borne by the industry for complying with vessel stability regulatory requirements. The committee was told that a stability assessment is very costly. This cost per ship may be acceptable for large vessels, but for the operator of a small fishing boat, this cost could be enormous. For this reason, committee members strongly encourage TC to pursue dialogue with the small vessel segment of the commercial fishing industry to come up with an acceptable proposal that will, over time, cover the vast majority of all these vessels. In the meantime, however:

- 12. The committee recommends that Transport Canada develop and disseminate user-friendly information regarding vessel stability to reduce unsafe practices in the commercial fishing industry.**

#### **4.1.2 Commercial Fisheries Management**

It was explained to the committee that the commercial fishing industry in Canada is a very regional activity; even within a region, the industry can be diverse in terms of the nature, structure, and type of fisheries. The committee also heard that there is an in-shore fishery, which occurs closer to shore, a mid-shore fishery, which occurs up to twenty miles or so offshore, and an offshore or deep-sea fishery, which extends to the end of the exclusive economic zone, the 200-mile limit. These fisheries have different vessel classes and lengths; some fisheries are competitive while others are quota-based.

DFO is the department responsible for developing the measures governing fisheries harvesting activities. These fisheries management measures – which include regulations, licence conditions, and policies – set out who can fish, where, when and how they can fish, and the amount of fish they are permitted to harvest. Specific management measures are developed and enforced for each fish species to be harvested in every region. The committee was told that these measures are developed

in consultation with the commercial fishing industry and that they take fish harvester safety into account. Nonetheless, TSB representatives told the committee that some fisheries management measures have the potential to affect safety at sea by indirectly encouraging unsafe behaviour or by leading to the reduction of safety features on fishing vessels. Examples provided by the TSB included: the opening of fishing seasons, especially in adverse weather conditions; weekly quotas with no specified end-of-season dates; and the requirement that harvesters empty their traps within 48 hours of setting them.

The committee was told that DFO's regulations may provide exceptions. For example, extension to the fishing season may be permitted under exceptional circumstances beyond the harvesters' control, like inclement weather. However, this information is not necessarily included in the licence conditions for the fishery and harvesters may be unaware of this exception because the department does not communicate it well enough. Another example relates to DFO's "buddy-up" authorization that allows two licence holders to fish together on a single (larger or safer) vessel. This policy improves safety and helps reduce expenses, but it is not permitted in all fisheries.

The committee understands that DFO's primary considerations when regulating fisheries – competitive, total allowable catch, or individual quota – are the preservation of fish stocks and the economic well-being of the industry. Yet, some of the rules and regulations developed by the department – even though in consultation with fish harvesters – have, in the past, led to maritime injuries and fatalities and some continue to create safety risks. The committee believes it is essential for DFO to widely communicate exceptions to the regulations or changes in policies that enhance safety. Therefore:

**13. The committee recommends that Fisheries and Oceans Canada ensure that its regulations and practices give priority to fish harvester safety.**

### 4.1.3 Prevention

*There would be no virtue talking about search and rescue, SAR, activities without linking them to prevention. After all, the most effective SAR activities are those that never happen.*  
[Jean Lanteigne, President, Canadian Council of Professional Fish Harvesters (7:96)]

The committee often heard that prevention can have a profound impact on the frequency and severity of SAR incidents involving fishing vessels, and can mean the difference between life and death. Committee members were told that the fishing industry has, over the past 15 years, established several regional health and safety organizations for and run by fish harvesters, such as the Fisheries Safety Association of Nova Scotia, the Newfoundland and Labrador Professional Fish Harvesters Certification Board, Fish Safe BC, and the Canadian Council of Professional Fish Harvesters, to name a few. These organizations have helped increase safety awareness across the industry.

For example, the committee heard about the *Safest Catch Program*, a program developed and run by Fish Safe BC that is built on three pillars: safety procedures, safety orientation, and emergency drills. The program assists fish harvesters in the province in assessing potential risks and minimizing them, to maintain safety equipment on board, and to develop an emergency plan and then practice it in the form of various drills: fire, man over board, flooding, calling for help, and ship abandonment. Given the success of the program, DFO provided funding to Fish Safe BC to offer this training to all Indigenous communities throughout British Columbia, as well as to Indigenous commercial fish harvesters in Nova Scotia, Prince Edward Island, New Brunswick, and Quebec. Similarly, TC provided funding to bring the *Safest Catch Program* to other commercial fish harvesters in Nova Scotia, Prince Edward Island, and New Brunswick.

In addition, the committee heard about the Standing Committee on Fishing Vessel Safety for the Quebec Region or SCFVSQR (le *Comité permanent sur la sécurité des bateaux de pêche du Québec*). The SCFVSQR was established in 2006 as a forum for discussion and information on issues related to the safety of fishing vessels. It hosts several activities: workshops, information sessions, conferences, discussion forums, and outreach. Its governing board includes representatives from TC, the CCG, DFO, the provincial workers' compensation board (la *Commission des normes, de l'équité, de la santé et de la sécurité du travail*), and various sectors of the fishing industry (e.g., lobster, crab, mid-shore, Indigenous, groundfish). Committee members were told that the work of the SCFVSQR has led to a notable and very positive change in the attitude of fish harvesters regarding safety. It was explained that this change has been generated by the synergy between all stakeholders. Given the success of the SCFVSQR, TC announced in February 2018 that similar standing committees would be created in all the other regions of the country. Moreover, a series of qualitative and quantitative measures will be tracked to assess performance and progress over time, including: reducing in the number of lives loss; reducing workplace accidents; reducing material losses; improving training for fish harvesters; harvesters' engagement in awareness programs; and peer support.



These examples are great success stories. The committee also heard about the Canadian Marine Advisory Council (CMAC). Established by TC, CMAC is the primary consultative body for marine matters. Participants include government representatives, industry stakeholders, and other individuals and parties that have a recognized interest in boating and shipping safety, recreational matters, navigation, marine pollution, marine security, SAR, and regulatory reform. Meetings generally take place twice a year, in the spring and fall, in Ottawa (Ontario). Fish harvesters' organizations across the country told the committee that the CMAC is highly valuable. They noted that this is the only pan-Canadian forum where information can be exchanged and the lessons learned can be shared amongst participants. Additionally, they pointed out that there is a tremendous amount of federal legislation, regulations, rules, and standards to be followed by the commercial fishing industry. In their view, the CMAC offers fish harvesters an important avenue to know all there is to know about safety, and that safety information is not always practical, easy to read, or easy to find. However, they stressed that TC recently reduced the frequency of the CMAC meetings, from two to one annually. Some even expressed the concern that these meetings may be totally phased-out. These witnesses recommended that TC reintroduce two national CMAC sessions per year.

TSB representatives told the committee that a Memorandum of Understanding (MOU) exists between DFO/CCG and TC that provides a framework for cooperation in promoting safety at sea of commercial fish harvesters.<sup>28</sup> The MOU commits the two departments to meet at least twice a year (before the CMAC) to develop safety goals for commercial fish harvesters. TSB representatives also insisted that a safer environment for fish harvesters can only be created through coordinated action by all stakeholders, and that “this is by no means an impossible task.”

To date, the CMAC remains the only national initiative that provides an opportunity to discuss emerging and ongoing safety at sea issues, to provide guidance on new and existing policies and regulations, to share knowledge about new approaches and best practices, and to engage and get feedback from all stakeholders. It is the view of the committee that the regulatory processes governing safety in the commercial fishing industry are complex and, despite the successes achieved to date, work still needs to be done to increase awareness of the risks inherent to fisheries. Therefore:

- 14. The committee recommends that, through the Canadian Marine Advisory Council, Transport Canada, Fisheries and Oceans Canada, and the Canadian Coast Guard work with fishery safety organizations and fish harvesters to develop a national action plan on safety in the commercial fishing industry. This action plan should be provided to the committee within three years of the tabling of this report in the Senate of Canada.**

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<sup>28</sup> [\*Memorandum of Understanding between Fisheries and Oceans Canada \(DFO\) and Transport Canada \(TC\) Regarding Safety at Sea of Commercial Fish Harvesters\*](#), March 2014.



## 4.2 Recreational Boating Safety

*Clearly an area where there is some room for improvement is prevention. There was a time that boating safety was within the Coast Guard. (...) It is with Transport Canada now (...) This is an area where we could provide a better service to Canadians if we had some more time and resources to work on prevention.*  
[Wade Spurrell, Assistant Commissioner, Canadian Coast Guard, Atlantic Region (7:33)]

During the study, the committee learned how maritime SAR incidents have various combinations of causes, severity, and vessel types. In particular, committee members were told that pleasure crafts have historically represented the largest, single-search object category in the Trenton and Victoria SRRs. The committee also heard that there is an increasing proportion of pleasure vessels involved in maritime SAR in the Halifax SRR. Witnesses noted that there is a large and increasing recreational boating population in Canada; new pleasure boaters, however, often lack experience. Currently, some 100 recreational boating fatalities occur on average annually in Canada. In this context, witnesses stressed the need to continually promote boating safety in all three SRRs with the view of reducing the demand for maritime SAR.

The responsibility for recreational boating safety rests with the federal government and, more particularly, with the Office of Boating Safety (OBS). The objective of the OBS is to make recreation on Canadian waterways safe, raise public awareness about safety, and encourage compliance with regulations. Established in 1995 within the CCG, the OBS used to attend boat shows and other events across Canada, and promote safety through national advertising campaigns. It also delivered dock-side courtesy checks and safety education directly to the boating public in partnership with the CCGA.

The committee learned that the OBS was transferred from the CCG to TC in 2003. As a result, the CCG no longer actively engages in SAR prevention and boating safety. According to witnesses, the transfer has led to a reduction in SAR prevention and boating safety. Members of the committee were told, for example, that the boating safety book is no longer available in print form. Furthermore, TC is not present at the boat show in Vancouver, the largest of its kind in Canada. More importantly, witnesses noted a reduction in the OBS budget over the years. They insisted that, without the OBS, there would be little information on or promotion of boating safety in Canada. In the past, the OBS was the single most important source of funding for boating safety promotion in Canada. Over time, however, a smaller budget for boating safety has limited the impact of the OBS on prevention.

Accordingly, witnesses have called on the federal government to return responsibility for the OBS to the CCG. In their view, the CCG is best suited to support recreational boating safety and to lead public outreach activities for boating safety awareness as part of its SAR functions, in collaboration with the CCGA. Within the CCG, the OBS can influence attitudes and behaviour in a manner that would ultimately reduce injuries, fatalities, and property damage caused by recreational boating accidents.



As previously mentioned, SAR is a last resort when safety and prevention measures fail. The fact that the responsibilities and authorities for prevention are within TC (which is not part of the federal SAR program) runs contrary to the logic that prevention should be at the forefront of an effective maritime SAR program. The committee concurs with witnesses that addressing the number of SAR incidents at sea involving pleasure crafts by increasing the priority of safety and prevention strategies within the CCG can lead to a reduction in the number of lives lost as well as the overall number of maritime distress calls. Therefore:

- 15. The committee recommends that Transport Canada transfer the responsibility of search and rescue prevention and recreational boating safety back to the Canadian Coast Guard along with the associated funding.**

### **4.3 Communications in Canada’s Arctic Region**

During its fact-finding mission in Iqaluit (Nunavut) and Kuujuaq (Quebec), Committee members discovered that communication is still an important challenge when conducting SAR operations in Canada’s Arctic. In fact, the CCG explained that gaps in communication exist in Arctic SAR, with dead spots over large tracts of land and ocean. Three radio frequencies are used in the Arctic: VHF (which is used by small vessels and communities) and MF and HF (which are used by larger vessels). Committee members also heard that ground and air SAR operators do not always use the same radios and therefore cannot easily communicate with each other during SAR operations. In short, the range and clarity of radio communications in Canada’s Arctic are concerning.

However, the committee discovered certain community-based initiatives that work to help increase communication capabilities in remote areas (e.g., the installation of repeaters). Members applaud these initiatives that are often funded by local hunting and trapping associations to help their members. However, communications in Canada’s Arctic are often still limited by line of sight, leaving the systems spotty in some areas and simply non-existent in other areas. Communications can also be impeded by poor weather conditions.

The committee believes that reliable radio communications are critical and can help reduce the severity of SAR incidents. For example, if someone was having engine trouble and vessels could communicate effectively, vessels in the vicinity could quickly come to the aid of the person in need. In addition, reliable communications would ensure that vessels and persons in need can communicate their distress call immediately, and be heard no matter their location, increasing the likelihood of the SAR operation’s success. The committee was told that in the Arctic “time is mission critical” and reliable communications save time. Therefore:

16. The committee recommends that the Government of Canada, through the Canadian Coast Guard, and in collaboration with Canadian Coast Guard Auxiliary units, local communities, and other partners, increase radio coverage in Canada's Arctic and in other remote communities.

## 5: MARITIME SEARCH AND RESCUE GOVERNANCE

*The Coast Guard needs its own statute and should be structured as a separate statutory service agency (...).*  
 [Christine Collins, National President, Union of Canadian Transportation Employees (9:40)]

### 5.1 Federal Role in Maritime Search and Rescue

The legal basis for the federal government’s jurisdiction over maritime SAR – and the responsibility of the DFO Minister in this regard – is well established (see Table 5.1). Article 91 of the *Constitution Act, 1867*<sup>29</sup> gives the federal government exclusive authority over navigation and shipping, as well as beacons, buoys, and lighthouses. Section 41 of the *Oceans Act*<sup>30</sup> enumerates the responsibilities of the DFO Minister in relation to coast guard services, including maritime SAR. Part 5 of the *Canada Shipping Act, 2001*<sup>31</sup> authorizes the DFO Minister to designate rescue coordinators to organize maritime SAR operations. The DFO ministerial authority for coast guard services, including the delivery of maritime SAR, has been vested in the CCG. In response, the CCG has adopted a mission statement and established specific objectives for its maritime SAR function (see Table 5.2).

**Table 5.1 – Legal Basis of the Maritime Search and Rescue Program in Canada**

Statute	Powers, Responsibilities and Obligations
<i>Constitution Act, 1867</i>	Article 91 gives the federal government exclusive authority over: <ul style="list-style-type: none"> <li>• navigation and shipping; and</li> <li>• beacons, buoys, lighthouses, and Sable Island.</li> </ul>
<i>Oceans Act</i>	Section 41 of the Act gives the DFO Minister responsibility for providing coast guard services, including: <ul style="list-style-type: none"> <li>• aids to navigation;</li> <li>• marine communications and traffic management services;</li> <li>• icebreaking and ice-management services;</li> <li>• channel maintenance;</li> <li>• marine search and rescue;</li> <li>• marine pollution response; and</li> <li>• support of other government departments, boards and agencies by providing ships, aircraft and other services.</li> </ul>

<sup>29</sup> [Constitution Act, 1867](#), 30 & 31 Victoria, c. 3 (U.K.).

<sup>30</sup> [Oceans Act](#), S.C. 1996, c. 31.

<sup>31</sup> [Canada Shipping Act, 2001](#), S.C. 2001, c. 26.

Statute	Powers, Responsibilities and Obligations
<i>Canada Shipping Act, 2001</i>	Part 5 of the Act gives the DFO Minister powers, responsibilities and obligations concerning: <ul style="list-style-type: none"> <li>• aids to navigation;</li> <li>• search and rescue, including the designation of rescue coordinators;</li> <li>• pollution response; and</li> <li>• vessel traffic services.</li> </ul>

Source: Table prepared based on information from the Canadian Coast Guard, [Canadian Coast Guard – Who We Are](#), 23 December 2015.

**Table 5.2 – Mission Statement and Objectives of the Canadian Coast Guard**

Mission Statement	Objectives
<b><i>To save and protect lives in the marine environment</i></b>	Save 100% of lives at risk
	Minimize loss of life, injury, property damage, and risk to the environment
	Reduce the number and severity of incidents
	Provide humanitarian aid and civil assistance where possible
	Support and involve the Canadian Coast Guard Auxiliary

Source: Canadian Coast Guard, *Canadian Coast Guard SAR Program – Western Region*, Brief to the committee, 28 February 2018, p. 2.

**5.2 The Canadian Coast Guard: A National Institution**

Over the years, the CCG has undergone significant organizational changes (see Table 5.3). In 1962, it was created as a departmental division under the Department of Transport; the need for a maritime SAR organization was already evident at that time. In 1995, responsibility for the CCG was moved from TC to DFO. The rationale was to achieve cost savings by amalgamating the two vessel fleets under a single department; the CCG therefore became the owner/operator of the federal government’s civilian fleet. In 2005, the CCG became a Special Operating Agency (SOA) within DFO to enhance its visibility as a national institution.

**Table 5.3 – History of the Canadian Coast Guard**

Year	History
1868	The Department of Marine and Fisheries is created with responsibility for all marine affairs, including the operation of government vessels and marine infrastructure (aids to navigation, lifesaving stations, canals and waterways, marine regulatory bodies, and shore infrastructure) with the exception of gunboats and other vessels of war.
1936	Responsibility for marine transportation is shifted to the Department of Transport.
1962	The Minister of Transport announces in the House of Commons that the fleet operated by the department will be known in the future as the Canadian Coast Guard. This national civilian marine service is established in response to growing demand for marine traffic services and maritime SAR.
1995	In order to achieve cost savings, responsibility for the Canadian Coast Guard is transferred to the Department of Fisheries and Oceans, merging the coast guard fleet with DFO patrol crafts and research vessels, thus creating one single federal civilian fleet.
2005	The Canadian Coast Guard becomes a Special Operating Agency within Fisheries and Oceans Canada.

Source: Table prepared based on information from the Canadian Coast Guard, [History of the Canadian Coast Guard](#), 10 February 2017.

It was explained to the committee that, as a SOA within DFO, the CCG has a clear mandate that is primarily concerned with service delivery. It has some management flexibility operationally and it does not require day-to-day involvement of the Minister. However, the CCG relies on the department for administrative services such as finance, human resources, and real property management. Moreover, it does not manage its own budget. In addition, the CCG Commissioner reports to DFO’s Deputy Minister, not directly to the Minister. The SOA status means that the CCG is not an autonomous organization. Establishing the CCG as a SOA did not require legislation. In fact, Committee members were told that the CCG as a specific entity is not even defined in the *Oceans Act* or the *Canada Shipping Act, 2001*. Moreover, the SOA status for the CCG did not increase its visibility with the Canadian public.

The committee learned that other countries have adopted different governance models for their civilian authority responsible for the coordination and provision of maritime SAR. For example, the Australian Maritime Safety Authority (AMSA) has enabling legislation; it is a crown corporation that is accountable to Parliament through the Minister of Infrastructure and Regional Development (who is also responsible for Transport). Similarly, Maritime New Zealand is a crown corporation governed by a Board of Directors appointed by the Minister of Transport. In the United Kingdom, the Maritime Coastguard Agency is an executive agency with more autonomy and responsibility for its own budget; it is also part of the Transport portfolio.

The committee heard concerns about the current governance of the CCG. It was explained that the transfer of the CCG from TC to DFO in 1995 led to the integration of two organizations with different structures and corporate cultures and generated significant challenges for the CCG. In addition, it was suggested that DFO considers and treats the CCG as one of its divisions and, under such a relationship, the CCG cannot realize its potential or the expectations set for it. Moreover, members of the committee were told that DFO does not fund the CCG adequately, and that this situation has hampered CCG's capability to deliver its services, including maritime SAR. For these reasons, a number of witnesses called for a change to the status of the CCG within DFO, from a SOA to a separate statutory agency (SSA). During fact-finding missions within Canada, there were also some discussions as to whether the separate CCG should report to the Minister of Transport instead of the DFO Minister. It was pointed out that a recent statutory review report recommended that the CCG be moved from DFO back to Transport Canada, a department that was said to be more closely aligned with its activities.<sup>32</sup> It was noted that a separate statute for the CCG along with a transfer to the TC portfolio would better align with its mandate and the approach taken by other jurisdictions, such as, for example, Australia, New Zealand, and the United Kingdom.

Committee members were told that establishing the CCG as a stand-alone organization or separate statutory agency would address the following shortcomings:

- **Accountability to the Minister:** as a SSA, the CCG commissioner would hold the position of a Deputy Minister and, as such, would report directly to the Minister. There would be no intermediary and direct discussions could take place about responsibilities, challenges, and requirements. There would no longer be competition with other departmental divisions over the allocation of resources.
- **Revenue collection:** Currently, the CCG collects fees for some of its services, but the revenue generated goes to DFO's budget. As a SSA, the CCG could charge a fee to the users of its services, including DFO, and the fees collected would remain in its budget. Accordingly, all coast guard fees would be used to support coast guard operations.
- **Long term capital planning:** As a SSA, the CCG would be given long-term sustainable capital funding. Currently, five-year capital plans and budgets are just not long enough, nor do they permit effective capital planning, for such an important and strategic national institution. It was suggested that the CCG have 20-year capital plans to ensure that long-term goals can be achieved. Long-term sustainable and predictable capital funding makes sense for capital intensive organizations such as the CCG.
- **Visibility:** Becoming a SSA would raise the profile of this important public institution.
- **Autonomy:** Operating at a distance from government with some degree of autonomy would give the CCG greater independence for policy development and strategic planning.
- **Flexibility:** The CCG would have more management flexibility, not only on operational grounds, but also for financial matters.

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<sup>32</sup> Government of Canada (2015), p. 231.



- Economies of scale: The efficiencies gained from the creation of a single, integrated government civilian fleet in 1995 would not only remain, they would also be improved.

According to witnesses, this new structure would benefit maritime SAR directly. They explained that an important element of SAR is management and monitoring. In their view, a SSA would provide the flexibility that the CCG needs to manage its affairs, as well as make it easier to identify and obtain resources required to respond to incidents or establish protocols for response. They further stressed that, with the opening of northern and Arctic marine commercial activities, this flexibility becomes even more imperative.

### 5.3 A New Status for the Canadian Coast Guard

*(...) maybe a solution is to bring the Coast Guard back into Transport Canada and take it out of Fisheries, because every time there's a budget issue, it always seems like it manifests itself in the Coast Guard in terms of the fleet, the equipment, training or personnel. [Captain Chris Hearn, Director, Centre for Marine Simulation, The Fisheries and Marine Institute, Memorial University (11:114)]*

Although there is currently a solid legislative framework for the federal maritime SAR program, and a clear mandate for the DFO Minister, the fact remains that the CCG as an entity is not explicitly recognized in the *Oceans Act* and the *Canada Shipping Act, 2001*. The committee therefore agrees that the CCG should be a stand-alone federal agency reporting directly to a responsible minister. The CCG would greatly benefit from moving beyond its current status as a SOA to becoming a stand-alone organization. This would give it more operational and financial independence and help it establish itself as a truly national institution and it would raise its visibility and public profile.

Canada is the country with the largest and most difficult coastline in the world and the CCG is at a critical juncture in its history. Canada has international maritime SAR obligations and the Canadian Arctic is rapidly opening to commercial maritime enterprise, including tourism and fishing. The CCG is the primary national institution responsible and obligated to meet these significant present and future challenges and it must be given the ability to do so. A new governance model and structure would allow the CCG to realize its full potential and the expectations set for it, including its responsibility for maritime SAR from coast to coast to coast. The committee also concurs with witnesses that suggested that a capital-intensive organization like the CCG needs to operate with a long-term capital planning horizon. Finally, the committee also agrees that the CCG's activities are more closely related to TC, which is responsible for marine traffic and maritime security. Therefore:

**17a) The committee recommends that the Canadian Coast Guard be established as a separate statutory agency reporting to the Minister of Transport.**

**17b) The committee also recommends that capital planning be extended to 20 years to reflect the need for the fleet's renewal, upgrade, and modernization.**

## APPENDIX A – WITNESS LIST

<b>May 10, 2016</b>	
Canadian Coast Guard	<ul style="list-style-type: none"> <li>• Clay Evans, Superintendent, Marine Search and Rescue, Pacific Region</li> <li>• Gregory Lick, Director General, Operations</li> <li>• Neil O'Rourke, Senior Director, Policy</li> </ul>
<b>May 17, 2016</b>	
Canadian Coast Guard	<ul style="list-style-type: none"> <li>• Jeffery Hutchinson, Deputy Commissioner, Strategy and Shipbuilding</li> <li>• Mario Pelletier, Deputy Commissioner, Operations</li> <li>• Jody Thomas, Commissioner</li> </ul>
<b>May 31, 2016</b>	
Cougar Helicopters Inc.	<ul style="list-style-type: none"> <li>• Rick Banks, Search &amp; Rescue Program Manager, Cougar Helicopters Inc.</li> <li>• Hank Williams, Chief Operating Officer, Cougar Helicopters Inc.</li> <li>• Steve Reid, Search &amp; Rescue Capability Advisor, Cougar Helicopters Inc.</li> </ul>
Royal Canadian Marine Search and Rescue	<ul style="list-style-type: none"> <li>• Pat Quealey, Chief Executive Officer</li> </ul>
Canadian Coast Guard Auxiliary	<ul style="list-style-type: none"> <li>• Randy Strandt, National Chair,</li> </ul>
<b>June 7, 2016</b>	
Department of National Defence and the Canadian Armed Forces	<ul style="list-style-type: none"> <li>• Rear-Admiral John Newton, Commander Joint Task Force Atlantic and Commander Maritime Forces Atlantic</li> </ul>
<b>September 27, 2016</b>	
Canadian Coast Guard	<ul style="list-style-type: none"> <li>• Gregory Lick, Director General, Operations, Canadian Coast Guard</li> <li>• Mario Pelletier, Deputy Commissioner, Operations, Canadian Coast Guard</li> </ul>
<b>October 4, 2016</b>	
Canadian Coast Guard	<ul style="list-style-type: none"> <li>• Gregory Lick, Director General, Operations</li> <li>• Marc Mes, Director of Operational Support</li> </ul>

<b>October 18, 2016</b>	
Transportation Safety Board of Canada	<ul style="list-style-type: none"> <li>• Jean L. Laporte, Chief Operating Officer, Transportation Safety Board of Canada</li> <li>• Marc-André Poisson, Director of Investigations – Marine, Transportation Safety Board of Canada</li> </ul>
<b>October 26, 2016 (Halifax NS)</b>	
Canadian Coast Guard	<ul style="list-style-type: none"> <li>• Brian LeBlanc, Executive Director, Canadian Coast Guard College</li> <li>• Wade Spurrell, Assistant Commissioner, Atlantic Region</li> <li>• Harvey Vardy, A/Superintendent, Maritime Search and Rescue, Joint Rescue Coordination Centre Halifax</li> </ul>
Canadian Coast Guard Auxiliary	<ul style="list-style-type: none"> <li>• Frank Boudreau, President, Maritimes</li> <li>• Darcy Henn, Manager, Maritimes</li> </ul>
National Defence and the Canadian Armed Forces	<ul style="list-style-type: none"> <li>• Major Rhonda Stevens, Officer in Charge, Joint Rescue Coordination Centre Halifax</li> </ul>
Nova Scotia Community College	<ul style="list-style-type: none"> <li>• Tom Gunn, Principal, Nautical Institute</li> <li>• Vivek Saxena, Academic Chair, Nautical Institute</li> </ul>
<b>October 27, 2016 (Halifax NS)</b>	
Atlantic Pilotage Authority Canada	<ul style="list-style-type: none"> <li>• Captain Sean Griffiths, Chief Executive Officer</li> </ul>
As an Individual	<ul style="list-style-type: none"> <li>• Lois Drummond, Member, Canadian Coast Guard Auxiliary</li> </ul>
	<ul style="list-style-type: none"> <li>• Ronald Pelot, Professor, Marine Affairs Program, Department of Industrial Engineering, Dalhousie University</li> </ul>
Bayside Port Corporation	<ul style="list-style-type: none"> <li>• Darrell Weare, Chief Operating Officer,</li> </ul>
Canadian Council of Professional Fish Harvesters	<ul style="list-style-type: none"> <li>• Jean Lanteigne, President</li> </ul>
Fisheries Safety Association of Nova Scotia	<ul style="list-style-type: none"> <li>• Stewart Franck, Executive Director</li> </ul>

Independent Marine Ports Association of Canada	<ul style="list-style-type: none"> <li>• Tim Gilfoy, President</li> </ul>
Marine Atlantic	<ul style="list-style-type: none"> <li>• Murray Hupman, Vice President (Operations)</li> <li>• Captain Shri Madiwal, Director Fleet Operations</li> </ul>
Prince Edward Island Fisherman's Association	<ul style="list-style-type: none"> <li>• Craig Avery, President, Prince Edward Island Fisherman's Association</li> <li>• Mitchell Jollimore, Secretary</li> </ul>
<b>November 1, 2016</b>	
Shipping Federation of Canada	<ul style="list-style-type: none"> <li>• Chad Allen, Director, Marine Operations</li> <li>• Michael Broad, President</li> <li>• Sonia Simard, Director, Legislative and Environmental Affairs</li> </ul>
<b>December 6, 2016</b>	
Transport Canada	<ul style="list-style-type: none"> <li>• Donald Roussel, Associate Assistant Deputy Minister, Safety and Security Group, Transport Canada</li> <li>• Luc Tremblay, Manager, National Marine Safety Program, Transport Canada</li> <li>• Robert Turner, Manager, Navigation Safety and Radio Communications, Transport Canada</li> </ul>
<b>January 31, 2017</b>	
CHC Helicopters	<ul style="list-style-type: none"> <li>• Sylvain Allard, President and CEO</li> <li>• Michael Fry, Director Commercial – SAR/EMS, Global</li> <li>• Ian McLuskie, Senior Manager – SAR/EMS, Global</li> <li>• Barry Parsons, Senior Vice-President, Global</li> </ul>
<b>February 7, 2017</b>	
Union of Canadian Transportation Employees	<ul style="list-style-type: none"> <li>• Christine Collins, National President</li> <li>• Michael Teeter, Political Advisor</li> </ul>
<b>March 8, 2017 (St. John's NL)</b>	
As an Individual	<ul style="list-style-type: none"> <li>• Danny Breen</li> </ul>

	<ul style="list-style-type: none"> <li>• Johanna Ryan Guy</li> </ul>
	<ul style="list-style-type: none"> <li>• Mervin Wiseman, Retired Rescue Coordinator, Marine Rescue Sub-Centre St. John's</li> </ul>
Canadian Coast Guard	<ul style="list-style-type: none"> <li>• Andrew Colford, Officer, MCTS Centre Port aux Basques</li> <li>• Howard Power, Watch Supervisor, MCTS Centre Placentia Bay</li> </ul>
Canadian Coast Guard Auxiliary	<ul style="list-style-type: none"> <li>• Marcel O'Brien, First Vice-President and District Director</li> </ul>
Federation of Independent Sea Harvesters of Newfoundland and Labrador	<ul style="list-style-type: none"> <li>• Ryan Cleary, President,</li> <li>• Jason Sullivan, Captain</li> </ul>
Fish Food and Allied Workers' Union	<ul style="list-style-type: none"> <li>• Bill Broderick, Inshore Director</li> <li>• Keith Sullivan, President</li> </ul>
Memorial University	<ul style="list-style-type: none"> <li>• Captain Chris Hearn, Director, Centre for Marine Simulation, Fisheries and Marine Institute</li> </ul>
Newfoundland and Labrador Department of Justice and Public Safety	<ul style="list-style-type: none"> <li>• The Honourable Andrew Parsons, Minister</li> <li>• Paula M. Walsh, Assistant Deputy Minister Public Safety and Enforcement</li> </ul>
Newfoundland and Labrador Professional Fish Harvesters Certification Board	<ul style="list-style-type: none"> <li>• Mark Dolomount, Executive Director</li> </ul>
Newfoundland and Labrador Fish Harvesting Safety Association	<ul style="list-style-type: none"> <li>• Sharon Walsh, Executive Director,</li> <li>• Glenn Winslow, Captain-Owner, F/V Roberts Sisters II</li> </ul>
Newfoundland and Labrador Professional Fish Harvesters Certification Board	<ul style="list-style-type: none"> <li>• Mark Dolomount, Executive Director</li> </ul>
Town of St. Anthony (Newfoundland and Labrador)	<ul style="list-style-type: none"> <li>• Ernest Simms, Mayor</li> </ul>
<b>May 11, 2017</b>	
As an Individual	<ul style="list-style-type: none"> <li>• The Honourable Robert Wells, Q.C.</li> </ul>
<b>February 8, 2018</b>	



Transportation Safety Board of Canada	<ul style="list-style-type: none"> <li>• Kathleen Fox, Chair</li> <li>• Jean L. Laporte, Chief Operating Officer, Executive Office</li> <li>• Pierre Murray, Manager of Regional Operations – Atlantic</li> <li>• Marc-André Poisson, Director of Investigations – Marine</li> </ul>
<b>February 13, 2018</b>	
As an Individual	<ul style="list-style-type: none"> <li>• Michael Byers, Professor and Canadian Research Chair in Global Politics and International Law, University of British Columbia</li> <li>• Dylan Clark, Program Manager, Climate Change Adaptation Research Group, McGill University</li> </ul>
<b>February 15, 2018</b>	
Arctic Security Consultants	<ul style="list-style-type: none"> <li>• Colonel (Retired) Pierre LeBlanc, President</li> </ul>
<b>March 22, 2018</b>	
Canadian Lifeboat Institution	<ul style="list-style-type: none"> <li>• Brian Cook, Vice President</li> </ul>
<b>March 27, 2018</b>	
Haisla Nation Council	<ul style="list-style-type: none"> <li>• Trevor Amos, Haisla Fisheries Technician, Harbour Authority</li> </ul>
<b>March 29, 2018</b>	
Fish Safe BC	<ul style="list-style-type: none"> <li>• John Krgovich, Program Coordinator</li> </ul>
Transport Canada	<ul style="list-style-type: none"> <li>• Donald Roussel, Senior Advisor to the Assistant Deputy Minister, Safety and Security</li> </ul>
<b>April 17, 2018</b>	
Iridium Satellite LLC.	<ul style="list-style-type: none"> <li>• Maureen C. McLaughlin, Vice President, Public Policy,</li> </ul>
Canadian Coast Guard	<ul style="list-style-type: none"> <li>• Gregory Lick, Director General, Operations,</li> </ul>

	<ul style="list-style-type: none"> <li>• Sam Ryan, Director General, Integrated Technical Services</li> </ul>
<b>April 19, 2018</b>	
Benoit and Associates	<ul style="list-style-type: none"> <li>• Liane Benoit, Founder and President</li> </ul>
<b>April 26, 2018</b>	
Canadian Coast Guard	<ul style="list-style-type: none"> <li>• Peter Garapick, Superintendent, Search and Rescue, Central and Arctic Region</li> <li>• Gregory Lick, Director General, Operations</li> </ul>
<b>May 1, 2018</b>	
As an individual	<ul style="list-style-type: none"> <li>• Jim Abram, (Elected) Electoral Area Representative, Discovery Islands-Mainland Inlets, Strathcona Regional District (Area C)</li> </ul>
<b>May 3, 2018</b>	
Northern Air Transport Association	<ul style="list-style-type: none"> <li>• Glenn Priestley, Executive Director</li> </ul>
<b>May 10, 2018</b>	
National Defence and the Canadian Armed Forces	<ul style="list-style-type: none"> <li>• Lieutenant-Colonel Leighton James, Commanding Officer, 424 Transport and Rescue Squadron (8 Wing Trenton)</li> <li>• Major Myrian Lafrance, Officer in charge, Joint Rescue Coordination Centre Trenton</li> <li>• Lieutenant-Colonel Jonathan Nelles, Senior Staff Officer, Search and Rescue, 1 Canadian Air Division</li> <li>• Major-General William Seymour, Chief of Staff, Operations, Canadian Joint Operations Command</li> </ul>
<b>May 22, 2018</b>	
Government of Nunavut	<ul style="list-style-type: none"> <li>• Ed Zebedee, Director of Protection Services, Department of Community and Government Services</li> </ul>

## APPENDIX B – FACT-FINDING MISSIONS

<b>Halifax, Dartmouth, Sambro, Sydney and Greenwood, Nova Scotia October 23 to 28, 2016</b>	
Joint Rescue Coordination Centre (JRCC)	<ul style="list-style-type: none"> <li>• Rear Admiral J. Newton, Commander Joint Task Force Atlantic and Commander Maritime Forces Atlantic, Royal Canadian Navy</li> <li>• Major Rhonda Stevens, Officer in Charge, Royal Canadian Air Force</li> <li>• Wade Spurrell, Assistant Commissioner, Atlantic Region, Canadian Coast Guard</li> <li>• Harvey Vardy, A/Superintendent, Maritime Search and Rescue, Canadian Coast Guard</li> <li>• Adam Erland, Regional Supervisor, Canadian Coast Guard</li> </ul>
Marine Communications and Traffic Services (MCTS)	<ul style="list-style-type: none"> <li>• Dan Nichol, Superintendent Special Projects, Canadian Coast Guard</li> <li>• Julien Gaudet, Superintendent MCTS, Canadian Coast Guard</li> <li>• Joanne Smith, Officer in Charge, Canadian Coast Guard</li> <li>• Sharon Floyd, Superintendent</li> <li>• Tim Raynor, MCTS Officer</li> <li>• Dave Rathbun, MCTS Officer</li> <li>• Shawn Carter, MCTS Officer</li> <li>• Kristine Poirier, MCTS Officer</li> <li>• Bruce Fiander, MCTS Officer</li> </ul>
Sambro SAR Lifeboat Station	<ul style="list-style-type: none"> <li>• Wade Spurrell, Assistant Commissioner, Atlantic Region, Canadian Coast Guard</li> <li>• Ed George, Commanding Officer, Canadian Coast Guard</li> <li>• Andrew Prince, Engineer, Canadian Coast Guard</li> <li>• Bruce Flemming, Lifeboat Man, Search and Rescue, Canadian Coast Guard</li> </ul>

	<ul style="list-style-type: none"> <li>• Stephen Tough, Lifeboat Man, Search and Rescue</li> <li>• Harvey Vardy, A/Superintendent, Maritime Search and Rescue, Canadian Coast Guard</li> </ul>
Canadian Coast Guard College (CCGC)	<ul style="list-style-type: none"> <li>• Brian LeBlanc, Exec.</li> <li>• Pierre Jean, Director Studies</li> <li>• Allan Taylor, Head of Navigation</li> <li>• Gary Pretty, Instructor, Search and Rescue</li> <li>• J-F Joly, Business Development</li> <li>• Gaston Lefort, Manager, Campus Services</li> <li>• Laurie McNell, Chief, Operations</li> <li>• Suzanne Carlin, Student Services</li> <li>• Bill MacDonald, Real Property</li> <li>• Pierre Cormier, Instructor</li> </ul>
CFB Wing 14 Greenwood	<ul style="list-style-type: none"> <li>• Lieutenant-Colonel James Marshall, Wing Commander</li> <li>• Captain Stephen Park</li> <li>• Chief Warrant Officer Claude Faucher,</li> <li>• Sergeant Scott Ellison, Search and Rescue Technician</li> <li>• Corporal Jax Kennedy, Photographer</li> <li>• Corporal Rob Nicholson, Cormorant Pilot</li> </ul>
<p><b>St. John's, Goose Bay and Gander</b></p> <p><b>Newfoundland and Labrador</b></p> <p><b>March 5 to 9, 2017</b></p>	
CCG NL Headquarters	<ul style="list-style-type: none"> <li>• Wade Spurrell, Assistant Commissioner, Atlantic Region, Canadian Coast Guard</li> <li>• Don Llwelwyn, Regional Director, Fleet</li> <li>• Mile Ouellet, Regional Director, Integrated Technology Services (Infrastructure)</li> <li>• Rod Marsh, Manager, Safety &amp; Security</li> <li>• Denise Veber, Regional Director, Integrated Business Systems Management</li> </ul>
CCG Regional Operations Centre	<ul style="list-style-type: none"> <li>• Rebecca Acton-Bond, Superintendent, Ice Operations</li> <li>• Adam Manning, Officer, Ice Watch Keeper</li> <li>• Albert Weir, Officer, Ice Watch Keeper</li> </ul>

	<ul style="list-style-type: none"> <li>• Liz Thompson, Ice Services Specialist</li> <li>• Barry Witherall, Officer, Fleet Operations</li> <li>• Anthony Broders, Officer, Fleet Operations</li> </ul>
CCGS <i>George R. Pearkes</i> – Multi-Task Vessel	<ul style="list-style-type: none"> <li>• Captain Chris Ropson</li> <li>• Jay Weeks, Chief Mate</li> <li>• Alex Fowler, 3rd Officer</li> <li>• Wade Spurrell, Assitant Commissioner, Atlantic Region, Canadian Coast Guard</li> </ul>
CCG Auxiliary NL – <i>Roberts Sisters II</i> (fishing and CCG Auxiliary vessel)	<ul style="list-style-type: none"> <li>• Glen Winslow, Captain &amp; Owner, Roberts Sisters II</li> <li>• Ron Dalton, Director, CCG Auxiliary, St-John’s and St-Mary’s</li> <li>• Terry Bungat, Mate, Roberts Sisters II</li> </ul>
Cougar Helicopters Inc.	<ul style="list-style-type: none"> <li>• Willis Jacobs, Manager, Safety &amp; Security</li> <li>• Rick Banks, Program Manager, Search &amp; Rescue</li> <li>• Steve Reid, Advisor, Search and Rescue (Readiness Systems Inc.)</li> <li>• Morris Kendall, Lead Engineer</li> <li>• Grant Mills, Pilot, Search and Rescue</li> <li>• Pav Bienkowski, Engineer</li> <li>• Kevin Morawski, Hoist Operator</li> <li>• Brad Lawrence, Search and Rescue Specialist</li> </ul>
Visit CFB Goose Bay 5 Wing (444 Squadron)	<ul style="list-style-type: none"> <li>• Master Warrant Officer Dave McDonnell</li> <li>• Warrant Officer Richard Coltart, Wing Chief</li> <li>• Captain Oliver Gallant, Public Affairs Officer</li> <li>• Sergeant Matthew Fudge, Wing Assistant</li> </ul>
Marine Communications and Traffic Services (MCTS)	<ul style="list-style-type: none"> <li>• George Andrews, Officer-In-Charge</li> </ul>
Canadian Forces Base Gander 9 Wing (103 Squadron)	<ul style="list-style-type: none"> <li>• Major Jim Pinhorn, Commanding Officer</li> <li>• Master Warrant Officer Mike Hurtubise, Search and Rescue Specialist</li> <li>• Master Warrant Officer Roger Foucault, Acting Wing Chief</li> </ul>

**Southampton, United Kingdom; Dublin, Ireland; Oslo and Bodø, Norway;  
Copenhagen, Aarhus, Frederikshavn and Skagen, Denmark**

**September 9 to 20, 2017**

UK Maritime and Coastguard Agency	<ul style="list-style-type: none"> <li>• Damien Oliver, Assistant Director, Aviation</li> <li>• Richard Parkes, Director, Maritime Operations</li> </ul>
Bristow Helicopter hangar	<ul style="list-style-type: none"> <li>• Damien Oliver, Assistant Director, Aviation</li> <li>• Richard Parkes, Director, Maritime Operations</li> </ul>
National Maritime Operations Centre (NMOC)	<ul style="list-style-type: none"> <li>• Julie-Anne Wood, Head of UK Maritime Operation</li> <li>• Richard Parkes, Director UK Maritime Operations</li> <li>• Mark Rodaway, UK Coastguard Area Operations Manager</li> </ul>
Selsey Royal National Lifeboat Institution Station	<ul style="list-style-type: none"> <li>• Cliev Cockayne, Lifeboat Operations Manager</li> <li>• Martin Rudwick, Coxswain</li> <li>• Phil Pitham, Mechanic</li> <li>• Local professional fishermen involved with RNLI</li> </ul>
Irish Coast Guard (Department of Transport, Tourism & Sport)	<ul style="list-style-type: none"> <li>• Eugene Clonan, Director</li> <li>• Gerry Smulle, Assistant Director, Engineering and Logistics</li> <li>• Declan Geoghegan, Manager, Volunteer Services and Training</li> <li>• Gerard O'Flynn, Operations Manager</li> <li>• Ger Hegarty, Divisional Controller</li> </ul>
Marine Rescue Coordination Centre	<ul style="list-style-type: none"> <li>• Ger Hegarty, Divisional Controller</li> </ul>
CHC Helicopter officials	<ul style="list-style-type: none"> <li>• Chris Hodson, Director, SAR &amp; EMS</li> <li>• Ian McLuskie, OBE, Senior Manager, Business Development SAR</li> </ul>
Irish Coast Guard Unit	<ul style="list-style-type: none"> <li>• Declan Geoghegan, Manager, Volunteer Services and Training</li> <li>• Ger Hegarty, Divisional Controller</li> <li>• Howth Volunteers at ICGU</li> </ul>

**WHEN EVERY MINUTE COUNTS**

Ministry of Justice and Public Security officials	<ul style="list-style-type: none"> <li>• Stein Solberg, Head of JRCC Stavanger</li> <li>• Ministry Senior Managers</li> </ul>
Ministry of Defence, Norway	<ul style="list-style-type: none"> <li>• Svein Efstad, Director, Security Policy</li> <li>• Commander Jens Arne Høilund</li> </ul>
Norwegian Society for Sea Rescue (NSSR)	<ul style="list-style-type: none"> <li>• Matt Skude, NSSR</li> </ul>
Norwegian Joint Operational Headquarters	
Bodø Joint Rescue Coordination Centre	
Ministry of Defence and Arctic Command	<ul style="list-style-type: none"> <li>• Dennis Virkelyst, MoD National Operations</li> <li>• Hasting Molich, Arctic Command</li> </ul>
Danish Sea Rescue Society	<ul style="list-style-type: none"> <li>• Steen Søbørg, Leader of Rescue Station</li> </ul>
Joint Rescue Coordination Centre (JRCC)	<ul style="list-style-type: none"> <li>• Frank Jensen, CH Joint Operation Center Carl Nielsensvej</li> </ul>
Royal Danish Navy 1st Navy Squadron base	
Coastal Rescue Service station and vessel, Skagen	<ul style="list-style-type: none"> <li>• Tim Lillelund, Head of Coastal Rescue Service</li> </ul>
<b>Comox and Victoria, British Columbia February 26 – March 2, 2018</b>	
Canadian Force Base 19 Wing	<ul style="list-style-type: none"> <li>• Major Francis Laplante, Special Advisor to Wing Commander</li> <li>• Captain Brad Little, Wing Public Affairs</li> </ul>
442 Squadron	<ul style="list-style-type: none"> <li>• Lieutenant-Colonel Bryan Elliott, Commanding Officer</li> <li>• Chief Warrant Officer Warren Wallace, Squadron Chief Warrant Officer</li> <li>• Honorary Colonel Diane McCurdy</li> <li>• Warrant Officer Francois Duchesneau, SAR Tech Lead</li> <li>• Master Corporal Cam Hillier, SAR Tech</li> <li>• Lieutenant-Commander (U.S.) Mike Feltovic, U.S. Coast Guard Exchange Pilot and Demonstration Coordinator</li> </ul>



Canadian Forces School of Search and Rescue	<ul style="list-style-type: none"> <li>• Major John Coffin, Commandant</li> <li>• Sergeant Bruno Lapointe, SAR Tech</li> </ul>
Canadian Coast Guard (Western Region)	<ul style="list-style-type: none"> <li>• Roger Girouard, Assistant Commissioner, Canadian Coast Guard</li> <li>• Captain Clay Evans, Superintendent, Maritime Search and Rescue, Canadian Coast Guard</li> <li>• Tyler Brand, Senior SAR Program Officer, Indigenous SAR</li> </ul>
Marine Communication and Traffic Services Centre	<ul style="list-style-type: none"> <li>• Art Statham, Superintendent</li> <li>• Terry Speed, Officer-in-Charge</li> </ul>
Royal Canadian Marine Search and Rescue	<ul style="list-style-type: none"> <li>• Pat Quealey, Chief Executive Officer</li> <li>• Jason van der Valk, Director of Operations</li> </ul>
Maritime Security Operations Centre (Western Region)	<ul style="list-style-type: none"> <li>• Commander Todd Verge</li> <li>• Tim Shorthouse, Senior Marine Intelligence Analyst, Transport Canada</li> <li>• Corporal Linda Simpson, Senior Non Commissioned Officer, Royal Canadian Mounted Police</li> <li>• Tamara Shuper, A/Intelligence Officer, Canada Border and Services Agency</li> <li>• Ruth Morrison, Maritime Security Officer, Canadian Coast Guard</li> <li>• Blair Thexton, Intelligence Supervisor, Fisheries and Oceans Canada</li> <li>• Sub-Lieutenant Nadia Boisjoli-Auger, Intelligence Watch Officer, Department of National Defence</li> </ul>
Joint Rescue Coordination Centre	<ul style="list-style-type: none"> <li>• Commodore Jeffery Zwick, Canadian Fleet Pacific, Royal Canadian Navy</li> <li>• Major Justin Olsen, Officer In Charge, Royal Canadian Air Force</li> <li>• Captain Colin Henthorne, Regional Supervisor, Maritime Search and Rescue, Canadian Coast Guard</li> </ul>

	<ul style="list-style-type: none"> <li>• Captain Stu Irvine, Air Coordinator, Royal Canadian Air Force</li> <li>• Corporal Terry Rogers, Air Assistant, Royal Canadian Air Force</li> <li>• Paul Reynolds, Marine Coordinator, Canadian Coast Guard</li> <li>• Dylan Carter, Marine Coordinator, Canadian Coast Guard</li> </ul>
BC Ferries	<ul style="list-style-type: none"> <li>• Mark F. Collins, President and CEO</li> <li>• Gregg Clackson, Director, Operations and Security Centre</li> </ul>
VIH Aviation Group	<ul style="list-style-type: none"> <li>• William T. Steeper, Primary Counsel and Lawyer, Steeper &amp; Associates</li> <li>• Willis Jacobs, Business Development, Cougar Helicopters Inc.</li> </ul>
<b>Québec City May 7, 2018</b>	
Central and Arctic Region, Canadian Coast Guard	<ul style="list-style-type: none"> <li>• Julie Gascon, Assistant Commissioner</li> <li>• Stacy Dufour, Superintendent, SAR</li> <li>• Jean Bourdon, Acting Superintendent, SAR</li> <li>• Katia Jollez, Regional Lead, Oceans Protection Plan</li> <li>• Mathieu Bergeron, Superintendent, MCTS</li> </ul>
Commissioner's Office, Canadian Coast Guard	<ul style="list-style-type: none"> <li>• Marie-Josée Alary, Acting Regional Director, Integrated Business Management Services</li> <li>• Valérie Du Sablon, Analyst, Strategic Services, Integrated Business Management Services</li> </ul>
Fisheries and Oceans Canada	<ul style="list-style-type: none"> <li>• Nadia Gilbert, Acting Director, Horizontal Priorities</li> </ul>
Canadian Coast Guard Auxiliary – Quebec Region	<ul style="list-style-type: none"> <li>• André Audet, Director of Operations</li> <li>• Claude Fortin, Zone Director</li> </ul>

CCGS Amundsen (Icebreaker)	<ul style="list-style-type: none"> <li>Alain Gariépy, Commanding Officer</li> <li>Abigail Lachance, Chief Engineer</li> </ul>
CCGS Cap Tourmente (SAR Lifeboat)	<ul style="list-style-type: none"> <li>Renaud Gosselin, Captain</li> <li>Other crew members</li> </ul>
<b>Iqaluit, Nunavut and Kuujuaq, Quebec October 1-3, 2018</b>	
Canadian Coast Guard & Marine Communications and Traffic Services (MCTS)	<ul style="list-style-type: none"> <li>Neil O'Rourke, Senior Director, Safe Shipping, Industry and Economic Intelligence</li> <li>Sylvain Vézina, Regional Director, Central and Arctic Regions</li> <li>Louis Robert, Officer in Charge, MCTS</li> </ul>
As individuals:	<ul style="list-style-type: none"> <li>Adamie Itorcheak, Ranger</li> <li>Pitseolak Alainga, local Hunters and Trappers Association</li> </ul>
CASARA	<ul style="list-style-type: none"> <li>Michael Chappell, Zone Commander (Territory Safety Officer and Territory Deputy Trainer, Assistant Search Master)</li> </ul>
Nunavut Offshore Allocation Holders Association (NOAHA)	<ul style="list-style-type: none"> <li>Jerry Ward, Director of Fisheries, Qikiqtaaluk Corporation</li> </ul>
Arctic UAV	<ul style="list-style-type: none"> <li>Kirt Ejesiak, CEO</li> <li>Glenn Williams, Chief of Operations</li> </ul>
Kativik Regional Police Force	<ul style="list-style-type: none"> <li>Benoit Plante, Deputy Chief, Police</li> <li>Craig Linguard, Civil Security Section</li> </ul>
Canadian Coast Guard Auxiliary	<ul style="list-style-type: none"> <li>Mark Gordon</li> </ul>
Canadian Rangers, 2 <sup>nd</sup> Canadian Ranger Patrol Group	<ul style="list-style-type: none"> <li>Captain Yann Léveillé, CD, Operation Officer</li> </ul>

Nunavik Hunting Trapping Association

- James May, President
- Jimmy Johannes, Corporate Secretary
- Johnny Arnattuk Jr., Vice President
- Putulik Papigatuk, Treasurer
- William Hubloo, Member
- Jimmy Gordon Sr., Member