

2023 World Record 1776 ft. Diameter Ice Carousel



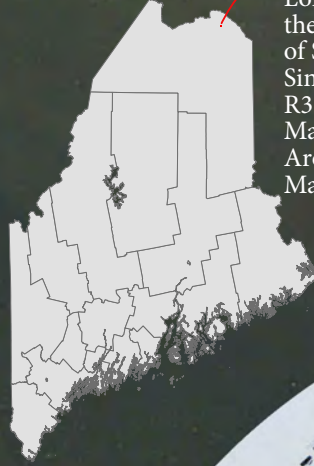
Northern Maine Ice Busters

"Multi-Community Volunteers teaming up to build rotating World Record Ice Carousels on Frozen Lakes throughout the world in the spirit of friendly, International Competition, Cooperation and Comradery."





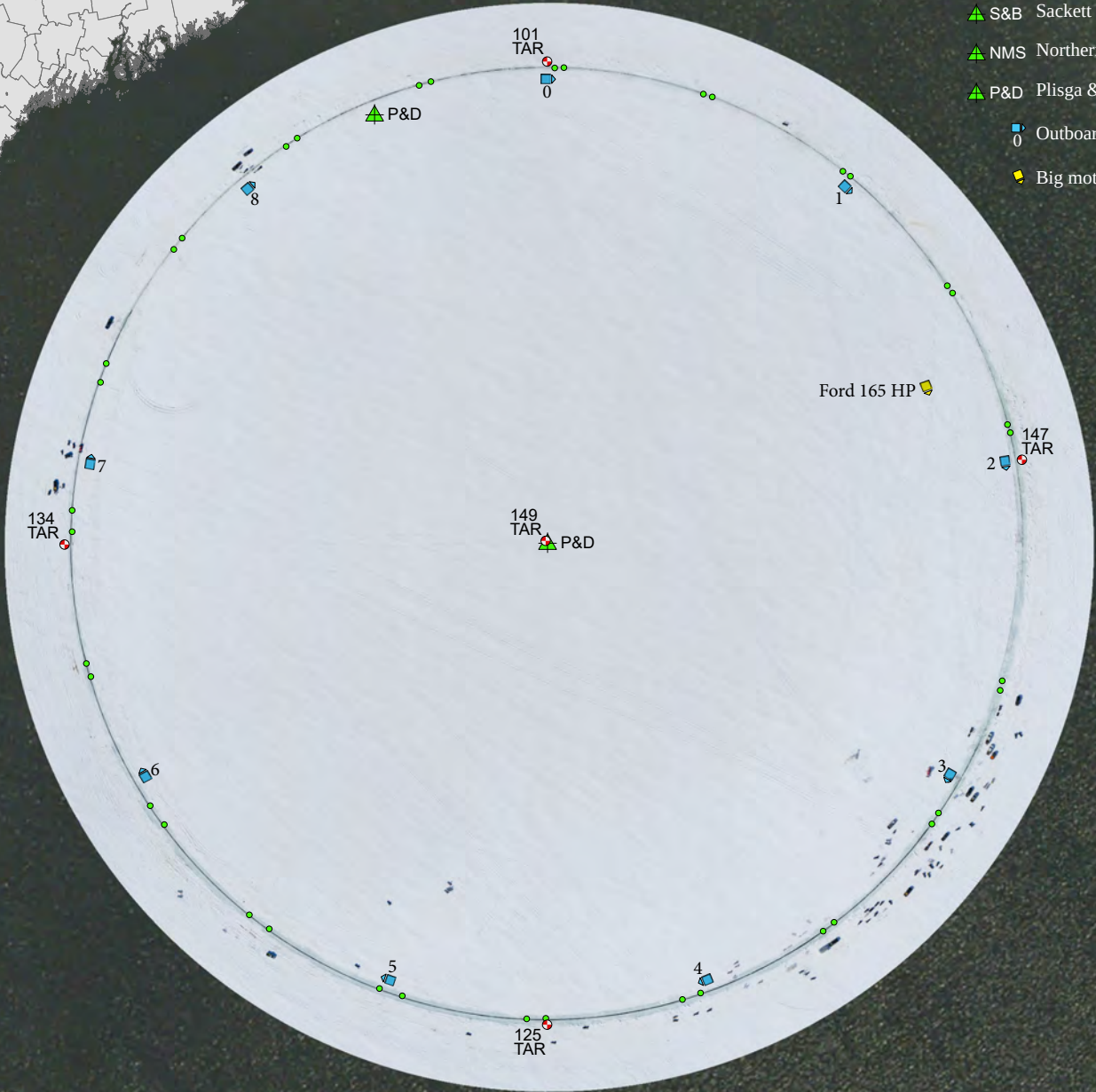
The 2023 WRIC was on Long Lake. Long Lake touches the communities of St. Agatha, Sinclair Twp, T17 R3 WELS, and Madawaska, all in Aroostook County, Maine



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- Total Station Location
- 101 TAR Numbered GCP Target
- S&B Sackett & Brake CP
- NMS Northern Maine CP
- P&D Plisga & Day CP
- Outboard motor
- Big motor



2023 World Record 1776 ft. Diameter Ice Carousel Set on Long Lake in St. Agatha, Maine
by V. Kelly Bellis, Maine PLS #2099, Ellsworth, Maine
About the cover photo¹

The ice carousel is a cold-climate community cultural phenomenon with Finnish origins, possibly dating from the 19th century². Smaller-sized ice carousels were sporadically spotted in Finland during the 20th century, but it wasn’t until 6 January 2017, when Janne K pylehto, of Helsinki, and the Executive Director of the World Ice Carousel Association, first began making a giant spinning ice disk on Kirmusj vi Lake in Lohja, Finland³ that these disks began to grow. Since then and over the past six years, he’s inspired many folks worldwide to try their hand at spinning an ice carousel with friends and family. Some ice disks have been small,

Circle of Best Fit through positions along the disk perimeter located on Friday 31 March using a total station. All distances are ground, U.S. Survey Foot

Point#	Northing	Easting	Residual
103	5887.996	5013.545	0.088
105	5838.971	5291.591	0.179
107	5695.038	5552.496	-0.152
109	5481.195	5746.415	0.038
111	5222.134	5859.705	-0.111
113	5020.765	5888.077	0.264
115	4742.808	5849.939	-0.061
117	4495.843	5731.006	-0.063
119	4291.881	5535.827	-0.062
121	4159.138	5285.597	-0.017
123	4112.045	4997.201	-0.090
126	4154.406	4728.604	0.039
128	4280.113	4480.159	-0.071
130	4473.690	4284.556	0.158
132	4750.513	4147.435	0.308
135	5021.462	4112.340	-0.085
137	5300.545	4164.620	-0.200
139	5549.023	4302.164	-0.079
141	5742.205	4512.700	-0.121
143	5855.234	4760.857	0.035

Residuals Standard Deviation: 0.134
Average Residual: 0.111
Circle Center: 4999.981, 5000.026
Radius: 888.030



Photo Above: Mike Cyr wearing the U Maine Survey shirt with style while staking out an 888’ radial point with Doug Lerman at the ice auger. Photographed on Friday, 20230331 13:31 UTC-4. The procedure used for laying out and cutting the 5,580’ circumference involved first staking out a point that was precisely 888’ from the center, which was then immediately followed by the 10” diameter auger being placed tangent to the point and on the outside of the arc. After the auger had started cutting through the 1.8’ to 2.0’ thick ice, Mike moved about 3’ to 4’ along the arc and then zeroed in on the position for the next hole. After the holes were augured, chainsaws cut 2 parallel passes, 10” apart connecting the dots. The resulting free floating strip of ice was then submerged and pushed out of the channel and beneath the outside (stationary) ice. The layout process unfolded during the week of March 27 including whiteout conditions on Thursday which resulted in some of the holes refreezing, getting filled in with snow and becoming lost. In this photo Mike is actually going over and redoing previous efforts that had been erased by Thursday’s blizzard conditions. Near the end of light on Friday, the entire disk had been cut, floating completely free from the stationary ice, ready for the next day’s big spin.

NMS



Photo: Finishing up the cutting of the slot; photographed on Friday, 20230331 14:52 UTC-4; Latitude: 47°12'34.728", Longitude: -68°14'2.472", Altitude: 120 m. Beautiful weather helped get the 10" wide channel cut by the end of the day on Friday leaving motor placement and the big spin for Saturday.

intended for the grandkids, and some not so small, but they've all been immense fun for everybody. Janne has also inspired some friendly international competition and through it many new friends have been found.

The northern communities in and near the Town of Madawaska, Maine have once again

wrestled for and won the title of World Record Ice Carousel for the largest ice carousel in the world making one revolution. This year it was on Saturday April 1, 2023 at Long Lake in the Town of St. Agatha, Aroostook County, Maine. Collectively identifying themselves as the *Northern Maine Ice Busters*, they describe themselves as, "*Multi-Community Volunteers*



Photo: News Center Maine at the Center of the Disk; photographed on Friday, 20230331 16:44 UTC-4; Latitude: 47°12'39.468", Longitude: -68°14'9.942", Altitude: 26 m; From left, Jacob Richards, videographer, Sam Olson reporter, both from News Center Maine; interviewing Mike Cyr while Jon Stewart sets up the total station over the center point of the 1776' diameter disk. Not in frame, Tim Cady on the staff getting shots on both edges of the cut 10" channel about 888' away during Day 1 of the as-built survey.

*teaming up to build rotating World Record Ice Carousels on Frozen Lakes throughout the world in the spirit of friendly, International Competition, Cooperation and Comradery."*⁴. This year was the third year in five years that the NMIB secured the title of World Record Ice Carousel^{5, 6}.

As the disks have increased in size, so too has the need increased for precisely measuring the giant circles. Over the years, several Maine land surveyors have assisted the Northern Maine Ice Busters set the world records on Long Lake by doing RTK layout. Additional



Photos above: Ice thickness being measured; photographed on Saturday, 20230401 11:30 UTC-4. Tim Cady and Jon Stewart of Plisga & Day Land Surveyors taking ice thickness measurements. This was 1 of 12 random locations sampled across the entire 56.87-acre ice disk made Saturday prior to the big spin.



Photo: Ice Strata from big prop hole; photographed on Saturday, 20230401 07:58 UTC-4. On the left is one of the (4) blocks of ice that was cut out for the large motor's prop. The photo on the right is a 3" slab from one of the ice blocks. Both photos illustrate the so-called blue ice or (or steel ice), and white ice (or gray ice) formed by wet frozen snow.



2023 World Record 1776 ft. Diameter Ice Carousel Stats								
thickness ft	radius ft	lbs/cu ft	area sq ft	area acres	vol cu ft	mass lbs	mass tons	mass Titanics
1.85	888	52.5	2477284.04	56.87	4582975.5	243814295.0	121907.1	2.3

surveyors have been called to document and certify as to the exact as-built dimensions using old-school total station methods. This year included, surveyors Kevin Sargent, Kevin Holmes and Steve Hardy, all from Sackett & Brake Survey, Inc. of Dover-Foxcroft⁷; Spencer Caron of Northern ME Enterprises from Fort Kent; and Mike Cyr of Northern Maine Surveyors from Madawaska. All of

them helped in the planning and layout of the giant disk including the locations for the motors that propelled the world record disk to complete the requisite full revolution. Surveyors from Plisga & Day Land Surveyors, Jon Stewart (Bangor office) and Tim Cady (Houlton office) independently verified the dimensions of the disk.



Photo: Hamster wheel #1; photographed on Saturday, 20230401 15:26 UTC-4. This was the first pair of tethered vehicles located on the ice disk, anchored to the stationary ice, which literally kick started the carousel spinning at 14:56.

One of the things that Plisga & Day measured was the thickness of the ice. Tim and Jon drilled and measured a dozen samples across the entire 56.87-acre area using a hand auger and a level rod with an adaptive foot. The rod was inserted through the hole in the ice and then pulled tight against the underside of the ice. The average ice thickness was determined to be 22.25" (1.85'). Tim also reported that due to the amount of white ice (frozen wet snow) on the lake, the ice samples they took and weighed figured out to be about 52.5 pounds per cubic foot. These measurements translated into an ice mass of about 120,303 tons, or 2.3 Titanics⁸! Getting this thing to spin would require even greater *sisu*⁹!

Saturday's weather was inclement with on and off snow showers, 10 to 15 mph winds out of the southeast and below freezing temperatures, none of which seemed to dampen the Northern Maine Ice Busters' resolve. The day began early with cutting the holes in the ice for the 9 outboard motors that were spaced at about 40° intervals within 20' of the outside edge of the disk, plus the bigger hole was cut for the inline 6-cylinder 165 hp Ford motor along with its through the ice clever anchoring system. The repurposed potato harvester motor, by NMIB team leader, Roger Morneault, had connected to its fabricated shaft a 45-pound 24" brass prop that had been found at an exceptional price. All motors were started and set running at a steady idle, and eventually, the mammoth



Photo: Hamster wheel #2; photographed on Saturday, 20230401 15:07 UTC-4. This was the second pair of tethered vehicles located on the ice disk, anchored to the stationary ice, which helped to speed up the rate of spin.

disk began to spin very slowly, for about 3' before completely stopping. Many broke for lunch, and at about the same time, somebody posted on Facebook that the attempted big spin had been scrubbed for the day, and that it would resume Sunday when the weather was expected to be a little better. That Facebook post was taken down shortly after lunch when the fueled group returned to the ice, and once again started their engines.

The motors were each generally oriented pushing along a tangential vector and collectively in a clockwise direction. The disk

was still not moving when Mike Cyr began sledding around the cut channel until he arrived at the northwest side of the carousel. With the sustained 10-15 mph winds out of the southeast and gusts up to about 20 mph, the 57-acre disc was driven northwesterly into contact with the stationary ice. Thanks to the quick thinking of Mike, he made a counter move. In his own words: *"It was at 2:10 pm on the west / northwest side of the Carousel and the channel was closed shut due to the brisk wind from the southeast. The idea came to me to turn the motor basically 90 degrees to "push" the iceberg to the southeast towards the*



Photo: Segment from Motor_Pano; photographed on Saturday, 20230401 09:23 UTC-4. Roger Morneault, NMIB Team Leader, has repurposed this Ford 6-cylinder inline 165 HP potato harvester by adding a long drive shaft with a 45-lb 24" diameter brass prop.

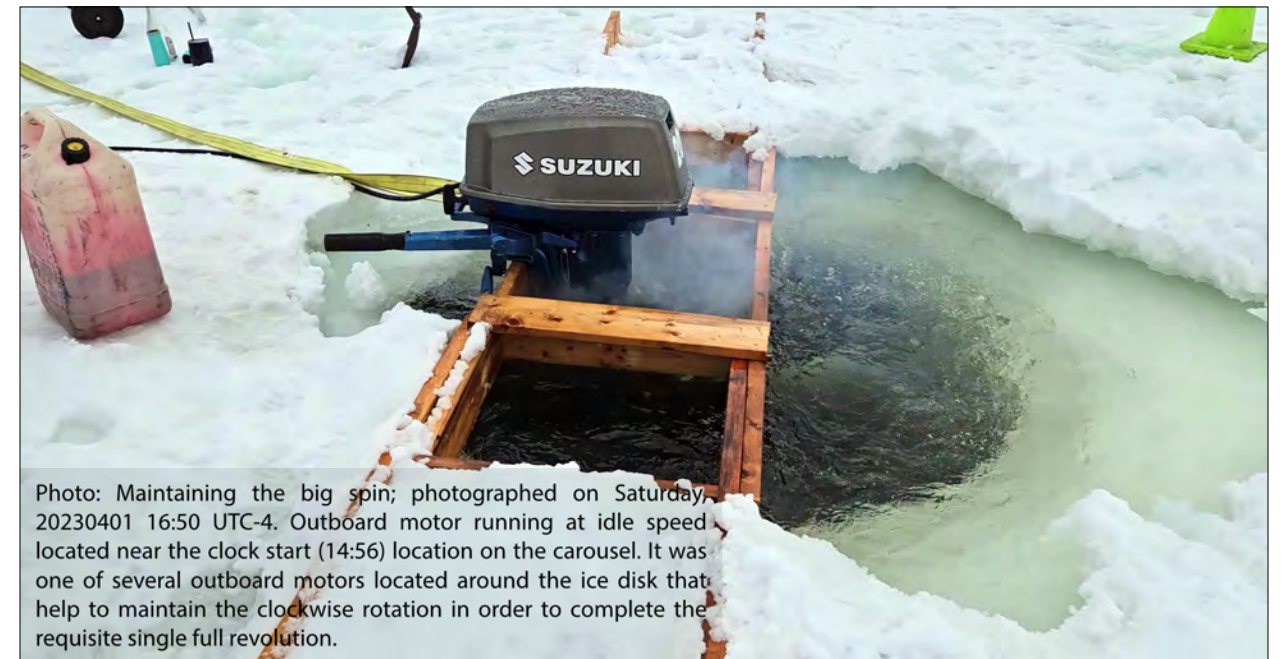


Photo: Maintaining the big spin; photographed on Saturday, 20230401 16:50 UTC-4. Outboard motor running at idle speed located near the clock start (14:56) location on the carousel. It was one of several outboard motors located around the ice disk that help to maintain the clockwise rotation in order to complete the requisite single full revolution.

Photo: 30 minutes until the new world record; photographed on Saturday, 20230401 16:42 UTC-4. People (and their vehicles) gather to witness the historic event. Most of the vehicles were parked on the stationary ice which caused the ice to sag slightly and flood the surface with water within about 8 to 10 feet of the edge.



radius point. That, in combination with the outboard motors, potato digger propeller contraption, the Raptor and THE SHERP-LIKE FAT TRUCK thus simultaneously initiated rotation at 2:56 pm in the most ROBUST FASHION!!".

Mike ran the motor that was mounted at the northwest for about 10 minutes, long enough to push the floating ice disk away from it contacting with the stationary ice before he returned it facing normal to the radial and back to a steady idle. The Raptor, referred to by Mike, is Roger Morneau's hefty Ford, and the FAT Truck¹⁰ is Canada's only locally developed and built amphibious vehicle.

More Yankee ingenuity – Roger's Raptor, located on the carousel, was tethered and anchored to the stationary ice with the FAT Truck located in front of and tethered to Roger's truck. The vehicles then began applying a constant forward force with their vehicles apparent direction counterclockwise on the ice disk. In the photo, I've referred to this as hamster wheel #1. About 10 minutes after the disk showed the very first signs of rotation (2:56 PM), hamster wheel #2, located about 50° around and toward the north from the Raptor-FAT Truck duo, was another pair of trucks that were hitched together and anchored in similar fashion. The extra-vehicular pull continued for several minutes until the spinning inertia had been developed and was maintained by the various outboard motors. The requisite single full revolution was completed at 5:12 PM, and at an average rate of 360° in 136 minutes, or 0.37778°/minute. Way to go Northern Maine Ice

Busters! Congratulations on setting the new world ice carousel record!



Photo: Day 2 of the as-built survey by Plisga & Day; photographed on Saturday, 20230401 10:50 UTC-4; Approximate Latitude: 47°12'39", Approximate Longitude: -68°14'9"; From left, V. Kelly Bellis, Jon Stewart, and Tim Cady. Day 2, the day of the spin, Jon and Tim finished up their pre-spin work in inclement weather, including drilling several test holes in order to get an accurate reading of ice thickness.



V. Kelly Bellis, Maine PLS #2099, of Ellsworth, Maine, is enjoying retirement and unbridled rabbit hole diving into a variety of subjects often having to do with some aspect connected to surveying.



360° Panoramas - Check them out!

<https://www.360cities.net/image/2023-world-record-ice-carousel-1st-day-of-as-built-survey-alt-26-m>

<https://www.360cities.net/image/2023-world-record-ice-carousel-1st-day-of-as-built-survey>

<https://www.360cities.net/image/2023-world-record-ice-carousel-ready-to-spin>

<https://www.360cities.net/image/2023-world-record-ice-carousel-the-big-motor>

<https://www.360cities.net/image/2023-world-record-ice-carousel-2nd-day-of-as-built-survey>



Photo: The 1776' diameter stakeout crew for the 2023 World Record Ice Carousel - 4 surveyors after the big spin; photographed on Saturday, 20230401 17:15 UTC-4 just minutes after the completion of the disk's requisite revolution; Left from and beginning with the green hat, Mike Cyr (1), Steve Hardy (2), Kevin Sargent (3) seen here holding the trophy for the World Record Ice Carousel, and Kevin Holmes (4).

Endnotes

¹ Cover Photo: Panorama photographed on Friday, 20230331 16:41 UTC-4; Latitude: 47°12'39.468", Longitude: -68°14'9.942", Altitude: 120 m; Projection: Stereographic, down, so-called *Little Planet*. Last day of cutting out around the 1776' diameter ice disk on Long Lake in St. Agatha, Maine.

² Email from Janne Kämpylehto and the World Ice Carousel Association; <https://icecarousel.wordpress.com/the-association/>

³ More on Janne Kämpylehto's first ice carousels in his own words at <https://icecarousel.wordpress.com/about/>

⁴ <https://www.facebook.com/NMIB21/> This is the best place to go and read and see more on this crowd sourced event.

⁵ News Center Maine, news stories: 1) https://www.youtube.com/watch?v=_QbHgJ0VmG0 and 2) <https://www.youtube.com/watch?v=ID6eeQC5XR8>

⁶ 2018 WRIC, 427 ft. diameter.; 2021 WRIC, 1234 ft. diameter; 2023 WRIC, 1776 ft. diameter.

⁷ Sackett & Brake's FB page is another good place to see more from this event <https://www.facebook.com/SBSurveyDE/>

⁸ Drawing: 1997 Drawing of the Titanic by Boris Lux, circa 1997: https://boris-lux.de/04_types/51_sh/sh_liner/12_tit/tit.php; Home page: <https://boris-lux.de> The reported displacement of the Titanic was 52,310 tons. Lately, it seems, measures related to the mass of ice carousels are now in units of Titanics!

⁹ *Sisu* is a Finnish word that we're told is transcendental and untranslatable, but *tenacity* may begin to approach an understanding the term in English.

¹⁰ This thing is impressive! <https://www.fattruck.com/>

