Circumnavigation of the U.P.
"Da Youp Loop"
May 2008

This spring (2008) my wife Donna and I decided to move our boat from Pike's Bay Marina on Lake Superior to Menominee Marina in Menominee, MI on Lake Michigan. Menominee is on the West coast of Green Bay right across the Menominee River from Marinette, WI and is the southeastern corner of the Upper Peninsula.

The trip would entail sailing from Pike's Bay up the south shore of Lake Superior, through the Keweenaw Passage, across to Whitefish Bay and through the locks at Sault Ste. Marie, MI. At that point, the St. Mary's river takes you to Lake Huron. We would then take a hard right and go through the Straits of Mackinaw and into northern Lake Michigan. We would enter Green Bay near St. Martin Island and then about half way down the bay to Menominee. The total trip comes to about 500 miles. With the drive up to Pike's Bay and back from Menominee, we would be, in effect, circumnavigating the U.P.

Because of time constraints, I wanted to make the trip in as short a time as possible and try to take advantage of a long holiday weekend so as to have as little impact on crew vacation time as possible. I chose the Memorial Day weekend to make the trip. We would depart on the Thursday before the weekend and, hopefully, arrive on Memorial Day. This would require averaging about 5-5 ½ knots for the trip, a comfortable cruising speed for my 1977 Pearson 323. Because of the time constraint, I expected that we would motor sail quite a lot. All of the crew, however, is aware that the unexpected could lengthen the time accordingly.

I wanted a crew of six people so as to have plenty of help but not overcrowd the boat. I planned on having two "crews" of three people each. This made watch planning much easier than smaller crews, but required us to stand 4 hour watches. The Weems and Plath ship's clock was perfect for use as a watch timing device as it chimes "ships bells" and 8 bells would signal a watch change. I set up the watches so the crews would rotate the nights on which they would draw two night watches (8 pm to Midnight and 4 am to 8 am). This necessitated having each crew draw a back to back day watch every other day. I didn't think this would be a problem since both crews would be "on duty" during the day anyway.

Since I am a "computer nerd", I made extensive use of Microsoft Excel and my programming skills to do the planning and scheduling. The boat has a Raymarine C-80 chart plotter with GPS and Radar. I used the Raymarine planning software that is compatible with the Navionics map chip and set up all of the waypoints for the trip on my computer. These were then downloaded to an Excel worksheet for each of the six legs of the trip. There were an additional two legs that could be used if we needed to "bail out" for weather. I used a lot of waypoints for the channel and river parts of the trip in case we encountered severe fog. All waypoints were set well away from any buoys or land masses that they marked. Too many times people have set a buoy as a waypoint and then their accurate GPS guidance unerringly guides them right into the mark – literally. The Excel workbook also contains sheets for the crew schedule, all of the individual waypoints (with links to the nearest NDBC Weather stations), the weather stations (with the dial code for getting the weather via cell phone) and a logbook for entering hourly position data for use in dead reckoning in case all of the fancy toys break. Finally, the waypoints were loaded from the chip to the C-80. This was much easier than entering some 60+ waypoints manually.

Many of the crew also has their own handheld GPS so I decided to provide them with all of the waypoints for the trip. That way we will have multiple backups. There is a shareware program called EasyGPS that will "talk" to virtually all of the handheld GPS units on the market using the popular GPX

standard. I wrote routines into the Excel workbook that would export the necessary files for uploading into the handheld GPS units.

For paper navigation I have NOAA charts and the Richardson chart books for Lakes Superior and Michigan. These are legal for navigation and somewhat easier to handle in the cockpit. I also have my trusted copy of Bonnie Dahl's *"The Superior Way"* an invaluable tool that takes us all the way to the end of the St. Mary's River. We have at least two full sets of plotting tools aboard the boat.

I have always wanted to learn celestial navigation and what better way to do it than for real, out on the water, with no land in sight. Curt Fahlstrom has a WWII British made sextant that his father used during the war to circumnavigate in a US Navy ship. I have a Davis Mark 25 sextant. I also have the "*Navigator"* software that will "cheat" and do all of the calculations for you. It has the sight tables and I printed them out for the days we were on the trip. It has a feature that will show you a graphical view of the sky at any day/time. This way we could do the work manually and then check it with the program to see how we did. William F. Buckley's (may he rest in peace) excellent DVD on the subject, "*Celestial Navigation Simplified"* is a must for someone new to celestial navigation – he takes all of the mystery out of it in his delightful way. Many of us have studied Bowditch and we will have a couple of other books on board also.

The laptop on the boat will have all of the computer stuff loaded on it and can also play DVD's. It has Wi-Fi capability and my cell phone will act as a wireless modem if we are in cell phone coverage.

We will have a small generator on board in case all of this stuff runs the batteries down, but I expect to only use the laptop for very short periods unless we are motoring. All of the electronic data will be printed out prior to departure.

We have a Walker Bay 10RID for a dinghy, on davits that will be well out of reach of waves. If need be, we can either tow the dinghy or haul it aboard and lash it down on the foredeck. We will have at least two immersion suits so, in the unlikely event of the boat sinking out from under us, two will have to go in the water and four in the dinghy. We are not taking a motor for the dinghy, just oars. I have a ditch bag which will contain a waterproof handheld VHF radio, flares and a handheld GPS.

We also have a new addition that could prove valuable and is also a lot of fun. The SPOT Messenger is a small, waterproof, handheld device that transmits your position every 10 minutes using the GEOS satellite system and Google Maps. It also has the capability of sending "I'm OK" and "9-1-1" messages on demand. These go to selected email addresses and cell phones and, in the case of the emergency 9-1-1 message, the GEOS Search and Rescue system. The fun part is that I have set up a shared web page through the SPOT system that allows anyone to watch our progress, real time on Google Maps. This way friends and relatives can just click on a link and see where we are at any time day or night.

The diesel burns approximately ½ gallon of fuel per hour at a reasonable 5-6 knots. This speed is easy on the engine and burns through the miles. We will top off the tank at each of two or three planned stops and we will also carry three 5 gallon jerry cans of fuel lashed to the deck. This will theoretically give us over 300 miles of motoring without refilling any tanks.

We have the standard sail plan for the P-323, a main and 135 Genoa. I am bringing along our symmetrical spinnaker and pole since we have plenty of crew to handle it and it could come in handy.

Circumnavigation of the U.P.
"Da Youp Loop"
May 2008

The Trip

Thursday, May 22:

The "Western" crew arrived at my house on time and ready to go. My brother Kyle's girlfriend, Jennifer, had offered the use of her newer Dodge Durango with roof rack and third row seating, so we were able to get everything loaded and were on the road by 0430 – thank you Jen for the truck and Kyle for doing the driving. We decided to stop in Washburn, WI, about 10 miles from the marina, for breakfast and to pick up three blocks and three bags of ice.

We loaded all of our gear on board and got the sails installed, the dinghy hung on the davits, shore power cord stored and pretty much ready to go. I had to pick up some spare parts that I had ordered from Pike's Bay Marina. Curt and Jim ("Eastern" crew) arrived and we started storing their gear. By about 11:00 AM we were ready to go. First, we had to get fuel topped off, fill the three jerry cans and get the holding tank pumped. We stopped at the Pike's Bay fuel dock for fuel, but they didn't have their pump out facility on line yet, so we had to go to Port Superior's a couple of docks over. Finally we were all ready to go and actually cast off at exactly noon.

Pike's Bay still didn't have their fresh water hooked up so we were unable to flush and fill the tanks at the dock. As soon as we got out onto the lake we started that process using the deck wash pump and our hose to fill the tanks, then run the galley and head faucets to empty them. After a few cycles, we filled the tanks with lake water. This worked out fine since all use of the water in the tanks would be for cooking (boiled) and washing dishes.

The water was amazingly flat for most of the Lake Superior part of the trip. At times it reminded me of getting up early on a Saturday morning at the lake place and being frustrated because it was too early to get the boat out and water ski on the glassy lake. Of course, there were the always present gentle swells that nodded the boat's bow up and down.

Friday, May 23:

We arrived at the entrance to the Keweenaw Passage at 3:30 AM, about 2 hours ahead of schedule. It seemed that motoring at about 1500 RPM gave us a comfortable cruising speed of over 6 knots, which was faster than the planned speed. This put us ahead of schedule for the whole trip. The trip down the Passage to Houghton was uneventful, with the autopilot guiding us flawlessly and the crew keeping it honest.

After calling for and getting the bridge to rise for us, we pulled into the Houghton County Marina at 5:20 AM, a couple of hours early. Since the marina didn't open until 9 AM, the "duty crew" walked across the bridge to get some breakfast. We finally found a nice restaurant that was open and had an excellent breakfast. On the way back, I bought a couple of small plastic tarps to use to cover the pushpit railings in an attempt to keep the diesel smoke from coming into the cockpit. It seemed that no matter what direction the light winds were coming from, it always blew the fumes into the cockpit, putting the tarps on made a big difference.

About the time we got back to the marina, the harbormaster showed up and we got our fuel topped off and the holding tank pumped. We departed at 8:20 AM to continue our trip down the

passage. This part of the Keweenaw passage has a couple of visual ranges to follow across Torch Lake, which a few of the guys had never experienced. The range consists of a couple of markers placed such that, from a distance, they appear to be a single line when on course and split apart when off course. They are a very simple visual aid to staying in the dredged part of the channel.

We cleared the Keweenaw Passage at 10:33 AM and turned east toward the first waypoint of the Keweenaw to Soo leg at the Huron Islands. This would be the longest planned leg of our trip at 192.5 miles taking approximately 35 hours. As was the last, this leg was very calm with glassy water. We did manage to get the sails up for awhile a couple of times, but were unable to make our target speed of 5.5 to 6 knots on sails alone, so we kept motoring. To this point, we hadn't seen another vessel except for a ketch that caught us after leaving Pike's Bay and gradually disappeared from view before we reached the Keweenaw. We did some mental calculation based on the range of our radar (about 24 miles). This meant that for the whole trip to this point, we had probably been the only vessel within about 1800 square miles. Nick had some good opportunities on this leg to take sun shots with the sextant.

Somewhere along the way, we discovered that we were taking on water. Not a lot, but somewhat alarming since we couldn't seem to find where it was coming in and over time, the bilge would begin to fill up. We set up a bilge watch and eventually discovered that it was intermittent. We suspect a cooling hose must be leaking, but only under certain conditions, which we never could pin down. Jim and Curt went over the boat as thoroughly as they could with all of the "stuff" aboard and never actually saw any water coming in. We will be replacing all of the hoses to see if that clears it up.

Saturday, May 24:

We reached Whitefish Point at 9:09 AM and turned into Whitefish Bay. Now we were beginning to see lots of laker traffic. Those big guys move fast and you stay well out of their way. Curt got tons of pictures of them and I'm looking forward to seeing them.
The trip down Whitefish Bay took about 4 hours and just as we were coming to the locks, we were passed by a bit freighter named "Frontenac". We followed her toward the locks and called Lock control. We were instructed to use the Poe Lock as she was going to use the Macarthur lock. We entered the lock at 2:48 PM.

Now things got interesting. I missed the stop sign and was admonished for going too close before being instructed. Just didn't see the little thing. Then we pulled into the lock and slowly made our way to the attendant, who was positioned almost all the way down the 1200' lock. As we got close, I slowed to a crawl and he tossed a line to our bow crew. At that point, the wind started to take the stern away, he missed the throw to our stern guy and we wound up cross-ways in the lock with the guy yelling at us that we had to be facing forward (duh). Well, I just went around again and this time he got the stern line to us first and it was no big deal. Ok, I blew it, but he was an idiot.

After pulling out of the lock we immediately came to the George Kemp Downtown Marina in Sault Ste. Marie, MI. We pulled into the gas dock at 2:57 PM and topped everything off and got another pump out. Since we were hours ahead of schedule, we put the boat into a slip right next to the gas dock and decided to take a couple of hours for showers and shopping and a good dinner. We pulled out of the marina a 7:25 PM, right back on schedule, for the trip down the St. Mary's River.

The "young guy crew" had decided to take an extra hour of the watch since we pulled out right at the end of the "old guy crew's" watch. They didn't realize what they had taken on. The old guys went to

sleep and the young crew had a ball trying to figure out the myriad of lights on the river. The navigation was very tricky at night and they were more than up to the task. They were glad, though, that they had three people - one to handle the helm (Jeff), one to calculate the direction and distance to the next set of buoys (Nick) and another on the binoculars to find them (Scott). They did a great job and when the old guys got up in the morning, all we had to do was navigate the last few easy miles and then out into Lake Huron.

Sunday, May 25:

We turned right and headed toward Mackinac Island, where we planned to stop and do the usual pump out and fuel top-off. The on-duty crew pulled into the marina area at about 6:45 AM and discovered there were no services available, so they pushed on. We crossed under the Mackinac Bridge at 7:35 AM with Scott at the wheel. Everyone was taking pictures of one other with the bridge in the background. It was the first time I had ever seen the bridge and I was suitably impressed. Our route would take us north of White Shoal and Lansing Shoal before turning SW toward St. Martin Island at the entrance to the Bay of Green Bay.

I had planned to shorten the bridles that held the dinghy to the davits before the trip but, somehow, that got left undone and we wound up paying the price. In higher waves the aft corner of the dinghy was starting to "bump" off the waves when the nose of the boat went up high. Eventually, the outboard rope failed where it attached to the eye on the dinghy and that corner dropped in the water. I wound up cutting the other rope on the aft bridle. This dropped the whole stern in the water and stopped the violent bucking of the dinghy. I then had Curt grab the dinghy's painter and cleat it so we wouldn't lose it and I unhooked the bow bridle. That worked fine and we added another line to get the dinghy far enough back on the stern waves and it rode the rest of the trip without incident. The dinghy contained a couple of bags with propane for our heater and alcohol for the Origo cooking stove – nothing was lost.

We started getting reports of the bad weather. I got a text message from my wife back in New Richmond that they had experienced very large hail. She saved some of the hailstones and they are bigger than golf balls. Others in the crew were receiving regular updates on weather via cell phone when we had coverage. And, of course, we had the VHF radio weather channels. We finally heard from Greg Fahlstrom in Green Bay that they had been hit and the weather was heading toward us. We had been dodging squalls with lightning and some rain and the sea state was increasing. Based on Curt's intimate knowledge of the area, we made the decision to duck into Summer Harbor on Summer Island at about 11:00 PM to ride out the storm in a fairly protected area.

Monday, May 26:

We left Summer Harbor at about 8:30 AM after a good night's sleep (for some) and a very good breakfast. I tried to maintain an anchor watch and finally gave in to sleep at about 2:30 AM. We left the harbor in fairly dense fog and I got to try out the fog horn feature of the VHF radio. It automatically broadcasts the proper sequence every two minutes from a speaker horn mounted on the mast underneath the radome. It worked very well and we had occasion to be glad that it did as we suddenly picked up a large freighter bearing down on us. Since we were in the shipping lanes, we gave them lots of room and listened as they passed us without ever seeing them. We stopped briefly in the lee of Washington Island to check the oil and proceeded into fairly large waves for the rest of the trip to Menominee. The winds at some point switched from directly on the nose to directly on the stern and

started building. Eventually, we were seeing over 30 kts as we closed on Menominee. By the time we got there the wind was getting colder and even stronger.

When we got into the marina, we went to the gas dock to get the holding tank pumped out. We had pushed our luck too far and it had filled up a few hours earlier. We found out just how full it was when Nick removed the pump out fitting and raw sewage blew out all over everything. Poor Nick got a good portion of it and the boat was covered from the fitting aft. It took an hour or so of scrubbing to clean up the mess. The holding tank is going to get some sort of sensor and gauge to monitor its state in the future.

I got a ride out to the airport with Jim's brother in law, who had come to pick him and Curt up. I had previously left a car out there so the "Western" crew would have a means to get home. The car started right up and I high-tailed it back so we could start packing.

We finally got the boat unloaded and buttoned up, Jim and Curt left for Green Bay and Jeff, Nick, Scott and I prepared to leave. I'm afraid I stuck Jeff and Nick with the driving duties – I was too wiped out to safely drive and was suffering a pretty bad case of "the leans", which took 3 days to completely go away. We hit the Subway on the way out of town for a quick meal and arrived at my house, the staging area, at about 3:00 AM, completing our "Circumnavigation of the U.P. 2008".

The Crew: (in alphabetical order)

Curt Fahlstrom	Green Bay, WI	"old crew"
Nick Krueger	Somerset, WI	"young crew"
Capt. Don Magnus	New Richmond, WI	"old crew"
Scott Magnus	Maplewood, MN	"young crew"
Jeff McIntosh	Oakdale, MN	"young crew"
Jim Rennes	Green Bay, WI	"old crew"

The Boat:

1977 Pearson 323 Sloop
32' long, 10.3' beam
V-berth, double berth starboard, single to port. Full galley with pressure water (cold) and Origo non-pressure alcohol stove. Head amidships with swing out vanity/sink with pressure water. Two cylinder Volvo MD-11C diesel auxiliary engine.

Things I think I did right:

1. I think the overall planning and scheduling was pretty good.
2. My choice of crew members was, in my opinion, excellent.
3. The idea of having 3 man crews was a good one.
4. Buying and using the SPOT Messenger was a really good and popular idea.

Things that could have been better:

1. The boat was really too small for six guys with cold weather gear.
2. I should have restricted the amount of gear and food that the crew brought along.
3. I should have properly mounted the dinghy on the davits.
4. The boat prep was ok, but I didn't really have time to do it right due to late launch, etc.

5. I found out (too late) that the Richardson's Chart books don't cover the whole trip. I should have bought all of the paper charts.
6. I never got to type my notes in the evening mainly because we couldn't get to the nav station – it was full of gear.
7. I never got to shoot any fixes with the sextant – totally my fault because I just didn't take the time.
8. I never got the AIS to work and it would have come in handy. I just didn't have time to get the wiring right before leaving and didn't have the ability to do proper debugging under way.
9. I thought we had two quarts of oil aboard. I should have checked more carefully as they were only partially full, maybe a quart between them. With all the motoring, our old engine needed a quart every now and then. I estimate that we put about 80 + hours on the engine which is probably more use than it has seen in the last 5 years combined and used a total of three quarts of oil. Not bad for a 31 year old engine that to my knowledge has never been rebuilt.
10. I should have checked my waypoints more carefully. I made a few mistakes in placement and Nick found a few places where I had made errors in transferring to the spreadsheet from which everything was derived.