

SAVE
SOS ONTARIO
SHIPWRECKS

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SOS NEWSLETTER



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P.O. Box 2389
Blenheim, Ontario
N0P 1A0
Fax: 519-676-7058
<http://www.saveontarioshipwrecks.on.ca>

EDITOR

JODY BULMAN
PO Box 69 660 Eglinton Avenue East
Toronto, Ontario
M4G 2K0
tacking@sympatico.ca

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Save Ontario Shipwrecks gratefully acknowledges the support and financial assistance of the Ministry of Culture.

Deadline submission for next issue is January 1, 2007.

Editor Notes

Thanks to the contributors of the November issue. With the summer season over, and a fall season arriving, it was great for the members to send support for the newsletter.

I encourage all chapters to submit a brief article with their events update to ensure everyone is involved and informed. Deadline for submissions for next issue will be January 1, 2007.

Have a great Christmas and holiday season.

Jody Bulman





By Brian Prince, SOS President

As we are hoping for great Fall weather and to get out on the boat for the remaining weekends of this season, the dive season for most of us, is quietly closing for 2006. For this past season, my dive log shows my schedule only allowed for half the number of dives done in 2005. Was it rain, family commitments, or both? I know for sure we had our share of rain here in the 1000 Islands and there were a lot of family gatherings this summer. But this weekend is sunny, the vis is getting better and I'm planning on taking a few people on a great dive tomorrow. With any luck we will come upon lost history, an anchor, or just some boards with no apparent purpose. We will drift over the river bottom and enjoy the splendour of the wrecks, lost items and geology hidden from landlubbers as well as enjoy the curiosity of a variety of fish.

As you will see in this issue, there was a number of things happening this past quarter. This included the postponement of the sinking of the Maitland Star in Goderich, Scuba in the Park in Brockville, and a NAS 1 in Ottawa and London. There is also a NAS 1 planned for Oct 13th (rescheduled from earlier in the season) in Toronto that will have happened by the time this gets to print. Part 2 of the GPS articles is in this issue and an article by on the Ships Stores make over.

People have asked me how can we use Charitable Donations. Simply get an invoice for "products" donated for a project (itemizing a fair market value, total less taxes and written on it that it is a Donation for project ABC) and send it to Head Office (address inside the front cover and on the bottom of the SOS main web page). Or fax it in with a description of who it is for, the name of the project, and the address of where to send. Personally, I always get them sent to me directly so I can hand deliver to the person that donated the items and express a hearty thank you. Nothing speaks louder and creates a better relationship than closing the loop yourself. Be aware that the Charities Act does have limitations on the donation of services. Services need to be paid for first and the money donated back to SOS for a receipt. Donations can be accepted, but a receipt can not be given if there is any form of advertising for the company/person making the donation. This is my understanding after reading the Act and I'm hoping to have



a more formal policy statement in the future.

SOS needs you or someone you know to volunteer for the following positions:

"Public Relations Coordinator" to help improve and drive our out going messages, brochures, website and newsletter content. Basic graphics understanding and computer skills.

"Event Coordinator" province wide. We exhibit at a number of shows every year, plan NAS courses, have occasional social gatherings and plan our AGM. This would bring one common point of contact for everyone involved with an event and ensure a level of consistency. Outgoing and organized, an individual that is detail oriented with basic computer skills.

"Multimedia Designer" to design a standard SOS presentation in PowerPoint about who we are and what we do for all chapters to use. Moderate graphics and PowerPoint experience.

If this is you or someone you know, please contact me at 613-342-3900 or brian.prince@sympatico.ca.

I am pleased to announce that Frank Nisi has accepted an invitation from the Board to be the Honourary Counsel of *Save Ontario Shipwrecks*. The Honourary Counsel provides the Board with legal advice so that the corporation is conducting its operations properly. Frank is one of the lawyers from *Hewitt, Hewitt, Nesbitt, Reid* who worked on Bylaw #2 that was passed at the last AGM in Ottawa. Welcome aboard, Frank!

I hope that you and your family have a wonderful holiday season and hope to see you all at the SOS booth during the *Outdoor Adventure Show* in Toronto February 2007.

Remember, if you find a renewal form enclosed, please renew your membership ASAP (preferably for 5 years). This saves you money and us postage and every member, whether participating in events or not, helps the cause and to spread the word. So please do it now. We need your support. Thank You.

Brian Prince
President SOS



SOS Toronto

By Michael Gregg
Special to *The Globe and Mail*
Print Edition 09/09/06 Page M6

Knapp's Roller Boat Wreck

What lies beneath a waterfront revitalization plan could result in the loss of important pieces of Toronto's history

The Globe and Mail - When the singular Knapp's Roller Boat made its maiden voyage in 1897, the experimental vessel was, briefly, a wonder of the modern world. The Toronto Evening Telegram described the thousands that lined the shore and filled the rooftops to catch a glimpse of its trial run. Created by lawyer Frederick Knapp of Prescott, Ont., the boat was built to roll over waves rather than cut through them, using paddles affixed to its hull. A fascinating but doomed experiment, it was ultimately abandoned where it had been built, at Polson Iron Works, having proved itself unequal to the open waters. Now it lies buried, along with the remains of the iron works, under a Federal Express warehouse in a derelict part of town called Polson pier that may soon be the site of a massive revitalization effort that would see condos and office towers dig their foundations deep into the soil, and right through the Roller Boat.

Amid the enthusiasm of the various waterfront projects, Toronto is in danger of losing many of its most important 19th-century maritime treasures. A report by the Toronto Waterfront Revitalization Corporation recommends developing parts of the eastern bay front, including the Polson pier property; all it needs to go from report to official plan is the passage of a bylaw by city council, which is being introduced next week.

Despite spending \$350,000 in the past two years identifying the probable locations of Toronto's most important archeological sites, the city's planning department has no immediate intention to safeguard the Roller Boat or many other treasures and sites, including the Polson Iron Works, the hub of Toronto's thriving turn-of-the-century maritime industry.

Though the discovery and destruction of the early-19th-century Queen's Wharf by the crews building the 32-storey Malibu condos at the foot of Bathurst Street in March and April has drawn attention to flaws in the planning process, senior city planner Angus Cranston will present the bylaw amendment to Toronto and East York Community Council next week allowing condominium and retail development on waterfront lands without



adequate protection for heritage sites.

Chris Andersen, the Ontario Ministry of Culture's regional archeologist responsible for the Greater Toronto Area, figures it would be a mistake to lose this particular piece of our history.

"The Toronto Polson site [including the Roller Boat] certainly warrants commemoration and interpretation for its role in Toronto's and Ontario's proud maritime history," he says.

Incorporating archeological sites into the modern urban landscape is more difficult in Toronto than in older cities such as Jerusalem, Athens or Rome, where history is always front and centre and justification for funding rarely a debatable point. And unlike Montreal and Quebec City, where historically important buildings have been left in place and integrated into parks and modern structures, much of Toronto's distinctive 19th-century architecture was demolished to make way for industrial development and rapid economic growth.

A report from Archeological Services Incorporated (ASI), prepared for the TWRC by Ron Williamson (who approved the demolition of Queen's Wharf) and David Robertson, recommends leaving vestiges of Toronto's industrial past in place and integrating historical features such as road surfaces, rails and machinery into future developments. But it does not suggest what might become of the Roller Boat.

"We're loath to tell anyone what to do with an archeological resource until we've seen it," Mr. Williamson says.

Among the vestiges of the past that the report recommends preserving in some form are Ontario's first parliament buildings, the Grand Trunk Railway Shop and Toronto Rolling Mill on Cherry Street, the Toronto Street railway stables, the Palace Street School at Cherry and Front Streets and the Roller Boat. But in the absence of any recommendations as to what to do with any of it, the danger remains that difficult-to-deal-with items like the boat might slip through the cracks.

Its launch on Sept 8, 1897, and its first trial the next month were big events. As the Toronto Evening Telegram reported at the time, "In the presence of thousands of spectators and surrounded by small craft, the famous roller boat yesterday demonstrated its claim to be classed among steamships. It rolled up and down the centre of the bay several times and was cheered on all sides. Every available vantage point along the wharves from Berkeley to Bay Street was occupied, and the roofs of the factories along the Esplanade were black with crowds who had gathered, anxious to see the roller boat make its first trip. All day thousands of persons had fairly besieged the Polson shipyards and clamored to know when the boat was going out."

Rehabilitation of Toronto's port and waterfront industrial district is supported by the municipal, provincial and federal governments. However,



archeologists with the Ministry of Culture question the city's wisdom in permitting development without a provisional conservation plan for materials likely to be uncovered during construction. Ministry archeologist Malcolm Horne suggests that "given past recovery on the waterfront, the [Roller] ship's remains may be in very good condition," and recommends "planning for preservation and interpretation begin even before excavation and archeological assessment, so that there is a plan in place if remains are located."

TWRC president John Campbell says a plan for archeological investigation based on the ASI report will not be ready for six months, and he cannot respond to a Toronto Preservation Board query about how the archeological heritage of publicly owned waterfront lands will be preserved and interpreted in the future. In the meantime, Mr. Campbell will ask the city's waterfront secretariat to notify the museums department regarding any additional materials recovered from upcoming redevelopment.

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The roller boat being inspected in 1906. City of Toronto Archives



The roller boat in 1911?. City of Toronto Archives



Presentation on the Roller Boat Wreck

Presentation by Elaine Wyatt to the Toronto Community Council
September 13, 2006

Good afternoon. I'm Elaine Wyatt, vice president of *Save Ontario Shipwrecks* and president of SOS Toronto. SOS was incorporated in 1980 to protect Ontario's maritime heritage. I'm here today because Toronto is in danger of losing one of its most important late 19th century marine treasures, the celebrated Knapp's roller boat. The remains of the roller boat are likely buried beneath the Federal Express building at the foot of Sherbourne St. – in the very center of the soon-to-be developed East Bayfront.

The importance of preserving the roller boat has been emphasized by Chris Andersen, regional director of archaeology for eastern Ontario, in Saturday's *Globe and Mail* when he said the ship is "a powerful symbol of the idealism and optimism of the late Victorian era and the industrial revolution." The roller boat was designed to roll over rather than through the waves and it was expected to transform trans Atlantic shipping. News of its launch spread quickly throughout North America and Europe, it was even reported in *Scientific American*.

The roller boat was not a successful endeavour and it was eventually converted to conventional propellers before it was abandoned at the site where it was launched, at the Polson pier in Toronto. But the roller boat was a metaphor for Canada's perception of its own position in the world at the turn of the century. Free from the bonds of the British Empire, we saw ourselves as ready to assume the role of technological innovator in an increasingly industrial world. J.J. Brown in his book *Ideas in Exile* called the roller boat, "Perhaps the most exotic Canadian innovation ever conceived."

This isn't the only treasure that might lie buried on the East Bayfront lands. Erika Laanela, Ontario's marine archaeologist, says it's possible other vessels or significant shipworks might be found. She also believes that the roller boat does not have to be found intact and in its original form to have significance as a heritage resource.

Management of these resources cannot be decided as construction proceeds, as the senior planner responsible for this plan has suggested –



we've seen what happens under such an approach.

We're asking you not to put developers in the position of destroying the city's heritage – the role that was forced upon Malibu Investments because you had not adequately planned for the recover of Queen's Wharf. We are asking you not to approve the by-law amendment under consideration today. We believe it is imperative that the city waits for an answer to the question that you sent to the TWRC on June 2 – three months ago: How does the TRWC intend to preserve and interpret archaeological resources on waterfront lands?

We have just seen in the discussion of the railroad lands that such advance planning is not only possible it's desirable. But it's critical to start early. Discussions about the archaeological and heritage resources on the railroad lands began in the 1990s.

If you decide to approve this amendment I urge you to revise it to require the development of a plan to preserve and interpret our heritage resources before construction begins.

Finally, I would like to ask the City of Toronto to designate the Polson Iron Works and the Knapp's roller boat heritage sites under the Ontario Heritage Act.

Thank you.



100 Years Ago

By Jim Hopkins

The Duck Islands Claimed Two Barges

The 151' steam barge Langell Boys (U.S.141067) was a common sight in the waters of Georgian Bay. The Langell Boys business was lumber, hauling rough-hewn logs from the forests surrounding Georgian Bay to sawmills in Michigan. In early October 1906 the Langell Boys was a busy boat. Having loaded her own cargo at Byng Inlet, she was on her way to pick up her two barges prior to making her way across Georgian Bay and Lake Huron to Bay City Michigan.

The Langell Boys first stop was Midland where she picked up the schooner barge J.B. Comstock (U.S.76941) The 139' Comstock had been built in 1891 at the Abram Smith ship yard for the Smith and Comstock lumber Co. Leaving Midland, the next stop was Collingwood where the schooner barge Abram Smith (U.S.106923) had taken on a cargo of lumber. Like the Comstock, the 147' Smith had been built by its names sake Abram Smith in Algonac Michigan in 1892.

Having secured her final tow, the Langell Boys set out for Bay City on the morning of October 7. As the Langell Boys sailed on the weather conditions deteriorated from over cast to strong winds. By the time the trio reached the open waters of Lake Huron a full gale was blowing and the Langell Boys began to lose headway and was blown off course. Aware not only of his predicament but also his surroundings, the captain of the Langell Boys made his way into the lee of Great Duck Island where the Langell Boys and consorts took refuge in the early evening of the 7th.

During the course of the evening the winds began to change, moving from the west to the north, a direction that once again exposed the three ships to the full teeth of the gale. The Langell Boys then took her consorts through the channel between Outer and Great Duck islands, their destination being the south end of Great Duck where they would be in the lee of the island from the northerly winds. However once there the three ships now faced the rolling waves still coming from the southwest, the Langell Boys, the Smith and the Comstock were trapped.

The waves pounded the trio and the towline between the Langell



Boys and the Smith soon parted. Immediately the Abram Smiths anchors were dropped in an attempt to stop the barge drifting back to the shores of Outer Duck Island. Likewise, the Comstock did the same thing but it was to no avail, both were soon hard aground on Outer Duck Island. The crews made it safely ashore and the following morning when the Langell Boys returned, it was discovered that nothing could be done for the battered barges. The survivors were picked up and the Langell Boys continued on her way to Bay City.

According to the October 22, 1906 edition of the Buffalo Evening News, the Langell Boys returned to the Duck Islands to salvage what she from the Smiths and Comstock's cargos. 600,000 board feet of lumber was recovered, but that would be all the owners would receive from the wrecks, neither barge was insured.

Following the accident the Langell Boys would continue to sail for many more years. Then on June 13, 1931 while sailing from Saginaw to Spragge, Ontario to load her usual cargo of wood, the Langell Boys caught fire near Au Sable, Michigan. Little could be done by the crew and they abandoned ship and were soon rescued by the Coast Guard, not long after which, the Langell Boys settled to the bottom of the lake joining the Smith and Comstock, lost 25 years before.



SOS Thousand Islands

By Douglas Miller

Scuba in the Park 2006

After many hours of planning and organizing, Scuba in the Park came and went on Saturday, September 23, 2006.

St. Lawrence Park in Brockville, Ontario, was a buzz with scuba and SOS activity. The participants enjoyed a very economical dive of the Lillie Parsons (\$10.00 per person) with all proceeds coming back to the local SOS committee. Thanks goes out to the charter boat operators as they donated their services to the event. After the divers' returned from their dive on the Lillie they were encouraged to visit displays presented by the six scuba retailers and the gear swap booth. Many deals were scooped up before the afternoon was over.

One of the highlights of the evening came from a local band named A-Drift. This young band played a mix of music ranging from the Goo Goo Dolls to the Sinking of the Edmund Fitzgerald. The beer garden was well attended and the BBQ meal that was served in the beer garden was equally appreciated. There was a fashion show of Scuba gear and clothing.

Addresses from both our President and the Vice-chair of the 1000 Islands Chapter were heard by an unsuspecting crowd, they hardly knew what hit them. There were several very happy scuba enthusiasts who shared in more than \$5,000 worth of door prizes donated by suppliers and retailers whom we thank for their generosity.

All in all, the day was a success. We could have handled a few more participants - if only the weather had cooperated - you were going to get wet anyway!

Next year we are planning to move Scuba in the Park to September 8th as we anticipate warmer and more predictable weather.

See you then??



SOS Hamilton

By Walt Irie

NAS 1 Course

SOS Hamilton hosted a very successful NAS 1 course the weekend of June 22nd to 24th. We had a full course enrollment of sixteen students with some coming from as far away as Indiana USA. Classroom and pool facilities for the Friday and Saturday were provided by London Scuba Centre. Students had an opportunity to do a pool survey of “Pirate Treasure” with the land survey on the imaginary wreck of “LSC” in the dive store parking lot. On Sunday the open water portion was a shore dive on the wreck of the Gladstone which is located off Canatara Park in Sarnia.

Congratulations to the following students on completion of their NAS I Course: WT Chung, Aaron Duckworth, Doug Gagnon, Jessica Happl, Darren Helmer, Terry Kovacevic, Arthur John Lake , Ben Lane, Cindy Lawrence, Dace Lawrence, Bev McAllister, Mike McAllister, Larry Porter , Brenda Sterling, Angelique Verbrugge and David Verkley.

We would like to thank the following people for making this possible: our instructor Erika Laanla from the Ministry of Culture; Terry Kovacevic of London Scuba Centre; John Charest from the SOS Sarnia Chapter; and, Mother Nature for providing the hot sunny weekend.

A special thank you goes out to the following people for assisting with the course: Paul Chapple, John Charest, Kirk Grey, Aaron Happl, Mike Merlo and Greg Steffler.

For more information on upcoming events with the Hamilton Chapter please refer to our website at:
www.soscentral.ca/Chapters/Hamilton/hamilton.htm



Reward Offered

Michigan Department of Natural Resources law enforcement officials have announced a \$500 reward for information leading to the arrest and conviction of the person or persons responsible for the removal of the ship's bell from the wreck of the City of Detroit located in Lake Huron. On July 30, local divers informed conservation officials that they returned from diving the City of Detroit and wanted to report the bell missing. The propeller City of Detroit (U.S. 4378) was built by David Lester at Marine City Michigan and was launched in 1866 measuring 167' x 28' x 12'. On December 4, 1873 carrying a cargo of wheat from Chicago to Sarnia, the City of Detroit encountered a December storm and foundered on Saginaw Bay. There were no survivors from her crew of 20. The wreck of the City of Detroit was discovered in June 1999 by David Trotter. Since its discovery, the wreck has been a popular site for recreational divers, primarily because of the bell. Clearly visible on one side of the bell is the name, "Novelty Works," and the other side states "New York 1844." As in Ontario, removing artefacts from Michigan's bottomlands is illegal. Michigan officials state that "The bell has enormous historical value and shipwreck antiquity thefts are difficult criminal cases to develop and prosecute, and most begin with tips from the public".

Wreck of the New Orleans Surveyed

From August 20 to September 3 a team of archaeologists from NOAA (National Oceanic & Atmospheric Administration) and East Carolina State University surveyed the wreck site of the side-wheel passenger steamer New Orleans. The site lies in the boundaries of the Thunder Bay National Maritime Sanctuary located near Alpena Michigan. During the field session the site was photo-documented and mapped in detail to allow for what has been described as the development of a "meticulous site plan". Built in Detroit by B.F. Goodson in 1884, the New Orleans is the oldest known wreck in the sanctuary. On June 11, 1849 the New Orleans was making her way through a heavy fog when she grounded on a reef near Alpena. A local fisherman promptly removed the passengers and crew from the ship and it was expected the New Orleans would soon be pulled from the reef. However on the 14th of June strong winds began to blow over the stranded ship and late in the day her back broke. The New Orleans settled to the bottom only 15' below. The location of the wreck was forgotten until it was located in 1992 during an arial survey of the area.



Discovery

MSRA Discovers the Hennepin Early Self Unloader Discovered in Lake Michigan

Michigan Shipwreck Research Associates have announced the discovery of the small bulk freighter Hennepin in 230' feet of water near South Haven Michigan.

The wooden hulled Hennepin (U.S. 86016) was built in 1888 at the Wolf & Davidson shipyards in Milwaukee Wisconsin. Launched as the package freighter George H Dyer, the ship measured 209' x 35' x 21.5' and sailed as the Dyer until April 2, 1898 when the name was changed to Hennepin, in honour of Father Jean Louis Hennepin who served as a missionary with the explorer LaSalle.

In 1901 the Hennepin was severely damaged in a fire, most of her upper works being destroyed. At this time the Hennepin was taken to the Leatham Smith Dry Dock Company at Sturgeon Bay Wisconsin where over the winter she was rebuilt. Emerging in 1902 the Hennepin now was the first self-unloader on the lakes, a self-unloading tower being included in the rebuild. The conversion left the ship too unstable to operate under her own power so it was subsequently converted to a tow barge.

On August 18, 1927 the Hennepin, now owned by the Construction Material Company of Grand Haven Michigan and carrying a load of gravel was being towed by the tug Lotus when weather conditions began to deteriorate. Soon the old Hennepin was leaking and the crew abandoned ship and were rescued by the Lotus. Shortly after the Hennepin settled to the bottom where it remained unseen until this summer. Photos show the ships wheel intact as well as the a-frame self-unloading tower.



Goderich Planned Sinking

By Carolyn Parks

For the *Signal-Star*

Wednesday September 06, 2006

Goderich Signal-Star. “It’s off!” Those two words from Jan Hawley of the Goderich Marine Heritage Committee (MHC) brought an abrupt halt to years of volunteer work, organization and planning for the christening and sinking of a 35-foot dive boat, planned for Saturday, Sept. 2.

With government and agency approvals in place, the pilot project was a go--until the Sept. 1 arrival of a lengthy letter from a lawyer, acting for Wiarton-area Chippewas of Nawash and the Saugeen First Nation at Southampton, that threatened litigation should the Town of Goderich proceed with the sinking.

The First Nations bands stated that MHC correspondence sent in early July, together with invitations to take part in the ceremonies, did not permit sufficient time for meaningful research into the project and that they should have been involved with planning from the outset. They also expressed concerns about fish habitat, their commercial fishing and treaty rights.

The letter cited legal precedents in which Supreme Court decisions discussed conditions under which consultation with First Nations should take place, that is, if aboriginal rights or title could be potentially adversely affected. could be potentially adversely affected.

Considerable interest had been generated in the dive site project and The Maitland Star. Members of the media were expected to attend, along with dignitaries, local residents and visitors on shore and in the flotilla to accompany her, as well as several dive clubs from London and Tobermory anxious to be the first to dive the new “wreck.” All such arrangements were dismantled last Friday. “We had a narrow optimum window for the launch and sinking,” says Hawley. “Everything came together to allow public and official participation, to facilitate MacDonald Marine’s involvement, to get the boat in the water and on the lake bottom before breakwater construction recommenced, and to end the summer season with a celebration on the last holiday weekend.”

“It can happen in the fall too,” Hawley continues. “Dive season can be year-round in open water, but re-scheduling everyone and everything again will take time and effort.”

“Provincial and federal government ministries have been more than thorough and helpful,” states Hawley, “Consistently exercising due diligence. In short, they did their job and did it well.”

Goderich Mayor Deb Shewfelt said that he felt particularly upset about the years of work put in by the committee, especially by Jan Hawley and Bob Carey.



“There was plenty of time for comment before the last minute,” says Mayor Shewfelt. “The optics are bad.”

“With due respect to First Nations,” Shewfelt goes on, “they could have responded more promptly. As requested, we’ll definitely meet with the Chippewas of Nawash and Saugeen as well as the various government ministries very soon. This is a good project, a pilot model that has lifted a 10–year moratorium on such ventures. We want to work toward this going forward very soon.” “Extremely disappointed,” stated Deputy Mayor Ellen Connelly when asked about developments. “And I’d be remiss if I didn’t recognize the dedication of Jan Hawley and Bob Carey.

“But,” she adds, “this is a hiccup, only a postponement. The Maitland Star will be sunk.

“The Maitland Star represents development of a new industry for the town and port,” states Connelly. “We’ve had the marine historical component for many years--now we’ll expand the recreational side.”

Combined with an increase in tourism and national visibility for Huron County, dive shops, scuba diving instruction, guiding and transport to dive sites would all provide entrepreneurial opportunities for anyone wishing to set up shop.

Jeff Evans, Public Relations Chair for Canadian Power & Sail Squadrons agrees. “Goderich has so much to offer anyway,” says Evans.

“I live in Sarnia with any number of marinas nearby, but I berth the boat at Goderich and spend the season here with my family--because of the amenities, the setting and the scuba diving. To have another dive site is an absolute plus. “Water activities are a part of lifestyle in Southwestern Ontario,” adds Evans. “The Maitland Star is a clean wreck and a good thing. An artificial reef is an ‘underwater playground’ for divers as well as marine life. And scuba diving is excellent exercise, low impact, easy on the skeletal system, using all muscles. We fully support the dive project.”

Chippewas of the Nawash Unceded and Saugeen, which both claim the waterway as their own, felt left out of the planning process and warned Goderich Friday against the planned sinking, Nawash Chief R. Paul Nadjiwan said.

“The community felt we weren’t adequately consulted,” he said. “By the time we did get involved...it was pretty much a done deal.

“This is the type of deal that makes doing business...difficult for First Nations. [People] speak to them at the eleventh hour.”

Though his community has “concerns” about the ship wreck, Nadjiwan declined to detail them.

“We need to meet with the various parties and discuss the issue in greater detail,” he said. “Had those meetings taken place in the beginning, maybe this would be a different situation.”



GPS Technologies

By Brian Prince

Welcome back to the next article on GPS. In the last issue I talked about GPS coordinates, conversions, latitude and longitude. In this issue I will talk about GPS technologies, accuracies, past and present. In the next issue, I will talk about purchasing and installation considerations.

When GPS was first invented by the USA Military, everyone may have heard that they used a feature called Selective Availability (SA) to add intentional error to civilian usage of the GPS signals. This was true until May 2000 when Bill Clinton had it decreed disabled (but can be re-enabled if required). There are 3 segments to the system.

THE SPACE SEGMENT: GPS signals emanate from 24 satellites (plus spares) that circle the Earth in 6 planes, 4 per orbit, each making a pass 20200KM overhead once every 12 hours. The 6 planes are angled 55 degrees to the plane of the equator and there is 60 degrees between each orbital planes. In practice, there is typically 5 to 12 satellites in view from any position on Earth. Each satellite has four atomic clocks and radiates a unique signal indicating identity, position, position of other satellites, and time of departure of the signal from the satellite.

THE OPERATIONAL SEGMENT: The operations group is located at Schreiber Air Force base in Colorado. There are 5 accurately surveyed ground monitoring stations. Corrections are made to positioning data and is periodically uploaded to the satellites on encrypted channels.

THE USER SEGMENT: For us boaters and divers, the user segment is most relevant. This consists of the GPS receiver in your boat, hand or vehicle which calculates your position. Each device is comprised of an antenna, an amplifier, decoding algorithms, a computer and a display with control keys. To get a 2D position on the Globe (Lat & Lon), you need data from a minimum 3 satellites. To get 3D (Lat, Lon & Altitude) you need a minimum of 4 satellites. Having good sky visibility to the horizon all around and a 12 parallel channel GPS will give you the best positional information. Given bad weather, trees, buildings or other obstructions you may see fewer as well as your GPS may only use 8 and keep others as spares. Standard accuracy is defined as <15 meters (<50ft) 95% of the time with SA off.



If you are on a boat, and approaching a harbour, +/- 50ft is good enough to find the entrance. If not, you should not be out in such bad weather. But in tight waters, for example in the 1000 Islands navigating the narrows, you may run aground in poor visibility. So better accuracy was needed and the CCG added beacons in known locations, monitored GPS data and transmitted digital correctional information. This is called Differential GPS (DGPS) that gives you 3 to 5 meters (10 to 16ft) accuracy. This was great as long as you were in range of the beacon towers that have a 200nm range. The propagation delay of the DGPS signal also reduces accuracy... about .5 meters (1.5ft) for every 60nm. Not perfect, but far better than Standard Accuracy. All of the Canadian coast lines, the St. Lawrence and Great Lakes have coverage. A DGPS receiver also needs an additional antenna (a satellite puck-like antenna and a more conventional looking metal rod-like antenna for the differential signals). So typically you will not find DGPS features in a handheld unit, but rather in the dash mount type units.

Given the limited range of DGPS beacon signals, air traffic could not use this. The FAA wanted to use GPS as well because their current system was getting outdated. They needed wider coverage and more accuracy. So they invented the Wide Area Augmentation System for North America, known as WAAS (sometimes referred to as Satellite Differential GPS or SDGPS). This system uses an additional 2 geostationary satellites at 42300KM, one over the East coast and one the West coast at the equator. If your GPS has WAAS, you will now get <3 meter (<10ft) in North and South America. Most new units today all have WAAS capability and they do not need the extra antenna that a DGPS has. See the image below with a plot of GPS readings taken for the same point over time using the various technologies: GPS, DGPS and WAAS.

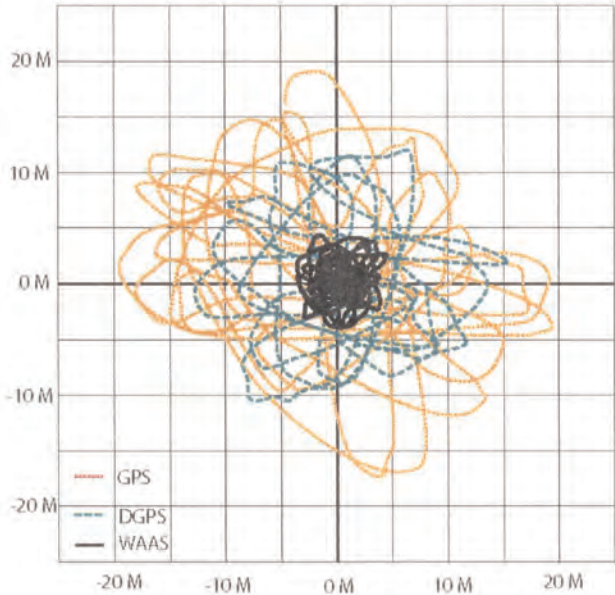
Given WAAS has such better accuracy and is widely available, there is no reason for you not to buy the latest technology. But if you are like me who bought my unit before WAAS, (did not arrive on the market until 2001) then you might have DGPS or even a basic GPS. I've always found a shipwreck that had accurate coordinates with DGPS. Where the problems happen is misinterpreting the format DD MM SS.s or DD MM.mmm and entering them wrong or transposing digits. Or worse, taking GPS coordinates and having the unit set to a Datum of something other than WGS84. Human error is still the number one cause of error using GPS.

Now that you know more about the types of GPS's and the technology that makes them work, you can spend more time ensuring accurate results so you do not waste any time looking for that dive site. Safe Diving



and navigating till next time when we talk about purchase and installation considerations just in time for next spring's boating and diving season.

Footnote: GPS plot from Navigating with GPS by the Canadian Power and Sail Squadron.



SOS Ottawa

By Marg Barker

Once again this year, SOS Ottawa was fortunate enough to be able to offer the NAS Level I in our area. As expected this course was very popular being only one spot shy of a complete sell out. Out students came great distance to attend the course including two from Cornwall, one from Kingston and even one from Boston, Massachusetts!

Although the course had been provided in the Ottawa area before, there were a few firsts this year. This was the first time that Erika Laanela, Marine Archaeologist, Province of Ontario Ministry of Culture, provided the instruction of the NASI in our area. Also a first, we decided to have the entire course, both classroom and pools sessions, at the Walter Baker Sports Centre to make it easier for everyone with no traveling between venues and last but not least we had two non-divers in this year's course. Erika's curriculum was very similar to the course content of both Peter Engelbert and the Marine Archaeologists from Parks Canada. There was a little more emphasis on the lectures but we still had the great dry land and pool sessions to give folks the opportunity to practice the theory of survey and fieldwork before going to open water.

Having the course held entirely at a single location turned out to be a great idea since a huge thunder storm rolled through the at the time we were scheduled to go outside to do land practice sessions. As well, we did not have to allow for travel time to the pool and the students were able to concentrate on completing tasks to keep pace with the course requirements.

The non-divers in the course were very enthusiastic about having the opportunity to take part in the NASI even though they did not dive. They were able to contribute to their teams by recoding information, completing drawings and even doing some pre-dive surveillance while snorkeling in the pool on Saturday evening. Erika set up a very complicated dry land site for them to survey while the other students were doing the open water survey work on Sunday. Our non-diving students received a full Introduction to NAS and NAS Level certification. The weather gods were good to us on Sunday and all the students were able to complete the two required dives and get the final drawing and field notes done. They did actual survey work on the little wreck in the Prescott diver's playground, aptly named by former NASI students The H.M.S. Prescott.

Everyone left with a better understanding of the principles of marine archaeology and an appreciation of the importance of preserving our marine heritage sites.



SOS Recognizes New Members

Listed below are new SOS members names. Membership makes a difference as the total number is used many times as a measure of the support we have for views and people that believe that preserving marine heritage and spreading the message is important. Thank you to each and every one for your continued support.

J Bilo, Y Bilo, F Bird, G Black, P Bouvier, V Carr, J Earle, M Fink, M Powell, M Schaus, M Tanguay, R Touchette, C Wagstaffe, J.A Weaver, T Wilson, Dive Brockville Adventure Centre

Note: SOS wishes to add Lorne Joyne in the member's recognition list for the 26-30 year category.

News From the Quartermaster

By Gordon Dewis

In late-August, I became the Save Ontario Shipwrecks Quartermaster, taking over from Brian Prince who had been the Quartermaster for the last few years. One of the changes that I'm introducing is an online store for Save Ontario Shipwrecks merchandise. Shortly, you will be able to purchase our most popular items like the new series of dive slates and SOS-branded clothing, with more items to be added to the inventory in the coming months. The online store's address will be <http://quartermaster.saveontarioshipwrecks.on.ca>. Traditionally, sales of items from the Ships Stores to dive shops have been a main money raiser for the chapter committees. In the past, this has meant the chapter committees have had to carry the inventory and make frequent visits trying to sell the items. In an effort to reduce the burden on local chapter committees, local chapter committees will be able to make the initial contact with a retailer, take an initial order which they submit to the Quartermaster who will fulfill the order and invoice the retailer directly. The local chapter committee will receive credit for the initial sale and any subsequent sales. Similarly, sales made through the online store will be credited to the local chapter, wherever possible. We're always looking for new items to carry in the Ships Stores. If you have an idea for a new product we might be able to offer, please send me an email at quartermaster@saveontarioshipwrecks.on.ca.



Executives

President

Eastern Region Representative

Webmaster

Brian Prince*
137 King St. East
Brockville, Ont. K6V 1C1 (613) 342-3900
BmP@BmPadvantage.ca

Vice President

SOS Toronto

Elaine Wyatt*
501 Hillside Avenue East
Toronto, Ont. M4S 1V1 (416) 485-0205
ewyatt01@hotmail.com

Secretary / Treasurer

SOS Ottawa

Margaret Barker*
23 Dundegan
Kanata, Ont. K2L 1P7 (613) 836-5157
margaret.barker@sympatico.ca

Membership Director

Bernie Roy
18 Ada Cressent
R.R. # 2.
Tobermory, Ont, N0H 2R0 (519)596-2607
broyl100@amtelecom.net

Board Director

Ethics Chairperson

Jonathan Ferguson*
1911-730 Dovercourt Rd.
Toronto, Ont. M6H 2W9 (416) 536-1247
jonathanferguson@hotmail.com

Board Director

Bylaw Committee Chairperson

Ships Stores

Gordon Dewis*
609-45 Holland Ave.
Ottawa, Ont. K1Y 4S3 (613) 482-1075
gordon@pinetree.org

Central Region Representative

OCU Insurance Chairperson

David Taylor*
15 Dalewood Cres.,
Hamilton, Ont L8S 4B5 (905) 526-9026
taylordw@mcmaster.ca

SOS Hamilton

Walt Irie
169 Victoria Street
Ingersoll, Ont, N5C 2N2 (519) 877-4356
wirie@sympatico.ca

SOS Huron Shores

Krissy Nickle
197 George St., Box 2411
St. Marys, Ont N4X 1A3 (519) 284-2998
krissy@nickle.ca

SOS Ohio

Joyce Hayward
1791 C.R. 296
Bellevue, Ohio, 44811 (419) 483-3074
joycehayward@cros.net

SOS Port Dover

Jim Murphy
Box 299
Port Dover, Ont. N0A 1N0 (519)583-2884
buckmurphy001@sympatico.ca

SOS Quebec

Applications welcome

SOS Sarnia

John Charest
1150 Afton Drive Suite #108
Sarnia, Ont. N7S 5B8 (519) 383-7536
john.charest@sympatico.ca

SOS Thousand Islands

Douglas Miller
1348 Halleck Road East, R.R. # 3
Brockville, Ont, K6V 5T3 (613)342-7191
dmiller@ripnet.com.

Past President

Northern Region Representative

SOS Manitoulin

Jim Hopkins*
38 Shames Cres
Española, Ont. P5E 1B9 (705) 869-3532
jjhop@onlink.net

* Board Directors

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