



## Prevention of Collisions at Sea: More Radar – What’s Blinding You?

by VINCENT T. PICA, II  
DISTRICT COMMODORE, FIRST DISTRICT, SOUTHERN REGION (D1SR)  
UNITED STATES COAST GUARD AUXILIARY



We’ve written in the past about radar and its advances (see *SSP*, “Radar for the Private Boater – your Eye Ayes!” and “High Def Comes to Radar – Will Anything be the Same?”) and I remain a devotee of the technology. But you need to understand what you are seeing, may not be seeing and why. This column is about that.

### Best Case – What Can It See?

Radar is one of those technologies where math and physics dominate. To make matters worse for Americans, much of the math that relates to surface areas is in metric scale and the speeds are in meters... But remember that a meter and a yard are close enough in size that, for the layman, you can read “yard” when you see “meter” and it will work for you from the standpoint of understanding.

Well, what does this mean? Surface area reflection – THE key item when it comes to what can we see under what conditions – is a measure called “Radar Cross Section” (RCS). The RCS of an object, expressed in square meters (remember that a square yard is an area 3 feet x 3 feet...), measures the strength of an object’s signal returns to your device. Objects with big RCS’s return signals from a greater distance and

through tougher weather conditions than any object with a lower RCS, at a given amount of power output from your radar. So, what are typical objects in terms of square meters (yards), as measured from stem to stern to gunwale? A tender is roughly 3 RCS (9’ long x 1’ gunwale); a typical recreational boat would be roughly a 10 RCS (18’ long x 1.5’ gunwale); a Navy cruiser might be about 10,000 RCS!

What does that mean in distance, which is the key? See the table below:

Detectable Distances, Ideal Conditions (in nm)				
----- Transmission Power -----				
Target	2 kW	4 kW	12 kW	50 kW
3 RCS	1.2	3.0	4.2	6.2
10 RCS	3.7	3.9	5.5	12.4

If some of these distances seem short, they are because small objects with a small amount of power will not, given the laws of physics, throw a big signal back. And this is under ideal conditions. Sidebar: If you are in a small vessel, add a radar deflector to make you look larger than you are!

In the column on radar, I noted that one of the issues to keep in mind is that heavy seas can cause you to see even less than you think since, at the crest of the wave, your radar’s beam is shooting into space and, while sliding down into the trough, it is shooting into the water. Counter-intuitively, perfectly flat seas actually work against range since you don’t pick up the little bit of extra distance that small waves will give you – kind of a paint brush approach...

### What Really Hurts?

Fog, rain and high waves are increasingly dense and thus impair “see-ability” as they get denser. For example, fog where you can see roughly a tenth of a nautical mile (200 yards) has no meaningful effect. If you can only see 20 yards, that is a real problem. A light to moderate amount of rain (1/2 inch per hour) is not going to cause any serious attenuation. A moderate to high amount of rain (1 1/2 inches per hour) is definitely going to close up the range, particularly for longer distance. Waves up to a foot, which isn’t much, have no effect and in fact help spread the radar beam. Also, perversely, the wave action will interfere with the radar ability to detect an object nearby since the waves surround you as well as the target. In 5-

foot seas, a small boat (10 RCS, above) becomes nearly invisible to radar when the range decreases to 1 nautical mile... In short, once the wave height (trough to peak) reaches a boat’s freeboard height, the vessel becomes very difficult to see – as range decreases!

### What Helps?

Any vessel can increase its visibility by adding a radar reflector. Mounted as high as possible, it can simply be a shoebox covered in aluminum foil. Being more visible, no matter what your “RCS”, is better than not. Of course, there are commercial devices that you can find on the internet such as RadarFlag, Hamilton Marine, Davis and EchoMax, amongst many... You can even mount an old spaghetti pot if you want! Just knock a hole or two in the bottom so it doesn’t fill with rain water...!

See and be seen is our motto. Should be yours too!

BTW, if you are interested in being part of USCG Forces, email me at [JoinUSCGAux@aol.com](mailto:JoinUSCGAux@aol.com) or go direct to the D1SR Human Resources department, who are in charge of new members matters, at DSO-HR and we will help you “get in this thing...”



## County Clerk Update

by SUFFOLK COUNTY CLERK  
JUDY PASCALE

### STARTING A BUSINESS IN SUFFOLK COUNTY

State law provides that the County Clerk’s Office files certificates for persons conducting business under an assumed business name. These are usually referred to as DBAs. DBA certificates must contain specific information. A business certificate form for filing can be obtained from various stationery stores, or by visiting the County Clerk’s website at [www.SuffolkCountyNY.gov/Clerk](http://www.SuffolkCountyNY.gov/Clerk) and clicking on online forms.



There are three basic DBA filings: Original; Amendments; Discontinuances.

#### Original DBA

Prior to filing an original DBA, the filer should review business names already assigned to ensure that the desired name is available. A list of current DBAs is available for public review on the County Clerk website. After checking on available names, and choosing a name that is available, a completed DBA form is filed in the Clerk’s Office with a fee of \$35.00. The fee of \$35.00 covers the filing, a certified copy for the filer’s record and a certified copy for a business bank account.

#### Amending a DBA

A DBA can be amended by filing a copy of the appropriate amendment form at the clerk’s office. The form can be obtained from various stationery stores, or by visiting the County Clerk’s website.

Amendments can only be filed to change the business name, the business address, or to add or remove partners. Amendments and discontinuances require a reference to the original or most recent filing. The filing fee for an amended DBA is \$35.00.

#### Discontinuing a DBA

A DBA can be discontinued when the individual or partners cease to conduct business. Like amendments, discontinuance requires reference to the original filing and amendments. Again, the form can be obtained from various stationery stores, or by visiting the County Clerk’s website. There is no fee for filing discontinuance.

## Animal Shelter Seeking Loving Families to Adopt Dogs and Cats Rescued from Medford Animal Hoarding House

The Brookhaven Town Animal Shelter and Adoption Center is currently showing the dogs and cats that were rescued last week from a Medford home that contained over 150 animals. The shelter took in 22 dogs and more than 60 cats. There are 12 dog adoptions pending and 10 are waiting for a loving family to adopt them. All of the cats are still available for adoption. Two of the rescued cats were reunited with their rightful owners who had contacted the town and reported that their pets were missing. The animal shelter also rescued seven rabbits from the Medford home and will be showing them to the public this coming weekend. All adopted cats and dogs will be spayed and neutered at no charge before being taken home.



Supervisor Ed Romaine said, “The public response to our need to find homes for these animals has been overwhelming. I thank those who have made the commitment to adopt and urge anyone who is looking for a dog or cat to come to the shelter and meet our adorable, adoptable animals.”

Councilwoman Jane Bonner, who serves as town board liaison to the animal shelter said, “These rescued animals would make great companions for people who are willing to give them love and patience so they can assimilate into a true home environment after what they have been through. Once you meet them, you’ll want to take one home.”

The animal shelter is open Monday, Tuesday, Thursday and Friday from 9:30 a.m. to 4:00 p.m., (Closed Wednesdays), Saturday from 10:00 a.m. to 4:00 p.m. and Sunday from 12:00 p.m. to 4:00 p.m. It is located at 300 Horseblock Road in Brookhaven, New York, 11719. For more information, please call the Brookhaven Animal Shelter and Adoption Center at 631-286-4940 or visit [www.brookhaven.org/animalshelter](http://www.brookhaven.org/animalshelter).