



Cat's Paws to Grey Beards: Wave Theory - and Practice

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Waves can be the most beautiful and the most fearsome aspect of the sea. Whether you float above them or dive beneath them, you had better understand them and most certainly respect them. This column is about that.

Winds Are Known From Whence They Blow, Currents By Where They Go

A northerly wind means a wind FROM the north, thus blowing you south. A northerly current means a current heading TO the north, setting you in the same direction - north. What does that have to do with waves? Largely, waves are the off-spring of the wind. Ignoring for the moment that wave action can be created by tidal forces sluicing through a narrow channel (see SSP, "Mastering the Inlet", 12/12/07), waves are created by the wind. When the water is fairly still, as you'll often see early in the morning, and the wind starts to pick up, those little over-lapping wavelets, called the Cat's Paws, will eventually build into something significant. The greater the distance that the wind has blown over the water unhindered by land (called its "Fetch"), the greater the size of the waves. If you ever wondered why mariners for centuries have feared Cape Horn at the bottom of South America, it is because the "fetch" there is essentially infinite. Wind can blow continuously, unimpeded by land, around the entire planet in the space between Cape Horn and Antarctica. Again. Again. And again. 100' waves are not uncommon...

Packing a Punch

The "sea state", which can be characterized as the sum of the height, frequency and direction of waves, is the key to understanding comfort - and safety - of any passage over the water, even more so than the strength and direction of the wind. Anyone that has ever been caught in 6' seas that are but 6 seconds apart in frequency would gladly trade them for 10' waves

that are 30 seconds apart. The first is a kidney-busting beating; the latter is a sleigh ride. Of boats that sink at sea, slightly more than 1 in 20 of them sink because they break apart from the pounding of the waves upon the hull (see SSP, "We're Sinking!", 12/13/06.) BTW, for very different reasons, four times as many boats sink at their dock than sink at sea (see SSP, "The Dangerous Dock!", 12/6/06.)

So, I'm Heading Out To Sea - How Are the Waves?

One of the unsung heroes of our maritime services is NOAA (www.noaa.gov) and their National Ocean Service (http://oceanservice.noaa.gov). They, along with the Army Corps of Engineers, understand how important wave action is and maintain 70 wave-gauging stations placed around the coastline of the U.S. (including the Great Lakes) collecting data on wave height and direction in near-shore areas. Now you can get an hourly update from these stations, direct to your cell phone. I get Buoy #44017, which is 23 nautical miles southwest of Montauk. Go to <http://www.buoyalarm.com/> to find the buoy or buoys you want to monitor. Oh, and it is your favorite price. Free.



Courtesy GoogleMaps - "buoy44017: 4.3 ft @ 5.9 sec - 10:00pm" (typical text message to my cell phone)

"Surf Happens" - But How Do I Gauge It?

For the more scientifically inclined, the energy within a wave is proportional to the square of the wave's height. Like many things in nature, a 4' wave isn't four times as powerful as a 1' wave. Four-foot seas are 16 times as energetic as one-foot seas, all else being equal. How much energy is in one of those 100' "grey beards" passing by Cape Horn, compared to a 4' wave in Moriches Inlet? Do the math. Not 25 times more powerful (100' / 4') but 625 times more power-

ful! (100 squared / 4 squared)

But things are rarely equal. A long, slow, four-foot sea is one of life's great pleasures as sea. What matters is how close together and how steep those waves are. A good way to compare waves for steepness is the wave height divided by the square of the frequency period. This is essentially how fast your sleigh ride is going to be - or the beating you are going to take. Halving the frequency period (from, say, 10 seconds to 5 seconds) of a wave quadruples the acceleration of your sleigh ride, and more than likely multiplies the sea sickness aboard the boat (see SSP, "Mal de Mer - Oh! My Stomach!", 2/21/07.) Another way to gauge what awaits you at sea is a Severity measurement. This indicates the amount of energy carried by each bit of wave and is proportional to the energy of a wave (the square of its height) divided by its wavelength (how much distance the waves are apart, measured from peak to peak.) As you can probably do in your head, 6' waves that are 6' (distance, not time) apart are more severe than 6' waves that are 12' apart. We don't need the Cray computer for that one...

In a subsequent column, we'll get into different kinds of waves - tsunamis, deep, shallow, non-wind, etc - and the effect they have on mariners. But this column will hopefully get you thinking about safety before you leave the dock.

Here's one more, what is the longest wave on Earth?

The wave that is created by the moon, pulling the water up and around the Earth. What is its Frequency..? Email me with the answer!

BTW, if you are interested in being part of USCG Forces, email me at JoinUSCGAux2010@aol.com or go direct to John Blevins, who is in charge of new members matters, at FSO-PS@emcg.us and we will help you "get in this thing..."



Legislative Update

By Suffolk County Legislator
ED ROMAINE (1st District)

Shortcuts to County Resources on the Web

Below is a list of websites, put together by the Office of Public Information, to help you navigate to some useful services provided by Suffolk County. Of course if you need help finding these or county resources, you may also call my office at (631) 852-3200.

Need a certified copy of your deed? A certified copy of your deed is available at the County Clerk's Office for \$5.00. Call (631) 852-2000 or visit online at www.suffolkcountyny.gov/clerk.

Want to receive an email notice when new Civil Service tests are announced?

Go to the county home page www.suffolkcountyny.gov, click on Subscribe to our e-Updates on the right hand side.

Looking to do some home improvements? Search for businesses in Suffolk County with valid licenses by logging onto the county home page www.suffolkcountyny.gov, click on Department Directory then Consumer Affairs.

Want to sign up to receive emergency notifications from Suffolk County in the event of an actual or impending emergency? Go to the county home page www.suffolkcountyny.gov, click on Code Red on the left hand side.

Want to determine if the household products you use in your home may cause possible health hazards? Go to the Energy & Environment Department on the county homepage www.suffolkcountyny.gov, click on Cancer Awareness Task Force, then on Home Product Checklist.

National Poison Prevention Week

March 20-26, is National Poison Prevention Week and is designed to highlight the dangers of poisonings and how to prevent them.

Every 13 seconds, poison control centers receive a call about someone being exposed to a poison. In 2009, the American Association of Poison Control Centers reported that more than half of the 2.4 million poisoning incidents each year involve children younger than six years old. Leading causes of poisonings include cosmetics such as perfume and nail polish, deodorant and soap, household cleaning products and medications.

Anyone who has been exposed to a pesticide or other toxic substance and may be experiencing non-life-threatening symptoms should call the National Poison Center hotline at 1-800-222-1222 or should call 911 in case of more serious exposures.



County Clerk Update

by SUFFOLK COUNTY CLERK
JUDY PASCALE

COUNTY CLERK PASCALE HONORS COUNCILMAN JAMES MALONE

Suffolk County Clerk Judy Pascale recently recognized Southampton Councilman James Malone on being the recipient of the J. Daniel Mahoney Award from the New York State Conservative Committee.

The statewide award was presented to Councilman Malone at a ceremony in Albany to recognize his firm commitment to protecting taxpayers and bringing strong fiscal discipline to government.

County Clerk Pascale acknowledged Councilman Malone's award by presenting him with a proclamation declaring March 14, 2011 as "Councilman James Malone Day" throughout Suffolk County.



Councilman James Malone and County Clerk Judy Pascale