

**Start Date:** 01/25/2005 **End Date:** 07/28/2005

**General Description:**

The International Ice Patrol (IIP) conducted the 2005 North Atlantic ice patrol. Successful operations resulted from excellent teamwork and support from Coast Guard commands, U.S. and Canadian agencies, and hundreds of mariners. Only eleven icebergs drifted south of 48°N in 2005. Ice conditions in 2005 did not warrant issuing routine daily bulletins. However, IIP did produce weekly bulletins each Friday from 15 February to 1 July—the period that SOLAS defines as the ice season—to apprise mariners of Ice Patrol’s reconnaissance efforts. In 2005, no vessel heeding IIP’s iceberg information reported lost life or property due to iceberg collision.

**Operational Data:**

Pre-season preparations were intensive and included meetings as well as training. The IIP Annual Conference convened in December 2004 and included many Coast Guard, federal, and international partners. Training included the following: low-pressure-chamber training (Langley AFB, VA, Oct 2004) for new personnel, C-130 egress training (Groton, CT, Jan 2005), swim/survival training (U.S. Coast Guard Academy, CT, Nov 2004), two weeks of IIP University (Groton, CT, Jan 2005), and IIP operational training for personnel at Elizabeth City Air Station (Elizabeth City, NC, Jan 2004). Following preparations for the ice season, the pre-season Ice Reconnaissance Detachment (IRD) deployed from 25 January to 3 February to determine the prevailing ice conditions and to meet with Canadian partners.

Ice Patrol observed significantly lighter-than-normal ice conditions in the North Atlantic and therefore did not issue daily ice-limit bulletins. Though the light ice conditions did not warrant normal bi-weekly deployments, IIP did conduct periodic reconnaissance. From 25 January to 8 June, IIP deployed six IRDs; IRDs 1, 3, 5, and 7 were canceled. Ice Patrol concentrates reconnaissance on finding the icebergs that set the Limit of All Known Ice (LAKI). However, because the LAKI never significantly threatened transatlantic shipping in 2005, IIP focused reconnaissance on determining the general iceberg population. Post-season operations concluded with a deployment from 25-28 July to make logistics arrangements, vacate leased spaces, and meet with partner agencies. Ice Patrol did not conduct a customer-satisfaction survey during 2005 because daily products were never issued. Ice Patrol will seek OMB approval to conduct this survey during the 2006 ice season.

**Support Data:**

The International Ice Patrol is funded annually through appropriated sources. As specified by SOLAS, the 17 member nations share the total cost of conducting the North Atlantic ice patrol. Member nations are billed according to their portion of total tonnage shipped across the North Atlantic. Operational (annually funded) costs include the aircraft-support contract, travel costs, and Ice Patrol operating expenses (e.g., rent, uniform items, flight gear, equipment). Billed costs (i.e., those costs passed along to signatory nations) include all operational costs as well as the use of the HC-130H aircraft stationed at Elizabeth City Air Station and used for iceberg reconnaissance. Costs for the HC-130H are calculated based on the standard rates listed in COMDTINST 7310.1I. Financial data (including billed costs) will be available at a later date. The support received from the Coast Guard Research and Development Center’s administrative, procurement, and contracting staff was excellent.

**Location of Operation:**

Groton, CT—IIP Operations Center; St. John’s, Newfoundland and Labrador (NL)—IIP Remote Operations Base

**Location of Personnel:**

Groton, CT, and Elizabeth City, NC

**Objectives and Major Lessons:**

See Lessons Learned section.

**Limitations and Casualties:**

In March 2005, significant limitations were placed on the 1500 series HC-130H aircraft stationed at Elizabeth City Air Station. See the Lesson Learned section for amplifying information.

**Participants:**

International Ice Patrol

Elizabeth City Air Station—home base for aircraft and crews for iceberg reconnaissance

Communications Area Master Station Atlantic—broadcast conduit for majority of IIP products

National Weather Service—HF WEFAX converter for IIP ice chart

National Ice Center—iceberg reconnaissance partner

National Geospatial-Intelligence Agency—broadcast partner for IIP products

Fleet Numerical Meteorology and Oceanography Center—environmental-data provider for iceberg modeling

Canadian Ice Service—iceberg-reconnaissance and modeling partner

Provincial Aerospace Limited—contract iceberg-reconnaissance provider

Canadian Coast Guard—iceberg reporter and WOCE buoy deployer

C-CORE —scientific-research partner who conducts satellite-based reconnaissance and computer-based target-identification experiments

German Ice Service—ice-chart-broadcast partner

Merchant Vessels—SOLAS-mandated iceberg and weather reporters

Fishing Vessels—SOLAS-mandated and voluntary iceberg and weather reporters

**Lesson Learned: 1500 Series C-130 Aircraft Limitations****Observation:**

Findings from comprehensive inspections of USAF C-130Hs, following the crash of a U.S. Forestry Service C-130 in 2002, identified problems with the plane's center wing- support structure. As a result of these findings in March 2005, significant limitations were placed on the 1500 series C-130 aircraft stationed at Elizabeth City Air Station and used for IIP reconnaissance. These limitations were instituted to minimize the possibility of additional metal fatigue within the center wing box. The limitations that impacted IIP operations (in no particular order) were (1) gross-weight maximum of 139,000 lb (2) speed restriction in mild turbulence (3) requirement to avoid moderate turbulence (4) minimum landing fuel of 15,000 lb. Violating any of these limitations required grounding the aircraft for inspection.

**Discussion:**

Based on a review of the limitations and their operational impacts on IRD 4, the critical limitation (from IIP's perspective) was the minimum-landing-fuel requirement coupled with the reduced-speed requirement in mild turbulence. As a result of the evaluation conducted on IRD 4, SOP changes were instituted and will remain in effect indefinitely.

**Lesson Learned:**

Changes to the SOP include (1) tactical commanders must use a tiered patrol-length maximum based on on-scene weather conditions and forecasted conditions at the airport (2) 1200 nm patrol-length maximum is required for excellent-moderate weather (VFR conditions at the airport and no turbulence on scene) (3) 900 nm patrol-length maximum is required for moderate-marginal weather (no turbulence on scene but possibility of divert to alternate airport exists) (4) forecasted turbulence in the OPAREA requires a no-fly decision (5) patrols are made without the SLAR-support pallet and seat pallet in order to reduce weight and allow greater fuel capacity. These limitations will be in place until a depot-level inspection can be conducted on each affected airframe. The complete schedule and inspection regimen has not been determined.

**Recommendation:**

Conduct the necessary depot-level inspection prior to the 2006 ice season.

**Comment:**

Because of the small iceberg population in 2005, the above limitations did not preclude effective reconnaissance. However, under intense iceberg conditions, IIP requires 1,700 nm flights to adequately cover the Limit of All Know Ice (LAKI), and the current restrictions would not afford a patrol length long enough to survey the traditional southern and southeastern points of the LAKI.

**Lesson Learned:** Decision Not to Open the Ice Season**Observation:**

Only eleven icebergs drifted south of 48°N during 2005. These icebergs did not impact the North Atlantic shipping lanes; therefore the 2005 iceberg season did not open.

**Discussions:**

When IRD 9 returned on 8 June, the Commander of International Ice Patrol decided not to open the 2005 ice season because it was clear that the iceberg population was not going to impact the North Atlantic shipping lanes. In May, the Ice Patrol command discussed the possibility of opening the 2005 season regardless of the iceberg population. However, it was decided that the only benefit of opening the season would be to train Operations Center personnel, who could be trained sufficiently during the usual post-season period by using a simulated iceberg population. The ice season, therefore, remained closed.

**Lesson Learned:**

The last year IIP did not open the ice season was 1999. During that year, a procedure was established to notify mariners weekly that IIP was monitoring the iceberg population but not issuing daily products because of no iceberg threat in the North Atlantic shipping lanes. Ice Patrol formalized that process in 2005 and issued weekly bulletins from 15 February to 1 July, the period that SOLAS defines as the ice season.

**Lesson Learned:** Use of Contract Hotel**Observation:**

As a result of a lesson learned from the 2004 ice season, IIP returned to a contract hotel in 2005. Ice Patrol evaluated different hotels in St. John's during the pre-season IRD and awarded the best-value contract to the Quality Hotel in St. John's.

**Lesson Learned:**

The contract hotel provided excellent accommodations and maximized value by saving unit funds. In 2004, IIP deployed 11 IRDs and spent \$76,900 in non-contract-hotel costs (an average of \$100 per person per night). In 2005, IIP deployed 7 IRDs and spent \$45,010 in contract-hotel costs (\$63 per person per night).

**Recommendation:**

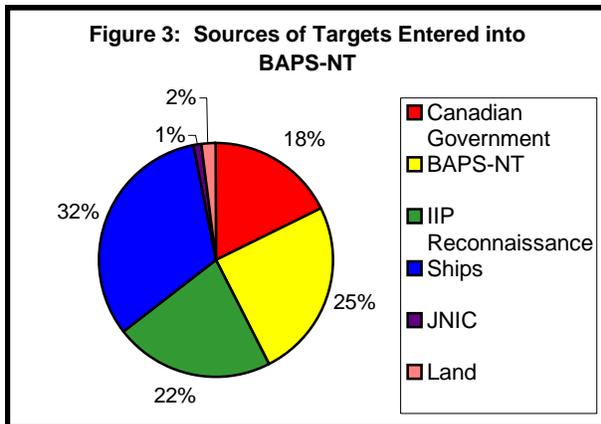
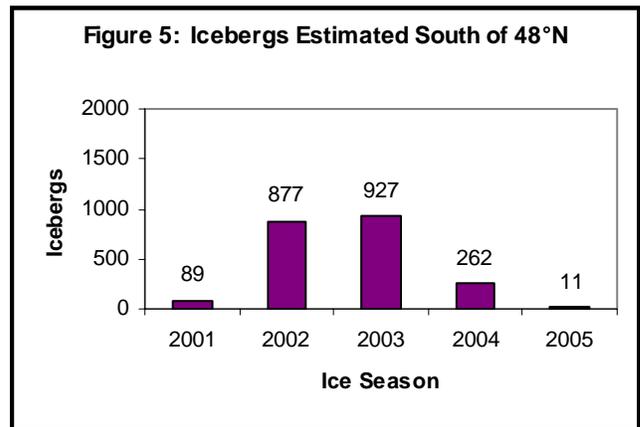
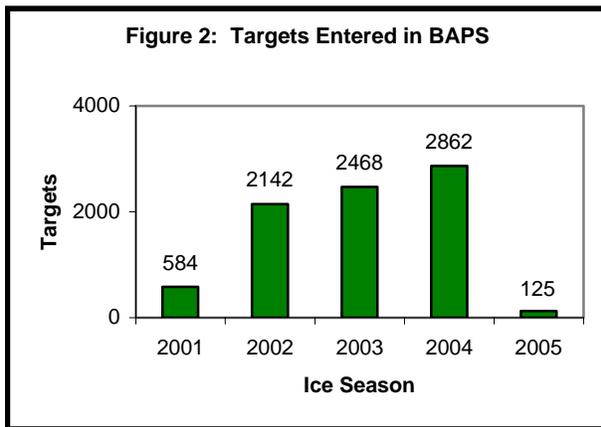
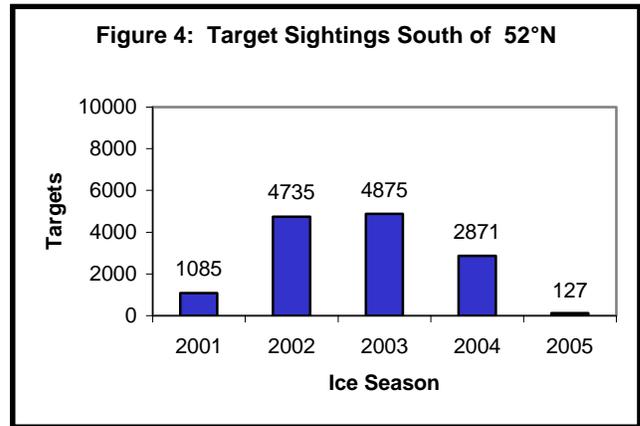
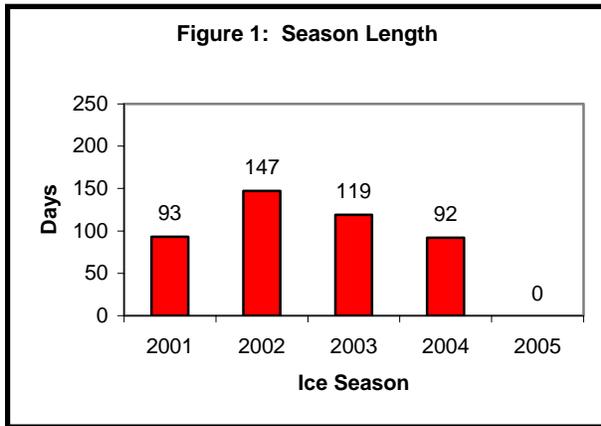
Ice Patrol will pursue a contract hotel for the 2006 ice season.

**Comment:**

The Quality Hotel provided an environment conducive to crew rest and a helpful staff that accommodated IIP's operational and personal needs.

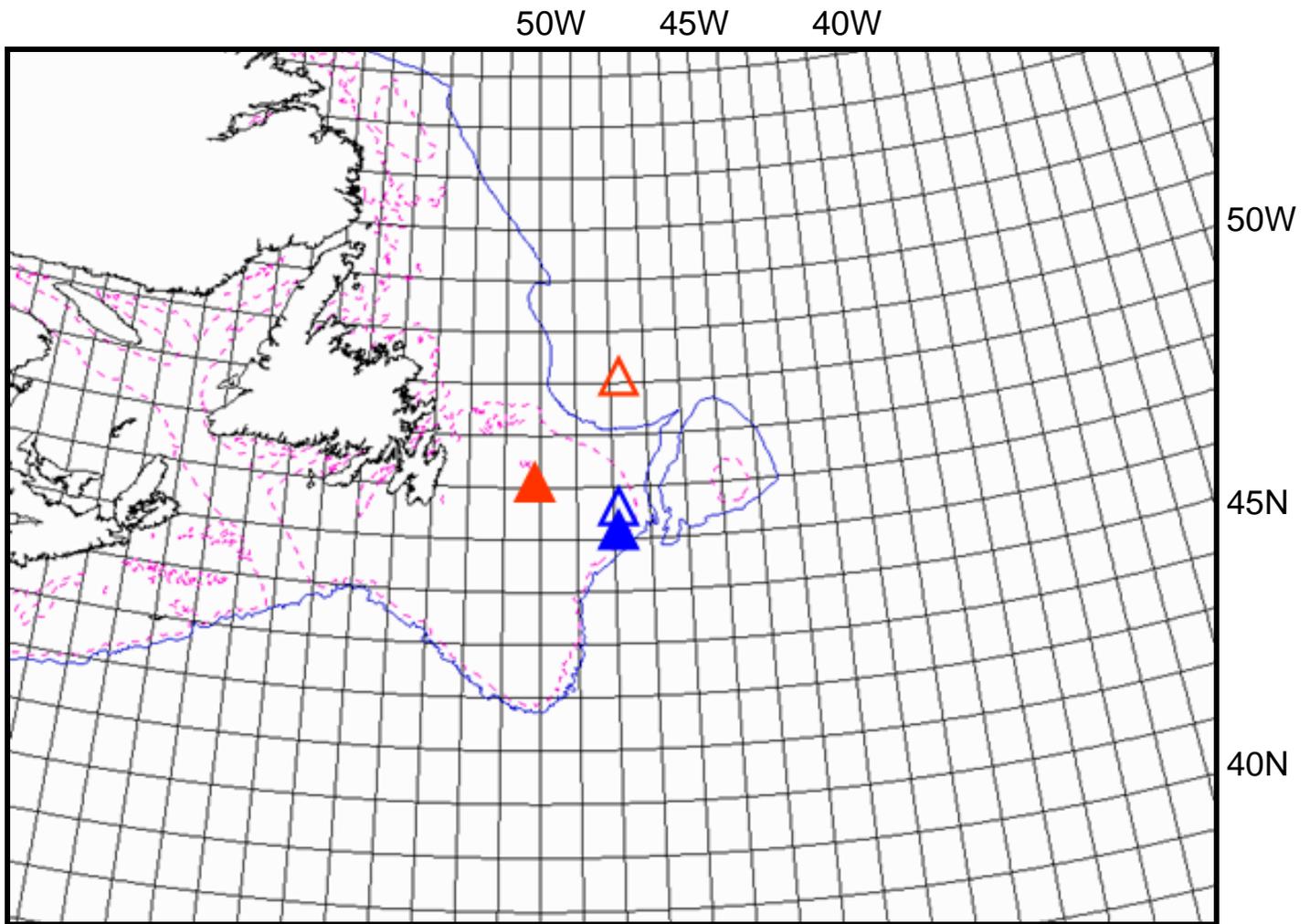
## Operations Center Data

- Model Up: 18 February
- Model Down: 1 July
- Average Season Length (1987 - 2005) 134 Days
- Average Icebergs South of 48°N (1987 - 2005) 812



### Geographic Iceberg Distribution

	Sighted Position		Date	Drifted Position		Date
Eastern △	47°46'N	49°00'W	29 Mar	46°27'N	47°40'W	23 Mar
Southern ▲	46°52'N	50°01'W	5 Apr	45°56'N	47°52'W	25 Mar



## Reconnaissance Operations Data

