

Are Compasses superfluous, now that I have my Chart-Plotter/GPS?

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A new boater came up to me a few years back and said they had just purchased a brand new boat. "Great" I said, "So did you have your compass checked to make sure it's at least in the ball park – accuracy wise?" My friend replied, "Nope. What do I need a compass for? I just bought a GPS – it will tell me how to get where I want to go."

This amazing conversation has been repeated over and over again by both long-time boaters and boating safety educators. And, unfortunately, I think both these groups are losing ground.

So, let me state this concept in unequivocal terms. The first piece of safety equipment that you *install* on your boat is a COMPASS!

There are lots of different safety devices that you need to safely boat, and a compass is just one of them, even though it is not a Federal mandate.

Ok, so why do I need a compass? Let's look at a compass and then compare it against a GPS (with or without a chart-plotter).

A little compass history?

A compass is an instrument used for navigation that is used to find directions. By reading the magnetic field of the Earth, a compass is able to tell you the direction of the magnetic field. This direction (commonly referred to as magnetic north), which essentially points to the same place all over the world, has been designated magnetic north.

Not only can a compass be used for navigation by use of its direction finding capabilities, but it can be used in figuring time (actually time zones [longitude]) by using a marine chronometer. If you then use a sextant, you can figure out latitude.

The earliest compass dates back to the 11th century and the Europeans invented the marine compasses sometime in the 1300's.

Let's examine the compass and a GPS?

A compass is a simple mechanical device with only one moving part. In fact many traditional compasses have only three parts, a needle that freely pivots, a pin for the needle to pivot on, and a compass rose. These three items are then usually put in a box, but even that's not necessary.

A GPS consists of hundreds of moving (I include electrical components in the definition of 'moving') items that must be enclosed in a box.

A compass, unless demagnetized or thrown off by a stronger local magnetic field, will always point to magnetic north. It requires no additional internal or external components.

A GPS requires an energy source, multiple satellites and reception of signals which can be affected by weather, electrical storms (both terrestrial and extra-terrestrial) and needs to be calibrated (thru the systems system-setup menu).

A marine compass costs anywhere from \$20 to \$200. A GPS starts at about \$100 and just climbs in cost.

When I told my friend "You need a compass!" he replied, "Why? All I need to do is plug in where I want to go and it will tell me!" In reply I stated, "Sure it will... The GPS will give you the shortest route between here and there, which in coastal navigation is typically a straight line. Did you consider that there maybe a sandbar or an island between here and there?"

Ok, so you're still not sold. Let's look at the skill it takes to use compass vs. a GPS.

Categorical statement number 2: All boaters should take a course in at least simple navigation, besides safe boating. You need to be able to read a nautical chart and plot a course.

With this in mind, to properly use a compass you need to know the direction in which you want to travel. That means you need to plot your course. Once your course is plotted, you can ascertain the heading and then point the bow of the boat in that direction by reading your Compass.

For you purists out there, you need to apply TVMDC (True course +/- Variation = Magnetic course +/- deviation = compass course). TVMDC is the method of converting a true heading [that's what you get on nautical charts] to a compass heading [that's what your compass reads] by applying corrections for variation [the change in the magnetic field of the earth] and deviation [the local magnetic field on your boat due to radios and other electronics/electrical gear situated near your compass]. It sounds more difficult than it actually is, but that's why you need to take boating education!

With your GPS, you need to plot your course, punch in each and every waypoint, and then have your GPS tell you which way your boat should be headed. Simple, huh?

No, not so simple. First you have to figure out how to turn on your GPS. Then you have to figure out how to enter waypoints, then how to create a route. Finally, you need to know how to activate that route. Along the way, you have to know how to adjust a myriad of settings that tells the GPS how the information it has will be displayed to the end-user – that's you! BTW, most GPS's provide you with a magnetic course – that's if you're bothering to write down on paper the information or plot it on your chart....just in case....

Oh, I almost forgot. A compass runs on the magnetic field of the earth. GPS's run on electrical energy, either AC or DC. You can run your GPS with portable batteries or from another source of electricity (the inverter on your boat or the boat's batteries).

Batteries die. Electrical connections short-out. The display can burn-out or crack. Satellites have problems and weather can degrade the satellite signal so you can't get enough of them to get an exact fix.

If the magnetic field were to fail, well, I guess you wouldn't need to worry about the compass not working.

A simple reason why you should have a compass

You go out for a short run one evening in the summer. It's been hot and humid. You really didn't check the forecast, but you hadn't heard of any T-storms so you figure your safe.

But you're not safe. A colder mass of air moves in causing heavy fog. You can't see. You don't know how long the fog will last, and your

boat is drifting (your anchor line isn't long enough to hold you). What do you do?

Did I forget to add that you left your GPS home?

Which way do you go? You know if you travel west (at least where I live on the East Coast) you'll hit land. Which way is west?

Without your trusty, inexpensive, foolproof navigational device in constant use since the 11th century – you have a good chance of not hitting land for a long time.

Buy a compass – it will be one of the best investments in your safety money can buy! Moreover, learn how to use it, so you will always know where you are going.