

A large, jagged iceberg floats in the dark, choppy ocean. The iceberg's surface is uneven and textured, with a prominent peak on the left side. The water around the base of the iceberg is turbulent, with white foam and splashing. The overall scene is dramatic and emphasizes the scale and danger of the iceberg.

*“Never again would men fling a ship into an ice field, heedless of warnings, putting their whole trust in a few thousand tons of steel and rivets. From now on Atlantic liners took ice messages seriously, steered clear, or slowed down. Nobody believed in the ‘unsinkable ship.’ Nor would icebergs any longer prowl the seas untended.”*

*Walter Lord, “A Night to Remember” (1955)*



# COAST GUARD PATROLS ICEBERG ALLEY

By Jim Turnbull

The U.S. Coast Guard has many missions, ranging from maritime safety and environmental protection to counter-drug operations and search and rescue. One of its lesser known, yet vital taskings is the North Atlantic ice patrol.

Towering up to 400 feet above the water and 1,000 feet wide, icebergs are both majestic and menacing. Of all peacetime marine threats, none is more fearsome and treacherous. But it took the worst marine disaster in history to distinguish the iceberg as a real threat to international shipping.

On 15 April 1912, RMS *Titanic* was on her maiden voyage from Southampton, England, to New York carrying 2,224 passengers and crew. The luxury liner struck an iceberg near the Grand Banks, south of Newfoundland, Canada, in the middle of North Atlantic shipping lanes. The largest ship of her day at 883 feet long and 11 stories high, she sank in 2.5 hours, taking 1,500 victims with her. The tragedy and massive loss of life led to public demand for an organized effort to deal with the iceberg threat. Countries with ships transiting that area in the North Atlantic saw the need to establish an ice patrol to avert further disasters.

Since 1913, the Coast Guard has been tasked with the management and operation of what is known as the International Ice Patrol. The patrol observes, studies, monitors and reports ice conditions near the Grand Banks, warning mariners of iceberg threats. Congress passed legislation in 1936 requiring the Commandant of the Coast Guard to administer the International Ice Observation and Ice Patrol Service. Originally, ships were used for patrol work, but since WW II, aerial surveillance has been the primary method of reporting ice conditions.

Costs for the patrol are based on each participating nation's percentage of the total cargo tonnage transiting the patrol area during the ice season. Today, the contributing countries are Belgium, Canada, Denmark, Finland, France, Germany, Great Britain, Greece, Italy, the Netherlands, Norway, Poland, Spain, Sweden, Yugoslavia and the United States.

The Grand Banks are known for cold water, sudden storms,

**This icy behemoth was photographed during the 2000 International Ice Patrol season. As with most icebergs, 7/8 of its mass is underwater.**



severe winds and heavy fog. It is also the ultimate destination of icebergs that break free of western Greenland glaciers and drift southward. Nudged by currents, the icebergs make a 2,000-nautical mile journey lasting at least a year until eventually they drift into an expanse of sea between Greenland and Newfoundland called “Iceberg Alley.”

A seasonal average of 600 icebergs survive to cross the 48th parallel and reach the shipping lanes, where wave action and higher temperatures melt even the largest iceberg in one or two weeks. Until they melt, watching over them is the responsibility of the International Ice Patrol.

The patrol season usually begins in February and continues until the end of July. Each year, reconnaissance detachments deploy from Coast Guard Air Station Elizabeth City, N.C., to Saint Johns, Newfoundland. Using specially equipped HC-130H *Hercules* aircraft, ice reconnaissance crews typically fly five days every other week during the six-month season. The usual patrol spans 5 to 7 hours, covering 27,000 square miles of water.

The HC-130H is the Coast Guard’s primary long-range aircraft and has been a mainstay of the patrol for over 20 years. With a low-altitude operating range of 3,000 miles and a 14-hour endurance capability, the aircraft is well suited for the job. Of the 26 Coast Gaurd HC-130Hs, only the two operated by Elizabeth City are configured for North Atlantic ice patrol duty.

**Above, this HC-130H is one of two specially configured *Hercules* used in the International Ice Patrol. Below, a Coast Guard crew prepares to deploy a “current buoy,” which is used to determine current strength, speed and direction.**



Ice patrol HC-130Hs employ side-looking airborne radar to detect and track icebergs. This remote sensing technology is very effective in searching low-visibility areas. The aircraft are also equipped with forward-looking airborne radar, which helps distinguish a ship from an iceberg. Together, both types of radar provide



Coast Guard *Hercules* crews with a highly effective suite of sensors to detect, track and identify the targets.

The density of salt-free glacial ice is such that 7/8 of an iceberg's mass is below water. A small iceberg, called a "growler," may be only 3 feet high but may have an underwater depth of 12 feet and underwater mass up to 100 tons. Greenland icebergs frequently reach heights of 300 feet and lengths of 700 feet—equaling 1.5 million tons of ice. Despite their size, icebergs are difficult to detect by ship due to wave height and/or poor weather and visibility. Even on a clear, starlit night, a lookout cannot pick up an iceberg at a distance greater than one-quarter mile—not nearly the time or distance needed for a large ship to avoid a collision. It was just such a night in April 1912.

Today, icebergs remain as much a threat as they were when *Titanic* sank. But since the ice patrol began, the Coast Guard's ability to determine the location and heading of icebergs and to quickly warn mariners has eliminated iceberg collisions.

Still, the mission is both challenging and dangerous. Commander Robert Desh, Commanding Officer of the International Ice Patrol, Groton, Conn., stated, "No question. The most hazardous aspect of the mission is unpredictable weather; 70 percent of our patrols are flown in marginal conditions. The most dangerous icebergs are the growlers, which break off from larger icebergs. With low height but large underwater mass, they

can disappear between swells and can cut a boat like a knife." Other icebergs may tower 400 feet above the water, and patrol crews flying in low visibility at less than 1,000 feet altitude need to be wary. "Going over the top of a large 'berg and clearing it by 300 feet can be pretty exciting," Desh added.

The patrol area is 500,000 square miles, and crews rotate biweekly to Saint Johns in addition to their regular search and rescue and law enforcement duties. To augment visual searches and radar, buoys are deployed to measure currents and assist in predicting where an iceberg is headed. Data collection on iceberg type, size and location is entered into computers, which then create models used to predict where an iceberg will be the next day. Cdr. Desh explained, "We forecast where icebergs are going to be, and distribute the latest information using fax charts, safety broadcasts and satellite communications, as well as the internet." Currently, 65 nations use data supplied by the International Ice Patrol. During the 2000 season, crews tracked 800 icebergs—200 more than normal.

In early April of each patrol season, International Ice Patrol crews pause and place a wreath over the site where the *Titanic* sank. This sober reminder has its desired effect. "What happened then, could happen tomorrow," Cdr. Desh said. "Inattention is our greatest enemy. What we do is vitally important, and we must remain vigilant." ✈



**Above, Coast Guard crewmen prepare to place a memorial wreath over the spot where *Titanic* struck an iceberg and sank in 1912. Below, a USCG HC-130H is dwarfed by a huge iceberg while on patrol in "Iceberg Alley."**

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