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High Def Comes to Radar – Will Things Ever Be The Same?

Last week, you found an article here on radar (see The Independent archives at indyeastend.com, "Radar, Your Eye Aye's") where I extolled the virtues and increasing cost-effectiveness of radar. While a lot of enhancements have been made over the years (My first radar set was, I think, installed by Marconi!), they have largely fallen into two categories – tracking boogies to avoid collisions at sea and tuning out the effects of weather. But, like with our TVs, High Definition ("high-def") has come to radar and nothing will be the same. A new "arms race" between radar manufacturers has begun and safety at sea will be beneficiary. This column is about that.

What's So Bad About What We Have?

Really, only two things. First, even the best radar systems have difficulty is differentiating close objects from each other. As you may remember from last week's article, we thought we were closing in on a large slow moving vessel in Narrow Bay one night when our forward-looking infrared scanner told us the truth; it was a flock of swans serenely paddling ahead of us. This can also be true for a tug and its tow – which is less serene to come upon in the fog.

Secondly, in close quarters, it can be deceptively assuring – when assurance is not at hand. Last spring, we came in to Moriches Bay via the Inlet one moonless, cloud covered night with no visible contacts but the radar overlay on the chart plotter. Well, that is certainly better than nothing – except that the east channel from the Inlet to the seaway within the bay is narrow. I didn't have 50' on either side of good water – but the chart and radar resolution wasn't much better than that.

What to do? Slow down and get a crewman on the bow . . . so much for technology.

"High Def" Means What?

When I saw my first high-def TV, I realized that actors had better see their dermatologists, right away. I could count the hairs on the chin of the actors – which also meant their scars, pimples and pockmarks. It also meant that sports figures needed to clean up their language because now it was a lot easier to read their lips when they 'cussed out the referee or umpire.

Happily for boaters, high-def means better, not worse. Instead of a smudge of radar return signals implying that the Queen Mary is anchored in Moriches Bay west of the Inlet, you'll be able to count the boats swinging at anchor, or drift fishing, within feet of each other. I've seen high-def

radar screen-shots showing boats in slips at a marina. Prior to that, all I would have been able to see is one large radar return of a very large object ahead.

High-def is all about resolution. And better resolution leads to better problem resolution, and sooner. And that means better safety at sea.

What's Available

Well, like TV in the early days of the high-def revolution, not everyone has the technology and, for those that do, not all their gear is "plug-compatible." Raymarine's latest – the G Series – is the state of the art in high-def radar. And their prior state-of-the-art E Series can be retrofitted through firmware (specialized software) to receive and process the high-def signal. But the C Series is out of luck. Remember that three years ago, the C Series was the state of the art -- that's how fast this is moving.

Who else is out there with high-def? Furuno, as long as you are running their NavNet 3D system; Northstar, Simrad and Lowrance are also geared up for high-def.

As you would imagine, mounting the radome/scanner is now especially important. Recall again from last week's article that as the boat pitches, the radar "beam" can shoot down into the water or off into outer space. Some installers argue that this means that a scanner should be mounted on a gimbal that keeps the radar true to the horizon -- makes sense to me but that means a specialized mount that I have yet to find for powered boats. So, just be aware, especially in heavy seas, that you are getting a picture that is sweeping from the depths of the water to the heights of the sky.

What's Next?

It is always hard to predict the future so I won't begin to, but bear this in mind: everywhere that there have been systems with moving parts, the moving parts are the most inefficient and, thanks to friction, the most likely to break: So, maybe the magnetron inside the scanner is the next enhancement?

BTW, if you are interested in being part of USCG Forces, email me at JoinUSCGAux@aol.com or go direct to the DISR Human Resources department, who are in charge of new members matters, at [DSO-HR](#) and we will help you "get in this thing..."