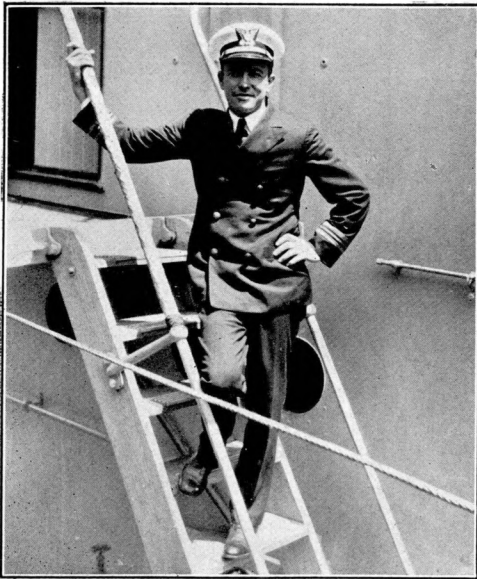
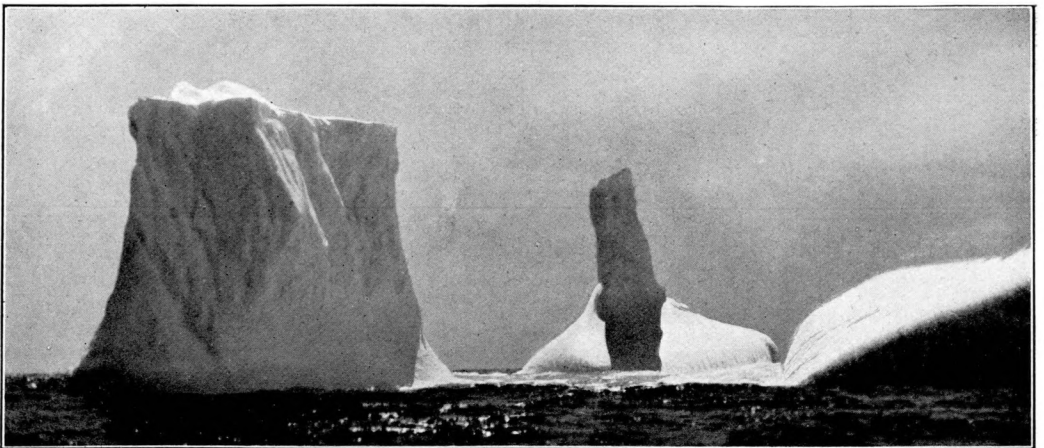


U. S. C. G. MARION



Lieut. Commander  
E. S. SMITH





## EXPEDITION TO BAFFIN BAY

(Extract from the "ARMY AND NAVY REGISTER" June 30, 1928)

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The U. S. COAST GUARD has completed plans to send a survey vessel to the waters between LABRADOR and GREENLAND, and the expedition, in command of Lieut. Comdr. E. H. SMITH, U.S.C.G., expected to sail from Boston, Mass., not later than July 10, 1928. The main object of the expedition is to learn the complete story regarding the iceberg from the time it leaves the GREENLAND glacier until it finally melts in the warm, tropical waters of the Gulf Stream.

The COAST GUARD is the service under the UNITED STATES GOVERNMENT which is charged with furnishing vessels and personnel to patrol the trans-Atlantic steamship lanes and protect passengers and property from the dangers of ice which every spring threaten the North Atlantic. Most of us can still remember the great tragedy of April 15, 1912, when the gigantic passenger liner *Titanic*, on its maiden voyage, struck an iceberg off the Grand Bank of Newfoundland and sunk with a loss of 1,571 lives. This appalling marine disaster was answered by an International Convention for the Safety of Life at Sea, held in London, England, in November 1914. Fourteen maritime nations there signed a pact to establish a vigilant patrol of the ice-infested waters southeast of Newfoundland, and to defray the cost of this service by proportional appropriations from year to year. The UNITED STATES was invited to take over the work, and the COAST GUARD and the HYDROGRAPHIC OFFICE have since performed the actual work. The COAST GUARD has been carrying on now for the past fourteen years. Every springtime, in March, two able, seagoing vessels sail from Boston for the vicinity of the ice fields, and there they remain, relieving each other, on constant guard until the danger season is over, usually the middle of July. No higher tribute could be paid to the COAST GUARD and its commander, Rear Admiral F. C. BILLARD, than the fact that no lives have been lost due to collision with ice in the area patrolled since the COAST GUARD has taken over this work. The COAST GUARD has performed a very thorough service, the main problem being to learn more regarding the drift of the iceberg and to tell shipping in advance where the dangerous ice is apt to drift. The radio has made all this possible, for every night and every morning trans-Atlantic liners cease their wireless operations and concentrate their attention on listening for the broadcast report of ice, sent out by the patrol vessel, thus permitting ships 400 miles on either side of the danger zone to learn the location of looming icebergs in their paths and, consequently, they can head southward to safety. Little does the great mass of people travelling across the Atlantic in spacious, luxurious salons realize the hazardous work which is being carried on there in mid-Atlantic.

The problem of making life and property more safe at sea in passing through the ice regions has been solved to a great extent by the extensive program of oceanography carried on by the COAST GUARD. Little was known before 1912 or 1914 regarding the drift of bergs, their rate of melting, and the degree of danger which they formed to passing traffic, except for the fact that they mostly came from GREENLAND, and that they finally melted in the offshore waters of the Atlantic, which appeared considerably of a mystery. Over 3,000 observations, therefore, have been compiled during the last ten years by the ice-patrol vessels. The program

has consisted of securing observations of temperature and salinity at various depths at various so-called stations, carefully selected in the danger area. The ocean currents have been computed from these data in accordance with a mathematical formula, and based upon the principle that ocean currents are due to differences in the specific gravity of the water. Water will flow from the place where it is relatively light to another region where it is proportionately heavy, and this, combined with the fact of earth rotation, permits the scientists on ice patrol to issue regular weekly current maps for all the world similar to our better known weather maps published daily by the UNITED STATES WEATHER BUREAU. The COAST GUARD has, in the course of this work, now secured a really quite correct picture of current and ice conditions in the immediate area south of Newfoundland, and near the trans-Atlantic steamship tracks, but little is known of the wild and unexplored stormy region northward between LABRADOR and GREENLAND. Soon a little 125-foot COAST GUARD boat will be entering these storm-tossed foggy waters and, it is hoped, will snatch from them a long contained mystery. There is an element of danger and adventure in the expedition which has appealed to COAST GUARD crews, and none but the most fit and well selected men are to be taken. Many applications have been received from volunteers eager to go despite the dangers, the stormy weather, and the hardships. Lieut. Comdr Edward H. SMITH, U.S.C.G., who is in command of the exploring vessel, has about ten years' service in the ice regions on ice-patrol duty. He is a trained oceanographer, having spent two years in Europe on this work and several years' scientific research at Harvard University, Cambridge, Mass. Lieut. N. G. RICKETTS is second in command, an energetic and zealous officer who has also seen service in the ice regions. The vessel, to many people, would seem insignificantly small, she being only 124 feet in length, but, nevertheless, embodies many exemplary qualifications. No fuel or supplies will be obtainable north of Sydney, Nova Scotia, and, therefore, it requires a craft not only of extraordinary seaworthiness, but one which has an unusual cruising radius.

The little ship *Marion* is a Diesel-engine boat, capable of cruising one-quarter of the way around the earth without seeking replenishment of her fuel. This ship today is being fitted out in New London, Conn., with all manner of apparatus and appurtenances capable of wresting secrets from old Father Neptune. In addition to the observations of temperature, salinity, and current, the *Marion* will take the depth of water every half hour during her cruise by means of an electric set of amplifiers lodged in the hull which catch the echo from an electric oscillator sending out its pulsations.

The World War gave a great impetus to submarine sound devices and it has remained to the SUBMARINE SIGNAL CORPORATION of Boston to develop an instrument commercially for securing the depth of the water at any place. It is called a fathometer and promises to be installed extensively on all seagoing craft of any size.

The U. S. HYDROGRAPHIC OFFICE is particularly anxious to have the COAST GUARD expedition to the region of Baffin Bay secure as many soundings as possible. There are areas of 50,000 square miles over which the expedition will sail in which there never has been a sounding made by man. Villages along the LABRADOR and GREENLAND coasts will be visited, their facilities and other pertinent information of a maritime character recorded for publication in HYDROGRAPHIC OFFICE publications.

The WEATHER BUREAU is interested in securing meteorological observations, data on storm tracks, percentages of fog compared for both sides of the GREENLAND and the LABRADOR coasts. All this will be an accumulation of useful information.

The DANISH GOVERNMENT is sponsoring a biological and oceanographical expedition which will encompass the entire range of West GREENLAND waters this summer. It is led by Comd. RIIS CARTENSEN, of the Royal Danish Navy, who already has sailed in the steamer *Godthaab* from Copenhagen. Arrangements have been made for the two expeditions to co-operate in their surveys, data and records to be exchanged, all of which greatly enhances the value of the entire program. Some of the time-famous questions which probably will be answered as a result of these two oceanographic expeditions this summer: Does a branch of the Gulf Stream actually dive to the bottom and finally emerge far north in Baffin Bay? Is the LABRADOR current a continuous overflow from the Arctic Ocean? Does the East GREENLAND current stretch all the way across to LABRADOR? Why is the west coast of GREENLAND so much warmer climatically than Baffin Land in the same latitude?

Press reports of the progress of the COAST GUARD'S expedition to Baffin Bay will appear from time to time as arrangements have been made to communicate with the UNITED STATES on a short wave radio set. The success of this type of communication depends to a great extent upon the co-operation of the amateur radiomen in the country. The AMERICAN RADIO RELAY LEAGUE has requested that amateurs be on the watch in order that messages from the *Marion* in the far north this summer will be picked up.

The expedition expects to sail from Boston about July 10. All possible carrying capacity will be taxed to the limit at Sydney, N. S., which will be the last port of call before disappearing into the north. From that time on the little COAST GUARD boat *Marion*, with her two officers and twenty men, will be entirely on their own resources.

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The following additional details of the actual program of the expedition may be of interest.

As stated in the above article, soundings will be taken every half hour. Temperature and density observations will be made every twenty-five miles, en route from Newfoundland to Greenland, a distance of approximately six hundred miles, the observations of temperature and collections of samples of sea water, at each stop, requiring about one hour. Bottom specimens will be taken frequently by means of a specially designed apparatus.

Arriving at the South point of Greenland, the *Marion* will traverse diagonally back and forth between the Coast of Greenland and the continent and islands of North America in that region, making stops and observations similar to the above until a distance of over four thousand miles is covered. Special observations will be made in Baffin Bay and the glaciers on the West Coast of Greenland will be carefully observed as it is these which give off, or are the sources of, most dangerous icebergs which subsequently reach the track of transatlantic steamers. The expedition hopes also to chart the general trend of the great ice-cap of Greenland, which is reputed to be the centre of meteorological movement in the northern region.

Returning, the expedition will visit Hudson Strait and the Coast of Labrador. It is hoped also that new fishing banks of economic value may be discovered.

This Bureau has been able to secure several photographs of interest in connection with this expedition and they are herewith reproduced.

