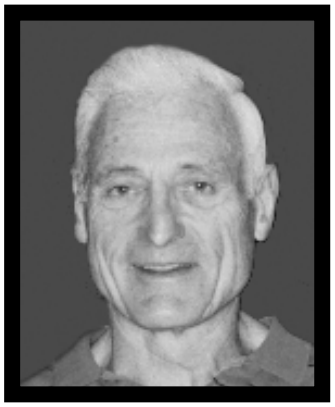
MY BREASTSTROKE COACHING EXPERIENCE

By NORT THORNTON and reported by Dick Hannula



Coach Dick Hannula is one of the most respected coaches in High School Swimming. He led his teams to many state championships and at one point had more than 200 consecutive wins. He has published many articles, books, and videos on the sport of swimming.

When four swimmers from one school qualify for the final sixteen places in the 100 yard breaststroke at the NCAA Division 1 Championship, I sit up and take notice. That's what happened in 2009 at College Station, Texas. Two in the big final and 2 in the consolation final The swimmers were from the University of California, Berkeley and the winning time of 50.86 was also a U of California swimmer. The 200 yard breaststroke in the same meet was just as impressive. Three University of California swimmers made it into the big final, and two more in the consolation final. While I was a spectator at the meet, I became obsessed with hearing how the architect of the U of California breaststroke swimming success made this feat possible. Nort Thornton is the former head coach at Cal who has continued to assist by coaching one specialty, the breaststroke. The following text of this article is in Nort's own words and depicts his unique approach to coaching breaststroke.

"Since my retirement at Cal, which is another story, I have had a great experience. I have had the opportunity to be a volunteer coach and work with the breaststrokers. This is the first time that I have had the opportunity to work with only one individual stroke instead of being concerned with the whole team and all the strokes. Usually it was mainly crawl because the majority of the team members used crawl more than any of the others.

An interesting thing happened while only looking at one stroke, I saw it more clearly. This gave me more ideas on things that need to be attended to. Along with the addition of the high tech swim suits, I felt that things needed to be done differently. So here is what I did.

1) To get the maximum benefit from the new suits, I felt that the swimmers needed to maximize their line in the water, by really appreciating the destructive properties of drag and resistance. So what I did was to give each of the breaststroke swimmers a pair of fins, and told them that I was going to time each of them for 25 yards. The only rules were that it was going to be from a push off, and they had to stay on their stomach. We began from a push off and finished to a hand touch. They got very competitive trying different ways to beat each other, and copying each others successful/fastest styles. As it turned out everyone ended up traveling underwater in a streamlined position using a dolphin kick. Their bodies were in a straight line (maximum stretch) with a tight fast kicking action. After about six or seven attempts, everyone was at 10 seconds or less depending upon their ability to use a good dolphin (full body extended) kick.
2) Next I gave them a printed page of the breaststroke rules, and asked them what they could to their "fast 25's" to make them legal according to the breaststroke rules. What would they have to tweak to make it conform to

the breaststroke rules? Most of them decided that they could use a "body dolphin" action while rotating their feet out to catch water at the end of their dolphin action. This meant not bending at the hips, having as little bend as possible at the knees and still being able to rotate the feet out to catch water. Otherwise I gave them speed first and then built the stroke into the speed. This is just the reverse of the normal approach. I figured we were looking for speed, so let's get after that first.

From that point on, I never began a practice session without first using butterfly, butterfly drills and/or dolphin kick. Then we gradually progressed from dolphin to frog without losing the body dolphin action. We were concerned about hiding the legs behind the body – within the body line. Each practice session would gradually transition from a full dolphin to a frog/body dolphin.

3) On the breaststroke arm action, it seemed that the main problem was that the swimmers were trying to pull water backwards. What I wanted them to do, was to scull inward and then follow right on through into the recovery to full extension with the arms. There is absolutely no forward propulsion in moving the arms outward from the centerline. The catch in the breaststroke is outside the shoulders in a "Y" position. As the arms are separating it is important to press the upper body (in a connected manner) down between the hands/arms. If you bend the neck and move the head around, you are in trouble because the body will always follow the head. By pressing your upper body down, this will allow your hips and legs to ride up higher in the water. I call this "the cocked" position – to fire the inward scull/sweeping arm action to occur more powerfully. You catch the water by scooping the hands to hold water, keeping the elbows as high as possible. This action will add power to your inward sweep. The width of your hands will be determined by your strength level. This is similar to a gymnast doing an "Iron Cross". Once your hands come in under your chest, it is important to round off into a forward push/recovery with your hands. Your hands are moving in while your body is moving forward, so the hands will end up under your chest. It is important to drive your elbows in behind your hands to add to the speed of the hands by eliminating drag and resistance on the arms, upper arms and shoulders. The narrower the body, the greater the speed.

Once the kick is completed, the hands slide out to the catch position. This should be a slow and smooth separation. There should not be any real effort expended during this part of the stroke, because there is no usable propulsion during this part of the stroke. Some propulsion can be achieved, but it leaves your elbows in a position that creates maximal drag and resistance causing a negative result in speed and a larger level of fatigue.

As you sweep in, because of the increase in propulsion, more water slides under your body causing a lifting effect. This is the same type of lift force that lifts airplanes, or brings speed boats to plane up on the surface of the water at higher speeds. Because

this is not a constant effort the body will return to a lower position in the water for the kicking action between the sweeps. Since this is the highest part of your stroke (following the inward scull), this is where you should be taking your breath. It should be noted that you do not want to be moving your head around independently of your body. This will cause several things to happen – all negative to speed.

"The Hesitation Drill" – using a front mount snorkel, pull buoy, and swim fins. This is where I want a 3 to 5 second hesitation between extended reach of the arms in front and the beginning of the catch and inward arm action during the sweep. This spreading of the hands should be constant and relaxed resulting in very little energy expenditure. Then the inward sweep should be constant with an active increase in hand speed as you finish your inward pressure on the water and round off into the forward extension. You are trying to get as much forward body movement and as little up and down motion away from your line as possible. This will vary from swimmer to swimmer depending upon their body type.

Besides the "Hesitation Drill", the other main drill we did regularly was what I call the "Cobra Drill". This is very much like a narrow butterfly recovery over the water, with this we use a dolphin kick to jump as far forward (for distance) on each stroke. The swimmers felt that these two drills were the most important drills we used.

4) The other major thing we did differently was that we did all flip turns during practice. I didn't want them slowing down into the wall because of fatigue or crowded conditions at the wall. I felt this eliminated the learning of bad habits. At the end of the practice session, we took 15 minutes to work on good turning action. I broke the turn down into segments and build a good turn up by parts every session, while racing and timing each part. Basically the segments were: (a) coming in and rotating to the feet, (b) push offs, (c) pull downs, (d) arm recovery and kick. Every time we had a breaststroke session, the whole session was breaststroke or something related to breaststroke. They never swam at the end of a freestyle lane, and a couple sessions a week the individual medley swimmers would join in. The breaststrokers also did some individual medley work as well.

I need to say that of the six breaststroke swimmers in the group, they finished with 100 yard times of from 50.8 to 53.2, one swimmer at 50+, three at 52+, and two in the low 53's. I am not so naïve as to think that I had a large part in their accomplishments. They are an intelligent and talented group that was competitive in a very good team type of way. There was great leadership and caring support for, and from, everyone in the group. Lastly there were the high tech swim suits which obviously played a large part. It turned out to be a positive and rewarding experience for all of us – one I won't soon forget".