



Fisheries and Oceans  
Canada

Pêches et Océans  
Canada

Canadian  
Coast Guard

Garde côtière  
canadienne



# Canadian Coast Guard Maritime Security Contributions



Canada 

Published by:  
Maritime Security  
Canadian Coast Guard  
Fisheries and Oceans Canada  
Ottawa, Ontario  
K1A 0E6

©Her Majesty the Queen in Right  
of Canada 2011

Cat. No.: Fs154-21/1-2011  
ISBN: 978-1-100-53099-4  
DFO/2011-1724

Printed on recycled paper

Également disponible en français :  
Cadre de sûreté maritime

Available on the Web: [www.ccg-gcc.gc.ca](http://www.ccg-gcc.gc.ca)

#### CONTACT:

Maritime Security  
Canadian Coast Guard  
200 Kent Street, 5th floor  
Ottawa, Ontario  
Canada K1A 0E6

Marc Mes, Director

*Telephone:* (613) 993-6943

*Fax:* (613) 998-3255

*E-mail:* [Marc.Mes@dfo-mpo.gc.ca](mailto:Marc.Mes@dfo-mpo.gc.ca)

## The Canadian Coast Guard

# Maritime Security Contributions

**T**he Canadian Coast Guard (CCG) has long been held in high regard for the important role it plays in maintaining a safe, accessible and sustainable national maritime transportation system in Canada. Less well known, but also of critical importance, are the contributions it makes to Public Security Initiatives in support of national and maritime security. Whether taking the lead on such initiatives or providing support for initiatives led by other departments, the Coast Guard has proved to be an invaluable contributor to the country's security framework.

Various considerations related to CCG's contributions to national security are outlined in the 'Canadian Coast Guard Maritime Security Framework', a document that provides context around maritime security activities from a federal, departmental and CCG perspective. It is available on the CCG website: [www.ccg-gcc.gc.ca](http://www.ccg-gcc.gc.ca). This companion document, 'Canadian Coast Guard Maritime Security Contributions', provides a more detailed look at the CCG's security contributions, effected through a variety of Public Security Initiatives. It will help inform CCG's departmental and interdepartmental partners, as well as other government departments, the Canadian public, and interested international partners.





# The New Security Imperative

In the wake of the September 11, 2001 terror attacks, countries around the globe realized the need for heightened security not only on land but in the maritime environment as well. The marine transportation system includes countless vessels on domestic and international voyages, and facilitates the entry of a vast number of goods into our ports and cities. The security of this system is of vital importance to all countries. This is especially true of Canada, with its three coasts and one of the world's major inland waterways, providing marine access to several large cities.

Through a variety of programs and services, the Coast Guard is not only making significant strides in improving security in all of these maritime areas, it is also taking a leadership role in the enhancement of maritime security throughout the world.

The Canadian Government's response to the 9/11 terror attacks was to make national security a key priority. In the 2001 Budget, \$7.7 billion in new funding was allocated for Public Security and Anti-Terrorism initiatives (now Public Security Initiatives)

over the following five years. Unlike the United States, which combined security under one department, Canada undertook a multi-agency approach, utilizing and building upon the combined strengths and capabilities of various departments and agencies. This approach has had many advantages, including cost-effectiveness, efficiency and practicability.

The Coast Guard works collaboratively with 17 Canadian departments and agencies through the Interdepartmental Marine Security Working Group (IMSWG) to provide a comprehensive, harmonized approach to maritime security. In December 2002, the IMSWG produced a set of concrete initiatives to address identified gaps.

Subsequently, Canada's overarching security policy was set forth in the 2004 National Security Policy (NSP). The NSP identified specific initiatives that would further mitigate gaps in Canada's maritime security.



## Security Role

Security is not a new mandate for the Coast Guard. The Fleet has a long history of supporting enforcement activities of the Navy, the Royal Canadian Mounted Police and other federal departments. Fleet personnel have also long been engaged in supporting fisheries enforcement activities, which continues today.

Following 9/11, however, the Coast Guard's security role has been expanded. A six-point plan to enhance maritime security in Canada within the National Security Policy included enhancement of the Coast Guard's on-water presence. References in that Policy document were also made to the Coast Guard's on-water assets and its information collection and collation roles in support of national security. The Policy did not, however, describe a mandated security role for the Coast Guard, nor did it specify what support roles and responsibilities were expected of it.

The Coast Guard's expanded contributions to maritime security evolved from its existing capabilities and capacities in response to the need for the federal government to mitigate gaps in Canada's maritime security. Those contributions include initiatives in which the Coast Guard has taken the lead, and initiatives in which another department has taken the lead, with the Coast Guard providing support.





# Maritime Security Branch Role

The role of the Maritime Security Branch is to ensure that the department meets Government expectations around its contribution to Canada's national security. It does so by means of proactive leadership and management of the maritime security file within the Department of Fisheries and Oceans (DFO), under the direction of the Commissioner of the Coast Guard and on behalf of the Deputy Minister.

The Coast Guard's efforts around Maritime Security involve a group of initiatives aimed at providing value-added solutions to various government departments and agencies with an interest in

the maritime domain, which typically retain the program lead. The success of the Maritime Security Branch is largely dependent on communication and information sharing. It does this with other government departments (OGDs) whose programs it supports, with Headquarters directorates whose programs and services are enhanced in order to provide solutions for OGD partners, and with the regions responsible for delivering on Coast Guard commitments.

The work of the Maritime Security Branch largely involves coordination, facilitation, analysis and problem solving: confirming what is, determining what could be, and defining how to get there, always in consultation with program, operational and technical experts inside and outside the Department. The Maritime Security Branch works with Headquarters and regional Fleet, Maritime Services and Integrated Technical Services representatives, as well as with DFO's program experts in Compliance & Enforcement and Science, to assess departmental capabilities with a view to enhancing Coast Guard's contribution to national security. The Branch is also responsible for the development and implementation of strategies consistent with the federal government's priorities around enhancing national security. It implements changes in response to legislative and regulatory changes, and provides support to other sectors within DFO in response to those changes.

The Maritime Security Branch is a member of the Interdepartmental Marine Security Working Group, and the Director, Maritime Security, represents the Department on this and other federal and international working groups dealing with maritime security issues.



## Supporting Department and Agency Partners

The Coast Guard provides value-added support to the federal enforcement and intelligence communities by leveraging existing programs and services to provide collateral benefits to its partners in the form of on-water capabilities and shore-based operational support. Since 2005, it has also been providing dedicated capacity in support of its partners. A detailed discussion of collateral benefits versus dedicated capacity can be found in the companion *"Maritime Security Framework"* document on the Coast Guard website.

An example of leveraging Coast Guard's marine safety capacity to provide collateral national security benefits is the national Automatic Identification System (AIS) Project. AIS was initially developed as a tool for collision avoidance and vessel traffic management in busy waterways. Ships travelling near our coasts are required to automatically transmit AIS data, such as position, course and speed, in the Very High Frequency maritime band, which has a range of about 50 miles. The Coast Guard has successfully implemented the national AIS project, building AIS shore infrastructure so that vessel data is now collected for virtually the entire east and west coasts and the Great Lakes – St. Lawrence Seaway. As a collateral benefit to enhanced vessel traffic management, this data is fed to other government departments with an interest in national security, providing an enhanced awareness of vessel movements and actionable marine intelligence for all of Canada's primary waterways.

Collateral safety benefits can also accrue from various Coast Guard security initiatives. An example of this is the Long Range Identification and Tracking (LRIT) system, discussed later in this paper.

Championed and co-developed by the Canadian Coast Guard, LRIT is a system for monitoring the movements of large vessels on the high seas, in the interest of national and global maritime security. In addition, this satellite-based system can be a vital tool in search-and-rescue operations in all waters not covered by the short-range Automatic Identification System. It also enhances safety when tied into vessel traffic monitoring systems such as Coast Guard's Marine Communications and Traffic Services. LRIT can also play a role in environmental protection; for example, in the case of an oil spill, archival LRIT information can be used to help identify the polluting vessel.

The Coast Guard is also a key participant in Canada's multi-agency Marine Security Operations Centres (MSOCs) located on the east and west coasts and the Great Lakes. These Centres act as maritime intelligence gathering points, where civilian and military resources are brought to bear to detect, assess and support the response to security threats. The Coast Guard contributes its expertise and the output from its information systems and maritime operations experience to help enhance MSOCs' capacity to monitor Canadian territorial water and assess security threats.

An example of the Coast Guard providing dedicated capacity is the joint Royal Canadian Mounted Police/ Canadian Coast Guard Marine Security Enforcement Teams program, established in 2005 to enhance marine security in the Great Lakes – St. Lawrence Seaway. The program combines the law enforcement powers of the RCMP with Coast Guard vessels and expertise in order to provide an armed, on-water law enforcement capacity in one of Canada's busiest marine regions.

# Providing International Leadership

Canadians can be proud of the role the Coast Guard has played in the creation of the satellite-based Long Range Identification and Tracking (LRIT) system, an important international tool for maritime security. Spearheaded by the International Maritime Organization (IMO) as a direct result of 9/11, LRIT acts as a long-range counterpart to the near-shore Automatic Identification System. It enables participating governments to obtain encrypted identification and positional information on vessels intending to enter their ports or travelling within 1000 nautical miles of their coast.

Working closely with the IMO, the Coast Guard took the role of de facto systems manager for the project and chaired international LRIT meetings which dealt with technical requirements as well as political, financial and other issues.

The Coast Guard has not only championed the system internationally, it has also positioned Canada as a world leader in LRIT implementation.

The Coast Guard provides financial assistance to a number of developing countries for initial development of their LRIT Data Centres. As the international lead for LRIT at IMO, Canada has been asked by IMO, as well as directly by countries of the developing world, to assist them technically and financially to meet LRIT obligations. Providing this assistance to the developing world results in vessel data from those countries being available to port and coastal states, thus improving global Maritime Domain Awareness.





# Initiative-funded programs and initiatives

**A**s the Coast Guard does not have a direct mandate for maritime security, it undertakes security initiatives on behalf of partners. These initiatives are funded separately from regular Coast Guard funding, under the umbrella of Public Security Initiatives (PSI). The Coast Guard's PSI-funded contributions to security take two forms: initiatives in which the Coast Guard takes the lead, and initiatives in which the Coast Guard has an interest but another department or agency takes the lead.

Examples of the former include:

- ▶ **Fleet Presence;**
- ▶ **the Automatic Identification System (AIS) National Project; and**
- ▶ **Long Range Identification & Tracking (LRIT).**

Examples of the latter include:

- ▶ **Marine Security Enforcement Teams (MSETs); and**
- ▶ **Marine Security Operations Centres (MSOC).**

What follows is a brief overview of each initiative.

## Fleet Presence

As every driver, cyclist and even pedestrian knows, the mere sight of a police car makes us much more inclined to observe the rules of the road. This holds true in the maritime environment as well. Recognizing the importance of “fleet presence” as a deterrent not only to unlawful acts but also to those who may pose a threat to Canadian security, the federal government, through its 2004 National Security Policy, provided \$10 million in annual funding to support

the sustainability of Fleet operations and allow for a viable, visible federal presence on Canadian waters. The Coast Guard owns and operates the federal government's largest and most visible marine asset, the government civilian fleet. These vessels, with their distinctive red and white hulls, provide a strong maritime presence in all our coastal waters and the Great Lakes – St. Lawrence Seaway. On-water activities of the Coast Guard provide a clear demonstration of Canada's sovereignty over its waters, assuring the Canadian public and Canada's allies that Canada has both the intention and capacity to assert its sovereignty over its territory.

## Automatic Identification System (AIS) National Project

With the tremendous number of vessels travelling within a few miles of our coastlines, it is imperative for both security and safety purposes that these vessels be identified and monitored. To meet the demand for heightened awareness of activity within Canada's maritime domain, the Coast Guard has successfully implemented the National Automatic Identification System (AIS) Project through the construction of shore infrastructure and the development of traffic data integration systems. The AIS is based on an internationally mandated equipment carriage regulation requiring large vessels to have approved equipment that automatically transmits key data such as identification, position, course and speed over the Very High Frequency maritime band. With the completion of the AIS shore-based infrastructure project (capital funding for infrastructure and software development to receive, transmit and process AIS data), which involved the acquisition and installation of equipment for 98 remote sites and 18 Marine

Communication and Traffic Services (MCTS) control centres, Canada's east and west coast and the Great Lakes – St. Lawrence Seaway have full AIS coverage. The Coast Guard collects vessel data at its physical shore stations (including remote sites), and routes and filters it for its domestic security partners, allowing them to see the real-time position of all vessels within 50 miles of our shores, especially those approaching our ports. AIS is an important sensor that can be used in concert with other sensors and sources of information to provide a more complete and verifiable picture of the Canadian maritime domain.

### Long Range Identification and Tracking (LRIT)

The Coast Guard has taken a leadership role in the development and deployment of one of the most effective new tools in global maritime security: the Long Range Identification and Tracking (LRIT) system. In the wake of 9/11, the International Maritime Organization spurred the creation of a satellite-based system that would give participating governments (Flag States) the ability and time to evaluate the security risk posed by International Convention of the Safety of Life at Sea (SOLAS) Class A vessels (ships of 300 gross tonnes or more on international voyages) intending to enter their ports or passing within 1000 nautical miles of their coast. The Coast Guard was instrumental in the creation of LRIT, not only from a technical perspective but also from a policy-shaping one. It was also one of its earliest implementers. The LRIT system began operations on July 1, 2009 and the Coast Guard had achieved its primary objective of implementing the security capabilities of LRIT, in concert with its Marine Security Operations Centres (MSOCs) partners.

A complement to the near-shore radio-based Automatic Identification System (AIS), LRIT is a secure point-to-point system which collects, stores and routes data from vessels wherever they are on the high seas. Unlike AIS, LRIT signals are encrypted, ensuring they cannot be read by unwanted eavesdroppers. SOLAS Class A vessels must automatically transmit their identity, position, and date and time of transmission four times a day, or, if required, as often as every 15 minutes. Flag States store data on their own vessels in a dedicated or regional data centre, providing specific vessel data to other Flag States upon request when the vessel either enters that country's coastal waters or gives notice that it is intending to enter one of its ports. Data obtained by Canada's LRIT Data Centre is relayed to a MSOC and combined with other sensor data to improve maritime domain awareness.

### Marine Security Operations Centres

One of the ways in which the Coast Guard is actively engaged with its domestic security partners is through the country's three Marine Security Operations Centres (MSOCs), which collect and analyze vast amounts of information from the marine environment in the interest of enhancing maritime security. The Department of National Defence (DND) leads the MSOCs located on the east and west coasts (Halifax, N.S. and Esquimalt, B.C.), and the Royal Canadian Mounted Police (RCMP) leads the MSOC in the Great Lakes – St. Lawrence Seaway region (St. Catharines, Ont.). These centres are a unique example of multi-agency integration and collaboration, bringing together Coast Guard staff with those of the DND, the RCMP, the Canada Border Services Agency, Transport Canada and the Department of Fisheries and Oceans. While retaining their own mandates and lines of

authority, these agencies work closely together within the MSOCs, sharing their expertise and, wherever possible, the content of their information systems to help identify and assess security threats.

The Coast Guard brings great value to the MSOCs as the provider of the majority of maritime vessel traffic information, including data from Automatic Identification System, Long Range Identification and Tracking system (LRIT), radar and the Coast Guard's vessel traffic management systems on the east and west coasts. LRIT data in particular, and how it is put into operational use, is one of the most important contributions to MSOCs by the Coast Guard, and this role will be enhanced as the LRIT system evolves. Another key contribution to MSOCs is Coast Guard's expertise in interpreting data and understanding the maritime environment. Coast Guard staff also facilitates discussion between partner agencies and Coast Guard operations – for example, when an MSOC partner wishes to use a Coast Guard fleet vessel in support of one of its operations, where required.

### Marine Security Enforcement Teams

Established in 2005 to enhance marine security in the Great Lakes – St. Lawrence Seaway (GL-SLS) area, the Marine Security Enforcement Team (MSET) program is a joint project between the Royal Canadian Mounted Police (RCMP) and the Coast Guard. This initiative addresses the lack of federal on-water enforcement capacity in the GL-SLS area through the establishment of armed on-water enforcement teams operating in this very high profile international maritime transportation corridor. Patrol vessels maintained and operated by the Coast Guard carry uniformed RCMP officers who provide an enforcement capability, in accordance with the powers of the RCMP. With their

high visibility, frequent patrols and ability to respond quickly to potential threats, these teams provide a strong national security presence and act as a deterrent to unlawful activities.

Currently four dedicated MSET units operate in the GL-SLS area throughout the spring, summer and fall on a 24/7 basis. In the fall of 2011, the Coast Guard is expected to receive the first of four new mid-shore patrol vessels that will replace the current MSET vessels, which are older, retrofitted ships from the Coast Guard fleet. These new vessels have improved range, speed and ability to operate in difficult weather conditions, greatly enhancing the MSET program. All four new vessels are expected to be in service by the summer of 2012. The MSET program has proven to be a highly effective pairing of the expertise and resources of two security partners, demonstrating the success of Canada's multi-agency approach to maritime security.





## Future Direction

The Coast Guard will continue to be a value-added solution provider, working with the federal enforcement and intelligence communities in the pursuit of enhanced national maritime security. In the ongoing climate of fiscal restraint, it is envisioned that the Coast Guard's partners will be seeking additional support from the Coast Guard in meeting their national security objectives. The Coast Guard will continue to assess how the organization can leverage its considerable expertise in maritime safety in order to proactively support its partners and further enhance national security.

It is clear, for example, that Arctic security and sovereignty are emerging federal priorities. The Coast Guard, as the main federal operational presence in the Arctic, can offer solutions to its federal partners to address security gaps in these waters. To this end, the Coast Guard is already working with its partners to establish Automatic Identification System coverage in key Arctic passages. As well, it is ensuring that its partners are fully utilizing the Long Range Identification and Tracking (LRIT) system to track vessels approaching or travelling within our Arctic waters.

Internationally, the Coast Guard will continue its vigorous and important work in support of global maritime security objectives. It will continue to have a strong voice on security within such influential bodies as the International Maritime Organization and it will share its expertise with these organizations. As an exemplary user and proponent of LRIT, the Coast Guard will work assiduously to promote the adoption and utilization of this critical vessel tracking system by all maritime nations, thereby enhancing maritime security around the globe.

