



# I have GPS - So Who Needs a Compass?!

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Back in January, we wrote about GPS, the wonder of the 21st (really 20th!) century. It is truly one of the simplest yet most powerful aids to navigation ever invented. And it just keeps getting better and better. So, who needs a compass? You do. This column is all about that.

## A Candle Held Where?

What if I told you that the signal from the GPS satellites reaches your boat with the intensity of a candle - held in Los Angeles while you are in New York? Yes, that's how it is designed. So, what happens if the weather really becomes foul? You can lose your GPS signal, that's what! It takes a lot because of the redundancies built in but it can happen. I know it, firsthand. And if you have to leave your boat due to emergency conditions, are you going to rip your GPS out of your dashboard and take it with you into the raft? No. As a matter of fact and of safety, right next to my compass, which sits above my in-dashboard GPS system, is a handheld, old fashioned compass. If I leave that boat, the handheld compass comes with me.

## Where is the Magnetic North Pole?

Most of us have seen diagrams or pictures of magnetic waves, just like those that come out of household magnets, coming out of the North and South poles, encircling the Earth. The iron core of the Earth spins at high speed and creates this magnetic field. Of interest, the magnetic forces don't emanate from the top of the world, i.e., the true North Pole. Right now, the "Magnetic North Pole" is just north of Hudson Bay. When George Washington was leading the United States, Magnetic North was near Norway. If you look on any paper chart for the "compass rose," it shows in the very center what is called "Variation," i.e., from the area that the chart covers, what is the angular difference, i.e., Variation, from True North to Magnetic North. Here, it is 14-degrees west, i.e., your compass points 14-degrees too far west at Magnetic North versus where True North lies. This means that when your compass is pointing to Magnetic North, you would turn the boat 14-degrees to the east (014-degrees) to be pointing to True North! BTW, this is interesting - but largely meaning-

less since all compasses sold above the Equator point to Magnetic North. But it is important to be aware of Variation.

## What is Deviation?

Frankly, more important than Variation to the average boater is Deviation. Deviation is the sum of all the forces within your boat that keeps your compass from pointing to Magnetic North. What? Case in point: a number of years ago, I was doing USCGAux vessel exams at a local marina when one skipper came up to me and asked me if I could look at his compass because it wasn't working properly. Now fixing an errant compass is a relatively complicated process that requires specialized hardware. But away I went with this skipper to see if I could at least isolate the problem. We stepped on his boat and, just before taking his seat at the helm, he removed his wallet from his hip pocket (which held his police badge within) and placed it next to his compass. While he was fumbling with the boat keys, I literally watched his compass clock around and point at his wallet/police badge! I asked him, "Skipper, why do you put

your wallet there?" He said, "It kills my sacroiliac if I sit on my wallet!" I said, "Keep your eye on your compass while I move your wallet." As I lifted it away from the compass, the compass clocked back and pointed to Magnetic North. "You fixed my compass!" No, I simply removed a source of Deviation. Metallic objects (or magnetic objects like radio speakers) near your compass will "fool" your compass into thinking that that object is Magnetic North. How can you tell what the Deviation is of your compass? Well, if you have a GPS, it will be easy - all you need is a mile or so of calm water and you can run down the rhumb lines of the four cardinal points and record the differences between what the physical compass is reading from the GPS course you are running. Of interest, Deviation "deviates" differently at a given compass course so you need to check at least the four cardinal courses. You need to know what your boat's compass Deviation is so that, if you do have to use your compass in lieu of your GPS, you can compensate appropriately. Over enough distance, even a degree or two can add up to significant differences. If you don't have a GPS, it is a bit

more complicated but it can be done. Get your paper charts out, mark a rhumb line between two points that lie at a given magnetic course between each other. Run down that line and record what your compass is reading versus what your paper chart told you the compass should be registering. The difference is Deviation.

## My GPS Has Failed and I Don't Have a Compass!

Well, happily for this sorry skipper, there is a way to create a crude compass with a watch if you find yourself in such a state. Simply point the hour hand at the sun. Halfway between the hour hand (the sun) and 12 on your watch lies South. If you know where South is, you know where North, East and West are...

Don't have an old fashioned watch? Draw one and line it up as if it was on your wrist. It works!

BTW, if you are interested in being part of USCG Forces, email me at JoinUSCGAux2008@aol.com or go direct to MaryJo Cruickshank, who is in charge of new members' matters, at FSO-PS@emcg.us and we will help you "get in this thing..."

## Tides for Moriches Inlet starting with August 27, 2008.

Day	High/Low	Tide Time	Height Feet	Sunrise/Sunset	Moon Time Visible	% Moon
Wed 27	High	4:22 AM	2.9	6:14 AM 7:31 PM	Rise 2:12 AM Set 5:46 PM	18
	Low	10:22 AM	0.2			
	High	4:47 PM	3.5			
	Low	11:18 PM	0.1			
Thur 28	High	5:24 AM	3.0	6:15 AM 7:29 PM	Rise 3:28 AM Set 6:21 PM	10
	Low	11:19 AM	0.1			
	High	5:45 PM	3.6			
Fri 29	Low	12:08 AM	0.	6:16 AM 7:28 PM	Rise 4:43 AM Set 6:51 PM	4
	High	6:19 AM	3.2			
	Low	12:13 PM	0.0			
	High	6:36 PM	3.7			
Sat 30	Low	12:56 AM	0.2	6:17 AM 7:26 PM	Rise 5:56 AM Set 7:16 PM	1
	High	7:07 AM	3.4			
	Low	1:05 PM	0.1			
	High	7:22 PM	3.7			
Sun 31	Low	1:40 AM	0.2	6:17 AM 7:24 PM	Rise 7:06 AM Set 7:39 PM	0
	High	7:52 AM	3.5			
	Low	1:53 PM	0.1			
	High	8:05 PM	3.6			
Mon 1	Low	2:21 AM	0.2	6:18 AM 7:23 PM	Rise 8:14 AM Set 8:01 PM	
	High	8:36 AM	3.5			
	Low	2:38 PM	0.0			
	High	8:48 PM	3.4			
Tues 2	Low	3:00 AM	0.1	6:19 AM 7:21 PM	Rise 9:20 AM Set 8:24 PM	4
	High	9:19 AM	3.5			
	Low	3:21 PM	0.1			
	High	9:31 PM	3.2			
Wed 3	Low	3:36 AM	0.1	6:20 AM 7:19 PM	Rise 10:26 AM Set 8:50 PM	10
	High	10:02 AM	3.3			
	Low	4:03 PM	0.2			
	High	10:16 PM	3.0			
Thurs 4	Low	4:10 AM	0.2	6:21 AM 7:18 PM	Rise 11:31 AM Set 9:18 PM	17
	High	10:46 AM	3.2			
	Low	4:45 PM	0.4			
	High	11:03 PM	2.7			
Fri 5	Low	4:45 AM	0.5	6:22 AM 7:16 PM	Rise 12:35 PM Set 9:51 PM	25
	High	11:31 AM	3.1			
	Low	5:31 PM	0.6			
	High	11:52 PM	2.5			
Sat 6	Low	5:23 AM	0.7	6:23 AM 7:15 PM	Rise 1:36 PM Set 10:31 PM	34
	High	12:18 PM	3.0			
	Low	6:26 PM	0.8			
Sun 7	High	12:42 AM	2.4	6:24 AM 7:13 PM	Rise 2:33 PM Set 11:17 PM	43
	Low	6:13 AM	0.8			
	High	1:06 PM	2.9			
	Low	7:32 PM	0.8			

## OP-ED

## The Story So Far

story by **LEE M. ZELDIN**,  
Republican candidate for  
Congress in the 1st  
Congressional District

This week, thanks to the 24-hour news cycle, you undoubtedly heard the words 'hope' and 'change' hundreds of times. Let the record show, I'm all for hope and change. In fact, you'd be hard-pressed to find a bigger optimist or greater dreamer than me. I wouldn't be in this position were I not.

However, I come from a world where your audio has to match your visual. From my upbringing in Shirley through my time in the Army, I've long recognized that actions speak louder than words. Without hard work and action, hope and change will never get off the ground.

Because of the combination of these values and motivation, after finishing my active-duty service as a military magistrate and federal prosecutor with the 82nd Airborne Division and XVIII Airborne Corps, I moved back to Shirley, and bought a home, beginning my post-Army career, where, alongside my wife, Diana; we are raising our twin 2-year-old daughters, Mikayla and Arianna.

For their future and with their support, I began this campaign last October. Since then, I have worn out a couple pairs of shoes walking our dis-

trict, knocking on doors and getting to know folks, finding out the issues. And there are some sincere concerns out there.

The hardworking men and women of the First Congressional District expect their elected officials to earn their paychecks. We want security securing their finances, our borders and America's energy future. On the more local, tangible level, we care about modernizing our infrastructure and addressing our quality of life issues ranging from code enforcement to sex offenders and a clean water supply to immigration reform.

Hoping for change won't get anything done to rectify these challenges. Hoping for change gets us nothing but five-week Congressional vacations. We need leaders, people of action, roaming the halls of Congress.

Our campaign theme speaks to this need. Since October, I've told everyone that "Long Island's Future Begins Now!" We're tired of empty promises and inaction. In Congress, I will be the bulldog that gets things done.

I'm grateful to *The South Shore Press* for giving me an opportunity to address many of these concerns and lay out my plans in this column over the coming weeks. Be sure to come back; I look forward to keeping you updated on events from the trail.