



# SAR SCENE

The Canadian Search and Rescue Magazine Online

Spring 2007 Vol. 16, #2

**25 years of  
avalanche  
safety**

**New SAR  
projects  
launched**

**MEOSAR  
to the rescue**

**Call for  
SAR awards  
nominations**

**15 Wing's  
Ground Search  
Team response  
to air crashes**



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## SARSCENEonline

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## We need your feedback!

We need your help to improve SARSCENE magazine. We would greatly appreciate if you could answer the short questionnaire below. Your feedback will assist us in delivering to you the most relevant SAR information.

Fill out an on-line version of the questionnaire at [www.nss.gc.ca](http://www.nss.gc.ca) or send your completed survey by **July 1st, 2007** to the National Search and Rescue Secretariat by fax at 613-996-3746 or by mail to:

National Search and Rescue Secretariat  
400-275 Slater St. Ottawa, ON K1A 0K2

### 1. Please tell us your role in SAR (check all that apply)

- ☐ Marine
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- ☐ Volunteer
- ☐ Police service
- ☐ Other (please specify)

### 5. In your view, what could we do to improve SARSCENE magazine? Please give us your suggestions.

### 2. How would you rate the quality of the writing in the magazine?

- ☐ Excellent
- ☐ Good
- ☐ Average
- ☐ Poor

### 3. What percentage of the magazine would you say is of interest to you?

- ☐ 75 – 100 %
- ☐ 50 – 74%
- ☐ 25 – 49%
- ☐ 0 – 24%

### 4. What topics would you like see covered in SARSCENE?

### 6a. Would you like to contribute to SARSCENE magazine by writing a news item or article?

- ☐ Yes
- ☐ No
- ☐ Uncertain

### 6b. If yes or if you would like additional information, please give us your contact information:

Thank you for your time and your feedback. Your views are very important in helping us to improve SARSCENE magazine. ■



## Campaign aims to increase the use of Personal Flotation Devices

The Canadian Marine Manufacturers Association (CMMA) has implemented an industry-wide campaign to promote the use of Transport Canada approved Personal Flotation Devices (PFDs). The campaign's goal is to engage the boating industry in promoting PFD wear to their clientele.

Wearing a Transport Canada approved PFD or life jacket has been shown to be the most important precaution to ensure personal safety on the water; yet, actual wear rates among adults remain low. To change boater perception and increase the use of PFDs, CMMA is calling on industry groups to model PFD wear in promotion campaigns, brochures, ads and boat show displays.

According to Randy Whaley from the Canadian Safe Boating Council, initiatives such as this are essential in overcoming the culture of resistance associated with wearing PFDs. "There is an attitude that is prevalent amongst boaters that the industry must break as a community. CMMA's campaign is a step in the right direction."

If boater attitudes change, so will their practices. "PFDs are the seatbelts of boating. People should automatically reach for their PFD when they get on their boat as they do with their seatbelt when they get into their car," says Mr. Whaley. ■



*Photo Credit: National Safe Boating Council*

## CASBAs highlight the best in boating safety

Coxswain Stephen Lightfoot and the crew of the Canadian Coast Guard Auxiliary's Vessel Baitfish were presented with the Rescue of the Year award at the 9th Annual Canadian Safe Boating Awards (CASBAs) held in Toronto.

The annual CASBAs, organized by the Canadian Safe Boating Council, celebrate achievements in boating safety. Awards are given out not only for rescues, but also for achievements in the volunteer sector, safety campaigns and media contributions.

Eleven awards were handed out this year, including Best Media Contribution to Boating Safety which was presented to CBC Radio for increasing the profile of the "Boating Under the Influence (BUI)" story. CBC's coverage contributed to the passing of Bill 209, making Ontario's waterways safer. With the passing of Bill 209, BUI convictions are now linked to Ontario driver's licenses. This makes Ontario the only province in Canada where boaters convicted of BUI can also have their motor vehicle driver's licence suspended. ■



The crew from CCGA Vessel Baitfish. Left to right, Glenn Goodale, Phil Eagleson, Coxswain Stephen Lightfoot and MC Ted Rankine

*Photo Credit: Amanda Dyer, Lifestyle Integrated Inc.*

## Diploma program addresses expanding role of SAR

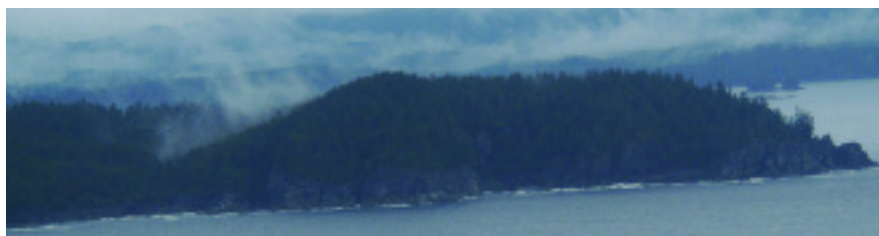
Search and rescue personnel are increasingly called upon to assist communities and governments in disaster response efforts that challenge their skills and leadership. The Emergency Management Diploma Program at the Northern Alberta Institute of Technology addresses the need for emergency management education that enhances search and rescue knowledge. The program offers the convenience and flexibility of distance learning by delivering all classes by Internet via WebCT.

Through a uniquely Canadian perspective, the program addresses such topics as: management and coordination of disaster response, development and conduct of emergency exercises, stress management for emergency workers, and resource and volunteer management. Find out more at [www.nait.ca/EM](http://www.nait.ca/EM). ■

## U.S. Coast Guard Auxiliary urges mandatory boating education

The U.S. Coast Guard Auxiliary is urging boaters of all ages, including sailors and paddle craft operators, to take a boating safety course approved by the National Association of State Boating Law Administrators.

"Approximately 80 percent of fatalities" says the Auxiliary, "occur on boats whose operators have not received any form of boating safety education. Moreover, statistics indicate that the average age of someone involved in a boating fatality is around 38 years old and thus, those states who require mandatory classes for younger boaters have seen little or no impact on their boating fatality statistics." Most states have some mandatory education based on age, while others, including California, have none. ■



### Report's findings focus on weather

A report has been published by the Transportation Safety Board (TSB) on the December 2005 crash of a Messerschmitt-Bolkow-Blohm (MBB) BO105 helicopter into the water of Mortier Bay, east of Marystown in Newfoundland. The helicopter was operated by Transport Canada on behalf of the Canadian Coast Guard (CCG). Among the findings, the Board's report concludes that the helicopter's survival equipment, which exceeded regulations, sank with the helicopter. The underwater locator beacon failed, and with no emergency signal to notify search and rescue, rescue efforts began one hour after the estimated time of arrival according to the flight plan.

According to the report, security cameras in the area "recorded unin-

terrupted snowfall from 1530 until 1630, with intermittent periods of heavy snow and reduced visibility." The crash occurred at 1648. The accident cost the lives of the pilot, who died from hypothermia and the lone passenger, a CCG technician, who drowned.

Following the accident, Transport Canada and the CCG established a working group to review safety equipment, training and procedures and to recommend improvements. Among the changes that have been implemented are the use of life jackets as standard procedure for passengers and crew, the purchase and mandatory use of helmets for front seat passengers and the purchase of 100 406 MHz Personal Locator Beacons to be fitted into the lifejackets. Further safety measures are being considered.

The TSB report was published this past February and is available at <http://www.tsb.gc.ca/en/reports/air/2005/a05a0155/a05a0155.asp> ■

### Korea reduces EPIRBs false alerts

According to a report published by the International Maritime Organization, in 2005 the average rate of 406 MHz emergency position-indicating radio beacons (EPIRBs) false alerts triggered worldwide was 96%. Although Korea's average was lower than this, in 2005, it conducted sweeping inspections of EPIRBs on board their ships under the coordination of the Korea Coast Guard. This was carried out to minimize the unnecessary search and rescue operations caused by false alerts.

After the inspections, false alerts were reduced by 40% on passenger ships, 25% on ferries and excursion ships and 24% on fishing ships. Better education regarding the use and handling of EPIRBs was noted as one of the factors needed to reduce false alerts. ■

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SARSCENE



Flynn Saunderson and Garth Cameron

**Photo Credit:** Garth Cameron

### AdventureSmart comes to the rescue

AdventureSmart is credited by 11-year old Flynn Saunderson with teaching him how to stay safe while skiing.

On January 9<sup>th</sup> as Flynn skied with his mother at Mount Washington, BC, the wind picked up and conditions worsened. Due to the limited visibility, Flynn made a wrong turn and ended up in unfamiliar territory. "When I realized I was lost, I stopped and used the whistle I'd been given at my AdventureSmart class," said Flynn. "I blew the whistle three times just like Garth and Randy had taught me and I did this every five minutes until someone came to help me."

Search and Rescue volunteers Garth Cameron and Randy Mercer had held an AdventureSmart snow safety workshop in Tofino which Flynn attended with his family the first week of January. At the end of the workshop, each participant received an AdventureSmart FOX40 whistle.

"The AdventureSmart program is a great way to teach kids and adults about potential risks and effective safety tips for participating in outdoor activities," said Cameron.

AdventureSmart was funded by the SAR New Initiatives Fund from 2004 to 2007. For more information on AdventureSmart visit [www.adventuresmart.ca](http://www.adventuresmart.ca). ■

## United Arab Emirates to establish SAR capabilities

The United Arab Emirates (UAE) will be looking into a comprehensive SAR plan in order to enhance their national SAR infrastructure. The UAE's SAR initiative is expected to result in the creation of a National Rescue Centre and a SAR Secretariat. EMS Satcom has been selected by the UAE to provide the country with the SAR planning framework. ■

## New name for federal department

As of March 1, the former department of "Public Safety and Emergency Preparedness" became "Public Safety". This may affect any stored web sites and e-mail addresses. Visit the Public Safety website at [www.ps.gc.ca](http://www.ps.gc.ca). ■

## People

After a number of years working with the search and rescue program in Saskatchewan, **Carla Dee Bellanger** has moved on to the position of Manager, Saskatchewan Emergency Social Services. **Ken Snell**, Public Safety Officer, has now taken over the search and rescue file for Public Safety & Sask911, which includes serving as a provincial representative on the Ground Search and Rescue Council of Canada.

**Brad Andres** has been appointed Emergency Management Officer, Government of Alberta.

Singer and composer **Loreena McKennitt** has been appointed Honourary Colonel of 435 Transport and Rescue Squadron.

**Geraldine Underdown** has been appointed Interim Executive Director of the National Search and Rescue Secretariat replacing Jean Murray. Ms. Underdown comes to the Secretariat from the Department of National Defence where she was Director General, Nuclear Safety.

**Anne-Marie Pelletier**, formerly Director for the Health and

Environment Policy division at Environment Canada, has been appointed Director, Policy and Review with the National Search and Rescue Secretariat.

**Walter Parnell** is the new President of the Nova Scotia Ground Search and Rescue Association, replacing Charlie Strickland.

There have been three new appointments within the Canadian Forces with respect to SAR:

**Rear Admiral T.H.W Pile** has been appointed Commander joint task force in Esquimalt. He will be Commander for the Pacific SAR region.

**Brigadier General J.M Duval** has been promoted to Major General and appointed to Commander 1 Canadian Air Division in Winnipeg.

**Major General J.D.A. Hincke** has been appointed Assistant Chief of the Air Staff at the National Defence Headquarters in Ottawa, replacing Major General W.A. Watt. He will be the Canadian Forces representative to the Interdepartmental Committee on Search and Rescue. ■

## Jean Murray moves to Public Safety

After almost six years as Executive Director of the National Search and Rescue Secretariat, Jean Murray has moved to the Department of Public Safety as Director General, Emergency Management Policy.



Ms. Murray created a national search and rescue (SAR) planning, management and reporting framework which has improved the overall coordination of the National SAR program at all levels of government. She has improved collaboration among the members of the Interdepartmental Committee on Search and Rescue and National Ground Search and Rescue Council of Canada, which together represent all jurisdictions across the country.

Ms. Murray has strengthened the ties between Canada and other countries with similar SAR challenges and has gained recognition for SAR in Canada among several nations. She improved the accountability and management of the SAR New Initiatives Fund and strengthened the national conference, *SARSCENE* to include all parts of the SAR community: air, marine and ground.

Perhaps her greatest impact, however, was in the field of boating safety where Ms. Murray has devoted significant professional and personal time promoting the wear of Personal Flotation Devices and maintaining a strong commitment to SAR prevention through her involvement as a Director of the Canadian Safe Boating Council.

Ms. Murray's commitment to Search and Rescue and her accomplishments as the Executive Director of the NSS have set a higher standard for Search and Rescue in Canada. ■

## Call for SAR awards nominations

Do you know a person or group that has made a significant contribution to search and rescue in Canada?

Introduced in 1995, the National Search and Rescue Secretariat's Outstanding SAR Achievement Award and the Certificates of Achievement recognize work done by search and rescue providers and organizations and raises awareness of search and rescue efforts across Canada.

To submit a nomination for the awards, review the evaluation criteria on the NSS website at <http://www.nss.gc.ca>. Nominations are due by June 29<sup>th</sup>, 2007.

The awards and certificates will be presented at *SARSCENE* 2007 in Victoria, British Columbia on October 20<sup>th</sup>, 2007. ■



## Awards

### Canadian receives Russian Distinction Award

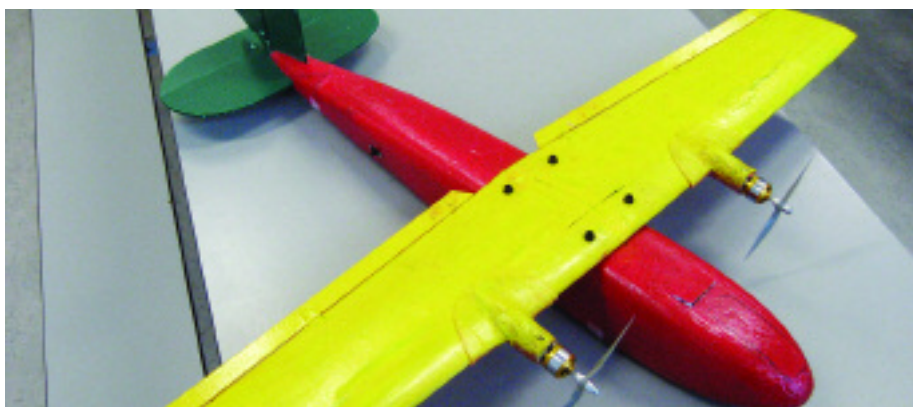
On February 15th 2007, Major Joe Goodyear, a maritime air navigator from Newfoundland, was awarded the Russian medal for Strengthening of Brotherhood in Arms.

The medal recognizes Maj. Goodyear's role in the rescue of a Russian sailor, on October 29, 2001. The sailor was in critical condition after developing a post-operative infection at sea. Maj. Goodyear and his crew airlifted the sailor off the ship and took him to a Hospital in Northern Ireland. All crew members involved in the rescue were awarded with the Russian Federation medal which is given to foreigners who assist Russians in emergency situations.

### National Assembly Medals awarded for SAR

In February 2007, Sergeant Marc Saumure was awarded a National Assembly Medal for his outstanding contribution to search and rescue. It has been announced that Yves Duguay-Gagné and Sergeant Arnold Lessard will also be receiving National Assembly Medals for their role in SAR.

Both Sgt. Lessard and Sgt Saumure are Police Coordinators for ground SAR with the Sûreté du Québec. Mr. Duguay-Gagné is active and involved with ground SAR volunteers and is the civil coordinator for his district. All three have helped create the "Programme provincial de gestion des bénévoles en recherche et sauvetage de la Sûreté du Québec". ■



Phase I winning UAV prototype from the University of Sherbrooke

*Photo credit: Team VAMUdeS, University of Sherbrooke*

### UAV teams compete in SAR exercise

Remote-controlled Unmanned Aerial Vehicles (UAVs) are far from being toys. They play an increasing role in the Canadian military and may become a crucial part of search and rescue operations.

The second phase of the First Annual UAV Student Design Competition organized by UVS Canada will take place in Happy Valley-Goose Bay, Labrador, May 4<sup>th</sup> to 6<sup>th</sup>, 2007. Each team's UAV will be tested in a search and rescue application which the NSS has helped to develop, searching for and identifying ground targets within a two square km search area.

More information about the contest, this emerging technology and its application in SAR can be found on the UVS Canada website at: <http://www.uvscanada.org/competition.html>. ■

### Phasing out 121.5/ 243 MHz beacons – spread the word

The International Cospas-Sarsat system will stop satellite processing 121.5/ 243 MHz beacon signals as of February 1<sup>st</sup>, 2009. Beacon owners and users should begin taking steps to replace their 121.5/ 243 MHz beacons with 406 MHz beacons as soon as possible.

With a 406 MHz beacon, the position of the distress signal can be relayed to rescue services more quickly, more reliably and with greater accuracy. Everyone involved in SAR should promote the message that switching to 406 will help save lives.

For more information, please visit <http://www.cospas-sarsat.org> ■

### Attention military beacon owners

To register or amend beacon registration information please call the Canadian Mission Control Centre at 1-800-211-8107. ■



### SARSCENE Games showcase teamwork

Rain or shine, the 2007 SARSCENE games will take place on Wednesday, October 17 in Victoria, B.C. With the large number of teams in the province, competition is expected to be fierce. The six events in the games will be based on medical aid, search planning, navigation and other core SAR skills.

There will be an upper limit set on the number of teams that can enter, so teams should register early to ensure a spot in the competition. There is no cost to enter.

For more information on the games, contact Carole Smith at 1-800-727-9414, e-mail [csmith@nss.gc.ca](mailto:csmith@nss.gc.ca) or watch the SARSCENE 2007 site for more information at [www.nss.gc.ca](http://www.nss.gc.ca). ■



# Canadian Forces ground SAR response to air crashes

By Warrant Officer Tim Eagle

## PREFACE

**O**n a drizzly July day in 1995, I responded with a Canadian Forces rescue helicopter crew to an F-18 fighter aircraft accident on the Cold Lake Air Weapons Range (CLAWR). The crew started the helicopter within minutes and a member of the 4 Wing Ground Search and Rescue (GSAR) Team joined me as a spotter. Less than an hour later, we commenced a visual air search for the missing pilot but did not find a parachute in the trees, a pilot signaling or even an Emergency Locator Transmitter. With our on-scene fuel supply running low, the crew located a small opening in the trees upwind of the crash site, so I could disembark the aircraft with the GSAR team member.

I searched the crash site dressed in a rain suit with taped cuffs, an air filter mask and a pair of goggles as protection from the carbon composite fiber, a prevalent risk in modern aircraft accidents. My goggles fogged up from sweat and the mask made radio communication difficult. While I searched, the GSAR team member used the chainsaw to enlarge and make safe the opening in the trees because more helicopters would need to land.

Within hours, a significant number of people arrived and we found some evidence that the pilot did not survive the crash. My task completed, I left the crash site, but a team of people remained behind, supported by their GSAR team. This article is about them, the Canadian Forces (CF) GSAR Teams and I am proud to tell a portion of their story.

## HOW IT STARTED

In 1986, the National SAR Program formally identified the CF as the GSAR services provider for aeronautical and maritime incidents. The responsibility for aeronautical and maritime incidents differs from searches for missing persons, which is a police matter. CF GSAR teams may be called upon to search for missing crew members or wreckage in a small high-probability search area that cannot be effectively searched from the air or from which air evacuation is inappropriate or impossible.

Although detailed historical records about the development of military GSAR Teams are not readily available, a general background can be derived.

The Royal Canadian Air Force (RCAF) and the CF maintained GSAR Teams for their own purposes

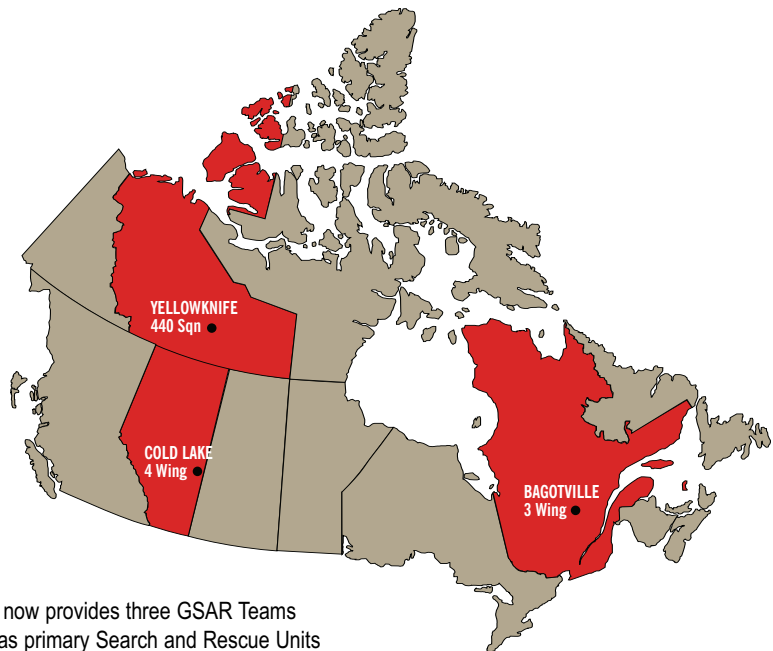


before the NSP existed. They used GSAR Teams to search for missing military members or their families based at isolated locations such as NORAD radar sites. They could also locate the crew of a missing aircraft, assist during evidence gathering and clean up efforts, or ensure the safe handling of hazardous materials associated with a combat capable aircraft.

Over the decades, however, the need for CF GSAR Teams declined considerably as Canadian maritime and aviation transportation services benefited from significant proliferation and improvements to helicopters, electronic beacons, safety practices, engineering and infrastructure.

## CURRENT STATE

Today, the CF contracts outside agencies that specialize in training GSAR teams rather than provide the training themselves because the fundamental methods used to locate missing persons have changed dramatically during the past decade. Since 2000, the CF reduced the number of GSAR teams from seven to four teams. The CF now provides three GSAR Teams trained as primary Search and Rescue Units (SRUs) located at 4 Wing (Cold Lake), 3 Wing (Bagotville), and 440 Sqn (Yellowknife). These CF GSAR Teams still organize themselves to be ready to leave within two hours of being alerted by the Joint Rescue Coordination Center. The fourth GSAR team, an anomaly to this situation, exists at 15 Wing, Moose Jaw, which contracts its GSAR requirements to Bombardier Aerospace Military Aviation Training, who utilize civilian volunteers from base employees, because of the low number of available military personnel on base. The flat terrain and extensive number of roads mean that a military crash will not likely occur more than half a nautical mile from a road. Therefore in Moose Jaw, the access to the site occurs quickly and can easily be maintained, as compared to the CLAWR situation described at the beginning of this article.



The CF now provides three GSAR Teams trained as primary Search and Rescue Units

The 4 Wing GSAR Team requires their members attend two meetings per month for training. Each year, they conduct a weeklong exercise every spring and fall, usually conducted on the CLAWR. From January to the end of February, they provide 48 hour aircrew cold weather survival training, which they call Frosted Flyer courses, at the Burnt Lake training facility, also located within the CLAWR. They provide three courses per week and also make the training available to 4 Wing members, RCMP and other outside agencies upon request and approval. Organizing training events and maintaining equipment and infrastructure takes commitment from trainees and support from their superiors. Expectations are high.

Some people do not consider CF GSAR team members as volunteers because CF personnel receive a wage and can be lawfully ordered to work in situations that could cause serious injury or death. However, these people are not ordered to donate the enormous amount of additional personal time and effort to keep up with the administrative and training requirements of their team. They perform this function because they want to do it and for that they deserve our respect. All people involved in GSAR, whether CF or

civilian, must successfully meet the challenge to provide sustained and effective operations in harsh environments and over demanding terrain.

Most people involved in the CF GSAR program wish to be employed in searches outside the base as well and sometimes get time off for this. Wing Commanders occasionally commit their GSAR resources to a search outside their base, but with great trepidation, because the military flying activity could result in an ejection at anytime and a CF requirement for GSAR.

Being part of a CF GSAR Team is not always appreciated. Although tragic events rarely occur, the substantial effort in preparing to mitigate their effects goes largely unrecognized. But CF GSAR Team members should feel proud for committing themselves to a cause that is larger than themselves – ***“That Others May Live!”***

On a personal note, I would like to thank all the people who wear red on Fridays. It is nice knowing that Canadians support their military. ■

*Warrant Officer Eagle is a Search and Rescue Technician with 27 years of military service, of which 20 years was spent performing operational SAR duties. He currently performs staff work in Canada Command in support of domestic employment of CF SAR resources.*



# MEOSAR to the rescue

By Jim King

**M**EOSAR, the next generation satellite system for search and rescue, is now being developed, as the venerable Cospas-Sarsat LEOSAR system approaches a quarter century of service.

The Cospas-Sarsat system, in operation since 1982, was initially based on a constellation of four low-Earth orbiting (LEO) satellites carrying 121.5 & 406 MHz payloads, and was later enhanced in the 1990s when 406 MHz payloads were added to a few geostationary (GEO) satellites. Overall Cospas-Sarsat works very well, but both these systems have inherent limitations, including the time delay for a LEO satellite to pass near a distress location and the limited coverage of GEO satellites in polar regions and mountainous areas, where a direct line of sight to a GEO satellite might never be possible.

These time and coverage limitations will be overcome by the future MEOSAR system, comprising many satellites in medium-Earth orbit (MEO), at about 20,000 km, that will relay 406 MHz beacon signals to a new type of ground station called a MEOLUT. This system will quickly compute beacon locations by ranging or triangulating signals received via multiple satellites, using techniques similar to satellite navigation, but in reverse, since the user activates a transmitter rather than a receiver.

A MEO satellite has a footprint much larger than a LEO, and almost as large as a GEO, that slowly moves around the world, providing long periods of coverage, even in polar regions.

Multiple MEO satellites in the sky will provide continuous coverage everywhere in the world, with various look angles to the satellites, so blockage by local terrain would have little impact.

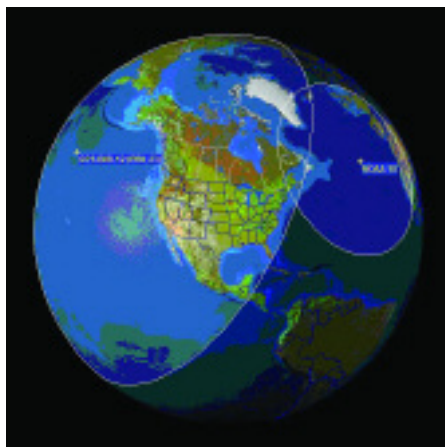


Figure 1: A MEO footprint is much larger than a LEO footprint and moves much slower

Plans are now being made to have 406 MHz payloads on future global navigation satellites (GNSS), such as USA's GPS, Russia's GLONASS and Europe's new Galileo system. Each constellation could each have about 20 to 30 satellites, and the Galileo system might also provide a return link to the distress beacon to acknowledge receipt of the distress alert.

EMS Satcom, in partnership with the Canadian Space Agency (CSA) and Communications Research Centre Canada (CRC), developed a prototype MEOLUT that is now being

used to conduct MEOSAR proof-of-concept tests using experimental payloads on some GPS satellites. This ground station has 3 antennas, like the one shown below, that track 3 satellites simultaneously, allowing 406 MHz beacons to be detected and located quickly.

Similar testing is also being done in USA, using a prototype ground station at NASA, and additional ground stations are planned in other countries in the future.

Preliminary trials with both these ground stations are already demonstrating the great potential of the MEOSAR system.

During the coming years that it will take to deploy a MEOSAR constellation, there will not always be enough satellites to locate beacons by triangulation, but individual satellites would still relay distress alerts, just like GEOSAR satellites do, and have a slowly moving footprint. Hence, in the early days, MEOLUTs with just one tracking antenna could receive and decode distress alerts, but not necessarily locate beacons, and additional antennas could be added later when more MEOSAR satellites are in orbit. ►



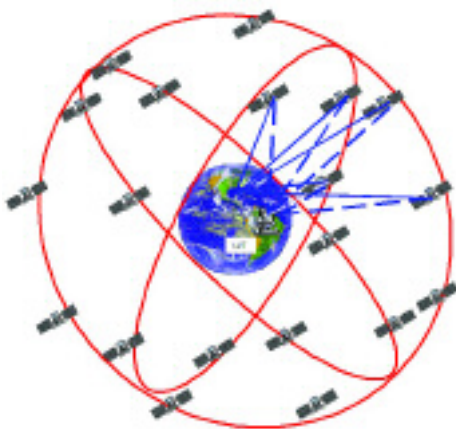


Figure 2: Multiple MEO satellites relay beacon signals to a MEOLUT

Adding the MEOSAR enhancement will be like moving from a slow, dial-up Internet connection to a high-speed, always-on connection, and will offer many benefits, including:

- continuous, global coverage
- more reliable reception of beacon signals by multiple signal paths
- near-instantaneous detection and location of beacons
- ability to track moving beacons on a life raft or on an aircraft even before it crashes

The MEOSAR system will ensure that both search and rescue forces and 406 MHz beacon users worldwide will have the optimum distress alerting and locating service for many years to come. ■

*Jim King is a Director at Industry Canada's Communications Research Centre (CRC) in Ottawa. He works on various Canadian and international satellite programs and has over 25 years experience on Cospas-Sarsat, including 10 years at the Cospas-Sarsat Secretariat at Inmarsat in London, England. He participated in the development, launch and testing of the first Sarsat LEO satellite in the early 1980s, the first GEO satellite and now works on the new MEOSAR system. Mr. King has a Master's degree in Electrical Engineering, specializing in satellite communications, is a Canadian delegate at Cospas-Sarsat and the European Space Agency, and has written many papers on satellite systems.*

# Avalanche safety in Canada

## A TWENTY-FIVE YEAR PERSPECTIVE

By Clair Israelson

As we celebrate the CAA's successes of the past twenty five years we gratefully acknowledge the generous financial support provided over the years by the National Search and Rescue Secretariat (NSS) and their SAR New Initiatives Fund (NIF) program.

As I travel and meet with avalanche colleagues from countries around the world I am often reminded that NIF is unique in the world; a federal government program specifically designed to fund development projects to enhance search and rescue capacity, including accident prevention programs. Our international colleagues are envious of Canada's SAR NIF; they recognize that it takes money to develop world class avalanche safety programs, and in Canada we are extremely fortunate that the NIF exists to serve this very real need.

Since 1991, the SAR NIF has provided nearly \$4 million in research and development funding for CAA and CAC avalanche safety projects. SAR NIF is by far the largest single financial contributor to development of avalanche safety programs in Canada and I believe that without this federal initiative Canadian avalanche programs would still be in the dark ages. SAR NIF projects require a federal agency to support the project and oversee the work. Over the years Michel Villeneuve, national public safety specialist for Parks Canada has served in this role for many CAA – CAC projects, and we are deeply indebted to him for his unflagging assistance. More recently the RCMP has also served in this support role for CAA NIF projects, and we look forward to continuing this mutually beneficial relationship.

On behalf of the entire Canadian avalanche community and all Canadians that enjoy an active, outdoors lifestyle I wish to publicly celebrate the significant contributions that the National Search and Rescue Secretariat, the SAR NIF and cooperating federal agencies have made to avalanche safety in Canada.

NIF projects administered through the National Search and Rescue Secretariat and cooperating federal agencies have produced the following outstanding results:

- Establishment of the CAA office in Revelstoke in 1991 to develop federal, provincial and industrial information exchanges (InfoEx), and to provide public avalanche information to backcountry users in western Canada.
- Development and publication of *Observation Guidelines and Recording Standards for Weather, Snowpack and Avalanches*, a national standard for data collection used by avalanche workers and researchers in Canada.
- Development and publication of *Land Managers Guide to Snow Avalanche Hazards in Canada*, a technical handbook to assist land managers to recognize and mitigate avalanche risk on Canadian public lands. ►





canadianavalancheassociation

25 years of service: 1982-2007



- Development and publication of *Guidelines for Snow Avalanche Risk Determination and Mapping in Canada*, a national technical standard for use by engineers, geoscientists, and other professionals to calculate avalanche risk and design avalanche defenses.
- Development of technical training courses and training materials for avalanche workers in Canada. In the past decade, approximately 4000 students have taken these courses, and these Canadian programs are now being adopted in New Zealand, Japan and Iceland.
- Development of avalanche safety training courses for non-professional recreation. These programs are available in all regions of Canada, and since 1995 more than 25,000 students have taken these two or four day programs.
- Publication of *Avalanche Accidents in Canada, Volume 4 1984-1996*, an analysis of avalanche accidents and the factors contributing to those events. This publication serves as an invaluable learning tool for accident prevention. More than 5000 copies have been distributed.
- Production of "*Beating the Odds*" a video (in 30 and 60 minute versions) for public avalanche awareness and education. Thousands of viewings to date (estimate only).
- Publication of *Backcountry Avalanche Awareness and Sledding in Avalanche Terrain*. These two handbooks provide avalanche awareness and education for people involved in back country recreation. More than 38,000 copies have been circulated across Canada and around the world.
- Delivery of public avalanche awareness programs and development of professional avalanche safety capacity in Quebec and in Newfoundland and Labrador.
- Development of an avalanche decision framework (ADFAR) to generate scientifically valid "process" for personal avalanche safety decisions.
- Development of an internet based avalanche accident prevention, response and rescue training program for on-site survivors. Few avalanche victims survive more than 30 minutes of burial. This program trains the victim's companions to conduct an effective rescue.
- Facilitation of interagency coordination and consulting services to establish the Canadian Avalanche Centre.

Beginning April 1, 2007 the SAR NIF will fund two new projects:

- ADFAR 2 will further develop scientifically valid decision frameworks for amateur recreationists with advanced experience and knowledge.
- eLearning for Avalanche SAR will develop on-line training for professional and volunteer avalanche SAR responders and SAR managers across Canada. This training program will also benefit security personnel for the 2010 Winter Olympic Games.

With SAR NIF project funding, cooperation from federal agencies such as Parks Canada and the RCMP, and the expertise of members of the Canadian Avalanche Association, world class materials and programs for avalanche accident prevention have been developed. We look forward to continuing to work with the National Search and Rescue Secretariat and other federal agencies to improve search and rescue and avalanche accident prevention activities throughout Canada in the years to come. ■

*Clair Israelson is the Executive Director of the Canadian Avalanche Association.*

# Innovation Showcase

## NINETEEN NEW PROJECTS TO BE FUNDED

The NSS will be funding 19 new Search and Rescue New Initiatives Fund (SAR NIF) projects beginning in 2007-2008. The projects reflect ground, air and marine SAR and focus on research management, training, equipment procurement, educational programming and much more. Many projects will help increase safety and knowledge in the SAR world while others will focus on responding to incidents.

Projects include:

- Development of training and proficiency standards for advanced ground SAR searchers and managers in Newfoundland and Labrador
- Development of a decision support tool with complex avalanche concepts to target skilled users
- Volunteer training, equipment procurement, communications planning and data management to enhance volunteer safety in BC
- Development of a SAR handbook and equipment purchase to reduce risk for Canadian Coast Guard Auxiliary members
- An educational program to increase the use of Personal Flotation Devices and life jackets and to illustrate how to survive in cold water conditions
- Research into communications equipment for Public Safety, Emergency Response and SAR organizations
- Development and validation in drift prediction and search and rescue area calculations
- Development of forecast tools for mariners and an Environment Canada routine wave forecast
- Enhancement of canine avalanche response
- Development of protocols for safe and effective SAR avalanche operation through an e-training course
- Increasing SAR capabilities in Saskatchewan and the North
- Conducting research and assessing the development of MEOSAR
- Collection of Probability of Detection Data during poor weather in fall and winter
- Enhancing search capabilities in finding lost persons with Alzheimer's
- SAREX, a full-mission, multi-jurisdictional SAR exercise
- Installation and integration of a network in Nova Scotia.
- Improvement of search management and report tracking for NS ground SAR teams

For the complete project list with summaries, visit the NSS website at [www.nss.gc.ca](http://www.nss.gc.ca). ■

## NOVA SCOTIA ANNOUNCES SAR NIF FUNDING

On February 26, 2007, the province of Nova Scotia announced the funding of a program that will assist the province in taking search management into the digital era.

The Search Management and Reports Tracking (SMART) program will receive NIF funding for the next three years to link all local ground search and rescue teams in Nova Scotia by satellite and remote laptops. The training and the implementation of this technology will assist in the planning and execution of searches, as well as coordinating training and personnel deployment.

Nova Scotia MPP and Emergency Management Minister Carolyn Bolivar-Getson presented a cheque for \$348,000 to representatives of the Nova Scotia Ground SAR Association, the Emergency Management Office and the SAR NIF Project Committee. Minister Bolivar-Getson also announced a provincial contribution to the SAR project bringing the total value of funding to \$500,000. ■

## SAR NIF SHOWCASE

### LEARNING MADE EASIER THANKS TO NEW TRAINING VIDEO

In the short time since its completion, the Ground Search Team Leader Training video has enhanced the effectiveness of British Columbia's Ground Search Team Leader (GSTL) course. The film, funded by SAR NIF, was created to help show team ►





Extras preparing for a background shot

*Photo credit: Dodie Lindley*

leaders how to plan and organize ground SAR missions and how to effectively manage a team.

British Columbia's GSTL course was developed in the early 90s to train experienced SAR volunteers to perform tasks related to leading a team through a ground search and rescue operation. Although the course has proven successful for many, GSTL candidates seem to experience difficulty with the critical planning and organization section of the course which is why Don Blakely chose to highlight these themes in a training video.

Mr. Blakely, the film's producer and SAR NIF project manager, saw the need to expand the range of training tools available to GSTL candidates to facilitate the understanding of key concepts practiced on the field and to ensure that all types of learners had better tools at their disposal. He notes that in addition to the benefit for visual learners, the training video also allows students to study at a time and place that best suits them. Having a training tool added to the

GSTL curriculum increases the likelihood that all competent candidates are successful in the course.

The film project was presented at SARSCENE 2006 receiving positive feedback from volunteers and SAR managers alike. The video follows the scenario of a search for a lost child that involves a joint response from two neighboring SAR teams. It

shows a team leader performing his tasks in a SAR operation from beginning to end. The film's format allows for the characters to explain their actions and more importantly, it shows a ground SAR team completing tasks in a logical and sequential manner.



Film producer and NIF project manager, Don Blakely

*Photo credit: Dodie Lindley*

The Justice Institute of British Columbia will be distributing the DVD copy of "Ground Search Team Leader — Planning and Organizing a Team Mission" all across the country through the Search and Rescue Volunteer Association of Canada (SARVAC). The DVD has chaptering capabilities which allow students

doing pre-course homework to skip and select the scenes they wish to view. The video is in English and is also available with French subtitles.

The DVD will also be available in the United States through the National Association for Search and Rescue (NASAR). That the film is being distributed everywhere in North America illustrates the need for a comprehensible visual learning tool. Currently, the training video is available at no cost on the Justice Institute of British Columbia's website. To download or stream the training video, visit <http://www.jibc.bc.ca>. ■

### **SAFE CATCH: ONGOING GROWTH IN RESEARCH AND PARTNERSHIPS**

Fishing is the main occupation in Newfoundland and Labrador and is also the most dangerous. Over the past 10 years, fishing-related SAR incidents have nearly doubled and the need for research into factors that influence fish harvesters and vessel safety has emerged. Safe Catch, a multi-disciplinary research project, was created to investigate these factors and to help reduce the number of fish harvesters' injuries, fatalities and SAR related incidents.

The project is a part of a larger initiative, SafetyNet, which is the first health research initiative of its kind, investigating occupational health and safety in Atlantic Canadian marine, coastal, and offshore industry.

Safe Catch, which received SAR NIF funding from 2003 to 2006, is presently entering a crucial phase: reporting research findings and transferring knowledge into action. Barbara Neis from Memorial ►

University says that the data analysis and other research components of the project are ongoing. Research results are now being disseminated, and are leading to new projects which are creating partnerships among researchers and community members. "Many collaborations have come to light as a result of this project.", says Ms. Neis. "For example, one individual has been training to get the community involved in safe fishing and is creating a multi-media package to this effect."

Research conducted through projects such as Safe Catch, is a crucial first step in understanding why and how SAR incidents occur. The outcome of the project is also the basis for establishing emergency prevention programs in communities all over Newfoundland and Labrador and as Ms. Neis notes, around the world. "There are still challenges to be faced but the goal is to transfer research findings to other provinces in Canada and to countries around the world that could benefit from the knowledge." ■

### ICE AND COLDWATER PROJECT ENHANCES SAFETY



In 2004, the Kentville Fire Department in Nova Scotia set out to enhance ice and cold water rescue capacity for first emergency responders. The SAR NIF contribution helped the Kentville Fire Department equip and train a coldwater rescue squad to reduce response time and increase the safety of rescuers and victims.

The need to build capacity in ice and coldwater rescue arose as winter sports such as ice fishing became increasingly popular in Nova Scotia. In the past, the Kentville Fire Department managed coldwater rescues through ad-hoc solutions such as rope, reaching assists and throw bags. The situation put volunteer firefighters and victims at greater risk, especially when victims were unable to swim.

As a result of the training project, the region now has ten technicians trained in ice and cold water rescue. The Kentville Fire Department has also raised awareness for ice and cold water safety in the community. An open house was held before the winter season to display the equipment that was acquired and to give demonstrations to the public. Events like these have permitted the community to come together and learn a bit more about SAR prevention and how to cope in an emergency situation. ■

## CALL FOR NEW PROPOSALS

The NSS is now accepting SAR NIF proposals for initiatives to start April 1<sup>st</sup>, 2008. SAR NIF can provide funding for up to three years.

Initiatives must be supported by either a federal SAR department or agency, or a provincial/territorial SAR authority. Provincial/territorial SAR proposals should reflect the SAR priorities identified by the province or territory and all should be aligned with the National SAR Program priorities.

The National SAR Program priorities for 2008-2009 are:

- Integrating data management with decision-making and management decisions
- Eliminating the barriers that prevent SAR partners from working together effectively

- Minimizing the number of SAR incidents through public education and awareness

Applicants must identify which primary National SAR Program objective they will be addressing through their project: prevention, response, or research and development. Applicants submitting a research and development proposal must complete a SAR NIF application form and a detailed R&D proposal.

All applicants must secure funding from sources other than the NSS for a minimum of 5% of the total project cost.

For further information consult the SAR NIF Applicant's Guide (2008/2009) available on the NSS website at [www.nss.gc.ca](http://www.nss.gc.ca).

For questions concerning SAR NIF applications, contact Jae-Sang Park, SAR NIF Manager at 1-800-727-9414 or [jsparks@nss.gc.ca](mailto:jsparks@nss.gc.ca).

Federal SAR departments or agencies and provincial/territorial SAR authorities should submit SAR NIF Applications by **August 10<sup>th</sup>, 2007** to:

France Bergeron  
Director Coordination  
National SAR Secretariat 4<sup>th</sup> Floor,  
275 Slater Street  
Ottawa ON K1A 0K2 ■

### MORE ON SAR NIF

SAR NIF, with an annual budget of \$8.1 million, supports search and rescue projects that enhance air, marine and ground search and rescue activities in Canada. Since 1988, it has funded over 750 projects. ■



# SARSCENE 2007

## Plans for SARSCENE 2007 unfolding

The 16<sup>th</sup> annual SARSCENE, Canada's only search and rescue conference, will be held in Victoria, British Columbia from October 17 to 20. SARSCENE 2007 is co-hosted by the National Search and Rescue Secretariat and the British Columbia Provincial Emergency Program, with the assistance of the British Columbia Search and Rescue Association.

This year's changes include longer presentations (50 minutes) with longer breaks in between sessions, the awards banquet moved back to Saturday night, the option for exhibitors to invite guests to their booth on Saturday morning, site visits to local SAR-related facilities and special activities on this year's theme of "The spirit of search and rescue".

### Confirmed sessions include:

- **RCMP sessions on:**
  - Canine standards
  - Canadian Labour Code
  - Underwater recovery
- **Two CASARA sessions:**
  - Jay Armitage, CASARA Training
  - Brian Duham, Spotting and Spotter Training
- Carol Namur, Sauvetage Canada Rescue, Using a canine log
- Carole Smith, National Search and Rescue Secretariat, PLB Pilot Project
- Clair Israelson, Canadian Avalanche Association, International best practices for avalanche accidents prevention
- Cynthia Jones, BC Provincial Emergency Program, AdventureSmart
- Don Blakely, Vernon SAR, SAR and 3<sup>rd</sup> party child abductions
- Harry Blackmore, Search and Rescue Volunteer Association of Canada, Newfoundland and Labrador Training Program
- Ian Tomm, Canadian Avalanche Association and Janice Johnson, University of British Columbia, How technology and the Internet are changing avalanche safety training for the public and professionals
- Jamie Lewis from Hamilton Health Science and Elizabeth Steggles from McMaster University, Locator technologies for wandering patients
- Jim King, Communications Research Centre, Update on MEOSAR (Cospas-Sarsat)
- John Kelly and Mary Clayton, Canadian Avalanche Centre, The Making of a Message: The Canadian Avalanche Centre's Experience with Media Coverage
- Major Mitch Leenders, Canadian Forces, Joint Rescue Coordination Centre
- Major Steven Reid, Canadian Forces, Tapping into Canadian Forces
- Neil Brewer, Kent-Harrison SAR, SAR volunteer credibility
- Paul Olmstead, Edmonton Police Service, SAR Management System including volunteerism and crime investigation

- Pete Wise, Vernon SAR, Bears, cougars and rattlesnakes
- Richard Smith, ERI Canada, SAR Leadership
- Robert Koester, dbS Productions, The latest research in lost person behaviour
- Sergeant Don Webster, Ontario Provincial Police, SAR pre-plans for Long Term Care Facilities
- An afternoon at the "Prevention Café" on best practices in SAR prevention
- Canadian Coast Guard Auxiliary, Pacific Region
- Information session on the SAR New Initiatives Fund
- Police and volunteer panel discussions
- SAR in the North

### International sessions:

- Colin Powell, University of Wales, Risk-taking behaviour: Implications for SAR prevention
- Steven Budar, National Commodore and Commodore Everette Tucker, U.S. Coast Guard Auxiliary
- Ian Canavan and David Shepard, Royal National Lifeboat Institution, Operation Training

Registration forms are available online, as well as information on hotels, schedules and travel. Check the SARSCENE 2007 website regularly for more updates at [www.nss.gc.ca](http://www.nss.gc.ca).

To suggest a presentation, discussion, panel or training session and to inquire about presenting, exhibiting or registering for SARSCENE call 1-800-727-9414 or e-mail [sarscene2007@nss.gc.ca](mailto:sarscene2007@nss.gc.ca) by **May 31<sup>st</sup>, 2007**. ■