

BEAR Hunt — The Search for a Historical Maritime Treasure

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A History of the Cutter Bear

The Greedy Relief Expedition

Rescue at Point Barrow

Michael A. Healy
* 1st African American officer in U.S. history
* Commander of Cutter *Corydon* and then *Bear*

Reindeer from Siberia
Bear transfers reindeer from Siberia to Alaska

Wartime Service, 1898-1919

Points represent date, or position of Cutter *Bear* based on Bear's ship logs obtained from the US National Archives (online). Track lines approximated using geographic information system (GIS) program to connect data points.
Source: USCGA Bear project 2013

SINKING AND LAST KNOWN POSITION

She had left Halifax, Nova Scotia for Philadelphia under tow on Saturday, March 16, 1963 for what became that final journey down to the sea.

The *Irving Birch* last reported seeing the *Bear* at 2000 hours on March 19, 1963 (photo dated 19 March 1963).

| TARGET ID | SOURCE | LATITUDE | LONGITUDE |
|----------------------------|--|-----------|-----------|
| Last seen by USCG Piles | Bixby's Track of the <i>Bear</i> (1963) | 42° 25' N | 65° 35' W |
| Last seen by Tow Vessel | <i>Irving Birch</i> | 41° 52' N | 65° 11' W |
| Chart location <i>Bear</i> | Northern Shipwreck Database (Non-submarine contact list) | 42° 07' N | 65° 50' W |

Initial Probability Distribution Model

BEAR Location Initial Probability Distribution SAROPS

Methods and Definitions

- SAROPS:** Search and Rescue Optimal Planning System. Software used by USCG for maritime search planning.
- Used USCG Cutter *EAGLE* drift and leeway characteristics to model *BEAR*'s movement through the water.
- In SAROPS Model **leeway** is the percentage of wind speed used to estimate speed of a vessel's drift through the water. So if leeway is 6% and actual wind speed is 30 kts then a vessel's drift speed would be $(30 \times 0.06) = 1.8$ kts.
- Mean drift angle** is the down wind direction of drift of a vessel. So if wind is from 000 degrees in the direction of 180 degrees, and average drift angle is 40 degrees then vessel drift will be estimated to be $(180-40) = 120$ degrees, or $(180+40) = 220$ degrees.

Assumptions

- Leeway of 6.0% and Mean Drift Angle of 40 degrees
- LKP of 20MAR 0015 Z 41° 52'N 65° 11'W (reported by tow vessel)
- USCG Aircraft reported position of *Bear* 19MAR 1345 Z 42° 25'N 65° 35'W
- Time of sinking 20 March 0920 Z 1963
- Winds 30kts from 000 (Yarmouth Weather St)
- Tidal currents from 19-20 MAR 1963 used

Possible locations of Cutter *BEAR* off coast of United States and Canada

Zoom in view of possible locations of Cutter *BEAR*

Probability Distribution Legend

| |
|---------------|
| 0.0 - 2.2% |
| 2.2 - 4.4% |
| 4.4 - 11.0% |
| 11.0 - 17.6% |
| 17.6 - 26.4% |
| 26.4 - 44.0% |
| 44.0 - 65.9% |
| 65.9 - 100.0% |

Legend

- 1 SAROPS LKP
- 2 USCG LKP
- 3 EAGLE LKP
- 4 Bixby's LKP
- 5 Irving Birch LKP
- 6 Bixby's Report LKP
- 7 Datum
- 8 Unrecovered Contact A
- 9 Unrecovered Contact B
- 10 Unrecovered Contact C
- 11 Unrecovered Contact D
- 12 Unrecovered Contact E
- 13 Unrecovered Contact F
- 14 USCG Vessel 1
- 15 USCG Vessel 2
- 16 USCG Vessel 3
- 17 USCG Vessel 4
- 18 Fish Hawk 2

CONTACT INFO

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PREVIOUS SEARCHES

Coast Guard Academy Cadet Project—1979

1979 US Coast Guard Academy Cadet Search Project
2 weeks searching using USCG Buoy Tender (USCGC CONIFER) AND EG&G Side Scan Sonar (SSS)

US Navy Research Submarine (NR-1) SURVEY AREAS

Coordinated search with NR-1 vessel
Imagery difficult to obtain. Four months to locate and speak with NR-1 Commanding Officer. Ship's logs destroyed, CDs with imaging lost.

NOAA SHIP PISCES SURVEY

On November 5th, 2012, NOAA Ship *Piscis* conducted a survey in an area associated with the sinking of USCG Revenue Cutter *BEAR* with a Simrad ME70 multibeam echosounder. The survey location was provided by the US Coast Guard and conducted under the direction of the NOAA Ship *Piscis* Commanding Officer.
NOAA Ship *Piscis* is a Fisheries Survey Vessel (FSV) and is outfitted with echosounders optimized for watercolumn fisheries survey. While bathymetry can be extracted from the watercolumn data, bathymetric resolution of these data is generally not of object detection quality.

Figure: Eight meter resolution gridded surface. Depth is in meters

CHALLENGES

Cutter *Bear* Dimensions (1885):
Length: 198 ft. 4in./ Beam: 30 ft./ Draft: 17 ft. 11in./ Hull: Wood/ Displacement: 703 tons
(note: *Bellevue* boilers removed from *Cutter Bear* before departing Nova Scotia under tow)

- Variations in last known positions
- Varying depths ranging from 300 ft (LNPs) in vicinity of Brown's Bank to 11,000 ft (SAROPS drift model high probability areas) southeast of Brown's Bank
- Numerous charted wrecks in probable locations making positive identification difficult
- Probable location straddles US and Canadian border
- Probable location of wreck in an area highly susceptible to foul weather
- SAROPS is surface drift model
- BEAR*'s material condition after sinking (intact or broken apart?)
- Vessels of opportunity with the time and equipment suitable for locating the *BEAR*