Domestic Icebreaking Operations

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While domestic icebreaking operations may fall among the Coast Guard's less glamorous assignments, this mission is important for maritime mobility and supports our national transportation infrastructure.

Operations include establishing and maintaining tracks (paths through the ice) in connecting waterways during the winter navigation season, escorting vessels to ensure their transit is not impeded by ice, freeing vessels that become beset, clearing/relieving ice jams, removing obstructions or hazards to navigation, and advising mariners of current ice and waterways conditions.

This vital icebreaking mission is executed domestically by one heavy icebreaker, nine ice-breaking tugs, 11 small harbor tugs, and 12 ice-capable buoy-tending vessels.

International Icebreaking Cooperation
In addition to U.S. Coast Guard assets, the Canadian Coast Guard operates two icebreakers on the Great Lakes.

The USCG and Canadian Coast Guard keep each other advised on the location and status of icebreaking facilities/assets and coordinate operations to keep critical waterways open for commerce. A cooperative agreement between our two nations allows the assets from one country to conduct icebreaking operations in the territorial waters of the other, as necessary.

East Coast Icebreaking
Along the East Coast, icebreaking generally occurs to facilitate deliveries of home heating oil, critical supplies in isolated communities, and ferry services in its busiest ports.

During January and February, East Coast ports can receive more than 15 million tons of petroleum products, food, and other cargo.[1] Nearly 70 percent of the home heating oil in the U.S. is used in the Northeast, and 90 percent must travel by barge.[2]

Under typical winter conditions, icebreaking may only be needed in the freshwater or brackish rivers and tributaries. However, during more severe conditions, coastal waterways leading to Boston, New York, Portland, the Cape Cod Canal, and isolated communities dependent on ferry services such as Nantucket may also require substantial icebreaking efforts. These efforts also benefit commercial fishing fleets by providing access in and out of port.

On the Great Lakes
Throughout the Great Lakes region and the St. Lawrence Seaway, icebreaking activities are organized into two task groups:

Operation Taconite encompasses the waters of Lake Superior, Lake Michigan, the St. Mary's River system, the Straits of Mackinac, and northern Lake Huron. Ice-

Report Documentation Page

Form Approved
OMB No. 0704-0188

1. REPORT DATE	2. REPORT TYPE	3. DATES COVERED
2011		**00-00-2011 to 00-00-2011**

4. TITLE AND SUBTITLE	5a. CONTRACT NUMBER
Domestic Icebreaking Operations	5b. GRANT NUMBER
	5c. PROGRAM ELEMENT NUMBER
6. AUTHOR(S)	5d. PROJECT NUMBER
	5e. TASK NUMBER
	5f. WORK UNIT NUMBER
7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) **U.S. Coast Guard,Marine Transportation Systems Office,2100 2nd Street SW,Washington,DC,20593-7580**	8. PERFORMING ORGANIZATION REPORT NUMBER
9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES)	10. SPONSOR/MONITOR'S ACRONYM(S)
	11. SPONSOR/MONITOR'S REPORT NUMBER(S)

12. DISTRIBUTION/AVAILABILITY STATEMENT
Approved for public release; distribution unlimited

13. SUPPLEMENTARY NOTES

14. ABSTRACT

15. SUBJECT TERMS

16. SECURITY CLASSIFICATION OF:			17. LIMITATION OF ABSTRACT	18. NUMBER OF PAGES	19a. NAME OF RESPONSIBLE PERSON
a. REPORT	b. ABSTRACT	c. THIS PAGE			
unclassified	**unclassified**	**unclassified**	**Same as Report (SAR)**	**3**	

breaking efforts in this region are coordinated from the vessel traffic service at Coast Guard Sector Sault Ste Marie, Mich.

Operation Coal Shovel is responsible for Lake Erie, the Detroit River, lower Lake Huron, Lake St. Clair, and the St. Clair River. This operation is jointly managed by U.S. and Canadian forces via USCG Sector Detroit and the Regional Ice Operations Center in Sarnia, Canada.

The Way Ahead

The Coast Guard's domestic icebreaking mission is at a critical juncture. As many icebreaking assets—specifically the 140- and 65-foot icebreaking tugs—are at or past their designed service life, the Coast Guard is initiating a project to extend the service life of the 140-foot icebreaking tugs. Additionally, performance analysts are investigating icebreaking resource allocations to ensure that cutters are placed in a position that best meets the needs of our diverse customers.

Another vital component of the continued success of the domestic icebreaking program is sustaining professional relationships with commercial industry stakeholders such as the Lake Carriers Association, tug/tow

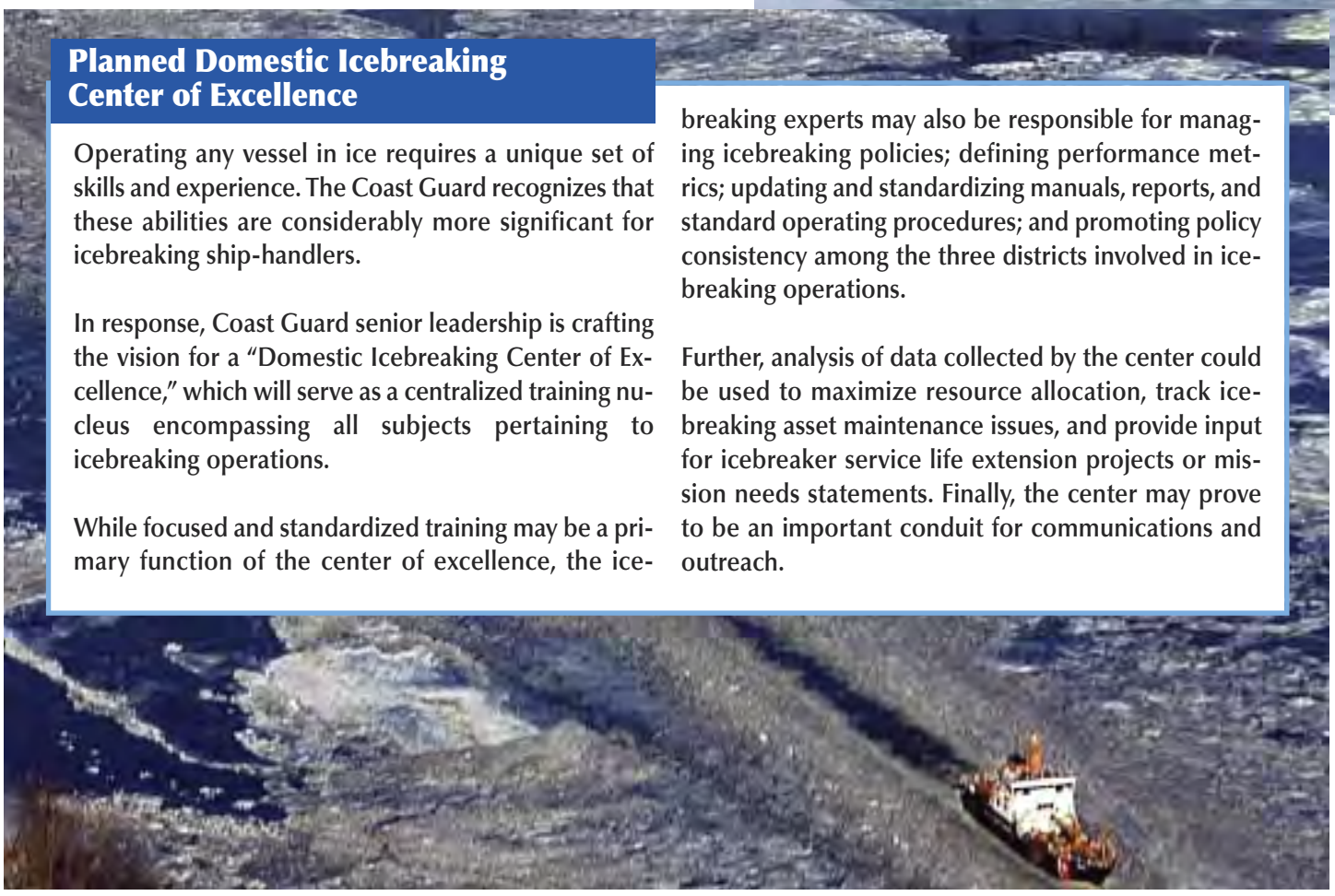
Planned Domestic Icebreaking Center of Excellence

Operating any vessel in ice requires a unique set of skills and experience. The Coast Guard recognizes that these abilities are considerably more significant for icebreaking ship-handlers.

In response, Coast Guard senior leadership is crafting the vision for a "Domestic Icebreaking Center of Excellence," which will serve as a centralized training nucleus encompassing all subjects pertaining to icebreaking operations.

While focused and standardized training may be a primary function of the center of excellence, the icebreaking experts may also be responsible for managing icebreaking policies; defining performance metrics; updating and standardizing manuals, reports, and standard operating procedures; and promoting policy consistency among the three districts involved in icebreaking operations.

Further, analysis of data collected by the center could be used to maximize resource allocation, track icebreaking asset maintenance issues, and provide input for icebreaker service life extension projects or mission needs statements. Finally, the center may prove to be an important conduit for communications and outreach.



Coast Guard Cutters *Mackinaw* and *Neah Bay* break ice on Lake St. Clair during Operation Coal Shovel. U.S. Coast Guard photo by Ensign Guillermo Colom.

operators, commercial fishing fleets, ferry services, and the businesses that rely on year-round maritime transportation. Close cooperation with commercial icebreaking companies is also important, as there are many demands for icebreaking assistance on the Great Lakes that the Coast Guard simply cannot meet.

Working together, the Coast Guard will continue to meet the demands of commercial shipping, and prepare for successful operations well into the future.

About the author:
LT Benjamin Morgan has served in the U.S. Coast Guard for nine years, including tours aboard domestic and polar icebreakers and in waterways management.

Acknowledgments:
The author gratefully acknowledges the support of LCDR Brian Donahue, Ninth District Chief of Aids to Navigation and Icebreaking; CWO Jim Ziolkowski, Atlantic Area Waterways Management Analyst; and Mr. Matt Stuck, First District Chief of Aids to Navigation and Icebreaking.

Endnotes:

1. Jonathan Nickerson, Gordon Garrett, James Kearney, and Anita Rothblum, "United States Coast Guard Domestic Icebreaking Mission Analysis Report," U.S. Coast Guard Research and Development Center, New London, CT, May 2010.
2. First Coast Guard District Domestic Icebreaking Report, 2004.