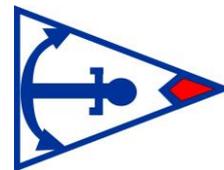




The Bitter End

Editor: Bill Reynolds JN



February 2017

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From the Bridge...

The Boat Show has come and gone so it is time to get ready for the Spring launch season. Yes, I know it is a few months away but what better way to pass the snow and cold than to begin planning for the cleaning, waxing and bottom-painting chores.

I got a call this week that my sails are back from the loft after being inspected and repaired for another season. I have already purchased the hull cleaner and wax for use once the snow is gone. I'm hoping to get another year out of the bottom paint. I don't plan to do a lot of racing this summer so I can live with the anti-fouling that remains for one more season.

The rules regarding flares are being discussed with the aim to reducing the required number of pyrotechnic devices carried on boats. Also under consideration is the recognition of laser flares which are now legal in the USA. However, as much as we look forward to the recognition by authorities that for those of us on inshore waters, new technologies may make current rules obsolete, the rules have not changed yet. So, check your flare collection and make sure all your flares were manufactured at least 3 years ago and that you have the required number for the length of your boat. The outdated flares can be turned in at one of the CPS Flare Collection events being scheduled for early summer 2017.

This winter four of our members are working diligently on the completion of the Offshore Navigation course taught by Tony Gardner and offered on-line by CPS. This is the highest level navigation course offered by CPS. It involves taking sights of the moon, planets, and stars using a sextant and using information from the Nautical Almanac to verify your position. Students will learn to use software to plot an offshore voyage and to verify GPS and DR positions by mathematically reducing sights to get a fix. While many sailors debate the need for sextant use in the age of GPS, it should be noted that even the US Navy has reintroduced the sextant in their training regimen. See the article [Why do we still teach charting?](#) in this edition of The Bitter End.

We have classes starting at Dr. Denison HS in February. If you want to broaden your knowledge or get your VHF operator's card sign up soon.

On behalf of the Bridge,

Bill Reynolds, JN
Squadron Commander

The Newmarket Power & Sail Squadron Bridge 2016-17

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NPS Course Offerings

Our courses run at Dr. John Dennison SS, 135 Bristol Rd, Newmarket on Tuesday evenings from 7:30 to 9:30pm in rooms 154, 157, and 159. To register go to our website: www.cps-ecp.ca/Newmarket/

Boating 1: All operators of motorized pleasure craft are required to show proof of operator competency. All you need to know for the Transport Canada test is presented in an easy to read format that is both informative and entertaining. You can be confident that this study guide meets all the standards established by Transport Canada's Office of Boating Safety. This program runs for 5 weeks beginning February 7, 2017.

Boating 2: The PCOC makes sure you have immediate navigation and safety skills but it's just the beginning of what you should know when you get on a boat. In the second of our Boating Series, you are introduced to the art of navigation, anchoring, ropes, lines and knots – not to mention what to expect when the boat is moving under power. This program runs for 6 weeks beginning March 21, 2017.

Maritime Radio (VHF/DSC): The Maritime Radio course teaches emergency radio procedures and everyday operating techniques. All mariners, including recreational boaters, will want to take advantage of the many features and capabilities of this innovative "automatic" radio. Secure your lifeline. Be sure that you and your family take the Maritime Radio course.

This complete package with CD, and the new Digital Selective Calling, will prepare you for the Restricted Operator Certificate (Maritime) with DSC Endorsement exam. To operate a maritime radio, you need the certificate. It's the law!

The spring offering runs 3 weeks beginning May 16, 2017.

Why do we still teach charting with the advent of GPS?

On January 17, 2013, the USS Guardian, an Avenger-class mine countermeasures ship (MCM-5) ran aground on the Tubbataha Reefs in the Philippine Islands. The officer in charge had told the navigator to trust the electronics because they were newer and updated. The ship's electronic charts, however, misplaced the reef by an incredible eight nautical miles. Yet, on the ship's back-up paper charts, evidence of this clear and distinct barrier was absolutely crystal. After the grounding the officer in charge, and everyone in the ship's crew above him, were relieved of duty.

What was the result? One wreck that had to be cut up and then hauled away. OK, she was laid down in 1985, but as a minesweeper, she no doubt still had years of service left in her. Also, the US Government also had to dip into the coffers and pay damages to their Filipino counterpart.



USS Guardian on Tubbataha Reef

So what do we learn? Well firstly, boating is not like driving a car, or for that matter flying commercial aircraft. With cars, the roads are set in concrete and asphalt. Yes, they build new ones, and there are trees and bridges overhead, but things don't come up from the bottom that often to ruin your day. Sinkholes are not that common and bomb craters mean you should possibly look at moving and drive something more suitable, such as a tank!

True, your car can still put you in a place you are clearly not, but street signs, curbs, traffic lights and all will keep you organized in the main. At sea, GPS and digital navigation can be accurate, assuming the fixes from the satellites are accurate, and the end user is using the Latitude and Longitude generated to pinpoint their position on a paper chart.

Satellite Navigation in the early days used one, and at best two satellites to give you a fix. If they were oblique, which was very often, the data supplied could only really be used as a test for your DR skills or make you do better sightings of any nearby landmarks or visible celestial bodies.

Equally, there is the question of who generated your charts in the first place? If it was not the Hydrographer, then taken with a grain of salt is about all they are good for. Also, updates can be over two months behind and then there is blind faith. One experienced navigator put a new chip into his approved system, and then promptly put the boat on the bricks, which were a full two nm away from where the chartplotter said they should be. No one was injured, thankfully, but the point is this was meant to be the best and most up to date, yet just like our USN friends, he paid the ultimate price.

Please read the chart suppliers' disclaimers. They do release the manufacturer from any liability surrounding the accuracy of the positions generated. Importantly, these days now that at least six satellites generate your position, all manufacturers will have you within a fender's diameter of each other. The scary part is just where all the bricks and lumpy bits have gone. They can scatter on the digital chart just like a bunch of cats.

So we come back to education. Many boaters go to sea with only digital navigation. Many do so with little

knowledge or understanding of how to fully operate their plotters properly. This includes the correct magnification to ensure that they don't hit known obstacles. Don't forget Team Vestas Wind who in the 2014 Volvo Ocean Race with all the latest and best sat/nav systems tore the bottom off their boat when they hit the well-known Cargados Carajos Shoals in the Indian Ocean. These were expert sailors well acquainted with the electronics aboard their boat. They freely admitted it was their error.



Vestas Wind on Cargados Carajos Shoal

This is not just the one example. Another mariner came out of a Queensland harbour, put the boat on auto-pilot to match his plot on the digi chart. Alas, he cut a corner where a finger of the reef came out, and tore the bottom off the boat. By zooming in he would have avoided the embarrassing call to the insurer.

Paper should not just be around in the event of loss of power. If you have no depth sounder as well, a series of plots will also let you see about tide and improve your DR exponentially. Nothing can replace the Notices to Mariners and paper updates, so it is not just for when you are going somewhere new, prudence demands you have it for where you are now. Should you become incapacitated, who will call the authorities and tell them where you are?

This is not an anti-digital piece. It is merely about correct and proper use, and the complete removal of blind faith by saying there are limitations, so know them! Digital is not always accurate and there are misgivings with the technology, such as source and updates, your use of it, correct magnification, as well as the reliability of the sats themselves, your power on board, and any cartography mistakes inherent in the source files.

Learn how to plot a course using paper charts and to get a fix to verify your position especially in unfamiliar waters. Check the notes on the top of a paper chart, and keep a sharp look-out. Safety on the water depends on vigilance and knowledge, not blind faith in electronics.

(adapted from an article by John Curnow in *Sail World*)

Editor's Note:

I sail in Lake Simcoe. I have a GPS-Chartplotter display at the helm and initially relied on it exclusively. One day I was sailing close to the eastern side of Eight-Mile Shoal near the entrance to Carthew Bay. I had passed the marker buoy that marks the southern most position of the shoal and, according to my chartplotter was safely East of the shoal. The depth finder showed 20 feet of water under the boat. Then the GPS screen display rippled and the boat symbol jumped westward. I struck the rocks at about 4 kn and came to a jarring stop. The boat was stuck with a huge boulder under the keel and another under the rudder. Once I was pulled off the shoal by a kindly passing boater, I found the rudder had been split open by the collision.

I have seen the display show the boat crossing the break-wall as I enter Jackson's Point Marina. Of course, I didn't cross the break-wall, but the chart on the GPS display showed me doing it. The GPS unit is very accurate in plotting the Lat & Long of the boat. The errors are in the chart that is displayed.

I keep paper charts on hand especially when travelling in areas with shoals. I mark the co-ordinates of the shoals on the charts and compare the GPS Lat & Long while in the area to ensure I don't get too close. Don't trust the Chartplotter display alone!

Dear reader: If you have comments or suggestions for *The Bitter End* we would love to hear from you. Share your comments by sending them to *The Bitter End* at npsinfo@mailonly.ca.