



## Safety of Life at Sea: Your Radio – Shot-Gun or Rifle?

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Last week, we talked about power (watts) and distance (height). You want to have a lot of both, especially if you are the one sending the may-day. But as the song goes, "Is that all there is – Is that all there is...?" As always, no. This article is about that.

### Give Me Gain!

If you've ever bought an antenna, it notes how many "dBs" (decibels) of "gain" it has. This is a very important element in selecting an antenna. Without a good antenna, your radio isn't much better than a paperweight. Gain, for the private boater, comes usually in three "sizes" – 3dBs, 6dBs and 9dBs. But what is it?

Gain is simply the measure of how focused the antenna is in taking the signal from the radio and, at a given wattage, shaping the rifle bullet of energy that it sends to the horizon. The higher the dBs, the more focused the beam of energy – the sharper the "rifle bullet" rather than the "buck-shot" of a shot-gun. And

greater focus, going back to the last column on radios, leads to greater distance and greater effective power, meaning more of the wattage gets turned into distance over the water, as you send out your may-day.

Sometimes...Let's go back to the fire-arm analogy. If you've ever gone hunting, you know you hunt for birds with a shot-gun. Why? Because the birds are all over the sky and if you have to hit one bird with one bullet, you had better be a pretty darn good rifleman. But that "spread" of buck-shot comes at a cost-power/distance. It will take down a duck, but not a roe buck. For the power to take down a deer, you need to penetrate a highly muscled animal of several hundred pounds and hit a vital place. For that, you need focused power – a rifle. Oddly, radio gain is just like that.

### All the Power Has to Go Somewhere!

Let's think mathematically for a moment.  $20 \times 5 = 100$ , as does  $50 \times 2$ . If that were real es-

tate, no one would want a living room that was  $50 \times 2$ , even if it was the same size in square feet as someone whose living room was  $20 \times 5$  (albeit not much better!). But gain is all about that. High gain creates a focused beam – like the  $50 \times 2$  living room. Lower gain creates the wider footprint –  $20 \times 5$  living room. All the power coming out of the radio has to go somewhere (we'll leave "minor lobes" for the radio-philes for another day) and that is why, in this example, both examples result in 100. If 50 is the distance, that is better than 20, for sure. Unless, like a shot-gun, you need spread. Then 5 is better than 2...

Like when the boat is rocking...as the boat rises to the crest of a wave, a high gain ( $50 \times 2$ ) antenna is going to send that radio beam into outer space as if it were shot out of a rifle. And when the boat is on the way down the wave, it is firing the radio beam into the back of the wave ahead of it. In this scenario, high gain works against you since the boat has

to be just at the crest of the wave, essentially parallel to sea-level, for that radio beam to shoot out straight ahead and hopefully hit something – like a USCG radio tower or another boat's antenna.

Now, if the gain were lower, instead of a rifle shot, you are getting a spread. Even when the boat is pointing into outer space, some part of that radio beam is being "shot-gunned" straight across the wave tops. In the simplistic but illustrative example above, it is only going 20 units of distance over the water, instead of 50...But, even when the boat is plowing down the wave into the trough, some of that signal is getting out, rather than being beamed into the back of the wave ahead, since the gain (rifle v shot-gun) is lower...

So, what to choose? Most skippers go with 6dB as that is the mid-point between distance (9dB) and spread (3dB). For those skippers with enough real estate and "moola," two radios and two antennas give

them the optimum result. They use a 3dB (or 6dB) for the inside (lower) helm where they drive the boat in heavy weather and 9dB for the upper or outside helm when the seas are flat.

Lastly, where should you put the radio itself? As far from your compass as possible. Why? The speaker has a big magnet in it. If the compass "sees" that, it will point to it and think it is the North Pole (magnetic). In any event, once you have installed your radio, develop a "deviation table" for your boat's compass so you know how to adjust for readings under way.

What's a deviation table and how do you create one? That's a lesson for another day...

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

### William Floyd Community Summit Beautification Committee Update

## "The Great Brookhaven Clean Up"

We are now in the midst of "The Great American Clean Up" sponsored by "Keep America Beautiful." The town of Brookhaven has become an affiliate and our committee is working with the town. Together we are activating an army all across our country and communities to get tough on litter.

The involvement and support received from the town has been exceptional. This year's litter is being divided so that recyclables will be bagged separately. At the completion of the clean up, recyclables and litter will be weighed and the results will be sent to the national headquarters of "Keep America Beautiful."

In addition to the usual clean up supplies (i.e. plastic trash bags, vests and gloves), the town provided bright lime green t-shirts and certificates will be mailed to all registered volunteers. The good news is more community civic associations, cub scout troops, high school students and residents came together like never before. Over 300 community residents in lime green t-shirts really worked hard and their efforts made a difference. The town trucks were on the roads picking up trash bags as fast as they were filled.

Here are some helpful hints on how to keep our community looking good. "Zero plus one" is a great idea we can all practice and teach our children. What it means is simple; not only do

you not make any new litter but you pick up one piece that someone else left behind. Another great idea is "Throwing it out...in Brookhaven," your guide to waste management and recycling published by the town of Brookhaven Waste Management

[www.brookhaven.org](http://www.brookhaven.org). This was mailed to every household in Brookhaven. If you misplaced your copy you can request a new copy by calling 451-TOWN.

The discouraging news is that not one person has called or emailed with an interest in becoming involved in the Beautification Committee. This is serious. Our community is surrounded by natural beauty, and shouldn't our neighborhoods and businesses reflect this? Our committee is made up of wonderful hardworking people, people who really care. I am honored to work alongside them. Never have any of our meetings been disrupted by harsh words or nasty disagreements. Every member is respectful of one another. Whether picking up litter, weeding, planting or fund-raising you could not find a nicer group of people to break a sweat with. So if you are interested in joining our committee email me at [wfbeautification@yahoo.com](mailto:wfbeautification@yahoo.com) or call me directly at 399-1286.

Submitted by Pat Matthews  
Chairperson, Beautification Committee

## Attention Boaters! Be Safe This Season!

### Prepare and Safeguard Your Passengers and Yourself

Boating season is underway and captains are ready to ride the waves. While it's a thrilling experience to cruise along the Long Island Sound or in the Great Lakes, responsibility for your passengers and yourself should be a priority.

"If you live your weekends out on the water, remember safety comes first for all those on board your boat," said Allstate's New York spokesperson Krista Conte. "Boaters often find themselves unexpectedly in the water due to a collision. Make sure each person wears a Coast Guard-approved personal flotation device (PFD) that accommodates his or her size and weight."

According to the U.S. Coast Guard, nearly 90 percent of all boaters who drowned were not wearing a PFD. PFDs should fit snugly and help keep your chin above water when in use. Since they deteriorate with time and use, test your PFDs at least twice a year and replace them when they lose their buoyancy.

According to Allstate's Boat Safety brochure, here is a boater's checklist:

- Always wear a personal flotation device (PFD) when boating
- Don't use an inflatable toy as a substitute for a PFD
- Never drink and boat
- Pay attention to weather changes. Head for shore when winds increase or storm clouds roll in
- Always tell someone where you're going and when you plan to return
- Be aware of exhaust emissions.
- Avoid areas where carbon monoxide collects in and around your boat
- Follow Red-Right-Running: keep red buoys to your right (starboard) and green buoys to your left (port)
- Take a boating safety course from an expert organization (e.g. U.S. Coast Guard Auxiliary or U.S. Power Squadron)

Conte said, in addition to safeguarding yourself and passengers, your boat is a valuable investment that should have an up-to-date boat insurance policy that way you don't have to worry about sinking your dream.