



2005 Annual Report

National Search and Rescue Program

Interdepartmental Committee on Search and Rescue

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Introduction

The National Search and Rescue Program encompasses the efforts and activities of all levels of government, corporate and volunteer sectors, and a vast array of organizations and programs related to providing information, applying technology, conducting research, preventing SAR incidents from occurring or saving lives of people at risk

The 2005 Annual Report¹ on the National Search and Rescue Program provides information for the Lead Minister for Search and Rescue (the Minister of National Defence), as well as other federal ministers with responsibilities for search and rescue (for example, Fisheries and Oceans, Royal Canadian Mounted Police, Transport Canada, Environment Canada - Meteorological Service of Canada, Parks Canada), parliamentarians and the Canadian public.

This document describes the organization of the National Search and Rescue Program, reviews the activities of the past year, and summarizes the issues and trends that are currently of particular importance to the program. It provides an overall picture of the federal resources devoted to the program and the results achieved. Provincial, territorial and volunteer search and rescue (SAR) resources are not reported in detail because the many jurisdictions and organizations have significantly different reporting procedures.

This annual report is one of three key documents produced each year that guide and report on the National Search and Rescue Program. It is complemented by a strategic directions document, which provides long-term direction, and an annual program plan, which highlights issues to be addressed in the coming year.

1. The SAR Environment in Canada

Canadians face some of the world's greatest SAR challenges. Canada covers an immense landmass of more than 10 million square kilometres. The country's area of responsibility for SAR extends to the North Pole, 1,000 kilometres west into the Pacific Ocean, and 1,300 kilometres east into the Atlantic Ocean.

Despite Canada's size, it is sparsely populated over much of its territory, with 90% of the populations residing within 160 kilometres of the U.S. border. Outside of this heavily populated strip, SAR incidents are likely to occur far away from roads, airports and harbours.

The terrain in Canada varies widely from permanently frozen ice caps north of the Arctic Circle to almost impenetrable forest cover on British Columbia's west coast. Temperatures range from -40°C in January to 35°C in July. These geographic extremes are both a cause of SAR incidents and a hindrance in responding to them.

These and other challenges have been the impetus for building a SAR system that is respected worldwide.

2. The SAR Community

Who Is Responsible for SAR?

In Canada, the federal government and the provincial and territorial governments share responsibility for search and rescue; each has authority within its own jurisdiction and they collectively make up the National Search and Rescue Program. Further cooperative arrangements with municipalities and numerous non-governmental SAR organizations set

¹ This Annual Report is produced by the [National Search and Rescue Secretariat](#), under the direction of the [Interdepartmental Committee on Search and Rescue](#)

out additional SAR response and prevention activities for these organizations.

The federal government's collective SAR activities make up the Federal Search and Rescue Program, which involves close cooperation among six federal department and agency partners:

[Canadian Forces](#)

[Canadian Coast Guard, Fisheries and Oceans Canada](#)

[Royal Canadian Mounted Police](#)

[Transport Canada](#)

[Meteorological Service of Canada, Environment Canada](#)

[Parks Canada Agency](#)

The National Search and Rescue Secretariat (NSS) is responsible for National SAR Program policy, plans, co-ordination and reports.

Canada is the second largest country in the world and has the most coastal waters. To effectively provide SAR services for such a large area, Canada is divided into three separate Search and Rescue Regions (SRR) as depicted in Figure 1. There are three Joint Rescue Coordination Centres (JRCCs) established to coordinate response to both aeronautical and marine search and rescue incidents and two Maritime Rescue Sub-Centres (MRSC) established to coordinate response to marine search and rescue incidents. JRCC Victoria covers a segment of the Pacific cean and includes the Province of British Columbia and the Yukon Territory. JRCC Halifax covers part of the Province of Quebec and the Atlantic Ocean, and includes the Maritime Provinces and Newfoundland and Labrador. JRCC Trenton's region is the largest; it extends from the Rocky Mountains to Quebec City and from the US border to the North Pole, which translates into an area of responsibility encompassing over 7.4 million square kilometres.

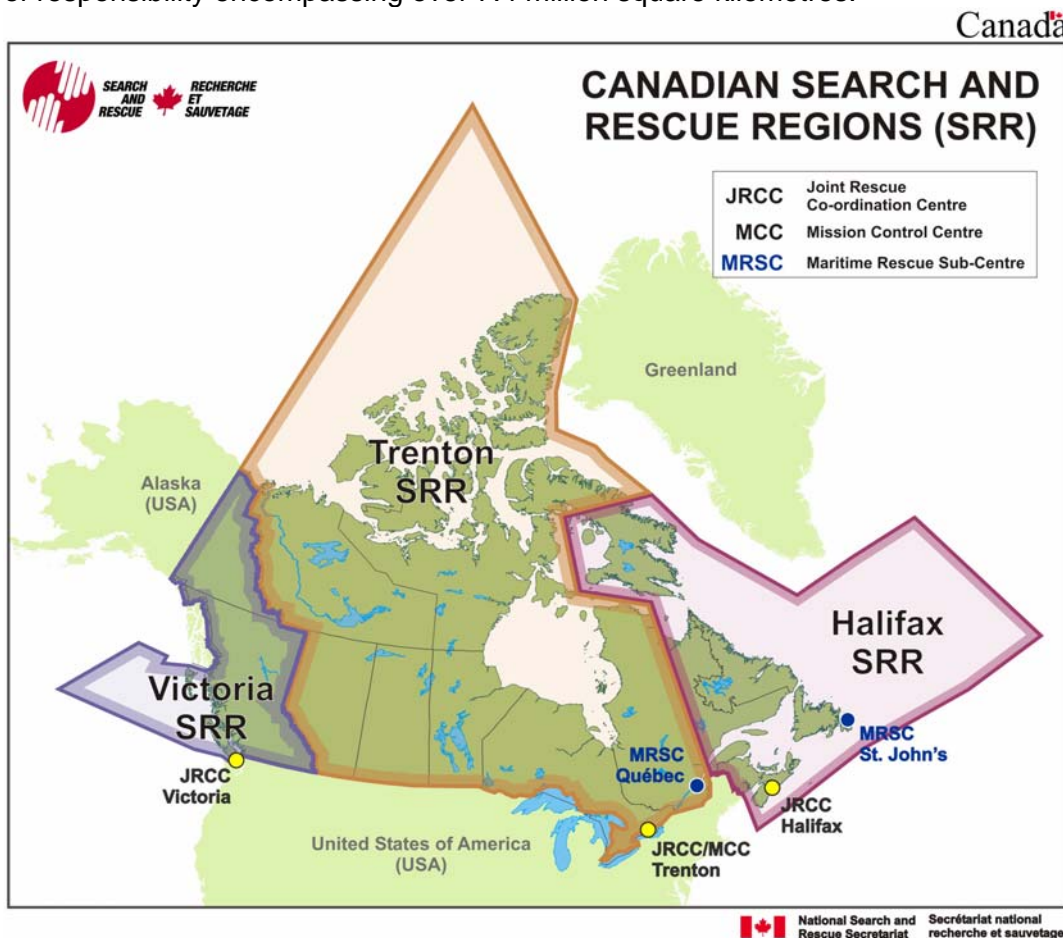


Figure 1: Canadian Federal SAR Area of Responsibility

SAR Challenges and the Pressures of a Changing World

The National Search and Rescue Program operates in a complex and evolving environment characterized by rapid national and international social, political, economic and technological change. These challenges are further compounded by growing public demand for effectiveness, openness, and accountability in all facets of government operations.

Sustained attention to the following trends and issues is required by the organizations involved in the National Search and Rescue Program.

▪ Climate Change and Frequency/Intensity of Natural Disasters

Nations around the world are experiencing more frequent and severe disasters. In 2005, floods in Alberta and Manitoba, the effects of the December 2004 Indian Ocean tsunami, Hurricanes Katrina, Rita and Wilma and the Pakistan earthquake had devastating effects, killing tens of thousands, costing hundreds of billions of dollars, and putting an intense strain on SAR resources worldwide.

All regions of the country are expected to endure incidents of extreme weather such as thunder, hailstorms and freezing rain. This extreme weather may lead to more frequent and severe SAR-related incidents nationwide.

▪ Canadian Forces (CF) Transformation

In 2005, the Chief of the Defence Staff announced plans to transform the CF in order to meet emerging security challenges and threats. This transformation represents the most significant change to Canada's military in over 15 years. Changes to the CF's operations-centric command and control structure have created a more unified, integrated and simplified chain of command to adapt to Canada's regional realities. This new structure addresses both domestic and international operations and will enhance the links between the CF and its SAR partners.

▪ Aging Population

The aging population characterizes our demographic landscape. Due to the increase in life expectancy, dropping birthrates and medical advances, the Canadian population is growing older. Statistics Canada projects that by 2021, there will be almost seven million seniors representing nearly 20% of the population.

Recent estimates show that approximately 420,600 Canadians over 65 suffer from Alzheimer's and related dementias. It is likely that requests for lost person searches could increase; therefore, more specially trained and equipped SAR teams are a priority.

▪ Beacon Transition

The most far-reaching SAR innovation in recent years is the transition from the 121.5 MHz beacon system to the 406 MHz COSPAS-SARSAT beacon. The 406 MHz emergency beacons with self-identification features are more accurate, speeding the rescue response and helping to save more lives. In addition, fewer resources are required to resolve false alarms: the identification feature of the 406 MHz beacon allows the SAR system to immediately and directly contact beacon owners.

The deadline for the transition from the 121.5 MHz to the 406 MHz system is February 1, 2009. The COSPAS-SARSAT system will cease to monitor the older beacons on that date.

There are approximately 29,000 light aircraft and helicopters registered in Canada, which currently use the older 121.5 MHz Emergency Locator Transmitters (ELTs).

▪ **Satellite Communications**

Technological developments in satellite communications and in position-finding equipment have increased the ability of people in distress to summon assistance. As beacons and Global Positioning Systems become more affordable, the demand for SAR response increases, while at the same time enabling SAR responders to locate someone in distress more quickly and precisely. There are, however, risks in relying on technology at the expense of developing survival skills, as technology can be prone to equipment failure and human error.

▪ **Interoperability**

Interoperability — that is, the ability to coordinate equipment, training and procedures among SAR responders — continues to be a challenge. The diversity of the provincial and territorial authorities and organizations, together with the federal bodies that make up the national SAR safety net means that more effective coordination and more commonality in equipment are needed to achieve seamless SAR delivery. In particular, experience in both live operations and exercises suggest that reliable, widely available radio communication is a basic requirement. Realistic exercises that simulate potential SAR incidents are one of the most effective ways to ensure the system works when it is needed. While multi-jurisdictional exercises improve coordination through experience, they are expensive and require a great deal of planning.

▪ **SAR Volunteers**

Volunteers are fundamental to the search and rescue system in Canada. They provide a trained and organized resource that is often called upon in SAR operations, and they help raise awareness of SAR-related risks among the general population. In December 2005, in an effort to ensure the sustainability of the SAR volunteer sector, the Interdepartmental Committee on Search and Rescue agreed to review and identify challenges that threaten the well-being of the sector. The review will help develop and implement solutions to support SAR volunteers in Canada.

▪ **Prevention**

Given the high cost associated with response, robust prevention programs are required to reduce the cost and mitigate the risk and severity of incidents. However, prevention efforts to date are often oriented towards specific targets without considering the overlap with other organizations' activities. While there is extensive prevention activity, less attention has been paid to effective targeting of prevention programs, evaluating their effectiveness and sharing best practices.

3. Federal Management of the National SAR Program

The Federal Search and Rescue Program consists of the individual and collective SAR activities of the six federal government departments and agencies listed in section 2. Each of these organizations has either a primary or a secondary role in providing SAR services in the areas where the Government of Canada has the SAR mandate.

Lead Minister for SAR

In 1986, Cabinet designated the [Minister of National Defence](#) to be Lead Minister for SAR in the federal government and the federal spokesperson on national SAR matters.

Interdepartmental Committee on Search and Rescue (ICSAR)

The Federal Search and Rescue Program is coordinated through ICSAR. The membership includes senior representation from each of the six federal departments with SAR program delivery responsibilities (see section 2 above), plus observers from [Public Safety and Emergency Preparedness Canada](#), the [Treasury Board Secretariat](#), the [Privy Council Office](#), the [Department of Indian and Northern Affairs](#) and [Natural Resources Canada](#).

ICSAR is chaired by the Executive Director of the NSS and is accountable to the Lead Minister for SAR. The committee reviews, reports and approves Federal Search and Rescue Program policies and plans on behalf of its member departments. It is supported by two sub-committees: the Coordination Sub-Committee and the Review Sub-Committee, each of which consists of managerial-level representatives from the ICSAR member departments.

National Search and Rescue Secretariat (NSS)

The NSS was established by Cabinet decision in 1986 to provide leadership to the National SAR Program. The NSS reports directly to the Lead Minister for Search and Rescue. The NSS is accountable to the Lead Minister, through ICSAR, for the development, coordination, analysis and review of National Search and Rescue Program policies, plans and specific components and activities:

- Administering the [SAR New Initiatives Fund \(SAR NIF\)](#);
- Representing Canada at the [COSPAS-SARSAT program](#);
- Maintaining the [Canadian Beacon Registry](#);
- Publishing the online [SARSCENE magazine](#); and
- Conducting the annual [SARSCENE workshop](#).

In addition, the NSS plays a leadership role by enhancing coordination between provincial and territorial SAR programs and the National Search and Rescue Program, as well as providing program-level advice and information to the Lead Minister for Search and Rescue.

The horizontal nature of the program environment requires the NSS to work in partnership with international, federal and provincial/territorial clients and stakeholders to realize the National SAR Program's vision and objectives.

National SAR Program Vision and Objectives

The National SAR Program focuses on the achievement of a seamless SAR system in Canada guided by a vision statement and two objectives:

The vision for the National SAR Program is a Canada where the critical importance of Search and Rescue is reflected in a multi-jurisdictional approach to promoting individual, collective and organizational behaviour that minimizes the risk of injury or loss of life while maintaining timely and effective response services.

Supporting this vision are two objectives: a response objective, to *ensure an effective SAR response (capability) in all areas of Canada*; and a prevention objective, to *educate individuals and organizations on the assessment of risks and the importance of acquiring and using the knowledge, skills and equipment needed to minimize injury and/or loss of life.*

Fiscal and Human Resources

Tables 1 and 2 show the monetary and human resources dedicated to SAR by the six Federal Search and Rescue Program department and agency partners and the NSS.

Note that the information is based on the federal government's fiscal year (April through March). This annual report and the program plan are based on the calendar year (January through December), which is more aligned to SAR activities.

Table 1: National Search and Rescue Program – Costs (\$000)

Department or Agency	2002-03 Actual	2003-04 Actual	2004-05	
			Planned	Actual
National Search and Rescue Secretariat (NSS) ¹	10,499	11,269	10,856	9,993
Environment Canada (Meteorological Service of Canada)	1,600	1,600	1,600	2,100
Parks Canada Agency	4,929	4,929	4,929	4,929
Fisheries and Oceans Canada (Canadian Coast Guard)	86,295	93,393	–	93,914
National Defence (Canadian Forces) ²	181,095	161,589	101,460	136,274
RCMP ³	N/A	N/A	N/A	N/A
Transport Canada ⁴	985	985	1,000	U/R
Total	285,403	273,765	119,845	247,210

Source: National Defence Departmental Performance Report for the period ending March 31, 2005

Notes

1. SAR New Initiatives Fund (NIF) expenditures were lower than forecast in 2004-05 due to project delays resulting from strengthening management and financial procedures.
2. The difference between planned and actual spending in 2004-05 includes increased flying hours (\$17M Personnel costs) and increased O&M (\$17M) due to the decision to phase in purchase of Cormorant engine modules. Cormorant cost factors have been reviewed to include the Full Cost.
3. As the resource allocations for SAR are provided under provincial auspices no figures are available for RCMP federal SAR activity. RCMP supports other departments with multi-tasked assets when required.
4. TC has no mandate for primary SAR and does not identify or dedicate resources to these activities. The level of financial commitment to prevention work is under review (U/R).

Table 2: National Search and Rescue Program – Personnel (FTEs)

Department or Agency	2002-03 Actual	2003-04 Actual	2004-05	
			Planned	Actual
National Search and Rescue Secretariat (NSS)	20	21.5	22	17.5*
Environment Canada (Meteorological Service of Canada)	14	14	14	20
Parks Canada Agency	64	64	64	64
Fisheries and Oceans Canada (Canadian Coast Guard) ¹	N/A	N/A	N/A	N/A
National Defence (Canadian Forces) ²	637	781	624	866
RCMP ³	N/A	N/A	N/A	N/A
Transport Canada ⁴	7	7	7	U/R

Source: National Defence Departmental Performance Report for the period ending March 31, 2005

* Does not include 2.5 FTEs seconded into the department.

Notes

1. FTE figures not available because Canadian Coast Guard operations involve multi-tasking.
2. The increase in planned vs. actual FTE in 2004-05 was due to an increase in squadron activity over the historical average.
3. As the resource allocations for SAR are provided under provincial auspices no figures are available for RCMP federal SAR activity. RCMP supports other departments with multi-tasked assets when required.
4. TC has no mandate for primary SAR and does not identify or dedicate resources to these activities. The level of personnel commitment to prevention work is under review (U/R).

Primary SAR Resources

The following federal primary SAR resources were available for SAR operations in 2005:

Canadian Forces

- 15 Cormorant helicopters (Comox, Trenton, Greenwood and Gander);
- 3 Griffon helicopters (Trenton, commencing October 2005);
- 6 Buffalo aircraft (Comox);
- 3+ Hercules aircraft (Winnipeg, Trenton and Greenwood).

In October 2005, Cormorant search and rescue helicopters from Trenton were temporarily redistributed to the coastal SRRs due to the decreased availability of the fleet. As a result, in the Trenton SRR, the Cormorants used for SAR operations were temporarily replaced by the CH-146 Griffon helicopters.

This redistribution of aircraft allowed better management of the Cormorant fleet while availability challenges were being addressed. It provided the remaining Cormorant squadrons with a sufficient number of aircraft to better maintain aircrews' skills and proficiency levels while focussing the unique capabilities of the Cormorant on demanding coastal SAR missions.

Canadian Coast Guard

- 105 total vessels available;
- 40 lifeboats on primary SAR alert;
- 1 hovercraft (Vancouver);
- 7 large patrol vessels on primary SAR alert (one seasonal only);
- 24 inshore rescue boats (summer only).

The March 2005 budget allocated \$276 million over the next five years to the Canadian Coast Guard to begin the modernization of its fleet. Nationally, this involves the acquisition of two fisheries research vessels and four mid-shore fisheries patrol boats. In addition to the \$276 million for these six new vessels, the Coast Guard received funding for the acquisition and operation of four new mid-shore patrol vessels for security on the Great Lakes and St. Lawrence River. The vessels are jointly operated with the Royal Canadian Mounted Police. The relationship of the Canadian Coast Guard within the Department of Fisheries and Oceans continued to evolve and restructure as the organization moved into its new Special Operating Agency role.

National Volunteer Organizations

- Civil Air Search and Rescue Association
 - 2,950 members;
 - 389 aircraft at 40+ airports across Canada; 334 pilots ; 486 navigators; 1353 spotters; 267 aircraft; available to rent 111 aircraft; 55 aircraft available to charter;
 - \$2.4 million 2004-05 federal contribution.
- Canadian Coast Guard Auxiliary
 - 4,502 members;
 - 1,295 vessels;
 - \$4.9 million 2004-05 federal contribution.

Many other governments and organizations contribute to Canada's SAR system, including provincial and territorial governments, police services, between 15,000 and 20,000 ground SAR volunteers, and many safety organizations, such as the [Canadian Red Cross](#), the [Royal Lifesaving Society](#), the [Canadian Power and Sail Squadrons](#) and the [Canadian Safe Boating Council](#).

There is extensive use of United States Coast Guard (USCG) assets in Canadian waters and vice-versa. Cooperation between the USCG and the Joint Rescue Coordination Centres continues to be an outstanding example of how two neighbouring nations can assist one another in ensuring that their citizens are safe. When it comes to saving lives, there are no borders, and the quickest response determines which country's assets are used.

4. Activity Levels

Activities in Canadian Search and Rescue Regions (SRR)

The Joint Rescue Coordination Centres (JRCCs) responded to 8,015 incidents in 2005. While the incidents varied in severity, approximately 28,000 persons received some form of assistance from the SAR system. Incident responses ranged from attending to a disabled vessel to parachuting into dangerous conditions to hoist survivors from life-threatening situations.

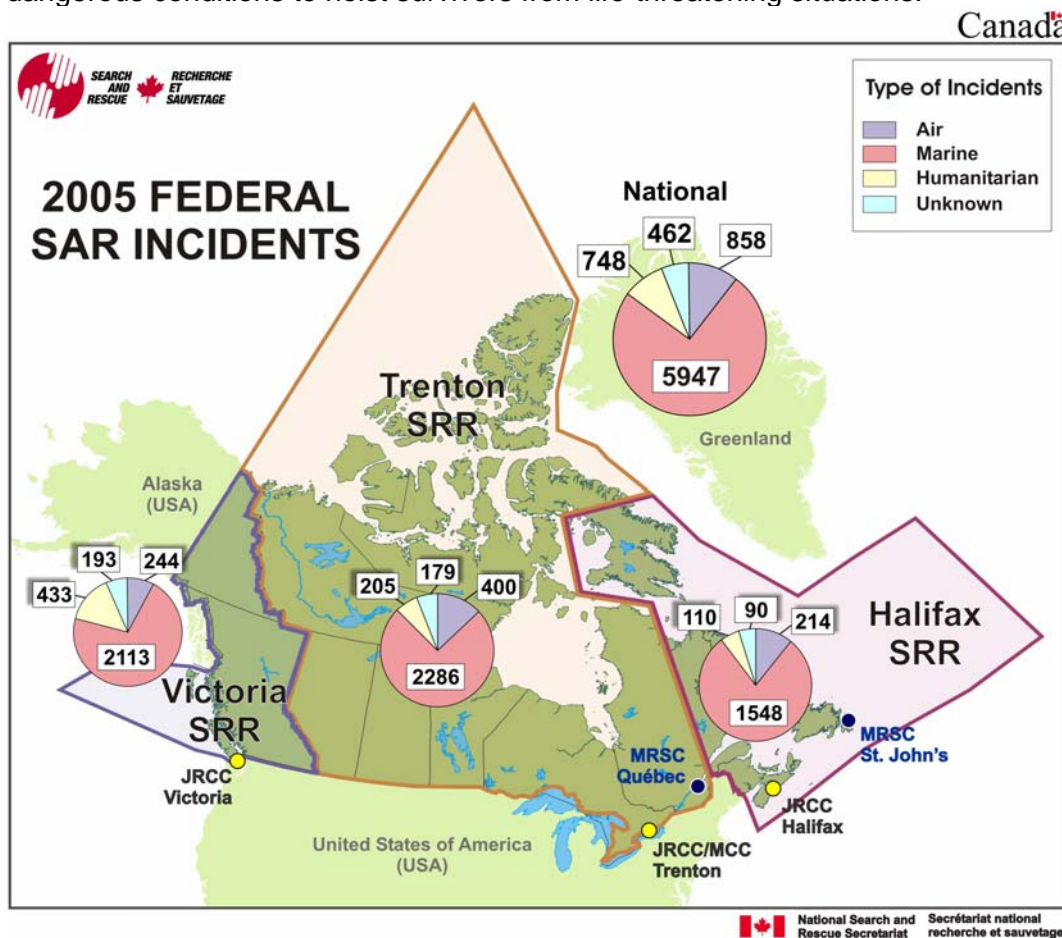


Figure 2: 2005 Federal SAR Incidents

Note: Figures are from case numbers established by JRCCs. They do not include Parks Canada and Provincial/Territorial cases not requesting Federal resources (approx. 1800/annum)

▪ JRCC Victoria

JRCC Victoria is responsible for responding to marine incidents in tidal waters and air incidents throughout the SRR. The provincial governments are generally responsible for land and inland waters (lakes, rivers) search and rescue such as missing persons and injured hikers, and, occasionally, JRCC Victoria will provide assistance to evacuate casualties or assist in air searches, which constitutes humanitarian cases for statistical purposes.

In 2005, JRCC Victoria responded to over 2,900 SAR cases, with a greater number of Category 1 and 2 cases² than the other two JRCCs. This disproportionate level of serious SAR activity can be attributed to the higher amount of recreational activity, changeable weather and challenging topography on the west coast. While the other two regions have Maritime Rescue Sub-Centres in Quebec and St. John's, JRCC Victoria has sole responsibility for its region. This centralized function is best for the Victoria SRR as the ocean area is smaller and marine traffic patterns are different from those on the east coast.

▪ JRCC Halifax

The Halifax SRR is geographically the second largest of the three regions but prosecutes the fewest number of incidents.

In 2005, JRCC Halifax responded to 1,962 SAR cases. Fishing activity continued to provide the majority of cases in the Halifax SRR as the fishing industry forms a large part of the economy. Most marine SAR activity is concentrated in the Nova Scotia and Prince Edward Island region of the SRR. Quebec had the majority of air incidents while Newfoundland and Labrador was high in humanitarian incidents, many of which were medical evacuations and assisting the RCMP with lost hunters.

▪ JRCC Trenton

2005 was a much busier year than normal for JRCC Trenton. A total of 3,070 incidents were handled — 2,286 maritime, 400 aeronautical, 205 humanitarian and 179 unknown. Compared to 2004, the marine incidents were higher and the air incidents were also slightly higher.

In 2005, the causes of marine incidents were:

- 50% human error;
- 35% mechanical;
- 11% unknown; and
- 4 % weather.

This reinforces the need to continue educating the boating community in order to avoid mechanical breakdowns caused by human factors.

Maritime, Aeronautical and Ground SAR

▪ Maritime SAR

Maritime SAR refers to activities within Canada's oceanic area of responsibility under International Maritime Organization agreements, as well as Canadian waters of the St. Lawrence Seaway and the Great Lakes. The federal government manages the response to Maritime SAR through three JRCCs and two MRSCs. Marine SAR operations are carried out by the Canadian Coast Guard, Canadian Coast Guard Auxiliary and the Canadian Forces.



² SAR incidents are also classified by their nature of degree of urgency. Four Categories (Cat) are used by the JRCCs. Cat 1: Incidents where life is in imminent danger; Cat 2: Incidents where there is a strong potential for loss of life; Cat 3: Incidents where assistance is required, but no distress exists; and Cat 4: False alarms and hoaxes.

The Canadian Coast Guard Auxiliary, which receives federal funding, plays an important role in providing initial SAR response in the many areas where primary resources are far away. In 2005, the Canadian Coast Guard Auxiliary responded to 1,531 distress calls and provided 17,910 volunteer hours. They are essential to the quick resolution of marine cases.

While the number of humanitarian cases remained relatively static, there was a slight increase in the number of air and marine cases in 2005. The number of recreational boaters, including a variety of watercraft enthusiasts from jet-skiers to kayakers to sailboarders, is increasing and eco-tourism has attracted a significant contingent of tourists who come to enjoy the relatively pristine marine wilderness of Canada.

In 2005, 5,947 marine-related SAR incidents were handled by JRCCs, representing 74% of total SAR incidents that fell within the federal mandate.

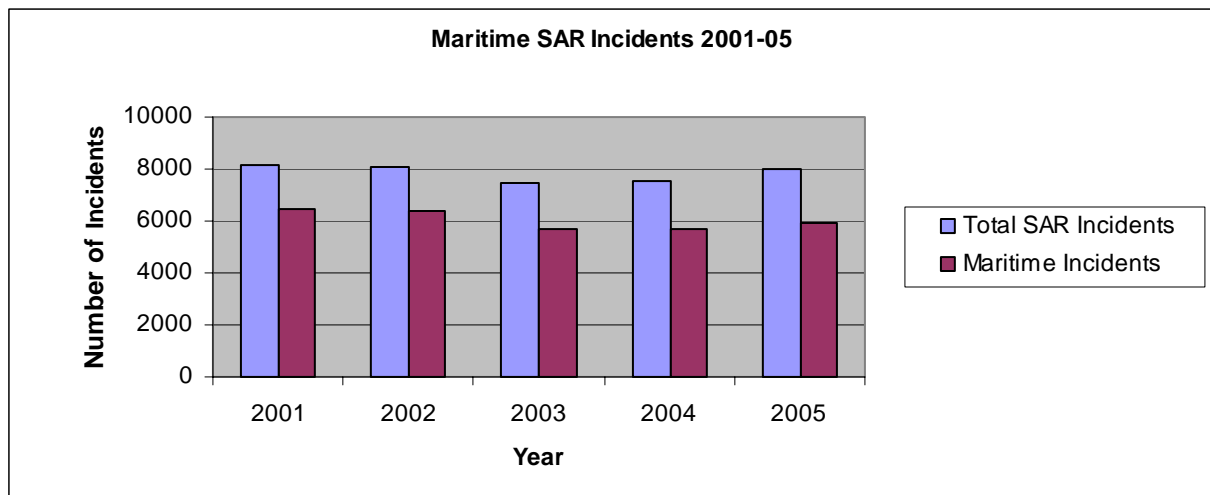


Figure 3: Maritime SAR Incidents 2001-05

▪ Aeronautical SAR

Aeronautical SAR covers any type of search for aircraft over land or water. Response to this type of SAR incident is coordinated by the three JRCCs. Aeronautical SAR operations are carried out by Canadian Forces and [Civil Air Search and Rescue Association](#) (CASARA) aircraft and, when a missing aircraft's route includes portions over water, by Canadian Coast Guard and Canadian Coast Guard Auxiliary vessels.

Canada's geography and its population distribution make air transportation a key mode of travel throughout the country; not just on commercial airlines, but also through commercial operators of smaller aircraft, such as charter float planes and privately owned light aircraft.

Aeronautical incidents continue to constitute a small proportion of SAR activity. They mainly involve private piloted light aircraft rather than the commercial aviation sector. With a few exceptions, serious cases involving loss of life are confined to light aircraft carrying four people or fewer.

In 2005, the light aircraft sector had 30,244 registered aircraft. This sector represents a wide variety of flying activities, such as flights for remote hunting and fishing excursions, commercial heli-logging, access to isolated communities, private sightseeing flights and



more. The SAR system responded to 858 aeronautical incidents, up from the five-year average of 708 CF aircraft were tasked 1,091 times in 2005 in support of the National SAR Program. There were 51 lives lost in aeronautical incidents in Canada in 2005.

CASARA (known as SERABEC (Sauvetage et Recherche Aériens du Québec) in Quebec) is a federally funded body of private aviators and volunteers who are called upon to carry out airborne searching, air and ground [Emergency Locator Transmitters \(ELTs\)](#) homing and to provide spotters on the Hercules and Griffon/Cormorant aircraft. CASARA, Transport Canada and other agencies continue to educate and train operators of light aircraft to file accurate flight plans and to carry robust, effective [ELTs](#). When search aircraft can home in directly on an ELT signal, rescuers can locate a crash site and provide assistance quickly. Conversely, if a missing aircraft's ELT does not activate, an extended search involving more time and resources may be required.

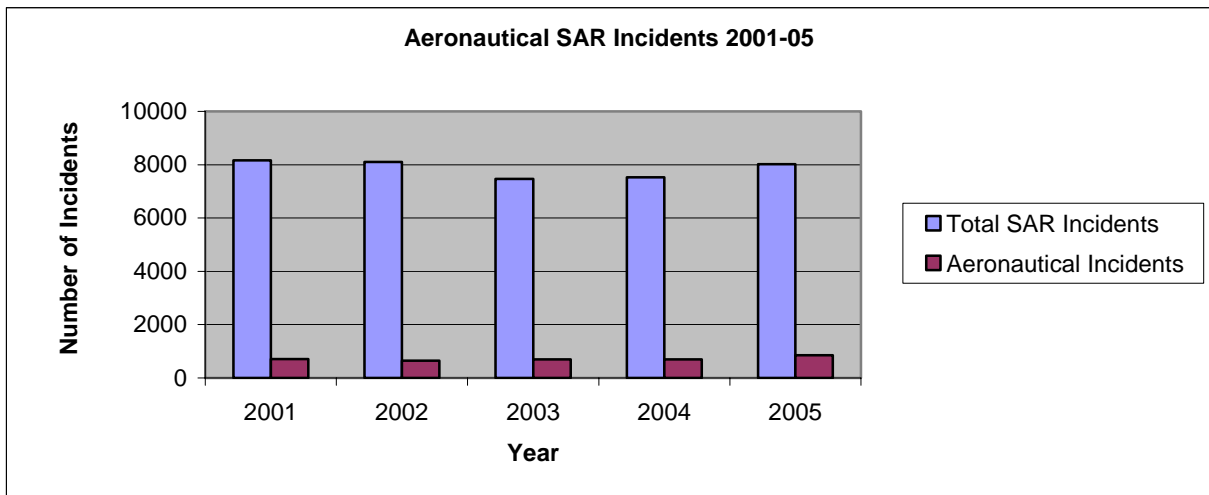


Figure 4: Aeronautical SAR Incidents 2001-05

▪ **Ground and Inland Water SAR**

Ground SAR services are provided by provincial/territorial government organizations. Searches on inland waters outside national parks are included in this category. In most cases, ground and inland water programs are managed by provincial/territorial emergency measures organizations, with SAR operations carried out by police, emergency services personnel and an extensive network of skilled volunteers. SAR incidents within Canada's national parks – ice field or avalanche rescues and wilderness searches, for example– are coordinated and conducted by specialists and volunteers from Parks Canada. The federal government has direct responsibility for ground and inland SAR in Canada's national parks, military bases and training areas. In 2005, Parks Canada's public safety specialists responded to 157 SAR incidents, with 32 air, 64 land and 61 marine incidents in national parks and national historic sites, ranging from injured hikers to canoeists stranded by poor weather to skiers caught in avalanches. These specialists also promote public safety and increase awareness of risks in backcountry areas.



Furthermore, [provincial and territorial SAR](#) resources often provide an important complement to federal assets because many aeronautical and marine SAR cases require the assistance of land-based resources. For example, a JRCC may ask local police to check remote airstrips for

missing aircraft, or request the assistance of a [volunteer ground SAR team](#) to search a marina or shoreline for an overdue vessel. This cooperation greatly increases the overall effectiveness of the National SAR Program, often allowing cases to be resolved quickly at the local level before a more expensive effort is required. Not only is the cost of searches reduced, but also federal resources remain available to respond to more serious situations.

[The Canadian Rangers](#) — a skilled group of reservists in Canada’s North — provide assistance to ground SAR operations in some of this country’s most isolated northern regions. With an increasing interest in northern activities in 2005, the Rangers have enhanced their ground SAR capabilities in order to assist both the federal and provincial/territorial SAR authorities.



The federal government provides assistance to provincial and territorial authorities who have the mandate for ground and inland water SAR. In 2005, a total of 748 requests for humanitarian assistance were responded to by JRCCs. While most of these involved medical evacuation and transportation assistance, some were part of front-line SAR missions, often involving helicopter hoists from cliffs, glaciers, mountains and other challenging locations.

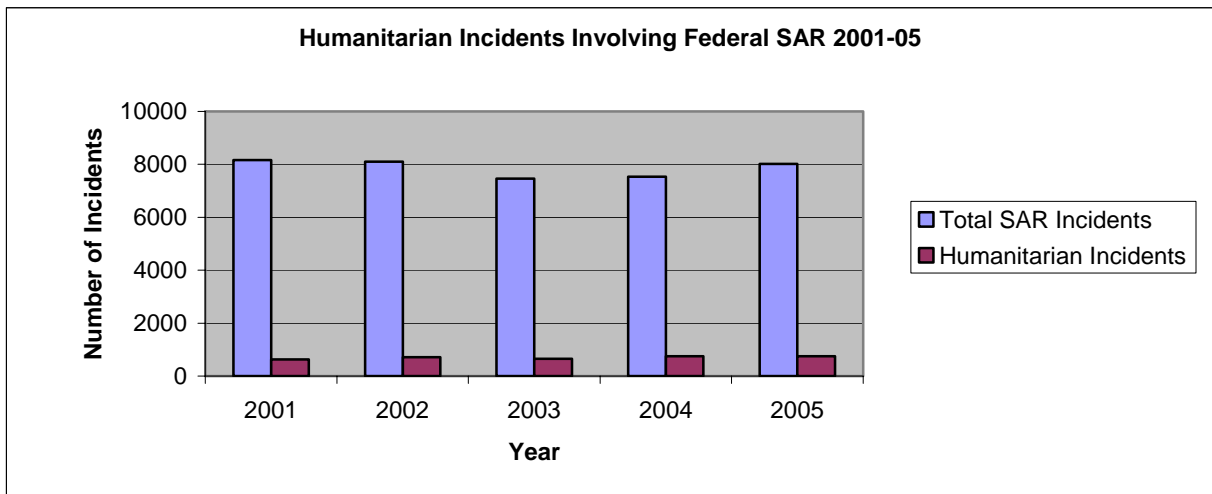


Figure 5: Humanitarian Incidents Involving Federal SAR 2001-05

5. Significant Incidents

In 2005, as is the case each year, there were incidents involving rescues in extremely hazardous conditions. These incidents involved loss of life, as well as other high profile situations that attracted media attention. As is the case with other emergency response services, SAR responders do their work with little fanfare and the majority of incidents do not receive public attention.

To demonstrate the nature of incidents that the National SAR Program responded to in 2005, several cases are briefly described below.

In the far North, a civilian Bell 207 helicopter that had been doing contract work for a mining company 300 miles south of the Arctic Circle encountered poor weather conditions en route from Ferguson, Nunavut, to its home base in Kelowna, British Columbia. While looking for a landing site, the pilot lost all visual reference, hit his skids on the snow-covered ice and bounced 100 feet into the air, landing on a small island surrounded by rocks. JRCC Trenton was notified and tasked 435 Squadron, Winnipeg, to respond. The 435 Squadron C-130 aircraft deployed SAR Techs by parachuting to the scene, and they helped the victim survive a number of days in blizzard conditions.

As the BC Ferry, Queen of Oak Bay approached Horseshoe Bay Ferry Terminal it reported that it was disabled and ran into Sewell's Marina. Numerous Coast Guard, Canadian Forces and Coast Guard Auxiliary resources were tasked and a number of local agencies assisted. Coast Guard, 442 Squadron and RCMP divers searched numerous wrecked and damaged vessels. No persons were reported injured or missing; however, the case had heavy media interest as it involved BC Ferries and caused the temporary closure of one of British Columbia's busiest ferry terminals. The case was turned over to the Transportation Safety Board for investigation.

A missing Beaver floatplane with five people on board was on a Visual Flight Rule round robin flight note out of Campbell River, British Columbia. The search involved over two-dozen aircraft, both military and CASARA, as well as six Coast Guard and CF naval vessels. In addition, the RCMP provided ground SAR teams. On the fourth day, a body from the missing aircraft was found on the beach of Quadra Island just 10 miles east of the Campbell River departure point. Based on this finding, as well as documents from the aircraft that were found along the same shoreline where the body was located, the search was reduced. The CF provided a naval vessel to assist in locating the downed aircraft using special SONAR equipment. Five months later the aircraft was salvaged and the remaining four bodies were located on board the aircraft.

The capsizing of the fishing vessel Melina & Keith II off the coast of Newfoundland and Labrador received much media attention in 2005. The SAR system received a 406 Emergency Positioning Indicator Radio Beacon (EPIRB) satellite alert and was unable to make contact with the vessel or the vessel owners. When unable to establish communication, a search commenced. A number of resources were tasked for this complex rescue mission, including a Cormorant, a Hercules, CCGS Leonard J Cowley, CCGS Cygnus, CCGS Wilfred Templeman, CGA Catalina Commander and Fishing Vessel Lady Charlotte Star. Four of the crew did not survive.

The scenes of the aftermath of Hurricane Katrina in the US Gulf Coast were shocking to Canadians. The Canadian Coast Guard was pleased to offer a helping hand to the United States of America Coast Guard during the relief effort. In September 2005, Canadian Coast Guard vessel, CCGS Sir William Alexander, was dispatched to the Gulf of Mexico, accompanying Canadian Navy vessels, as well as fast response craft and a helicopter. The CCGS Sir William Alexander, based in Dartmouth, Nova Scotia, assisted with heavy lift operations during the weeks following the destructive hurricane.

On September 4, as part of Operation UNISON 2005, the Canadian Forces' contribution to relief efforts in the aftermath of Hurricane Katrina, two CH-146 Griffon helicopters also deployed to the United States of America Coast Guard Air Station Cape Cod in Massachusetts to help cover the Boston SAR area of responsibility over the Labour Day weekend, returning to their squadrons on September 12. The six H60 Jayhawk helicopters, normally on stand-by for SAR duty in this region, were involved in the Coast Guard flood relief operation on the Gulf coast.

6. 2005 Program Plan: Report Card

This section of the Annual Report focuses on several important SAR issues which were identified in the 2005 Program Plan as warranting program-level attention by ICSAR departments. Many of these issues will continue through subsequent years.

These issues each relate to these four [strategic directions](#), approved by ICSAR in December 2005 for the National SAR Program:

- Seamless SAR
- The North
- Maritime SAR
- Volunteers

Volunteer Coordination and Sustainability

Results of a SAR Volunteer Survey, concluded in 2005, showed common concerns across SAR teams for retention of members, recruiting difficulties and insufficient funding for equipment and training. Aimed at the team leader, the survey looked at recruitment, training and retention. The NSS undertook this survey to support the volunteer community, an essential component of the National SAR Program. Respondents provided a detailed and heartfelt account of the problems facing their groups, which will help guide further work in this important sector. As a result, in December, ICSAR approved a more fulsome review of the SAR volunteer sector.

Interagency Communications Frequency and Working Frequencies

There is a great need for improved interoperability and connectivity to specialized resources on a national scale. Extensive discussions between the National Working Group for SAR Radio Communications and Industry Canada representatives culminated in a recommendation to Industry Canada for a common dedicated frequency for initial response among diverse SAR agencies. In 2005, Industry Canada approved the use of the Search and Rescue Inter Agency National Frequency (SARIAN F) 149.080 MHz VHF FM as a means to establish initial contact between first responders involved in a ground search and rescue operation. The Ground Search and Rescue Council of Canada accepted responsibility for maintenance of this standard.

SAR Alerting by Cell Phones (9-1-1)

During the 2005 boating season, in accordance with a recommendation from the [Transportation Safety Board of Canada](#) in response to the sinking of the Lady Duck in 2002 a newly formed National Capital Region Water Safety Committee began informing boaters about radio coverage and 9-1-1 alerting for SAR incidents on the Ottawa River. Information notices and posters were placed at the locks and wharves at the Rideau Canal and Carillon entrances to the Ottawa River.

Additionally, a leaflet detailing lock charges and operating hours, which the majority of boaters hold, was modified to carry the warning about radio coverage. A single page information flyer in both official languages is to be distributed at Parks Canada Lock Stations and by police marine units. Vessels in distress are urged to use cell phones to call 9-1-1, which has 365-day, 24-hour coverage.

SAR New Initiatives Fund (SAR NIF)

In August 2005, in accordance with the Government of Canada's initiative to strengthen financial management and comptrollership, new terms and conditions for the contribution

portion of the SAR NIF were approved by the Treasury Board of Canada. Financial management and authorities for capital and operating and maintenance SAR NIF projects were clarified and new processes were put in place to identify a clear line of accountability.

For projects involving operational and capital expenditures by federal departments with SAR responsibilities, funding is transferred from NSS to individual departments through the Annual Reference Level Updates (ARLU) and Supplementary Estimates process.

Impact of Changes to National Security Policy on the National SAR Program

In 2005, Public Safety and Emergency Preparedness Canada (PSEPC) agreed to increase cooperation and coordination with the NSS by joining the ICSAR and its sub-committees, to ensure that the ongoing changes to the National Security Policy and its impact on the National SAR Program are fully considered. In addition, the NSS joined a PSPEC interdepartmental committee dealing with public safety.

In 2005, Environment Canada (EC) continued collaboration with other government departments to further the Government of Canada's safety and security agenda. Working with Public Safety, Natural Resources Canada and others, EC started the development of science deliverables to establish Canada's first National Disaster Mitigation Strategy. EC's role is largely to create an integrated Early Warning Systems Strategy to identify, forecast and alert citizens to risks associated with weather and environmental hazards.

Prevention Information by Electronic Means

In 2005, the Meteorological Service of Canada (MSC) entered the third year of its five-year modernization initiative. Consolidation of weather forecast operations fostered the creation of five Storm Prediction Centres and two Canadian Meteorological Aviation Centres. New tools designed to focus on high impact weather events were implemented. Last year, the MSC made an investment in "weatheroffice" (MSC's weather website) to increase the website's dependability and capacity. Demand for information on "weatheroffice" continued to grow in 2005, with an average of over 430,000 hits per day, about 100,000 more than in 2004. This site received 40% of the total visits of all federal government websites.

SAR Data Availability and Quality

JRCC Trenton continued with improvements of the SAR Mission Management System (SMMS). All JRCC controllers use it extensively for logging, mapping, search planning and searching databases. It is a stable system and continues to improve the overall efficiency of the centre.

In 2005, the Civil Air Search and Rescue Association (CASARA) started development of the CASARA Management System (CMS) to track resources, personnel, training and operational hours.

Parks Canada addressed data quality and standards-related issues through the implementation of the national Occurrence Tracking System (OTS). The OTS adopts colour-coded categories of incident severity so that Parks Canada is able to report incident rates and their severity accurately. The OTS allows for analysis and reporting of incident data nationally. Parks Canada uses this data to report on visitor safety and program effectiveness across the system.

Major Passenger Ship Disaster Planning

On March 30, 2005, a large-scale table-top exercise and seminar were held at the Canadian Coast Guard College to simulate a major maritime incident. The aim was to evaluate the process of dealing with the immediate emergency, possible evacuation of the ship and subsequent reception, medical triage of casualties, and care of survivors. Many of the lessons learned centred on operational issues such as effective coordination and organization, public communications, and clarity in the decision-making process.

Also, in September 2005, Exercise Ocean Guardian, a joint International marine SAR exercise, took place off the Burin Peninsula. Participation of French authorities and SAR units from St. Pierre et Miquelon and cooperation of the civilian ferry operators added both an international dimension and realism to the exercise.

SAR Program Response to Anticipated Rise in Personal Locator Beacon (PLB) use in Canada

In 2005, the NSS drafted new standards to harmonize with the United States of America (USA) PLB standards. Citing a widening gap between Canadian and USA markets for Personal Locator Beacons and specifically the prevailing lack of Canadian-coded and approved beacons available to Canadian consumers, the NSS sought the ICSAR's endorsement for NSS' revision of the Canadian Performance Standard for 406 MHz Personal Locator Beacons (PLBs). It is important that Canadians continue to have access to affordable and approved PLBs.

7. Provincial/Territorial Activities

Provinces and territories meet from across Canada twice per year to discuss SAR related issues of common interest. The National Ground Search and Rescue Council of Canada, as they are known, report on activities and emerging concerns. The NSS participates in and provides Secretariat services to meetings of the National Ground Search and Rescue Council of Canada. Major development work was completed on the GSARC meeting, held in Charlottetown in October 2005. It was decided that most provinces and territories will continue to be represented at the Council by the EMOs. Further, the Royal Canadian Mounted Police, Parks Canada and the Search and Rescue Volunteer Association of Canada (SARVAC) have been given voting status on the Council. Furthermore, the Council agreed to be the custodian of the common radio frequency for GSAR responders to be approved by Industry Canada.

8. Other results

Northern SAR

The Interdepartmental Committee on Search and Rescue agreed to continue to focus on the North as one of four strategic directions for the National SAR Program. They approved a project to review existing services in the North and recommend changes to SAR service delivery in light of increasing activity. This project supports the government's vision for northern development and Arctic sovereignty by improving Northern SAR in consultation with territorial governments, the Canadian Forces and other SAR partners.

SAR New Initiatives Fund (SAR NIF)

In the 2005 evaluation of the SAR NIF, the program was recognized as having great value to SAR stakeholders. The evaluation recognized the unique nature of the Program and its

activities in ensuring the efficient, effective and seamless delivery of SAR activities. As such, the Treasury Board Secretariat approved new terms and conditions for the SAR NIF.

The SAR NIF has an annual allocation of \$8.1 million to enhance SAR in Canada. The NSS manages the fund, on behalf of the Lead Minister for SAR, in partnership with federal, provincial and territorial managing departments and agencies. In collaboration with its partners, the NSS manages and monitors program success and reports results to Canadians. The fund is available to all Canadians and Canadian SAR organizations through the federal and provincial/territorial partners.

In 2005-06, 33 new projects totaling more than \$5 million were approved, while 25 projects for a total of \$3 million continued from previous years. Almost half of the projects addressed prevention and response, the two objectives of the National SAR Program; one-quarter directly benefited volunteers; and one-quarter furthered research and development.

NIF Project Audits

To ensure due diligence and to provide the public with the confidence that funds are spent wisely, the NSS audits a selection of NIF projects each year. These audits help the NSS to better manage the NIF program and to identify risks and priorities for auditing in subsequent years. In 2005, audits were completed on five NIF projects, with findings focusing mainly on project reporting and communications.

COSPAS-SARSAT

Canada is one of the founders of [COSPAS-SARSAT](#), the international satellite system for SAR, and is still a major user and equipment supplier for this system. The NSS represents Canada's interests in the COSPAS-SARSAT system from a program perspective. The Department of National Defence operates and maintains Canada's ground segment that is made up of the Mission Control Centre (MCC) with a back-up site, three operational low earth orbit terminals, two geostationary terminals, one geostationary development terminal and a testing and evaluation centre for flight instruments that are engineered, designed and manufactured in Canada. Throughout 2005, the Canadian space and ground segments were fully operational.

In 2005, the International COSPAS-SARSAT Secretariat completed its move from London, England to Montreal. In November it held the 35th Session of the COSPAS-SARSAT Council at the International Civil Aviation Organization (ICAO) Headquarters. This meeting was one of the four international COSPAS-SARSAT meetings attended by a Canadian delegation and led by the NSS in 2005. The three other meetings were held in the United Kingdom. Additionally, the NSS led Canadian delegations to three bi-lateral meetings with the US to discuss future deployment of new mid-earth orbit search and rescue satellite systems.

Beacon Registry

Emergency beacons are part of the COSPAS-SARSAT system. They provide an alert that can trigger a rapid response to any emergency. Beacon information is held in the Canadian Beacon Registry, maintained by the NSS for use in SAR operations. The registry contains basic owner and, when properly completed, emergency contact information that enhances response time and often eliminates unnecessary responses to misuse of beacons or false alerts. By the end of 2005 there were more than 9,000 beacons registered in the registry. Beacon owners can register or update their information over the Internet at <http://beacons.nss.gc.ca>.

Education and Information

The Directory of Canadian Search and Rescue Organizations on the NSS website is a primary source of information about the skills and resources of groups that perform SAR activities in Canada. In 2005, 25% of the directory content was updated through the online interactive feature. In addition, a new search option was developed to allow users to find SAR organizations regionally within a province or territory.

The annual SARSCENE workshop brings together approximately 600 SAR professionals, paid and volunteer, from across Canada and around the world to share information and best practices and to build a sense of community. The 2005 workshop was held in Charlottetown and, co-hosted with the Prince Edward Island Emergency Measures Organization, included 60 presentations, a trade show, SAR games, displays of SAR aircraft and equipment. A new feature this year was the Personal Flotation Device Fashion Show, with local dignitaries as models.

SARSCENE Magazine is published online by the NSS three times a year. In 2005, it published over 40 news items and 33 features, including profiles of SAR volunteer groups, coverage of major multi-jurisdictional exercises, Canada's response to Hurricane Katrina and reports on SAR NIF projects. Further, a section called People was introduced to showcase individual achievements and appointments. Email alerts notify some 1,500 subscribers when new issues are published.

Promotion and Awareness

Canada Post unveiled a new stamp honouring Canadian search and rescue in June 2005 in Victoria, BC, giving widespread recognition to the men and women who are dedicated to saving lives. Designed in consultation with the NSS, the panel of four stamps depicted rescues from ground, air and marine search and rescue, and the COSPAS-SARSAT system throughout the design.



The annual SAR awards program recognized Barry Nash of Barachois, Newfoundland and Labrador, with the 2005 Outstanding Search and Rescue Achievement Award for his service and dedication to SAR in Canada. A pillar of the Newfoundland and Labrador SAR community for 22 years, Mr. Nash was a major force in the creation of the Newfoundland and Labrador Search and Rescue Association in 1996.

Six individuals received Certificates of Achievement in recognition of excellence in SAR:

- Lloyd Freese, Haines Junction, Yukon (Parks Canada and Kluane SAR)
- Douglas Popowich, Brandon, Manitoba (Office of the Manitoba Fire Commissioner)
- Peter Spear, Calgary, Alberta (Canadian Ski Patrol Service)
- Rick Staley, Haines Junction, Yukon (Parks Canada and Kluane SAR)

- Horace Webb, South Porcupine, Ontario (Porcupine Area Search and Rescue Institute)
- Colin Wiebe, Abbotsford, British Columbia (Central Fraser Valley SAR).

9. Conclusion

Search and rescue is about saving lives, implementing prevention programs to prevent emergencies, and providing seamless response services for those in distress. Canada has major SAR challenges, such as a vast area of responsibility, a harsh climate, a low population density and limited resources. Yet our SAR system is among the best in the world. This success results from organization, technology, equipment and, most of all, dedicated and brave individuals from governments at all levels, non-profit organizations, the private sector, as well as thousands of volunteers working together to save lives.

The Interdepartmental Committee on Search and Rescue is committed to working with the broad SAR community to support the provision of seamless SAR throughout Canada, and to continue to improve both planning for the future and reporting to Canadians on the results achieved.