



Wave Theory - And Practice, Part II

by VINCENT T. PICA, II

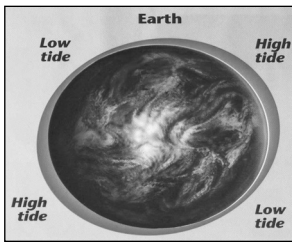
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When we first put together the column on waves (see SSP, "Cat's Paws to Grey Beards: Wave Theory - and Practice", May 12, 2010), I noted that we'd get back to waves and talk about different kinds of waves - tsunamis, deep, shallow, non-wind, etc - and the effect they have on mariners. This column completes that promise.

Wind Creates Waves

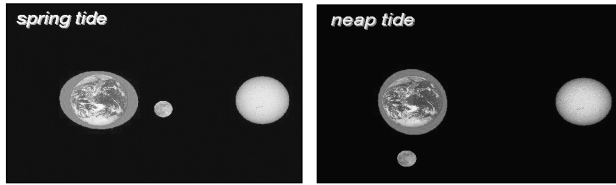
Almost always, this is true. Almost. There are what scientists call "non-wind" waves; the two most common are the tides and tsunamis. Back on May 12th, I closed the column by noting that the longest wave on the planet was in fact that wave created by the Moon, lifting the water up and dragging it around the Earth. The closing question was, "what is the frequency?" The frequency of the tidal wave (not to be confused with a tsunami, often called a tidal wave) created by the rotation of the Moon around the Earth is about 12 1/2 hours. The wavelength is half of the circumference of the Earth itself or roughly 12,451 miles. Looking at exhibit #1, you can easily see the representation of the wavelength



(exhibit #1 - courtesy: University of Arizona)

As you may recall from the column on tides and seamanship, (see SSP, "Time and Tide Wait for No (Wo)Man", 9/13/6), the tides themselves are divided into 2 types - Spring Tides, when the Earth, Moon and Sun align directly (higher highs, lower lows) and Neap Tides, when the Earth and Moon are at

right-angles to the Sun and cancel somewhat the gravitational pulls (lower highs, higher lows.)



(exhibit#2 Spring Tides, exhibit #3 Neap Tides; courtesy: University of Arizona)

The tides are rarely dangerous, except to the skipper who doesn't leave enough slack in his dock lines when making his boat fast to a fixed pier. But they are enormously powerful. How powerful? Over 80% of all the wave energy in the world is tied up in the tides. In fact, this energy and the friction related to it has actually lengthened the day on our planet. Over the past billion years, the day has lengthened from 19 hours to the present 24 hours.

What about what we called "tidal waves" as children - Tsunamis? Traveling at speeds of 400 knots, tsunamis form in response to sudden changes in the shape and location of the sea floor, often due to landslides or earthquakes. Although devastating to affected areas, they are a small portion of the wave energy in the sea. Like any wave that breaks on the shore, these enormously high speed waves pile up at the water's edge as all that energy compresses, much like a long train of train cars would pile up in an accident, rises up over itself and devastates all before it.

Wind DOES Create Waves

Jumping ahead since we've laid the ground

work back in May, take it as a given that the wind does create waves. And, on a windy but pleasant day, you can see the white caps marching in lock-step down the bays and in the offing to the ocean's horizon. But many mariners have experienced "confused seas" where the waves seem to be coming from everywhere and typically these are foul weather seas. What is going on? The wind seems to be coming from one direction - but the waves aren't. Why? This is due to the geometry of storms. Most storms are low pressure systems, with cyclonic winds orbiting the storm center. The cyclonic wind field creates waves moving in every direction. These newly formed waves tend to be steeper and more severe and have shorter periods than waves outside of a generation area. After wind waves form, their growth is limited by the duration of energy input. Energy input is determined by the velocity, duration, and fetch of the wind field. Waves reach an equilibrium state (the "fully developed sea") if the all three of these variables remain constant for sufficient duration. For higher velocities, these conditions are rarely realized, because the waves tend to run out of the area with high winds. Even in a hurricane 300 miles across, a typical large wave will move out of the source area within half a day, far too little time to allow development of a "full sea."

So, there you have it. Wind creates waves - except for the longest wave, the tides, and the most destructive, the tsunami...

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..."



by TONY SALERNO

FISHING WITH TONY

ROSIE KEEPING ANGLERS FILLING BUCKETS

With the stringent regulation of fluke the past couple of seasons, many anglers aboard most of the open boats that port along the south and north shore find it a challenge to obtain their limit on a daily basis. Oh sure there are loads and loads of fluke swarming around Long Island, however the majority of them range from 17-inch to just shy of the legal size limit of 21-inches. Sure there are days when a boat load of anglers crop their share of keepers, however this is more the exception than the norm.

In truth, we all love the fast action, but we all like to bring home some fish for the frying pan from time to time. Captain James Russo owner of the Center Moriches based open boat "the Rosie" located at Center Yacht Club has been keeping rods bending and buckets filling since he has become owner of the boat four years ago. Even in the fertile waters of Moriches bay, getting a boat limit of fluke on a daily is not a reality. Rather than settle, Captain James takes it to the sea bass ground when conditions permit where anglers enjoy non stop action with sea bass ranging from shorts to over 5-pounds. In addition when the tides are ideal, James will switch to fluke where quality is often the norm.

Just this week alone, "the Rosie" has been averaging between 200 to 400 sea bass a trip along with a good spread of keeper fluke. Keeper sea bass have been averaging 2 to 3 pounds with the pool fish usually going to a fluke in the 6 to 8-pound range. For those of you who don't know, sea bass make for excellent table fare with white delicate flaky meat. The sea bass season extends well past the fluke season and Captain James and "the Rosie" will be on their tails well into the blackfish season. For the duration of the summer, "the Rosie" sails two trips daily at 7:30 A.M. and at 5 to 9 P.M. for fluke and sea bass. As a recession fighter and to keep families fishing together, Captain James is offering one free fare to any child under the age of 14 years old when accompanied by each paying adult on the 5 to 9 P.M. trips. That means a husband and wife with two small children can sail for only the price of two adult fares. For more info you can reach Captain James at (631) 831-6859 or visit his website at www.rosiefishing.com.



Rich Dovner with a 5.4-pound sea bass caught on the open boat the Rosie.

Tides for Moriches Inlet starting with July 14, 2010

Day	High/Low	Tide Time	Height Feet	Sunrise/Sunset	Moon Time	% Moon Visible
Wed. 21	High	3:34 AM	2.6	5:38 AM	Set	75
21	Low	9:45 AM	0.3	8:17 PM	Rise	
21	High	4:10 PM	3.3			
21	Low	10:37 PM	0.3			
Thur. 22	High	4:37 AM	2.6	5:38 AM	Set	83
22	Low	10:38 AM	0.4	8:16 PM	Rise	
22	High	5:06 PM	3.3			
22	Low	11:28 PM	0.2			
Fri. 23	High	5:35 AM	2.7	5:39 AM	Set	0
23	Low	11:28 AM	0.3	8:15 PM	Rise	
23	High	5:57 PM	3.3			
23	Low					
Sat. 24	Low	12:15 AM	0.2	5:40 AM	Set	95
24	High	6:25 AM	2.8	8:14 PM	Rise	
24	Low	12:16 PM	0.3			
24	High	6:42 PM	3.4			
Sun. 25	Low	1:00 AM	0.1	5:41 AM	Set	98
25	High	7:10 AM	2.9	8:14 PM	Rise	
25	Low	1:02 PM	0.3			
25	High	7:24 PM	3.4			
Mon. 26	Low	1:41 AM	0.1	5:42 AM	Set	99
26	High	7:51 AM	2.9	8:13 PM	Rise	
26	Low	1:45 PM	0.3			
26	High	8:03 PM	3.3			
Tues. 27	Low	2:19 AM	0.1	5:43 AM	Set	99
27	High	8:31 AM	2.9	8:12 PM	Rise	
27	Low	2:26 PM	0.3			
27	High	8:41 PM	3.3			
Wed. 28	Low	2:55 AM	0.1	5:44 AM	Set	96
28	High	9:10 AM	2.9	8:11 PM	Rise	
28	Low	3:05 PM	0.4			
28	High	9:18 PM	3.2			
Thur. 29	Low	3:28 AM	0.1	5:45 AM	Set	92
29	High	9:48 AM	2.9	8:10 PM	Rise	
29	Low	3:42 PM	0.4			
29	High	9:56 PM	3.0			
Fri. 30	Low	4:00 AM	0.2	5:46 AM	Set	87
30	High	10:26 AM	2.9	8:09 PM	Rise	
30	Low	4:18 PM	0.5			
30	High	10:34 PM	2.9			
Sat. 31	Low	4:29 AM	0.3	5:47 AM	Set	80
31	High	11:03 AM	2.9	8:08 PM	Rise	
31	Low	4:56 PM	0.7			
31	High	11:14 PM	2.7			
Sun. 1	Low	5:00 AM	0.4	5:48 AM	Set	72
1	High	11:41 AM	2.9	8:07 PM	Rise	
1	Low	5:40 PM	0.7			
1	High	11:57 PM	2.6			