

## GPS Assisted Grounding

We are on our sixth day of a planned nine day delivery from Pittsburg to Seattle and so far the voyage has been without surprises. I have made this coastal trip between the San Francisco Bay area and Puget Sound more than two dozen times, and every trip is different and there is always a surprise or two.

It's now early afternoon off the Oregon coast and the weather conditions are starting to deteriorate as the seas are building and the wind has come up to a steady 25 kts. We have been listening to the VHF marine forecasts all morning so all of this is expected as the weather forecast had predicted a storm from the North to come as far south as Oregon by evening. We are approximately 20 miles south of Garibaldi, Oregon and rather than continuing overnight into the building seas to arrive in Westport Washington the next morning as originally planned, we decide to make Tillamook Bay our destination for the evening. The town of Garibaldi is a lumber and fishing town located 2 miles inside the entrance to Tillamook Bay. This is a great place to overnight as there is adequate dockage, marine services, and it's just a short walk to several good seafood restaurants. Getting into



Tillamook Bay can be a bit tricky however. I have been into Tillamook at least eight times so my comfort level in crossing the bar in adverse weather conditions is pretty high, so we finalize our plans to overnight at Garibaldi marina.

At the entrance to Tillamook Bay, Garibaldi channel is protected by jetties on both the north and south that are nearly 3000 feet long,

however, the last 1000 feet or so are submerged and caution is advised. In heavy seas the channel is subject to shoaling with breakers at the entrance and in these conditions is one of the most treacherous bars on the Oregon coast. The Tillamook bar is notorious for its deceptively calm appearance and the channel changes constantly because of the continuous natural silting. There are also several submerged and visible rocks on the north side of the channel and during a flood tide the currents push you towards these rocks. The US Coast Guard Station Tillamook Bay operates two 47 foot motor lifeboats and has a manned outstation located midway on the North Jetty along with a light and rough bar advisory sign where they control vessels moving in and out of the Bay. Our normal practice aboard the vessel when approaching any harbor, even those that we are familiar with, is to review the applicable sections of Coast Pilot for all on board to understand the approach and potential dangers. We have two separate GPS/Chartplotters with up-to-date chart cartridges on board; the ships installed system and our personal PC based system running a Coastal

Navigation program. Everyone on board reviews the plotter data and Coast Pilot information, then we discuss the approach and entrance. Additionally, we will call ahead to the USCG station to obtain the current bar conditions.

The safest approach to Tillamook channel is from the South. There are buoys that mark the end of the jetties and range lights that mark when you are past the submerged part of the south jetty and it's safe to turn right into the channel. The orange bordered white diamond shaped "Rough Bar" sign and two flashing high intensity yellow lights are visible on the south approach as well. As we near the channel we can see the yellow lights are flashing so we radio the Coast Guard station for bar conditions. The report back is not favorable; "the bar is closed to vessels less than 39 feet in length, with 10 foot long ocean swells in the channel, and 8 foot breaking waves at the entrance". Not ideal conditions, but manageable, as we are in a 53 foot Motoryacht that has proven to be quite seaworthy over the past week. We radio back our current position to the Coast Guard and state our intentions to enter the channel in approximately 90 minutes. Our intentions are acknowledged and they take down our vessel information and we are also advised that one of their 47' Motor Lifeboat is on station in the channel and we are provided their VHF working channel and callsign. Now consider this for just a moment, a group of young adult, highly trained surfman, patrolling a narrow channel with 10 foot seas and 8 foot breaking surf, just so that they can report to mariners the conditions in the channel. I do think that they are having fun and it is nice to know that they are there. After our initial contact with station Tillamook we are hailed every 15 - 20 minutes to check on our progress and provide us with any changes to the sea conditions.

Onboard the vessel it's a bustle of activity as we are reviewing Coast Pilot 7, Chartplotter displays, and looking out the window with binoculars, while discussing our entrance plans. That is when it was noticed that the approach buoys appeared to be in the wrong place!

What we are seeing out the window is not what our electronic aids are showing. Remember that we have been to this harbor many times and our collective recollection is what is shown on the chartplotters. But that is not what we are seeing. Now it is time to consult our third onboard aid to navigation, a paper chart. The paper chart is showing



significantly different locations for the entrance buoys and dangerous shoals and is not in agreement with the electronic information, however, it is in agreement with what we see out the window.

Before every coastal voyage we order a set of paper charts for the area that we intend to travel. These charts are purchased from Oceangraphix "Print on Demand" service. The benefit is that the paper charts come to us with all of the latest changes and updates as of the day they are printed. These charts have the most current information and in this case the information is not more than a week old. In lieu of ordering expensive paper charts, the USCG offers the Weekly Local Notice to Mariners email service. By subscribing to this free email, every week you are sent all of the changes that occurred in your area of interest the previous week and you can update your paper charts. On commercial vessels having updated paper charts is a requirement so this practice extends to our recreational boating as well. Properly updated paper charts are the most current information since our electronic charts may be as much as one year old if we purchase a new chart cartridge every year. In this case, our paper chart agrees with what we are seeing out the window, but not our recollection, so on our next check-in with the coast Guard we verify that the channel entrance has changed due to recent shoaling and state our intended route. A positive confirmation comes back. Had we just blindly followed our electronic GPS/Chartplotter into the channel, it is likely that we would have put the boat on a shoal, or in the best case, have had the Motor Lifeboat crew show us the error of our ways before we got ourselves into trouble.

As we make our entrance into the channel, the Lifeboat crew is in regular radio contact with us just in case we need assistance. Once we are safely through the breaking surf the water flattens out and it's just a few miles through the bay and to our berth for the night. With the forecast for the weather to worsen tonight and tomorrow, we decide to take a one day weather delay and wait for things to calm down before continuing up north.

What did we learn from this experience? Until we have a convenient and reliable way to update the electronic charts in our ships GPS/Chartplotter, the most up-to-date navigation



data may be in the form of paper charts and updates from the Weekly Local Notice to Mariners. But even for this to be of value, we need to make these changes on our paper charts. In addition, we have confirmed that we need to look out the window and consider what we are seeing and not just blindly follow our electronic GPS/Chartplotter.

Now it's time to sit back and enjoy an early evening cigar and glass of port and talk about

the afternoon's events. While we are sitting on the dock in deep discussion, several locals stop by to talk with the visitors on the big plastic boat. If you have to wait out weather, Tillamook is one of the best harbors along the Oregon coast. Even with a one day delay we still delivered the boat to its new home two days before the deadline.

To sign up for the Weekly Local Notice to Mariners go to the USCG Navigation Center at [www.navcen.uscg.gov](http://www.navcen.uscg.gov) and select Notice to Mariners and for California select district 11.

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Pat Carson is USCG licensed captain and operates commercial passenger vessels in the San Francisco Bay and Delta area. He is a partner with Bay Area Yachting Solutions, a company that provides instruction, local and coastal deliveries, and maintenance of recreational vessels. To contact, email [pat@bayachting.com](mailto:pat@bayachting.com).