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**"Hello? Hello? Can You Hear Me Now?" Cell Phones and Boats**

When I wrote about the need for and use of a VHF radio, (see The Independent at [www.indyeastend.com](http://www.indyeastend.com) "Sounding Smart on the Radio," 9/12/12), I noted that if you didn't have a radio aboard, you were risking your life over a couple of hundred dollars – it was "nutty" not to have a radio aboard. Nonetheless, many don't! And those skippers rely on their cell phone for emergency assistance. OK, I guess you can lead a horse to water but you can't make him drink. Here is the "scuttlebutt" on cell phones on the water . . .

**\*CG: Gone**

Starting in the early 90's, many cell phone service providers offered a special telephone number that would give you direct access, via your cell phone, to a US Coast Guard Operations Center. However, as many cell systems were upgraded, the feature didn't migrate to the new system and the Coast Guard found that coverage was thus very spotty and could create dangerous delays in dispatching USCG resources to an emergency situation.

As a consequence, in October 2006, the Coast Guard requested that all cellular phone service providers discontinue the \*CG service, except in Alaska, and any such calls be routed to the 911 Public Safety Answering Point (PSAP) nearest to where the call originated.

Even when it worked, mariners didn't always know where they were and the USCG had no ready mechanism to determining where they were. Now, with Rescue 21, this problem has been dramatically reduced and often eliminated (see The Independent, "Rescue 21 – 21st Century Savior," 10/3/12), if you are using a VHF radio.

Lastly, even when you did reach the USCG, they were the only one aware of your predicament. VHF-16 is, by federal law, required to be monitored by all vessels equipped with a VHF radio. Another private boater could be much closer to you than the nearest USCG station – and getting the "rescue clock starts now" sequence going may be the difference between life and death (see The Independent, "The Good Samaritan," 2/8/12).

**But I Want My Cell Phone!**

OK, skipper, here is the scuttlebutt. First, there is no reliable way to be definitive about cell phone coverage at sea.

Is it better the closer you are to land? Yes, compared to being far away. But cell phone systems are designed for land-based use and the associated physics of how objects absorb and reflect signals. Water is an entirely different kettle of fish, no pun intended.

Another agonizing puzzle is when you can see five "bars" on your cell phone but still can't connect a call. Why?

Here is a likely scenario – there is a cell phone tower high up on a hill somewhere and it, with its higher-powered signal, can see you. But your cell phone isn't strong enough to transmit all the way back to the cell tower! So, if you are intent on using your cell phone at sea, start looking into external antennas and signal boosters. Some boosters claim, when attached to an external 8' antenna, the signal range can extend up to 50 miles.

Now, if you are ready to spring for the cost of the external antenna, can I suggest again that you attach a VHF radio to it?

### **The Technology**

The world wide cellular system depends on two things – low power transmission and continual reuse of a limited number of frequencies. This is where the term "cell phone" comes from – you travel from cell to cell, bounded by low-power transmission, and are handed off automatically from one radio frequency to another. The cell tower is transmitting, usually, at just a few watts and your cell phone is transmitting back at even lower power – as low as 1/1,000th of a watt. It is always lower than 1 watt. (BTW, a handheld VHF radio is transmitting at 5 watts and the "desk-top" VHF radio is transmitting at 25 watts.)

As you travel towards the edges of adjacent cells, the cell phone tower's software coordinates the hand-off from cell-a to cell-b. If your boat is disabled and bobbing in the waves, there is no way to move closer to an adjacent cell like your car naturally does . . .

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...”