



National ground SAR standards

SARSCENE 2002

The Art of Casualty Simulation

Canadian Forces National/Arctic SAREX in Manitoba

SARSCENE

Fall/Winter 2002 Vol. 12, #3

The Canadian Search and Rescue Magazine

SAR partners simulate Arctic disaster



SARSCENE



National Search and Rescue Secretariat

Secrétariat national Recherche et sauvetage

Canada

CANADA		POSTES
POST		CANADA
Postage paid Publications Mail		Port payé Poste- publications
4059507		

TABLE OF CONTENTS

Feature Story

SAR partners simulate Arctic disaster 1

Ground SAR

Groundbreaking Volunteer SAR national criteria adopted ... 2

SAR Book Review

Heroic Rescues at Sea 3

SAR Team Profile

Lakehead Search & Rescue Unit
40 Years of Service and Change 4

Training

The art of casualty simulation 5

SAR SCENE 2002

SARSCENE 2002 exemplifies its theme
"No call for help goes unanswered" 6

Air SAR

CASARA joins Canadian Forces SAR
squadrons in SAREX 2002 10

Beacons

When Personal Locator Beacons do -
and don't - make sense 11

Upcoming Events 12

New SAR Initiatives Fund

NIF supports Basic Survival and Prevention Program 13

Marine SAR

Canadian team wins ISAR 2002 14

Cormorant flies first mission 14

Watch for information on SARSCENE 2003
October 15-18, 2003
Kingston, Ontario
Visit: www.nss.gc.ca for more news.

SARSCENE

SARSCENE

SARSCENE is published by the National Search and Rescue Secretariat.

Facts and opinions published in SARSCENE are those of the individual contributors and do not necessarily reflect the position or policies of the Secretariat.

Guest Editor: Roxanne Halverson

Editorial Assistant: Tina Bouchard

Email: Ekatz@nss.gc.ca

National Search and Rescue Secretariat
275 Slater Street, 4th floor
Ottawa ON K1A 0K2

Phone: 1-800 727-9414

Fax: (613) 996-3746

Web site: www.nss.gc.ca

Canada Post Agreement #40559507

ISSN 1183-5036



Canadian Coast Guard Auxiliary (CCGA) receives new funding

The CCGA will receive \$22.5 million in new funding from the Department of Fisheries and Oceans over the next five years. The funding will enable the volunteer association, whose members assist the Canadian Coast Guard in providing SAR services and maritime safety education programs to Canadians, to continue this valuable work. The CCGA consists of 4,666 members who volunteer their time and vessels to assist fellow mariners in distress.



Photo courtesy of the CCGA

SAR day in Alberta

Alberta's search and rescue volunteers showcased their skills and accomplishments in their first-ever SAR day, May 4, 2002. Hosted by the Search and Rescue Association of Alberta, the day featured a wide range of activities aimed at promoting SAR work. Communities across the province marked the occasion with SAR fun days, information booths, public seminars, workshops and school presentations. Other events included a mock plane crash in Fort McMurray, a cold case search in Calgary and a mock search in the Lethbridge region.

Study shows swimming and boating takes toll in Quebec

The Secrétariat au loisir et au sport Québec, the Quebec division of the Canadian Red Cross, and the Life Saving Society have released a study of provincial drowning data for an eight-year period (1991-1999). Recreational swimming accounted for most of the water-related deaths, but boating, canoeing, and fishing also took their toll. In boat-related drownings, the statistics indicated that the majority of the victims weren't wearing

personal flotation devices. Use of alcohol, swimming nears rapids and waterfalls, swimming alone and poor swimming skills were also cited as factors in most drownings. With increased awareness of drowning circumstances the organizations hope to reduce such drowning incidents.

Studying attitudes towards PFDs

The Canadian Coast Guard's Office of Boating Safety (OBS) has undertaken a project to increase the use of personal flotation devices (PFD) among recreational boaters. The project included a study of attitudes towards PFDs, which showed that women are more safety conscious than men, and that higher income and more highly educated boaters feel they have more control over their environment and are less likely to wear PFDs. Ninety per cent of study respondents said they would be more likely to wear a PFD if asked to do so by the boat operator—making operators a primary audience for safety messages. Bulkiness and fit was cited as the overwhelming problem associated with wearing PFDs among recreational boaters. For more information on the study, contact the OBS, Newfoundland Region, at 1-800-230-3693.



Photo courtesy of the CCGA

NIF project makes the news

The Edmonton Journal, October 10, reports that RCMP K Division in Edmonton is training volunteers for night searches with a Forward Looking Infra Red (FLIR) camera mounted on their Bell 206 L-4 helicopter. The cost of training the volunteers and of the equipment comes from the New Search and Rescue Initiatives Fund (NIF), which is administered by the National Search and Rescue Secretariat. The fund supports about 50 projects a year to enhance search and rescue capabilities across Canada.

The Cape Dorset shoreline, the site of the simulated rescue operation

SAR partners simulate Arctic disaster

by Louise Crone

Canada's SAR response agencies were put to the test in Cape Dorset on Baffin Island, Nunavut as they worked with Nunavut Emergency Management (NEM), the local community and the National Search and Rescue Secretariat (NSS) to simulate the response to a major marine emergency. This was the first time that these participants had worked together to carry out a full-scale, multi-jurisdictional exercise.

The scenario involved the simulation of a fire on board a cruise ship. The Canadian Coast Guard (CCG) icebreaker, the *DesGroseilliers*, acted as the stricken vessel with an explosion and fire on board. There were 14 casualties with a wide range of injuries. Seven were evacuated to shore, five remained on board for triage and treatment, and two persons (actually mannequins) were pulled from the frigid waters of the Hudson Strait onto a Zodiac fast-rescue craft. The CCG icebreaker, *Henry Larsen*, played the role of the rescue vessel.

The exercise assessed how each of the participating organizations (Canadian Coast Guard, Canadian Forces, Parks Canada Agency, RCMP, Nunavut Emergency Management, and the community of Cape Dorset) worked together. It also tested the ability of the various elements in the SAR response system – from the first call for help to the final recovery – to handle an emergency in a remote location. The Baffin Island Regional Health Centre, located in Iqaluit, used the exercise to test its ability to respond to a mass-casualty situation.

Planning the exercise

Planning for the exercise began in 2000. Three planning sessions, including a table-top dry run on-site in Cape Dorset, took place before the live exercise. The site was chosen because of the increase in passenger vessel traffic in the eastern Arctic.

Although heavy fog prevented the Canadian Forces from fully participating – the Hercules aircraft could not fly that day – the exercise was deemed a success. A hot-wash debriefing was held immediately after the exercise in the Cape Dorset community centre.

Some of the lessons learned provided valuable insights into future exercises, such as the importance of allowing an extra day for bad weather, if possible, and the need to hold the exercise in a more remote location, away from a community, where no immediate help is available.

Lessons learned

Some preliminary lessons about the SAR system include:

- Using VHF repeaters to assist communications between team members
- Having a common radio frequency for RCMP, NEM and Parks Canada
- Equipping all rescuers on-shore with the means to communicate with the On-Scene Commander
- Improving the interaction with local response agencies and rescue personnel when vessels are in Arctic waters.

A more comprehensive report on this exercise will be available in early 2003. Resources permitting, the NSS plans to facilitate one multi-jurisdictional exercise a year with a different location and scenario each time. ■



Groundbreaking national criteria adopted for SAR volunteers



GSAR training and skill levels difficult to gauge

GSAR operations have never been national in scope. They come under provincial and territorial jurisdictions, with regional police agencies managing and conducting GSAR missions employing standards and procedures which can vary significantly from region to region.

Police in most jurisdictions rely on GSAR volunteers to assist in search operations, but the degree to which they employ them varies. This is a result of the fact that, while the required GSAR skills are well known among disciplined GSAR volunteers, actual training standards and recognized skill levels vary significantly across the country. The lack of a common structure to validate skill levels has made it difficult for police agencies to determine how to best use volunteer GSAR resources.

In addition, GSAR operations are becoming increasingly sophisticated. There is a greater emphasis on analytical search techniques based on data, which shows that lost people display specific and predictable behavioral patterns related to their age, mental capabilities and mental states. GSAR workers must be versed in satellite navigation techniques, as well as capable of operating a growing array of

Volunteers in ground Search and Rescue (GSAR) operations in Canada marked a major milestone on September 12th with the adoption of a common set of national criteria for GSAR training and proficiency. The culmination of a two-year project, the first-ever common criteria will serve as the foundation for the harmonization of GSAR standards nationwide, and ultimately, certification of the skills of GSAR workers across Canada.

complex communications and information technologies. There are constant advances in first aid and emergency medical treatments that must be learned. As a result GSAR workers must have a wider range of specialized training and expertise that go beyond basic search, survival and orienteering skills.

GSAR certification

“With nationally recognized GSAR criteria we can get a handle on grading and identifying skill levels, as well as the training requirements for GSAR volunteers across the country,” explains NSS GSAR Project Director John Chaffey. “This will enable police authorities to use these resources far more effectively and with greater confidence.”

The common criteria will allow different jurisdictions to share resources, and pave the way for mutual aid agreements. They will facilitate the delivery of consistent and cost-effective training to produce certified GSAR experts and create a national pool of skilled emergency personnel. Certification will also increase the mobility of GSAR workers as their skill levels and credentials will be recognized across the country.

Consensus among thirteen jurisdictions

Thirteen separate jurisdictions have adopted the common set of GSAR standards, as part of a project that was

facilitated by the NSS. Funded through the New SAR Initiatives Fund (NIF), it was a cooperative effort of the National Ground SAR Council, which is made up of all the provincial and territorial GSAR authorities.

The Council appointed a working group to develop methods for uniting the training and management structures of GSAR operations across Canada. Comprised of major police agencies and provincial GSAR volunteer associations, the working group met over a two-year period to develop the national GSAR criteria.

The criteria model

Consisting of three GSAR training levels—basic, advanced, and management—the criteria outline the degree of instruction required for each GSAR level, as well as the essential elements to be included within the official standards of any GSAR organization. The criteria also include a GSAR vision and principles, and a glossary of standardized GSAR terms.

“This model enables GSAR authorities in all the jurisdictions to develop training and procedures, which address the vital elements of GSAR operations, while still allowing each jurisdiction to set their own specific standards to address regional differences related to organizational, geographical, environmental and cultural factors.” says Mr. Chaffey.

National identity

Beyond standardized training and skill requirements, the adoption of common GSAR criteria will advance GSAR operations in other ways. Most importantly, it will serve as the keystone to create a national identity for GSAR authorities.

“The combination of separate jurisdictions and lack of national standards has made it difficult for GSAR authorities to gain the same type of national profile as the Canadian Coast Guard, for example,” notes Mr. Chaffey. “We now have the ability to build a national identity, which will provide for greater corporate, academic and political interest in GSAR activities and offer opportunities for national sponsorships and fundraising programs.”

With national common criteria now officially in place, the NSS and GSAR authorities are now moving to implement and apply the criteria. This second phase of the project, for which NIF funding is also being sought, is aimed at enhancing ongoing communications among provincial and territorial GSAR authorities and on building on the new criteria to create an official Canadian GSAR accreditation and management program. ■



New common GSAR criteria will ensure consistency in general GSAR procedures and training nationwide.

“Heroic Rescues at Sea” by Carolyn Matthews captures Canadian Coast Guard’s character

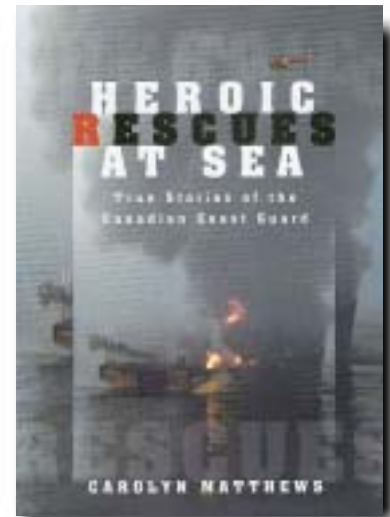
Heroic Rescues at Sea: True Stories of the Canadian Coast Guard, published by Nimbus Publishing in Halifax, is a collection of stories of the organization’s search and rescue missions from coast to coast. New Zealand native Carolyn Matthews, a former registered counselor, was compelled to write the book while researching the role of grief counselors during the Swissair disaster.

Her account of 34 Canadian Coast Guard rescues provides an excellent synopsis of the Coast Guard’s diverse role on Canadian waterways. Everything from maintaining buoys to dynamic rescues is covered, providing insights into the many challenges the organization faces, often in life and death situations.

The range of her rescue accounts serves to remind us of the vastness of our maritime resources. However, there is repetitiveness in her descriptions of the treacherous nature of the waters of our inland seas and three ocean coasts, and in the images that explain why these real-life heroes became involved in maritime rescues. Phrases such as ‘his dreams were of a seaman’s life’, ‘haunted by the ships and the sea’, and ‘the call of the sea was too powerful’ occur too frequently.

While the rescue accounts are well-written, reflecting a combination of foreboding, emotion and drama, key details are sometimes lacking. For example Ms. Matthews provides little information on the design, type or capabilities of the Coast Guard vessels involved in specific missions. Missing details also detract from the otherwise powerful story of the sinking of the L’Aigle d’Ocean in the Hudson Strait. The account of the rescue by the Coast Guard ship Norman MacLeod Rogers is well-done, but details about the fatal crash of the ship’s helicopter are sketchy.

Despite these flaws, Heroic Rescues at Sea is a well-documented tribute to the men and women of the Canadian Coast Guard and the critical role they play in saving and protecting the lives of people who venture onto Canada’s abundant lakes, rivers and seas. ■



Next Issue

Watch for a review of **Shipwreck Treasures: Disaster and Discovery on Canada’s East Coast** by Roger Masters, Formac Publishing Company Limited, 2002.



Lakehead Search & Rescue Unit: 40 Years of Service and Change

by Pat Skula, EMCA, SAR 1

1962

A four-year old boy went missing in Kakabeka Falls Park and night was coming on. A call for help went out. My husband and I had a German Shepherd and, in our naivety, we volunteered his nose to assist in the search. What we didn't anticipate was the amount of work and training that went into handling a tracking dog. Learning to read your dog and trusting him to lead, as well dealing with the implications and emotional impact of watching him stand, belly-deep in fast-flowing water, staring toward the top of the falls.

In the Fall of 1962 a group of hunters and fishermen in the Thunder Bay area responded to a call for a lost hunter. The chaos, confusion and sometimes, dangerous practices that followed, such as taking along a rifle and antifreeze, made it clear that training and organization were needed, not only to find a lost person, but to keep the searchers themselves in one piece.

The hunter was never found, but the experience led to the formation of the Thunder Bay Bush Search and Research Squad, which evolved into the Lakehead Search and Rescue Unit (LSRU). We knew we had a lot to learn. How do you conduct a thorough search? How do you know what you are seeing and what it means? Finally, how do you ensure that the searchers don't become a second casualty? Then came the Kakabeka missing child search and stark reality hit when the youngster was found drowned in a sink-hole above the falls.

Depth and diversity

When the LSRU's training classes began, we found an amazing depth and diversity of expertise among the members. There were greenhorns like me and my husband, together with expert hunters, fishermen and trappers, as well as a veteran of the Finnish Army Ghost Troop.

As the lone female member of the group in its early days I had some unique experiences. When the LSRU volunteer doctor gave a crash course in first aid, he was half way through his lesson before he noticed that one of the bushmen in his audience wasn't one! He said later that upon this discovery he spent a horrified few minutes trying to remember how rough his language had been. The LSRU was an equal opportunity organization. In fact, the unit's first callout coordinator was wheelchair bound.

As we acquired search and rescue skills and the confidence of authorities, we found ourselves being called for as many as three searches in one weekend. If we were going to enjoy our weekends we needed to take preventative action. We opened our training school to the public, published our first instruction manual, and waited to see if there would be any interest. Thirty-five years later, we have to limit our annual enrolment to 100 individuals and the number of searches has dropped to around a half-dozen a year.

Continued on page 5

4

SARSCENE



Lakehead SAR team's equipment trailer, Big Red

Continued from page 4

Passage and progress

The LSRU has gone from pencil, exercise book and a compass on the hood of a truck, to a unit-designed collapsible trailer and to Big Red, our command centre van, which served us for 25 years. At our 40th anniversary dinner this year, we showcased our new fleet. We now have a stretcher-equipped Suburban, an equipment trailer, which also serves as a secondary operations base, and a new Big Red equipped with computers and Global Positioning System linkups, radio and cell phone connections. We can now pull in a search area and print out the appropriate map segment for each team leader.

Of the original group, there are perhaps a dozen still working with the unit. They are valuable resources who teach, advise and mentor. Some remain active searchers, working alongside the newer members, and the up and coming computer generation. It is through this spirit of mentoring, teamwork, and dedicated volunteerism that the LSRU looks forward to the next 40 years of service. ■

The art of casualty simulation

by Jules Deschenes, OSt J, Chief Instructor-Trainer, Casualty Simulation

When it comes to emergency rescue and disaster training, the more authentic instructors can make a training session by creating realistic situations, the more effective the training. Casualty simulation—the art of making up a healthy person to look injured—is a prime example of how convincing and sometimes even gruesome simulations can add to the urgency and realism of such training.

Casualty simulation came to Canada from England in the late 1940s. Its original purpose was to prepare rescue personnel and members of the military to deal with injured disaster and combat victims by presenting them with realistically made-up wounds. For rescue workers, casualty simulation enabled them to recognize and assess the wounds they might actually

encounter. For the military, it also served as a form of battle inoculation.

Today the art of casualty simulation and its use as a training aid in emergency care training programs and disaster exercises has become very sophisticated. Well-trained casualty simulators can create shockingly realistic wounds ranging from first, second and third degree burns to open and closed fractures and arterial bleeding. They can also accurately simulate sucking chest wounds and amputations, as well as physical conditions that include shock, cyanosis, heart attacks and even death.

In Canada, casualty simulation has become such an art and important element of emergency and disaster training, that there are courses available to become a certified casualty simulator. The



Simulation of a badly burned hand

Emergency Services Division of Health Canada is the national certifying agency for casualty simulation. ■

For more information on casualty simulation, e-mail Jules Deschenes at astropix@magma.ca



An arm, severed at the elbow, is represented in this casualty simulation. In an actual simulation exercise, the victim's clothing would cover the remaining portion of arm that is supposed to have been severed.

Facts about casualty simulation certification

- There are three levels of casualty simulation certification—basic, instructor and instructor-trainer.
- Currently only the basic course is available to the general public.
- Kits, manuals and courses are available free of charge.
- Casualty simulator instructors must be remunerated for out of pocket expenses (e.g. food, fuel, lodging) when travelling out of town to teach a course.
- Instructors are available in all provinces and territories.
- Only instructors and instructor-trainers can book and register courses, and obtain kits and manuals.
- Contact your provincial Emergency Measures representative to have a basic course taught in your area.
- A casualty simulation aide-memoire video is available for certified simulators from the Department of National Defence. For more information contact Master Warrant Officer E. Comeau at 6 13-945-6797 or by e-mail at Comeau.JE@Forces.ca.



SARSCENE 2002

“No call for help goes unanswered”

SIX HUNDRED DELEGATES, SPEAKERS AND EXHIBITORS ATTENDED SARSCENE 2002 FROM SEPTEMBER 11-14 IN HALIFAX, TAKING PART IN A WORKSHOP PROGRAM OFFERING SOME 54 SESSIONS, A TRADE SHOW, SAR DEMONSTRATIONS AND TOURS, AS WELL AS SAR GAMES.

Advanced technologies advance SAR operations

From laser lights to computer models, innovative technologies are advancing and enhancing almost every aspect of search and rescue. A number of those dynamic new technologies were featured at SARSCENE 2002. Here is a brief summary of the presentations.

Maritime Activity Risk Investigation Project

Dr. Ron Pelot, Dalhousie University and Paul Kendrick, Canadian Coast Guard and a Dalhousie University researcher

A Dalhousie University Marine Activity and Risk Investigation Network Project, the Geographical Information Systems-based (GIS) technologies risk model is designed to analyze maritime activities by type, location and time and to combine them with SAR incident data (SISAR). Developed for the Canadian Coast Guard, the GIS-based model enables managers to compare accident statistics and risks by various criteria. It will play a key role in SAR strategic planning.

The Cold Exposure Survival Model (CESM)

Dr. Allan Keefe, Research Technologist, Defence R&D Canada (DRDC) – Toronto

The Cold Exposure Survival Model (CESM), a new computer-based hypothermia prediction model, gives SAR teams the capability to accurately determine the impact of hypothermia on a casualty. Using biophysical and physiological principles, the CESM estimates the core body temperature of exposed individuals by taking into account the physical characteristics, the clothing worn, the weather or sea conditions and the specific crisis situation. Using this information, it predicts both the functional and actual survival times of hypothermia victims. Developed by DRDC in partnership with EMS Technologies, this decision-aid enables SAR teams to input data about an actual lost party and use the CESM's calculations to aid in formulating search windows and preparing emergency medical services.

Laser Light Applications in SAR

Paul Burke, Greatland Laser

Sophisticated laser light signalling instruments developed by Greatland Laser of Alaska may be a promising new option, over conventional light systems, for the SAR high tech tool kit. Waterproof and simple to use, laser light devices emit light that can be seen for up to 20 miles. They can be used in SAR operations for both sending signals to lost parties and for detecting reflective materials to locate a lost person. Laser light is stronger and more directional than conventional light systems and when used in SAR operations it produces an unmistakable brilliant red flash that can easily be seen by the lost party. If the light is reflected by something the lost person may have on his or her person the sender or searcher will see a bright red flash back.

The Infrared Eye—an Airborne SAR Tool

Paul Chevrette and Benoit Richard, Defence R&D Canada—Valcartier

A new SAR airborne surveillance technology, the Infrared Eye, is a promising viewing system that will enhance airborne spotting and searching techniques. A NIF project, sponsored in partnership with DRDC, the Infrared Eye has accomplished this task by duplicating the mechanics of the human eye and simultaneously using two fields of view. This includes a wide overall field with high sensitivity, but low resolution for situation awareness and detection, and a narrow field of view with very high resolution that can easily be directed to objects of interest in the wide field, tracking the operator's line-of-sight.

Synthetic Aperture Radar (SAR) for Search and Rescue (SAR) of Crashed Aircraft

Tom Lukowski, Physical Scientist, Canada Centre for Remote Sensing, Natural Resources Canada.

Improved capability of detecting crashed aircraft without an emergency locator transmitter is the goal of a NIF project involving Synthetic Aperture Radar (SAR) and RADARSAT-2 (scheduled for launch in 2004). The key advantage to using a SAR system in

search and rescue missions is its ability to obtain imagery through cloud, darkness and in bad weather. In addition, the signatures of crashed aircraft in SAR imagery differ from those that can be seen visually or with optical imaging systems, enabling SAR imagery to be used with imagery from other systems. The project includes the modification and development of algorithms for detecting crashed aircraft with emphasis on multi-temporal and multi-polarization imagery. Tests to date show that imagery from polarimetric and interferometric SAR systems can determine the potential locations of downed aircraft, resulting in reduced search times, saving both lives and money.

GPS in Low-Cost High Tech Searching

Robin Hughes and Charlie Strickland, Pictou County Volunteer Ground Search and Rescue

A recent Nova Scotia bastard search—a search for a subject who is not in the area—may lead to a promising new SAR tool. The search involved a woman who was thought to have disappeared in the area of a bridge, but was later discovered to have moved to New Brunswick. Prior to learning of her whereabouts, the SAR team conducted a live search of the area using the team's GPS units and downloading their taskings onto electronic maps provided by a new computer software system. The result was a well-documented search area showing all the tracks and paths of the search teams. This “high tech for a reasonable price search technique” cannot only help in gathering information and facilitating better communications during a live search, but can provide worthwhile documentation for future search operations.

SAR Prevention Best Practice Elements

- I. Base on real specific needs
- II. Identify clearly defined audience
- III. Identify cultural competency
- IV. Identify clearly defined objectives and interventions
- V. Consult behavioural and social science theory and research
- VI. Conduct a formative evaluation
- VII. Include an evaluation plan
- VIII. Secure sufficient resources
- IX. Effectively portray nature, degree of risk and consequences of unsafe practices and offer solutions
- X. Use call-to-action or personal interaction programs
- XI. Ensure wide distribution of message
- XII. Conduct a process evaluation
- XIII. Make use of evaluation findings and mid-course corrections
- XIV. Conduct impact evaluations

Workshop reviews SAR Prevention Working Group's best practices

Federal SAR Working Group

Preventing SAR incidents by educating and preparing people for the risks associated with outdoor activities is an important part of the SAR mandate. The Federal SAR Prevention Working Group has been developing a strategy for federal SAR prevention activities and has established the SAR Best Practices Criteria—a system to measure the overall effectiveness of new, ongoing and proposed SAR prevention programs.

In a joint presentation from the NSS and Parks Canada, delegates of SARSCENE 2002 received an overview of the development and application of the SAR Prevention Best Practice Criteria, which consist of 14 best practice elements to serve as a benchmark for evaluating SAR prevention programs.

The SAR-related prevention programs that were reviewed included Parks Canada's SNOWSMART, which is designed to increase young people's awareness of the risks associated with winter activities, and Environment Canada's Arctic Land Fast Warning and Advisory System, aimed at better educating fast-ice travellers on the dangers involved in this activity.

Other SARSCENE Workshop presentations on prevention

- **Make SAR Prevention Fun**, a new prevention initiative aimed at youths in the Northwest Territories, was featured as an interactive presentation.
- **Sea Kayaking Prevention and Safety in the Mingan Archipelago** described approaches used to prevent sea-kayaking accidents and improve SAR responses at Quebec's Mingan Archipelago National Park Reserve.
- **YouthSafe Outdoors: Risk Management on School Field Trips** was profiled as an innovative NIF prevention project to help youth manage outdoor recreation risks for themselves.
- **The NIF-funded Canadian Avalanche Association Recreation Avalanche Course Program** was featured as a prevention success story, which now trains some 3000 people in avalanche safety annually. ■

International speakers at SARSCENE 2002

SARSCENE 2002 hosted a number of international SAR organizations. Speakers from six countries provided perspectives on their various SAR programs and activities.

New Zealand

Ross Gordon, Director/Trainer, Search and Rescue Institute New Zealand Ltd.

The Search and Rescue Institute New Zealand Ltd. (SARNIZ) provided an overview on the series of courses and operations SARNIZ has developed to maximize search team point of detection (POD) using sound and light. The presentation included an examination of how a life was saved with the use of the sound light line.

Iceland

Gardar Eiriksson, VP ICE-SAR and Thornstein Thorkelsson, SAR Department, ICE-SAR Headquarters

The Icelandic Association for Search and Rescue (ICE-SAR) provided a synopsis of its work in search and rescue and accident prevention, as well as a general overview of Iceland's SAR operations on both land and sea.

Sweden

Harry Sepp, Survival Instructor and Advisor for the Swedish Civil Defence League

Lost in the Woods: Awareness of the Physiological Signs in Survival for Children and Adults was the topic of the presentation from the Swedish Civil Defence League.

Outlining the psychological and physiological problems that a person may encounter within hours of being lost, the presentation also discussed preventative measures, focusing on the question, "How much do you really know about your child?"

Scotland

Hamish McDonald, Director of the Maritime Rescue Institute, Stonehaven, Scotland

The Maritime Rescue Institute of Stonehaven, Scotland, provided an overview of SAR Craft Operations and the Required Training for Crew. The presentation detailed the training requirements in planning marine SAR units equipped with state-of-the-art technology. Training needs were outlined within the context of the significant loss of indigenous seamanship knowledge and skills.

United Kingdom

Pete Roberts and Dave Perkins, Northumberland National Park SAR Team

The use of the UK Lost Person Behaviour database and a review of its effectiveness was one of two presentations from the Northumberland National Park SAR Team. Their second presentation discussed recent trends in SAR management and training, focusing on the value of a common approach to SAR among the various agencies.

Chris Price, Staff Officer Operations, Royal National Lifeboat Institution

The Royal National Lifeboat Institution (RNLI) outlined its contribution to SAR

activities in the UK. Topics focused on how the RNLI is organized and the manner in which it carries out its business within the SAR framework of the UK and Ireland.

United States of America

Chris Long, Washington State SAR Coordinator

Mr. Long lectured to a packed audience about the crucial role of good leadership in SAR. He stressed the importance of leadership in all aspects of operations from search teams through incident command.

Robert Koester, Type 1 Incident Commander

The number of searches for Alzheimer's patients has increased dramatically in the last few years and Robert Koester's sold-out training session explained the techniques and psychology needed to undertake these types of searches. Mr. Koester also gave two workshop presentations, one on Alzheimer's and related dementia and another on searcher fatigue.

Lieutenant-Commander Paul Steward, Office of Search and Rescue, U.S. Coast Guard

American Paul Steward and Canadian Peter Howe, of the National Search and Rescue Secretariat, joined forces to talk about the future of the COSPAS-SARSAT, an emergency beacon detection system. The presentation included a live demonstration of the satellite system.

Paul Burke, Greatland Laser

(see *Laser Light Applications in SAR in "Advanced technologies advance SAR operations"*.)

ALBERTA TEAM WINS SARSCENE GAMES

A record number of 13 teams from across Canada entered this year's SARSCENE Games, armed with only compasses and multi-tools. The day was overcast but the setting was ideal – the 95-acre Sir Sanford Fleming Park in Halifax was complete with a lake. The competition was scored on the basis of timing and skill and consisted of six stations. They included search planning, medical first response, clues and evidence, line throwing, a relay of four micro-stations and a mystery event that turned out to be crossing a cable using a fixed pivot balance rope.

For the second year in a row, the Foothills SAR Team from Turner Valley Alberta (left) took first place at the SARSCENE Games. Royal Newfoundland Constabulary (centre) came in second, while the Lakehead Search and Rescue Unit, Ontario, (right) secured third spot.



SAR DEDICATION AND VOLUNTEERISM APPLAUDED

The National Search and Rescue Secretariat recognized the dedication and professionalism of five members of Canada's SAR community at SARSCENE 2002 with the presentation of SAR Achievement Awards and Certificates.

Outstanding SAR Achievement Award

John Kelly of Winnipeg received the 2002 Outstanding SAR Achievement Award. It was presented to him by John O'Reilly, Parliamentary Secretary to the Minister of National Defence, on behalf of John McCallum, Lead Minister for Search and Rescue. Currently the National Administrator of the Civilian Air Search and Rescue Association (CASARA), Mr. Kelly's distinguished career has spanned some three decades. During that time he saved many lives, provided SAR training to thousands of military and civilian SAR workers and educated thousands of people on outdoor survival, safety and prevention. An award-winning parachutist, he helped develop a new parachute

enabling SARtechs to more effectively penetrate crash sites to administer lifesaving medical treatment.

Five SAR Achievement Certificate winners

Alberta-based RCMP dog handler, **Corporal James Galloway**, played a key role in forming Alberta's RCMP Civilian Search and Rescue and Service Dog Association, a province-wide organization that develops and trains SAR dog teams.

Tim Jones of British Columbia's BC North Shore Rescue Team was recognized for his contribution to SAR training designed to meet the unique challenges presented by the province's mountainous terrain. This included the development of SAR procedures for avalanche, swift water and ground rescues.

Eric Langley, a founding member of the Cape Breton SAR Team, was recognized for his three decades of service. Mr. Langley played a key role in developing many of the team's training

procedures and was active in hunter and firearm safety training programs.

Denis Maurice, founder of the Georgian Bay Volunteer Search and Rescue Unit, was recognized for his vision in creating a Central Region SAR unit. He also developed a training curriculum, policies and standard operating guidelines.

Robert Petitpas, President of the Canadian Coast Guard Auxiliary (Quebec), was recognized for his life-long dedication to volunteer marine search and rescue. He has been active throughout his career in the Canadian Coast Guard Auxiliary, Canadian Safe Boating Council, St. Lawrence Waterway Committee, Management Committee of the Pleasure Craft Operator's Card and Canadian Power and Sail Squadron.



John Kelly, recipient of the outstanding SAR Achievement Award 2002

DEMONSTRATIONS AND TOURS CAPTURE SPOTLIGHT



Peter Stow, Yves LeClerc and Captain Marc Beaumier provided the commentary for the SAR demonstrations.



A hoist from the CCG Earl Grey to the CCG Yarmouth helicopter in Halifax Harbour during SARSCENE 2002.

One of the highlights of SARSCENE 2002 was the marine and air demonstration, organized by Kathleen Flemming of the Joint Rescue Coordination Centre Halifax, with the support of Canadian Forces and the Canadian Coast Guard. The demonstrations included the RCMP dive vehicle and a kayaking team sponsored by Parks Canada Agency and a rescue boat from the Canadian Coast Guard Auxiliary, making this year's show one of the most multi-disciplined. The perfect weather brought out hundreds of delegates and the public who lined the waterfront area.

Taking in the tours

SARSCENE 2002 offered tours to three operational centres that play vital roles in the region's SAR operations.

The Joint Rescue Coordination Centre (JRCC) Halifax

One of three 9-1-1 centres for marine and aviation calls for Canada, the JRCC is jointly staffed by the Canadian Coast Guard and the Canadian Forces and is responsible for tasking-out vessels and aircraft across an area of nearly five million square kilometres.

Canadian Hurricane Centre (CHC)

With an area of forecast responsibility that lies along the Canada-United States border and extends into Canadian waters for 200 nautical miles, the CHC advises Canadians on the threat of hurricanes and tropical storms and provides guidance to weather centres in all regions affected by such storms.

Marine Communications and Traffic Services (MCTS) Centre

Providing ships with safety, communications and vessel traffic services, the MCTS Centre provides services that are vital to the safe and expeditious movement of vessels in harsh weathers and seas.

CASARA joins Canadian Forces SAR squadrons in SAREX 2002

by Major Grant Macdonald, Canadian Forces

For the first time ever, Civil Air Search and Rescue Association (CASARA) members formally participated in the National SAREX 2002 held in Gimli, Manitoba, in September. Teams from all five Canadian Forces primary SAR Squadrons, plus a sixth composite team from the three Combat Support Squadrons were joined by six CASARA teams. The five-day exercise tested skills in parachuting, aeronautical, emergency medical diagnosis and treatment within a competitive framework designed to foster camaraderie and team-building.

Each of the CASARA teams was paired with a Canadian Forces team and assigned the task of dividing and thoroughly searching an area within a specified timeframe. This realistic approach not only reflected the normal interaction that would take place between various search resources during a major aeronautical SAR operation, but also demanded a high degree of cooperation and trust. 413 Transport and Rescue Squadron, CFB Greenwood, Nova Scotia, paired with the CASARA team of Zone 3, Swan River, won the event.

WINNERS OF OTHER EVENTS INCLUDED

Maintenance Event

8 Aircraft Maintenance Squadron, 8 Wing, CFB Trenton (in support of 424 Squadron)

Search Event, Medical Event and Team Spirit Event

413 Transport and Rescue Squadron, CFB Greenwood

Rescue Event

Composite team of 417, 439 and 444 Combat Support Squadrons

Team Parachuting Competition

103 Rescue Squadron, CFB Gander

Individual Parachuting Award

Master Corporal Dave Cooper



The winning team of SAREX 2002: 413 Squadron and their CASARA teammates from Zone 3, Swan River, Manitoba (including a spotter from Newfoundland on vacation in Gimli).

ARCTIC SAREX 2002

10

SARSCENE

Three nations respond to mock air disaster

Following the four-day National SAREX, contingents from the Russian Air Force and the Alaska Air National Guard joined Canadian Forces teams in Gimli for Arctic SAREX 2002, an exercise in coordinating a major air disaster response.

A simulated crash site was established eight kilometres north of Gimli with mock airliner wreckage and some 50 CASARA

volunteers acting as casualties. Although low ceilings precluded parachuting to the site, teams of six para-rescue specialists from each nation arrived in late afternoon by Labrador, Griffon and Cormorant helicopters to tend to the injured.

An Alaska Air Guard HC 130 circled overhead acting as the On-Scene Coordinator. A Hercules aircraft from 8 Wing CFB Trenton dropped one of Canada's four Major Air Disaster (MAJAD) kits, along with six members of the Canadian Parachute Centre (CPC) who swiftly unpacked the MAJAD kit and erected two 42-person arctic tents, complete with forced-air heating and electric lighting.

Just after dawn the next day, a Cormorant arrived, the first of the evacuation helicopters. The casualties and their rescuers were

transported to a World War II hangar at Gimli airport, where Canadian Forces medical staff had set up a forward base medical area to assess and treat casualties.

The exercise was a success in demonstrating the effective integration of the tri-national para-rescue team at the incident site. The exercise included a trial in the use of coloured vests to identify key appointments at the site. The flow of casualties through the triage station improved considerably compared to the previous exercise in 1998.

The next Arctic SAREX will be held in Russia in the fall of 2003.



Canadian Forces SARtechs and a Russian Air Force doctor prepare to move a casualty.

When Personal Locator Beacons do – and don't – make sense

Bill Layman has paddled in Nunavut and the Northwest Territories with his partner, Lynda Holland, for over seven years. He wishes the Inuvik incident was an isolated one, but says stories of the inappropriate use of emergency signalling devices, triggering costly rescues, occur every year in Canada's north. He recalls when he lent his Personal Locator Beacon (PLB) to an outfitter who was taking a wealthy client on a stretch of the Kazan River. When their canoe blew away they set off the PLB.

"They had all the supplies they needed, except for the canoe, and a floatplane was scheduled to pick them up in less than a week," says Layman. "They could have spent that time fishing and hiking, but the client demanded the outfitter call for help, provoking a very expensive helicopter rescue." The tab was picked up by the Canadian taxpayer.

Layman says that PLBs should be an essential part of any major outdoor expedition, but believes they should be reserved for dire emergencies. "Along with our PLB we carry a satellite

phone and a VHF air-band radio," he explains. "The phone for logistics, like calling for a plane or a boat pickup at the trip's end or to contact a doctor for instructions on treating an illness or injury with our first aid kit."

But Layman maintains that their PLB would only be activated in the event of an all-out disaster. "Mine is strapped to my lifejacket, and my pre-trip registration plan indicates that if it is activated, we are in acute need of assistance because all other means of communications have been lost say, for example, in a canoe capsized."

When an individual buys or rents a PLB, they must register a detailed trip plan. When a PLB is activated during a trip a dire emergency SOS signal is relayed to Canada's Mission Control Centre (MCC) at CFB Trenton. Each PLB has a uniquely coded signal, which enables the MCC to pinpoint the exact location and to reference pre-trip registration details to launch a rescue.

Use the correct beacons

Layman also finds the use of Emergency Position Indicating Radio Beacons (EPIRB) or Emergency Locator Transmitters (ELT) in lieu of PLBs and satellite phones troubling. "EPIRBs are for ships, while ELTs are for planes," he explains. "They emit generic signals that are respectively received as 'ship is sinking' and 'plane has crashed' leaving rescuers with no choice but to launch costly and often needless rescues."

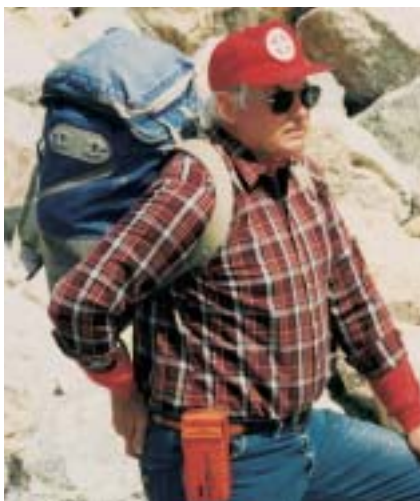
He cites the example of a party of young women on a canoe trip near Churchill, Manitoba, who activated their EPIRB and launched a helicopter rescue. They were worried about forest fires. A satellite phone would have

INUVIK N.W.T. (CP) – An American paddling in the Northwest Territories missed a rendezvous with a bush plane sent to pick him up, so he set off a downed-aircraft signal that triggered at \$100,000 search and rescue operation. The man, whom RCMP identified only as a librarian from New York, had finished a 14-day canoe trip from Coleville Lake to the Anderson River, a remote area north of the Arctic Circle. Sgt. Mark Wharton of the RCMP estimated the rescue cost \$100,000 including the \$9,000 per hour Hercules aircraft and a helicopter sent from Ontario.



U.S. allows use of PLBs on land

On October 8, 2002, the U.S. Federal Communications Commission authorized the use of 406 MHz personal locator beacons (PLBs) on land in the United States. Beginning in July 2003, hikers, hunters, climbers and others will be able to carry PLBs with them in case of distress. Until now, the use of PLBs has been limited because the agencies involved were not able to coordinate a nation-wide rescue system to respond to the beacons. There will be heavy fines of up to \$250,000 and imprisonment for six years for deliberate misuse of the beacons.



enabled them to call Churchill to find out if there was any real danger.

Mr. Laymen thinks that individuals who can afford to take remote trips should ensure they have plans in place to deal with a wide range of emergencies. "The PLB is truly a life-saver and all wilderness travellers in the far north should take one along," he says, "But, they should also have back-up plans and other means of communications for minor

emergencies. PLBs are meant for, and should be used only in the event of a serious crisis."

The source material for this article was provided courtesy of Bill Laymen, from his article in the Fall issue of the Kanawa magazine, published by the Canadian Recreational Canoeing Association.

COSPAS-SARSAT celebrates its 20th anniversary

A sense of achievement, pride and enthusiasm aptly describes the atmosphere at the 20th anniversary celebration of the COSPAS-SARSAT satellite launch and its first rescue. Advanced by a partnership that included Canada, France, the former Soviet Union and the United States, COSPAS-SARSAT was launched in June 1982. In September of that same year the system picked up the distress signal of a light plane that had crashed in British Columbia. The system's pinpointing of the crash site led to the rescue of the plane's pilot and passengers.

The celebration was held September 5th at the Canada and World Pavilion, cohosted by the National Search and Rescue Secretariat, Communications Research Centre Canada, and EMS Technologies.



The evening included congratulatory remarks from officials of the attending organizations, a video recounting the history of COSPAS-SARSAT and the presentation of certificates by NSS Executive Director Jean Murray, recognizing the contributions of the many dedicated individuals who played key roles in the development and success of the system. ■

Upcoming Events

Shephard's "SAR The Americas 2003"

This international conference and exhibition will be held in Halifax, March 24-25, 2003. Presentations, forum discussions and informal sessions will enable civil and military SAR operators, government officials and policy makers, business managers, academics, and manufacturers and suppliers to explore issues of risk mitigation versus effectiveness. For more information, visit http://www.shephard.co.uk/exhib/sar_03/

7th Annual Alberta SAR Conference

This conference will be held from March 7 to 9, 2003, in Cypress Hills Interprovincial Park. For more information, visit www.saralberta.org.

Alberta's SAR Day

Alberta's SAR Day, May 4, 2003, is an opportunity to promote timely prevention

messages and to raise awareness of the services delivered to the public on behalf of the many paid and volunteer SAR providers in the province.

For more information on Alberta's SAR Day, visit www.saralberta.org.

13th World Conference on Disaster Management

The conference takes place June 22-25, 2003 in Toronto, at the International Plaza Hotel, with the theme of "The Changing face of Disaster management: New Threats, New Approaches". For more information, visit <http://www.wcdm.org/>

ISAR 2003

The International Search and Rescue Competition is an annual event between coast guard auxiliary teams from Canada and the United States to test the volunteers' ability to plan, communicate and

execute a search and rescue mission. The next competition will take place in St. John's, Newfoundland, September 27, 2003. For more information, visit <http://www.isar2002.com/>.

SARSCENE 2003

Canada's national search and rescue games, workshop and trade show is organized by the National Search and Rescue Secretariat. SARSCENE 2003 will be held October 15-18, 2003 in Kingston, Ontario. This year's local host is the Ontario Provincial Police. For more information, visit <http://www.nss.gc.ca>.

To have your event listed in SARSCENE magazine or on the National Search and Rescue Secretariat web site, please call 1-800-747-9414 or e-mail tbouchard@nss.gc.ca.

NIF supports Basic Survival and Prevention Program

Wilderness adventure and eco-tourism are growing in popularity, with novice outdoor enthusiasts from all walks of life exploring Canada's backcountry in increasing numbers. Many of them are ill prepared for the challenges and dangers they may encounter. The result is more lost people, survival ordeals and tragedies.

Through a NIF-funded project, the Wilderness Training Institute (WTI) is working to improve this situation with the development of the **Basic Survival and Prevention Program**. Sponsored in partnership with Emergency Management Ontario, the goals of the WTI are to increase awareness of the importance of wilderness survival skills, to decrease lost person incidents, to predict the outcome of search and rescue missions and to prevent needless loss of life.

Survival Game Plan

Aimed at outdoor leaders and professionals, national and provincial park staff, volunteer searchers and teachers, as well as private organizations and individuals, the Basic Survival and Prevention Program includes a Basic Survival Skills Course with a supporting student guidebook and instructor manual, and focuses on two areas of wilderness survival.

The first, *Survival Preparedness*, provides instruction on trip and itinerary planning and survival essentials such as kit construction and wilderness navigation. The second, the *Survival Game Plan*, is a how-to guide to reduce a person's chances of getting lost, and to increase a person's chances of survival and of being found if they do become lost. It focuses on risk management, hazard evaluation and avoidance, and survival preparedness techniques.

Evaluate and prepare for risks

"We educate people to understand that there are uncontrollable and controllable-avoidable risks," explains Mr. Arama. "Avalanches and lightning strikes do occur without advance warning, and accidents can happen to even the most prepared, but a large proportion of mishaps can be avoided or, at the very least, planned for with *Survival Game Plan*."

The Survival Game Plan outlines what risks and hazards should be examined when planning an expedition, including everything from weather, topography, animals, and insects to warnings issued by authorities and specific activity-related dangers. Then it provides guidance on how to apply that information to plan for worst-case scenarios or even to avoid certain elements of the outing if the risks are too high.

Preparation is a must

Authorities cite the lack of preparedness as the major factor in a typical search and rescue scenario. This includes not leaving behind trip plans and not taking along survival essentials such as flashlights, fire-starting items, shelters and compasses. Poor physical and even mental ability to cope with an unexpected overnight stay, as well as alcohol and non-prescription drug consumption, are often contributing factors to poor or even tragic outcomes in lost person incidents.

For more information on the Wilderness Survival School, Wilderness Training Institute's Basic Survival and Prevention Course and other survival and safety workshops, visit the school's web site at www.wscsurvivalschool.com.

Signalling and shelter – key wilderness survival skills



Canadian team wins ISAR 2002

A Canadian Coast Guard Auxiliary team from Richmond, British Columbia, was the international winner of ISAR 2002, the third annual marine search and rescue competition for volunteers.

The competition was hosted by the United States Coast Guard Auxiliary at U.S. Coast Guard Group Milwaukee. Twelve teams representing the Canadian and U.S. Coast Guard Auxiliaries participated in various events including dewatering pump operation, line heaving, chart work, first aid and rope splicing.

The combined forces of the U.S. and Canadian Coast Guard Auxiliaries support the safe boating and search and rescue programs of the Coast Guard in their respective countries.

Every year, over 42,000 active Canadian and U.S. auxiliaries are credited with saving 600 lives and helping thousands of mariners facing difficulties at sea.

A memorandum of agreement between the two organizations was signed in 1999 and paved the way for joint training and exercises between the two volunteer organizations. ■



The Canadian Coast Guard Auxiliary Team Pacific was the winner of ISAR 2002 in Milwaukee in October.

Cormorant flies first mission

Less than a week after going into operational service at 442 Transport and Rescue Squadron, 19 Wing Comox, Canada's newest military rescue helicopter, the CH-149 Cormorant, successfully flew its first rescue mission.

On July 28th, 442 Squadron's Cormorant crew responded to a distress call to rescue an injured Filipino sailor from the deck of a ship. Upon arriving on the scene, the SARtech team rode the Cormorant's hoist down to the ship where they stabilized the patient and moved him onto a metal stretcher for hoisting. The hovering Cormorant effortlessly plucked the sailor from the deck and winched

him aboard. He was then flown to a Vancouver Island hospital where he made a full recovery.

Autopilot passes the test

The milestone rescue occurred in Hecate Strait, 200 kilometres offshore, giving the aircrew ample opportunity to put the Cormorant's sophisticated autopilot, which enables these choppers to virtually fly themselves, to the test. "It took us right there," said pilot Captain Jen Weissenborn. "It was nice not having to sit hunched over the controls like we're used to on the Labrador." The chopper's other vastly superior flying characteristics include an extra engine, increased endurance and carrying capacity, and the ability to fly in severe weather.

Flying in the SAR role

442 Squadron has a fleet of five Cormorants. Two of them will be dedicated primarily to training pilots, flight engineers and SARtechs on how to fly the helicopter in the SAR role. "Learning to fly the new helicopter is one thing, but learning to manoeuvre one next to a mountainside or above a pitching boat is something else altogether," explained Lieutenant-Colonel Colin Goodman, Commanding Officer of 442 Squadron.

The Cormorant is replacing the Canadian Forces Labrador helicopters. In addition to CFB Comox, CFB Gander is receiving three of the yellow aircraft, while CFB Greenwood and CFB Trenton will receive their allotment of the fleet of 15 by the end of the year.

14

SARSCENE



Cormorant flies family home

A pilot and his two children are safe thanks to CFB Comox's 442 Search and Rescue Squadron, who were called out after the family's plane failed to return at its appointed time. Following an all-night search, a Buffalo crew located the family and their aircraft on a beach 100 kilometres south of Tofino, British Columbia.

One of squadron's Cormorant helicopters was in the tenth hour of the search when the Buffalo spotted the family. The Cormorant landed on the beach, confirmed everyone was safe, and then flew the family home to Duncan, B.C., marking the second successful search and rescue mission for the newly commissioned Cormorants.