Why do I need a magnetic compass, what is a deviation table, and where do I get one?

At the present, all documented commercial fishing vessels operating beyond the boundary line are required to have a magnetic compass and a deviation table. The compass is required because it will still work even if you lose electrical power due to a casualty or equipment failure. Although electronic navigation equipment has greatly improved in capability and dependability, it can still fail or will not work if there is a failure of the power supply.

The compass deviation table is simply a guide that tells the operator what your compass shows relative to the courses you need to get where you want to go. For example, if your GPS always shows a course of 090° when headed back to port, but your magnetic compass shows 087°, the 3° difference would be on the deviation table to tell you to steer 087° by compass, rather than 090°, if the GPS quits working. While this may seem trivial, from 20 miles out, not knowing about the 3° deviation would put you about a mile south of your port.

Ideally, compass deviation tables are prepared by professional compass adjusters; however, the regulations which require a magnetic compass and deviation table do not specify how to determine deviation, what training is required to fill out a table, or how frequently a table should be updated. Information is widely available in books and on the internet about this topic, and we are unable to endorse anything specifically. With that in mind, the following is presented for informational purposes only, and was copied with permission from the website http://www.cruisingworld.com/gear/count-on-your-compass

Deviation by GPS

Prior to the widespread use of GPS, you took compass bearings off recognized features in the landscape and plotted them on a chart to figure out where you were. Your GPS knows where you are, so you take a bearing on a headland you don't recognize, plot it from your known position on the chart, and voilà: "Honey, that's Dangerous Point off our port bow!"

Because your GPS knows where it is, it can also calculate where it is in relation to any other location in terms of range (distance off) and bearing. And because it comes loaded with magnetic-variation information for the globe, it can tell you that bearing in magnetic notation as well as in true notation. This means that you can use your GPS to check your compass.

Create a waypoint in your GPS with the coordinates of an accurately charted and identifiable feature, say a lighthouse. Set the waypoint as your destination and steer toward it. The farther you are from the waypoint the better, but a couple of miles provides sufficient accuracy. With your boat's bow on the mark, note the compass heading and the magnetic bearing toward the waypoint from the GPS (not your COG because this will be affected by current). The difference between the heading and the bearing is your compass's deviation-on that heading. To check deviation all the way around the compass, approach your waypoint from several directions. You may need to use several waypoints to complete the circle.

Deviation Table			
Name of Vessel:			
Compass Make:		**Serial No.**	
Magnetic Course	**Compass Course**	**Magnetic Course**	**Compass Course**
0-North		180-South	
15		195	
30		210	
45-NE		225-SW	
60		240	
75		255	
90-East		270-West	
105		285	
120		300	
135-SE		315-NW	
150		330	
165		345	
Prepared By:		**Date:**	

DIRECTIONS

1. Set GPS plotter to Magnetic Course.
2. Steer by plotter and steady up on magnetic course 000 (North).
3. Observe magnetic compass reading and record it in the Compass Course block.
4. Repeat this process for the other magnetic courses.
5. At a minimum, the N, NE, E, SE, S. SW, W and NW courses must be done.