



## You Know "Boat Trim" - But Do You Know "Boat Squat?"

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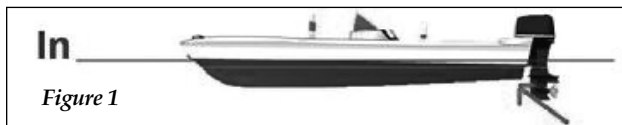


When I teach seamanship classes, inevitably somebody raises their hand and asks about how "flat" the boat should be? I ask, "By 'flat', I am guessing that you mean relative to her waterline. But do you mean when she is sitting at the dock, going slowly forward but only at a 'slow bell' or making all deliberate speed?" As their eyes glaze over, I know that we will have to take it by the numbers. This column is about that.

### Boat Trim

Understanding boat trim and boat squat are all about control and avoiding running aground. For a "planing boat", i.e., those boats we're most familiar with that buzz around the bays and creeks, usually with an outboard engine on the stern, that "climb up" on to the water as they go faster, trim is synonymous with every aspect of the boat. Whether it be at the dock, barely making way or operating "at speed", how 'flat' she is largely under the control of the skipper and he or she should be constantly aware of what trim they are assuming. This trim is best controlled by what angle you place the outboard engine relative to the transom. Huh?

Usually in the throttle, there is a thumb control that when you press it "down", it brings the propeller in closer to the transom. See figure 1.



By bringing the propeller in closer to the transom, you force the bow down from its manufactured water-line. When you would want to do that?

How about if you were heading into strong wave action? If your bow was trimmed 'up', the force of the

waves would accentuate that, possibly making it more difficult to see - and to control the boat. (see SSP, "Skippers in Heavy Weather", 10/11/06)

Commensurately, if you press the thumb control to bring the engine "up", it moves the propeller away from the transom, forcing the bow up from its manufactured water-line.

Why would you do that? Well, there are a number of reasons. One reason is that a powered vessel's fuel consumption improves as you reduce its wetted surface. (see SSP, "Fuel Efficiency on the Water", 7/23/08)

So, as you are cruising down the bay, you can trim the engine up and save fuel at a given rate of speed. Secondly, if you are willing to throw fuel efficiency to the wind, sort to speak, a powered vessel simply goes faster with less of a wetted surface. And, as you bring the bow up, you reduce the wetted (in the water) surface. Compare how much more of figure 1 is below the water line, versus figure 2.



### Boat Squat

Unless you are driving one of those "battlegoons" out there, or are involved in commercial navigation, you've probably never heard of "boat squat." Even if you are in those situations, you still may not have heard of it - and it is critical to understanding why a boat with 4' of draft hits the bottom in 5' of water...

When any boat is making way through the water, she starts by pushing a large amount of water ahead of her. If she's a planing vessel, she'll climb up on that

wave as she picks up sufficient speed. But if she is a "big 'un", she won't be planing anytime in this lifetime. She is a displacement vessel. So, this water that is getting pushed ahead returns to the side and under the boat's bottom. As she starts to put on some way (speed), imagine this cycle of water building up speed under the ship. This causes a drop in water pressure under the boat. This causes the ship to vertically drop in the water. This is "boat squat" and how a boat with 4' of draft hits the bottom in 5' of water. (Hint: go slow in shallow water, Big 'Un.)

Now, for a displacement vessel, trim is different from squat. Trim is the difference of the forward and aft draft while the boat is stationary. As she gets underway and her aspect to her water lines changes, she is affecting "squat." Naval architects justifiably worry about whether she has forward or aft "squat" (leans forward or aft as she builds speed.) This is largely determined by her center of gravity and her "block coefficient", which is the volume of the hull (V) divided by the Length of her Water Line (LWL) times the (maximum) Beam of her Water Line (BWL) times her Draft. If you draw a box around the submerged part of the ship, it is the ratio of the box volume occupied by the ship.

So, now, you can say that you do know squat...!  
\* a "slow bell" means making way at the minimum speed at which the boat can maintain steerage. Larger boats, with exposure to the wind, need more speed to maintain steerage than a smaller, low profile boat.

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

### SENIOR I.D. CARDS AVAILABLE AT COUNTY CLERK'S OFFICE

Suffolk County Clerk Judith A. Pascale would like to remind County residents that Suffolk County Senior Citizen Identification Cards are available free of charge at the Suffolk County Clerk's Office in Riverhead.

Senior Citizen Identification Cards are issued free of charge for Suffolk County residents aged 60 and over. The card entitles seniors to a reduced fare on the Suffolk County Bus System and discounts on purchases from participating businesses.

"It's my pleasure to provide the Senior Citizen Identification Cards to residents so they can utilize additional savings," commented Suffolk County Clerk Judith A. Pascale. Additionally, the back of the card has ample space to fill in emergency call numbers and other pertinent medical information.

For residents who possess valid proof of age, cards can be picked up at the County Clerk's Office at 310 Center Drive in Riverhead. Please call 852-2000 ext. 100 for more information or to make arrangements to get your card today.

"My staff and I stand ready to assist you in acquiring a Senior ID card as well as assisting you with any matters for which you may need assistance. While the scope of duties and powers of the Clerk are often limited to those prescribed in law, our office frequently acts as a liaison for people who need assistance but are unsure which level of government to call upon," concluded Suffolk County Clerk Judith A. Pascale.



by TONY SALERNO

## FISHING WITH TONY

### A FLUKING WE WILL GO

It was only a matter of time, but the time has come to seriously considering cashing in on the galore of fluke that have finally decided to chew in the last few days from Smithtown Bay to Mount Sinai. "I just weighed in four nice keeper fluke caught by Walter Haass and his friend Tim Haerberle with the largest one tipping the scale at 6-pounds. All the fish were caught at Mt. Misery Shoal and at buoy 11", stated a very excited and enthused Candy Carafitis of Carafitis Fishing Station on Main St. in Port Jeff Village. Candy added that plenty of quality stripers and jumbo porgies are also situated in the area. Just down the street a bit, both the open boats the Celtic Quest and the Osprey V have been switching up the days according to tides and wind filling pails and coolers with limits of jumbo scup and nice quality fluke. Although there are many short fluke keeping rods bent, there are many quality keepers to provide anglers with two to a limit of four keepers each for the fillet table. This year's action is about two weeks early due to the abnormally warm winter and the fishing should stay on track for the next four to six weeks. However there is no better time than while the fishing is hot to jump on the bandwagon. Don't let it come to I told you so.

Down along the south shore, the fluking may not compare to the quantity as of yet as up north, but the quality sure can. During the week the Hampton Bays based open boat the Hampton Lady has been fishing some of their pet spots outside Shinnecock inlet and has successfully succeeded in putting a few double-digit flatties aboard the vessel already in this early part of the season. The latest comes on Monday with a true doormat weighing in at 10.57-pounds taken by Michael Lee of Flushing. Mike also had his limit of flatties along with a limit of giant porgies to make a great day. Also on board on Monday were Johnny Stella and Eddie both with their limits of fluke to 8.4-pounds and their limits of scup to 3-pounds.

Inside Moriches Bay fluke fishing has been a bit more challenging. Nonetheless there are keepers among plenty of shorts, however the area is due to really light up at any time now. In the meantime, angler employing fresh clams and chum near the inlet are having no problem slotting out their keeper stripers as the area is seeing quite an abundance of the bass. If it's a flounder dinner your after, you should have no problem filling your two fish limit near the Buoy 15 area providing you chum and fish at the start of the outgoing tide.