

Open Water Issue

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The Elements of College Recruiting



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This month is our annual open water issue. In addition to naming this year's World Open Water Swimmers of the Year—France's Aurelie Muller and the Netherlands' Ferry Weertman (pages 18-20), Swimming World discusses some of the controversial issues facing open water swimming (pages 22-23). We also take a look at the aftermath of Hurricanes Harvey and Irma and how they have affected open water races in the southeastern United States, Gulf of Mexico and Caribbean (pages 24-25); the English Channel—its history (pages 28-29) and a recent crossing by an Arizona swim coach (pages 26-27); and the idea of adding open water relays at the 2020 Olympics (page 21).

[PHOTO BY KYLE TERADA-USA TODAY SPORTS]

FACTORS BEHIND THE AGE GROUP TECH SUIT DEBATE

BY BRENT T. RUTEMILLER

2017 has seen a tremendous amount of discussion on the need to regulate the use of tech suits by age group swimmers. In some cases, the discussion moved to rule changes by some governing bodies that banned tech suits in age group swimming competitions.

With the ground swell of debate reaching national levels, the next few months will surely see more rule changes that will limit the use of tech suits by young swimmers. The debate is global in scope and not unique to the United States.

There are eight factors that are contributing to this debate. The first is the mere definition of what classifies a racing swimsuit as a "tech suit." The other factors are social-economic, parental, physiological, psychological, philosophical, industrial and legal.

Combine all of these factors and the issue is complex.

For the most part, suits that are constructed with bonded seams, meshed seams or kinetic tape are considered "tech suits." Their prices can range from \$90 to \$500, depending on the manufacturer.

The price of these suits fueled the debate by sparking social-economic arguments about the cost of family participation in the sport. The discussion quickly polarized the community into "haves" and "have-nots," and then escalated to parental rights.

One side argued that parents have the right to purchase any legal product on the market that may help their swimmer. The other side argued that peer pressure was forcing parents to purchase expensive suits so their child would not be at a competitive disadvantage. Many argued that this was financially hurting young families and, thus, the entry levels of the sport.

During the parental debate came a flurry of opinions arising from the fact that there are no physiological studies supporting the benefit of tech suits on young swimmers whose bodies have not matured.

Without physiological proof, the debate morphed into psychological benefits that could help young swimmers overcome plateaus in swimming and catapult them to

a higher level.

At this point, many coaches jumped into the discussion to educate parents that race time improvements were just a natural part of maturation. They argued that the majority of improvement by age group swimmers was due to training, technique and biology—and not tech suits.

Some coaches and clubs took a philosophical approach by implementing team policies banning tech suits until swimmers were older or had reached a national level. The concept was to use tech suits as a reward for hard work and achievement and not as a tool to short-cut or accelerate the process. Conversely, those policies motivated some families to leave clubs and migrate to programs that allowed age group tech suits.

All of the arguments, debates and divisions have caused a national discourse and the need for a national policy. But any restriction could put financial limits on the industry's swimwear manufacturers, suppliers and distributors, affecting their sponsorship dollars on a national, club, coach and team level. Restrictions could also spark litigation.

So far, the manufacturers are not taking legal action against restrictions in the marketplace. They understand the need for a national policy that they can support, and will move forward with new business models.

Even though the factors behind the age group tech suit debate are diverse, the fabric of our sport is so interwoven that all levels need to come together. ❖



Brent T. Rutemiller

Publisher of Swimming World Magazine

"If you want to win, first help someone else win!"



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LESSONS with the LEGENDS

SWIMMING WORLD CONTINUES A SERIES IN WHICH TOP COACHES SHARE SOME OF THE SECRETS OF THEIR SUCCESS.

BY MICHAEL J. STOTT

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FRANK BUSCH

When seminal figures step away, the silence can be deafening as organizations, governing bodies and even countries await the arrival of their next leader. Frank Busch, a lifelong servant of our sport and USA Swimming National Team Director, completed his term on Sept. 30 and has returned to his home in Tucson.

With his departure, he leaves USA Swimming in terrific shape, having won 41 medals (38 pool, three open water) at the 2017 FINA World Championships and 64 medals (32 gold) at the 2012 and 2016 Olympic Games. His efforts in growing the national team divisions' three core areas—high performance, national junior team development and athlete services—promise an upward trajectory for his successor.

THE EARLY YEARS

Busch began coaching at age 16 in Edgewood, Ky. Seven years of summer league and four of club experience led his to a post as associate head coach of the Cincinnati Marlins for the 1979-80 season. The Marlin squad promptly won the national team championship and placed six members on the 1980 Olympic team. Following a nine-year stint (1980-89) at the University of Cincinnati, Busch transitioned to the University of Arizona, beginning a 22-year career filled with accolades and championships.

During his collegiate coaching days, he accumulated six NCAA, 11 Pac-10 and one USA Swimming and USOC (both in 1998) Coach of the Year awards. At Arizona, his swimmers won 49 NCAA individual crowns, 31 NCAA relay titles and two NCAA team championships (2008). He also led Tucson Ford Aquatics/Hillenbrand to several national team championships.

For USA Swimming, Busch served as an Olympic (2004 women, 2008 men), World Championship (1998, 2003, 2005), Pan Pacific (1995, 1997, 1999, 2006) and World University Games (1993) coach. He also mentored numerous athletes from more than a dozen countries to international success. In 2008, he was inducted into the ASCA Hall of Fame.

THE WILDCAT CODE AT WORK

Simply stated, the Wildcat Code is: "Honor your team with your effort." That lifestyle and work ethic has permeated Busch's personal and professional persona. Following are some deeper reflections of the man at work:



[PHOTO PROVIDED BY LUKE ADAMS, J AND L PHOTOGRAPHY]

What was the impact of your men and women winning NCAA titles in the same year?

It took 19 years to win. We did something that lasts forever with the athletes—for those who came before and those who came afterward. We laid down a foundation for a program of which I am very proud. I wanted them to be successful and competitive with each other because I was invested in all of the swimmers. It was a very healthy thing we had going.

You improved the USA Swimming stipend package. Why?

Swimming will never be a professional sport in the sense that football, basketball and baseball are. What we are doing through improved funding is extending athletic careers and giving swimmers resources to be the best they can be.

We redirected the initiative to emphasize the current versus prior-season accomplishment. This year was the first when we gave prize money at nationals. We also awarded bonuses for making the gold standard team as well as giving appearance fees for pro meets. Those dollars will increase annually and significantly throughout the quadrennial as we approach the 2020 Olympics.

We also have created the Elite Athlete Grant, in which the recipient—if he or she is ranked in the top eight in the world—gets \$15,000 for strength and conditioning, sport psychology and the like to advance his or her training.

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What must the United States do to remain dominant in swimming?

We are in a tremendous place right now. We just had the most historic meet of our lives at the World Championships without Ryan Lochte, Michael Phelps and Missy Franklin, so we have loads of talent growing at the international competitive level. In fact, the number of national junior team members who have made the 2017-18 national team approximates 67 percent, an all-time high for the pro era. However, there is always room for improvement.

I say with confidence that our national team division staff is the best in the world! In addition, we have a great leader in the national junior team in Mitch Dalton. We have raised the exposure of NJT members to more international competition (Mare Nostrum, World Cup, etc.), staged a 10-day camp in Colorado Springs and established a team-over-individual culture. We made the NJT smaller, basing team size on world ranking as opposed to taking top six times per event.

The continued staff support from USOC in terms of nutrition, strength and conditioning and sport psychology will assist the U.S. in retaining its role as global aquatic leader.

The state of international swimming. Any hope for tomorrow?

I am still very concerned about doping. I have no idea in which direction that is going.

FINA—there is grumbling from the assets/athletes. It is very important throughout the world—in all sports—that the athlete be the No. 1 priority regarding any decisions. Those decisions aren't always those of FINA. At USA Swimming, the athlete is the most important thing.

I am also concerned about the Olympics. I feel like there is a push toward entertainment as opposed to physical accomplishment.

What do you view as your biggest contribution to USA Swimming?

My goal was to leave the sport in a better position than when I first came. I wanted people on the outside to view us as servants of the sport and to expose younger coaches to international competition.

What are some of your proudest moments as a swim coach?

Without question, it would be watching kids accomplish things they never thought they could do and seeing the looks on their faces, knowing you were a part of that.

The influence one has in their lives is such a privilege and a reward. That's what real coaching is all about. Watching them grow as athletes and people is far and away the most rewarding part of any coach's life.

Final thoughts?

I was just a very, very fortunate person to land and work with the athletes and coaches I did. Every step of my life has been just one blessing after another. ❖

Michael J. Stott is an ASCA Level 5 coach whose Collegiate School (Richmond, Va.) teams won nine state high school championships. He has been named a 2017 recipient of NISCA's Outstanding Service Award.

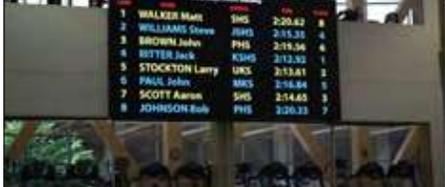


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HOW IT'S DONE

In the first of a multi-part series, Swimming World explores the basic elements of the college swimming courtship.

BY MICHAEL J. STOTT

Step one: “Times and grades are the subjective measures of how someone gets on a recruiting list,” says Adam Kennedy, once the head coach at the University of the Pacific and former recruiting coordinator and assistant men’s swimming coach at the U.S. Naval Academy. “That’s how you identify who you want to learn more about.”

Says George Kennedy, recently retired coach at Johns Hopkins, “SATs and number of AP classes were important, too, as we looked at how applicants were trending both academically and athletically. Admissions looked at this thoroughly. In some cases, a downward trend was the red flag, though the dialogue might continue if the student-athlete communicated the ‘why’—for example, parents’ divorce, death in the family, mono and the like,” he says.

Notes Adam Kennedy: “Recruiting is about getting great talent right. More importantly is the concept of team and chemistry—and the latter two are way more important with a women’s program than with a men’s,” he says. “With a women’s program, if the chemistry is off, it doesn’t matter how talented you are. You are never going to be successful. So when recruiting women, personality and chemistry are more important than performance.”

GETTING TO KNOW THE RECRUITS

As a coach at a mid-major, Adam Kennedy says he rarely had a shot at top-tier prospects. Consequently, he looked for untapped talent with the following characteristics:

- Height, but no muscle
- Technique, but no ego
- Distance per stroke
- Big-time drops from sophomore to junior year
- Upbeat, positive personality
- Personal and academic hobby interest that went way beyond the pool—“We always viewed that as a good thing. At the end of the day, you don’t want swimming to be the only thing in a person’s life.”

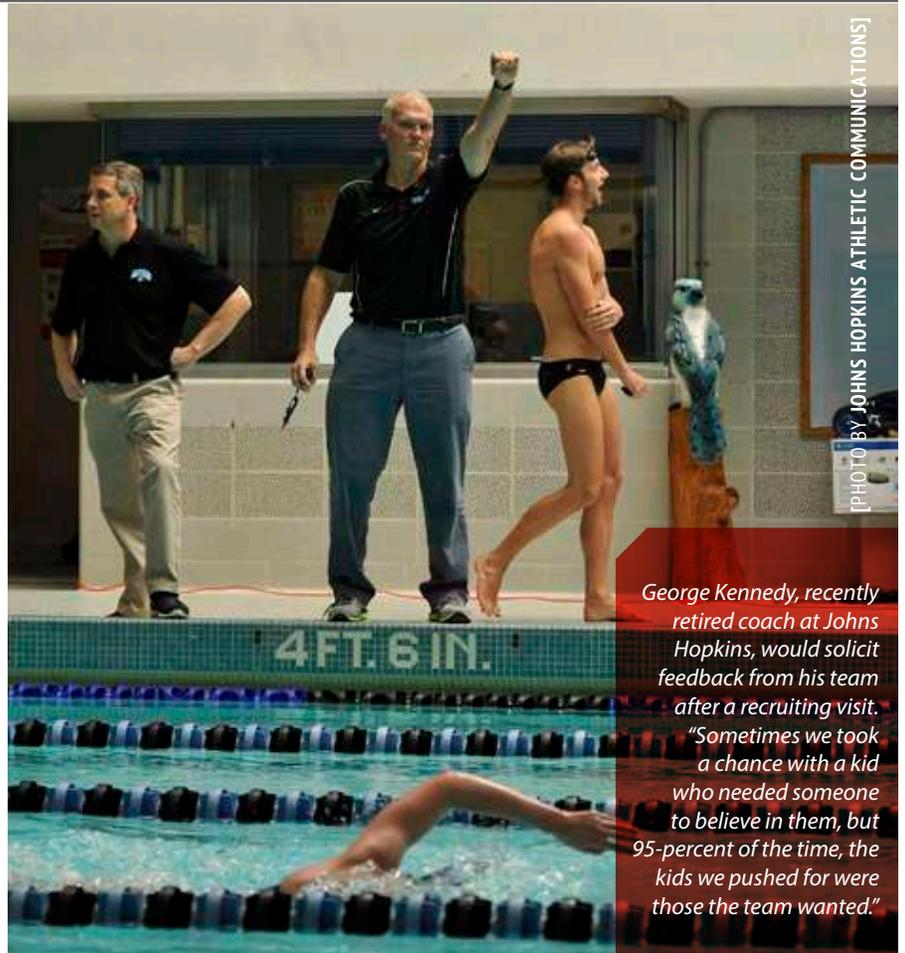
Michael Joyce is an assistant coach with recruiting responsibilities at Arizona State. “We try to get to know prospects as people and not just as swimmers,” he says. “At ASU, we understand that swimming is something student-athletes do, but is not solely who they are. What do they like to do outside of the pool? What do they want to study in college and why? These are all things that help us identify whether or not someone would potentially fit into our program. Know who you are recruiting at all levels, and you will then know who you are coaching. It’s a winning combination,” he says.

Successful programs leave no stone unturned to learn about prospective swimmers.

“We contact an individual’s club coach to get feedback on their training background and who they are as a teammate,” says Joyce. “This is valuable because club coaches have typically coached prospects for many, many years and can help explain to us how they’ve progressed within the sport.”

Emory’s Jon Howell will also contact club and high school coaches for the same reason: “I get a better sense of how

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George Kennedy, recently retired coach at Johns Hopkins, would solicit feedback from his team after a recruiting visit. “Sometimes we took a chance with a kid who needed someone to believe in them, but 95-percent of the time, the kids we pushed for were those the team wanted.”

committed and what kind of people they are. It helps me determine if they are really going to look at us or if we are just a backup for somebody else.”

While at Navy, Adam Kennedy also talked to the guidance counselor. “If we had a coach give negative feedback, we would dig deeper,” he says. “If the club and high school coach aligned and were willing to give less than stellar feedback, that would be the end.” Other sources were coaches or former teammates on the college team. “We might even feel out athletes we are recruiting from the same city to see if there is a problem,” he says.

RED FLAGS

Says Howell, “We are always looking for reasons to narrow our list, especially because the interest in Emory (reigning men’s and seven-time women’s D-III champions) is so high. Red flags for me are kids who complain about where they are coming from, their current team and ‘I’m not good because of these reasons.’”

“The kids who are going to be really successful are successful in any environment. If they complain about where they came from, chances are they will complain when they get here as well.” Backsliders and those struggling

[PHOTO BY U.S. NAVAL ACADEMY]



“With a women’s program, if the chemistry is off, it doesn’t matter how talented you are. You are never going to be successful. So when recruiting women, personality and chemistry are more important than performance.”

—Adam Kennedy,
former recruiting coordinator at the U.S.
Naval Academy

to balance academics and unable to perform in a championship environment are other Howell concerns.

“Choice of college is the biggest decision in a young person’s life up to this point,” says Texas A&M women’s coach Steve Bultman. “If I was a recruit, I’d want to get as much information as I could. What better way to get it than to be immersed in an official visit for 48 hours.” Such a visit holds enormous weight for the prospect and coach.

A TWO-WAY STREET

To be sure, the investigative process is a two-way street.

“What recruits sometimes don’t understand is that we are evaluating them as much as they are evaluating us,” says Howell. “There’s a vetting process. I always ask my team for feedback. If we host someone they don’t think is a good fit, I’m going to hear about it.”

Says George Kennedy, “I

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valued using the team and the experience of how the visit went. If our team indicated it was not a good fit, I always wanted to know WHY. Usually the team had good reason. Sometimes we took a chance with a kid who needed someone to believe in them, but 95-plus percent of the time, the kids we pushed for were those the team wanted.”

When coaches get really serious about a recruit, they nearly always schedule a home visit that includes viewing an athlete’s practice.

“What I looked for at the practice,” says Adam Kennedy, “were signs of relationship building.” For example:

- Was he leading the lane?
- How was he interacting with the team?
- How was he interacting with the coach?
- How was the coach interacting with him?
- Does the team do all-hands-in at the end of practice?
- Was he on the outside or inside of the circle?

Equally important was the home visit. Adam Kennedy looked hard at a prospect’s relationship with his parents. “If at the dinner table a recruit talked back to his father or mother, said something disparaging and was clearly disrespectful, that was it. The individual dropped way down the list.”

DECISIONS, DECISIONS

“At the end of the day, as a college coach, that team is your livelihood,” says Adam Kennedy. Rarely does a coach get fired

because of a win-loss record. It is because of a behavioral issue and how you dealt with it. At a scholarship school, you might be handing out almost \$900,000 in support of a women’s program plus incidentals and another \$600,000 if you have a men’s team. That’s \$1.5 million in scholarships. Those are real dollars. In some places those are endowed dollars, where someone has gone out and asked for support from alumni, etc. That’s big business.

“As a coach, if you get a bad seed, it can affect a team culture, which is absolutely critical at the collegiate level—BECAUSE if you get a bad seed on your team, it only takes one. In a college environment, there are no parents, no supervision or authority to correct bad behavior. You can lose a team overnight to drugs, drinking and discipline issues.

“Someone once said, ‘Individuals are smart, people are dumb.’ It’s the herd mentality. If you get a wrong kid in the program, the pain and heartache it is going to cause you as the coach, the team and the university is devastating.” Misconduct matters, if severe enough, can often end up on the president’s desk, notes Kennedy.

“You are faced with challenges every day...not to mention that academic issues may come along. You don’t want to risk your job on a 17-year-old. It is your life, your family,” he says.

Next month, we look at how colleges are using social media in the recruiting process. ❖

Michael J. Stott is an ASCA Level 5 coach whose Collegiate School (Richmond, Va.) teams won nine state high school championships. He has been named a 2017 recipient of NISCA’s Outstanding Service Award.

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SWIMMING TECHNIQUE MISCONCEPTIONS:

BY ROD HAVRILUK

Many people believe that it is worth copying the technique of the fastest swimmers. In reality, even the fastest swimmers have technique limitations, but they offset them with strength and conditioning. The purpose of this series of articles is to address scientifically the technique misconceptions and related skill-learning strategies that have become “conventional wisdom,” and to present more effective options.

This month's article addresses the misconception that “front quadrant swimming” (or FQS) is an effective freestyle technique. While FQS has been used by top swimmers, that is not justification for promoting that strategy. FQS produces an arm coordination that is counterproductive to fast swimming.

DEFINITION OF FRONT QUADRANT SWIMMING

The elite swimmer in **Fig. 1** offers a prime example of FQS. The right hand has just submerged, and the left hand has just begun to move backward. The arm positions are consistent with the definition of FQS that “at some point in each stroke cycle, both hands should be in front of your head” (Laughlin, 2001).

FQS has been promoted as a way to “lengthen the hull of your body” (Evans & Cappaert, 2014). However, to actually lengthen the hull of the body, the length must be increased at the waterline so that it changes the wave pattern (Havriluk, 2015a). Simply maintaining one arm above the head does not change the wave pattern.

A MAJOR LIMITATION OF FRONT QUADRANT SWIMMING

While FQS does not have the benefit of a longer hull, it does have the limitation associated with the resulting arm coordination. FQS is actually a qualification (and exaggeration) of a broader category of arm coordination—i.e., a negative index of coordination.

The Index of Coordination (IdC)

FRONT QUADRANT SWIMMING



FIG. 1 > (Above) An elite swimmer with front quadrant arm coordination. The right hand (in the yellow circle) has just submerged so that both hands are in front of the head.

quantifies the relative position of the arms throughout the stroke cycle (Chollet, Chaliés & Chatard, 2000). When one hand begins to pull at the same time that the opposite hand completes the push, the arms are in opposition, and the IdC is zero (**Fig. 2, middle image**). If the entry arm is motionless (or moving very slowly) while the opposite arm begins the recovery, the IdC is negative (**top image**).

FQS is an extreme case of a negative IdC, as the entry arm must move very slowly at the beginning of the pull phase to meet the requirement of “both hands in front of the head” at the same time. The resulting IdC produces gaps in propulsion, as shown by the solid line force curves in **Fig. 3**. If we assume a 1500-meter men’s world record swimming velocity (1.7 m/sec) with all propulsion resulting from hand force, a swimmer must generate an average hand force of 32 pounds. Using FQS, an exceptionally high peak force (e.g., 80 pounds) is required to average 32 pounds over each stroke cycle.

A MAJOR BENEFIT OF OPPOSITION COORDINATION (ZERO INDEX OF COORDINATION)

Another option to swim 1.7 m/sec is to use a zero IdC. If the arms maintain opposition coordination (IdC = 0), one arm is always generating propulsion so that gaps in propulsion are eliminated, as shown by the dotted line force curves in **Fig. 3**. The

opposition force curves also produce 32 pounds of average force, but require a much more achievable peak force (e.g., 60 pounds rather than 80 pounds). The comparison of a negative and zero index of coordination is shown in **Table 1 (below)**:

ARM COORDINATION VARIATION WITH SWIMMING VELOCITY

Swimmers typically vary their arm coordination as they swim at different speeds. Seifert, Chollet & Rouard (2007) found that the IdC increases with swimming velocity, as shown in **Fig. 4**. As an individual example, Russian Olympian Alexander Popov was observed to practice “every stroke on those slower laps...with FQS timing” (Laughlin, 2001)—i.e., a negative IdC. However, “competition video reveals that he begins the downsweep with his front arm at precisely the moment he stops pushing back against the water with his rear arm” (Maglischo, 2003)—i.e., a zero IdC.

While it is typical for swimmers—even Olympians—to practice with a negative IdC, it is contrary to the arm coordination necessary for swimming fast in races. Seifert found that the fastest swimmers sprint with a slightly positive IdC (e.g., 5 percent), where the entry arm begins to generate force before the opposite arm completes the push (**Fig. 2, bottom image**). If a swimmer practices with at least a zero IdC, the science (theory and research) support that

Index of Coordination	Stroke Time (sec)	Stroke Rate (strokes/sec)	Peak Hand Force (lbs)	Ave. Hand Force (lbs)	Swimming Velocity (m/sec)
-20%	2.0	.5	80	32	1.7
0	1.6	.6	60	32	1.7
13%	1.4	.7	60	39	1.8

Table 1. Comparison of a negative, zero and positive index of coordination

FIG. 2 > (right, top) In the middle image, the model has her arms in opposition for a zero Index of Coordination (IdC). In the top image, the recovery arm is "catching up" to the other arm for a negative IdC. In the bottom image, the pulling (entry) arm is in position to generate force before the other arm finishes the push for a positive IdC.

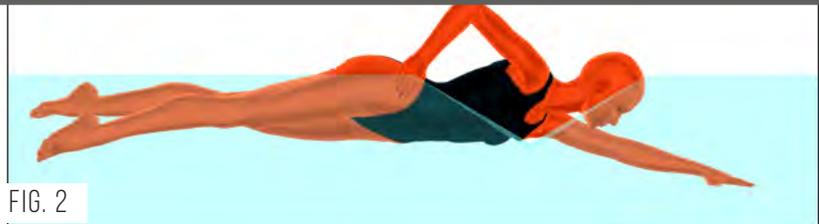


FIG. 2

FIG. 3 > (right, middle) The graph shows the force curves for a negative index of coordination (solid lines) and a zero index of coordination (dotted lines). The average force—as well as the resulting swimming velocity—is identical for both sets of curves.

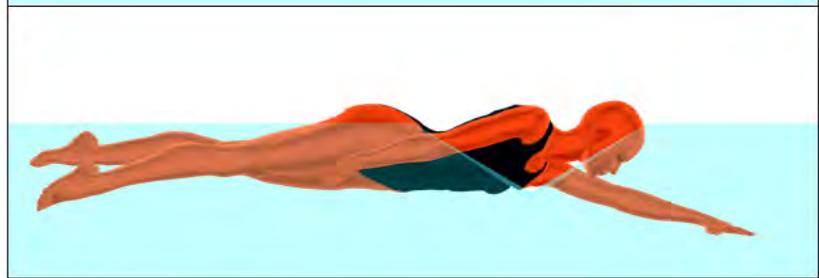


FIG. 4 > (right, bottom) The graph shows an increase in the index of coordination with swimming velocity (Seifert & Chollet, 2010).

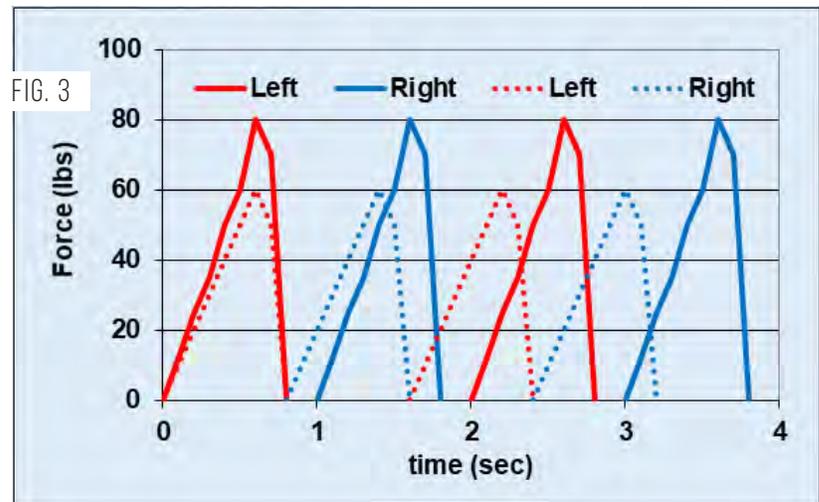


FIG. 3

he/she should gain a very positive IdC (e.g., 10 percent or more) with an increase in stroke rate to sprint speed. Strategies for swimming with a very positive IdC were explained in a previous article (see "Swimming Technique Misconceptions: Arm Coordination Part 2," SW Dec 2015, pages 10-11). ❖

Dr. Rod Havriluk is a sports scientist and consultant who specializes in swimming technique instruction and analysis. His latest e-book—"Approaching Perfect Freestyle + Science"—is available at the STR website: www.swimmingtechnology.com. You can contact Rod at info@swimmingtechnology.com. All scientific documentation relating to this article, including scientific principles, studies and research papers, can be provided upon demand.

SUMMARY

A common misconception is that front quadrant swimming (FQS) is an effective freestyle technique. It is not. FQS does not have the purported benefit of lengthening the hull because it does not change the wave pattern. In addition, there is a substantial limitation in the resulting negative arm index of coordination (IdC).

Swimmers typically practice with a negative IdC and increase to a slightly positive IdC for racing. It would be much more productive for a swimmer to practice with at least a zero IdC so that an increase in stroke rate would produce a very positive IdC at racing speeds. This focus on a positive IdC will enable more swimmers to achieve or exceed the current world records.

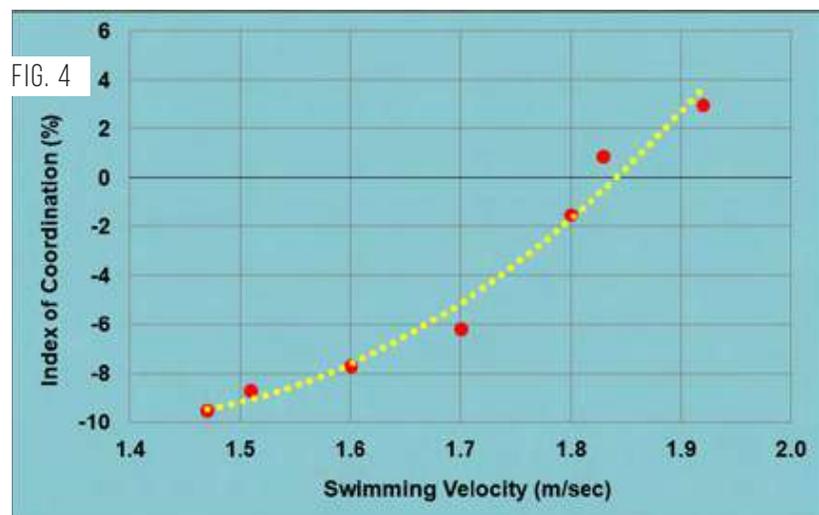


FIG. 4



TOTAL ACCESS MEMBERS CLICK HERE

to learn more about the references for this article.

TWO THOUSAND SEVENTEEN

Open Water Swimmers of the Year

[PHOTO BY ALEX VOYER]

BY ANNIE GREVERS

Swimming World's Open Water Swimmers of the Year for 2017 are both two-time winners, with France's Aurelie Muller also having won the title in 2015, and the Netherlands' Ferry Weertman taking the honor in back-to-back years.

AURELIE , FRANCE

Female Open Water Swimmer of the Year

REDEMPTION AFTER A DEVASTATING DQ

In 2017, French open water star Aurelie Muller wasn't seeking revenge—just redemption.

Muller had been envisioning the 2016 Olympic Games since earning her Olympic berth by winning the 10K event at the 2015 World Championships in Kazan, Russia. The Rio Games would mark a return to the Olympic stage for 26-year-old Muller, who had missed qualifying for the team in 2012.

At 18, Muller had competed in the first-ever Olympic 10K race at the 2008 Beijing Games. She finished 21st out of 24 competitors—two minutes behind the first-ever 10K Olympic gold medalist, Larisa Ilchenko of Russia.

Three years later, at the 2011 World Championships in Shanghai, Muller clinched her first international medal in the 5K race. She took silver, edging out American Ashley Twichell by 1-tenth of a second.

At the 2013 World Championships in Barcelona, Muller found herself in ninth place, with just one second separating her from fourth place.

Two years later, Muller became the first French woman to capture a World title in the 10K, winning by a decisive two-second margin. She was crowned 2015 European Open Water Swimmer of the Year. Everything seemed to be coming together for Muller, just in time for the Rio Games.

OLYMPIC PODIUM DREAMS DERAILED

Spectators are routinely baffled by how close the battle at the finish of a two-hour race can be. The sprinter within each of these incredible endurance athletes is revealed in that final straightaway.

During the last 50 meters of the arduous 10,000 meter-swim in Rio, Muller duked it out with Rachele Bruni (Italy), fighting for the Olympic silver medal. When results were first registered, they showed Dutch woman Sharon van Rouwendaal had won handily and that Muller had edged out her Italian competitor.

But then Muller's Olympic dream of climbing the podium was dashed. Judges ruled that she had pushed Bruni's arm down in order to hit the touchpad second. She was disqualified.

According to Muller, Bruni and she had joyfully embraced after the race, both jubilant to have an Olympic medal. Muller would have a silver medal draped around her neck, and Bruni, bronze.

The DQ was revealed nearly 20 minutes after the conclusion of the race "at the foot of the podium," Muller said. "In that moment, I could only collapse because I made this goal my job, every day for years. It is very inequitable. But in any case, the damage is done. I lost the podium moment and the medal, which would have been draped around my neck."

Muller described the hurt after the disqualification as the worst of her life.

"What happened in Rio is now part of me...of my story...whether I like it or not," Muller told *Le Parisien* four months after the stunning DQ. "I'll have to live with that. I cannot say if it hurts me, but as soon as I see a Rio medalist, a report, it stirs me. As soon as I see Brazil on a sign or on products, I turn my head."



Aurelie Muller of France (previous page and above) was disqualified at last year's Olympics after apparently edging out Italy's Rachele Bruni for the women's 10K silver medal. However, at this year's World Championships, Swimming World's Female Open Water Swimmer of the Year didn't leave any doubts, winning the event by more than three seconds.

But Muller's story didn't conclude with a disqualification on the Olympic stage. One year after one of her life's more disturbing sporting moments, she experienced an emotional triumph made greater by her 2016 devastation.

REDEMPTION IN HUNGARY'S LAKE BALATON

At the 2017 World Championships in Budapest, Muller battled with defending Olympic champion van Rouwendaal for more than half of the grueling 10K race. But this was a familiar scene for the two athletes who train together under the guidance of legendary French coach Philippe Lucas.

"I have a good relationship with my training partner Sharon van Rouwendaal, and it is never a problem that we have a common coach," Muller said after the race.

Muller has worked with Lucas since 2015. Lucas became a standout name after coaching 17-year-old Laure Manaudou to gold-, silver- and bronze-medal finishes (400 free, 800 free, 100 back) at the 2004 Olympics. But recently, Lucas has become a trusted coach for those seeking success in the open water. Big-name swimmers such as Océane Cassagnol, Femke Heemskerk, Benoit Bebast and the young Belgian star Eva Bonnet have trained with Lucas.

"He has his rules, his methods—I need him," Muller said about Lucas, who is known for his grueling training regimens. Stephane Lecat, an open water swimming legend, helps Muller master "the science of the free water." Louis-Frédéric Doyez is not as well-known a name in the sport because "he does not speak stopwatches, technical and speed," Muller said, "but he brings some understanding and support on all that is not sports-related." She attributes much of her ability to bounce back from the devastation of her Olympic experience to these three men.

"I could not resume a normal season because what had passed was not normal," Muller said regarding training after her disqualification. She was eager to adapt and become an even better athlete than she was in Rio. "The work I had put in, it had to be validated," she said.

In February, Muller swam a 57-kilometer race in Argentina. You read that right. She finished third in by far the longest distance she'd ever swum. It took her a little over nine hours. In March, Muller swam her first 10K since the Olympic race. She won. In May, Muller swam the 1500 meter free at the French Championships in Strasbourg. She won with a best time (16:32.04).

Muller said she was calmed by her stellar performances in 2017 and able to "attack the continuation with much more serenity and almost detachment."

She arrived at the 2017 World Championships without butterflies in her stomach—just "with a big appetite." Muller swam her signature race, the 10K, beautifully and didn't leave any room for judges to question the finish. She won the race by more than three seconds.

Muller not only made the podium—she stood atop it. She listened to the French anthem play...and smiled. Her appetite was satisfied, her training was validated, and her gold medal symbolized far more than a victory in the 10K race. ❖

FERRY WEERTMAN, NETHERLANDS

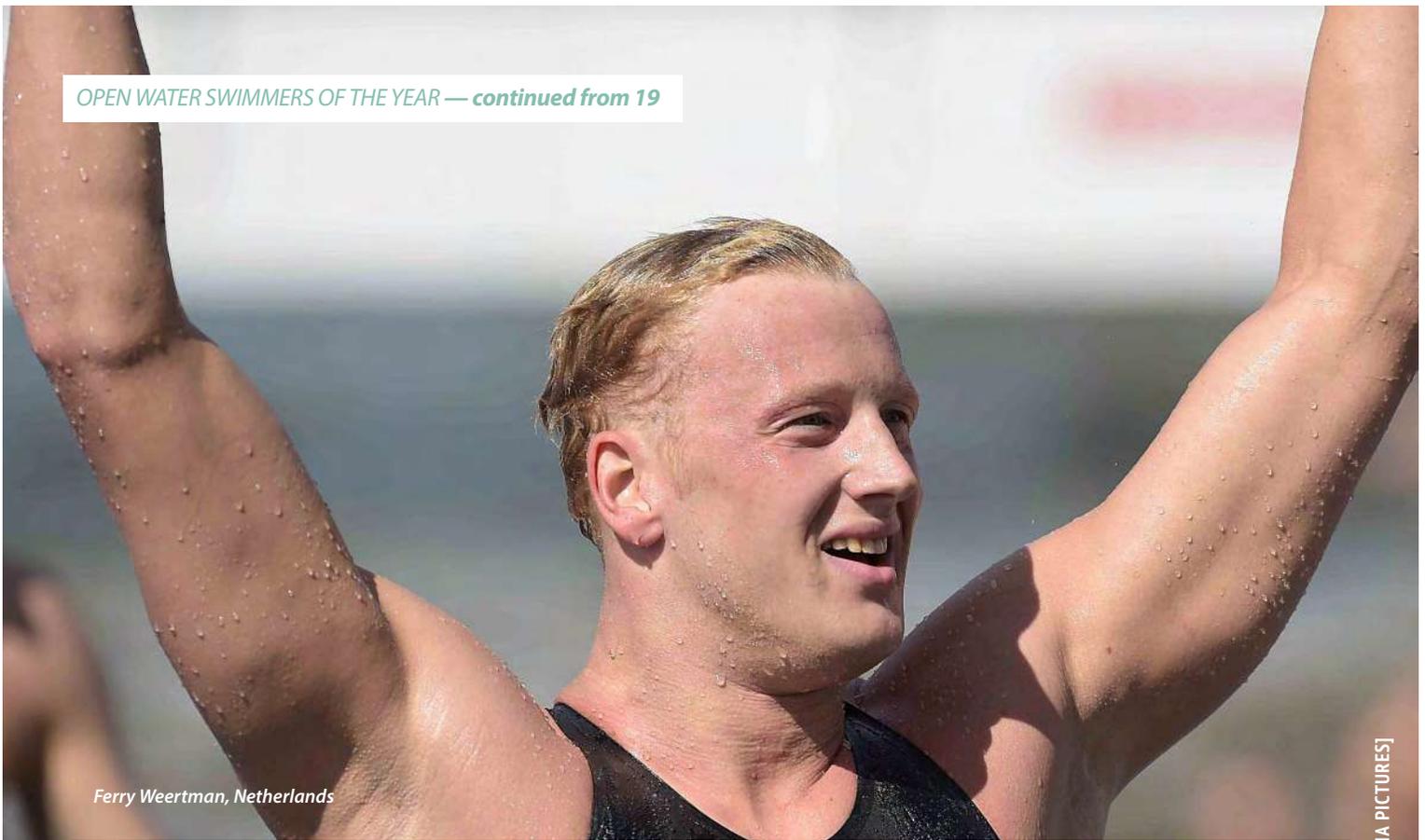
Male Open Water Swimmer of the Year

MASTER OF THE PHOTO FINISH

Nearly one hour and 50 minutes had passed in the men's 10K race at the 2017 World Championships. Dutchman Ferry Weertman, the defending Olympic gold medalist in the event, found himself in a familiar situation. Three men were leading the pack in Lake Balaton (Hungary). It would be a fierce battle for gold.

In 2016, Weertman had found an opening to sneak past Greek swimming legend, Spyridon Gianniotis, in the final 50 meters of the 10K. Watching the finish in real time, it was tough to distinguish who earned the Olympic gold medal—both men recorded identical times.

— continued on 20



Ferry Weertman, Netherlands

[PHOTO BY ARENA PICTURES]

But Weertman planted his hand on the touchpad perfectly, snagging the gold.

One year later, Weertman was armed with the confidence that comes with being an Olympic champion, but also the pressure:

“I had a clear goal for the race in Balaton—I wanted to be the first to win the 10K at Worlds and the Olympics. I did feel more pressure from the people around me and the media. Everybody said I should ‘just do it again’—making it sound like it’s easy.

“But the race in Balaton was really different from the Olympics in Rio. In Rio, there were only 25 men at the start; in Balaton, there were about 70! In Rio, the race was held in the sea, with salt water and waves, but in Balaton it was a lake with no waves at all.

“These are all things that change a race, and as an open water swimmer, you have got to be able to deal with all these circumstances.”

Outsiders to the sport could not fully comprehend how distinctly different the two racing scenarios were.

2017 RACE RUNDOWN

Back in Lake Balaton, with 1,000 meters to go, American Jordan Wilimovsky and Frenchman Marc-Antoine Olivier were in the lead. Jack Burnell of Great Britain trailed directly behind Wilimovsky, and Weertman was nipping at Olivier’s heels.

Weertman waited for someone to pick up the pace, but no one did—until they rounded the final buoy with 230 meters to go.

“I knew that if I wanted to be a part of the final sprint, I had to get next to Marc (Olivier) right after the buoy,” Weertman said. “So I did.”

Then there were three. Wilimovsky, Olivier and Weertman swam yoked together. But Burnell wasn’t out of the race. “I knew Jack usually has a good sprint at the end—he cost me the gold at the World Cup in Abu Dhabi.”

Olivier curved to the left to draft off Wilimovsky, and Weertman saw the opportunity to make his move and split away from the pack.

“After sprinting for about 25 meters, I noticed Marc was now drafting off my side, so I decided to wait for a final attack.” Drafting

is similar to body surfing. A swimmer finds the wave created by another swimmer and “hops on” for a ride.

Weertman knew continuing to sprint while hauling a competitor on his wave was not a smart strategy, so he backed off.

With 50 meters to go, it was still a band of Wilimovsky, Olivier and Weertman. “I know I have the most speed—so I went all out and had a good touch and won my first World Championship title,” Weertman said, making it sound as simple as the expectant press did prior to the race.

Apparently, Weertman does quality work on how to impeccably time the slap of the touchpad! In 2017, the title went to the swimmer with the fastest hand yet again—after nearly two hours of swimming, Weertman’s finishing touch inched out the defending 2015 World Championship gold medalist, Wilimovsky, by 1-tenth of a second.

A LASTING IMPACT

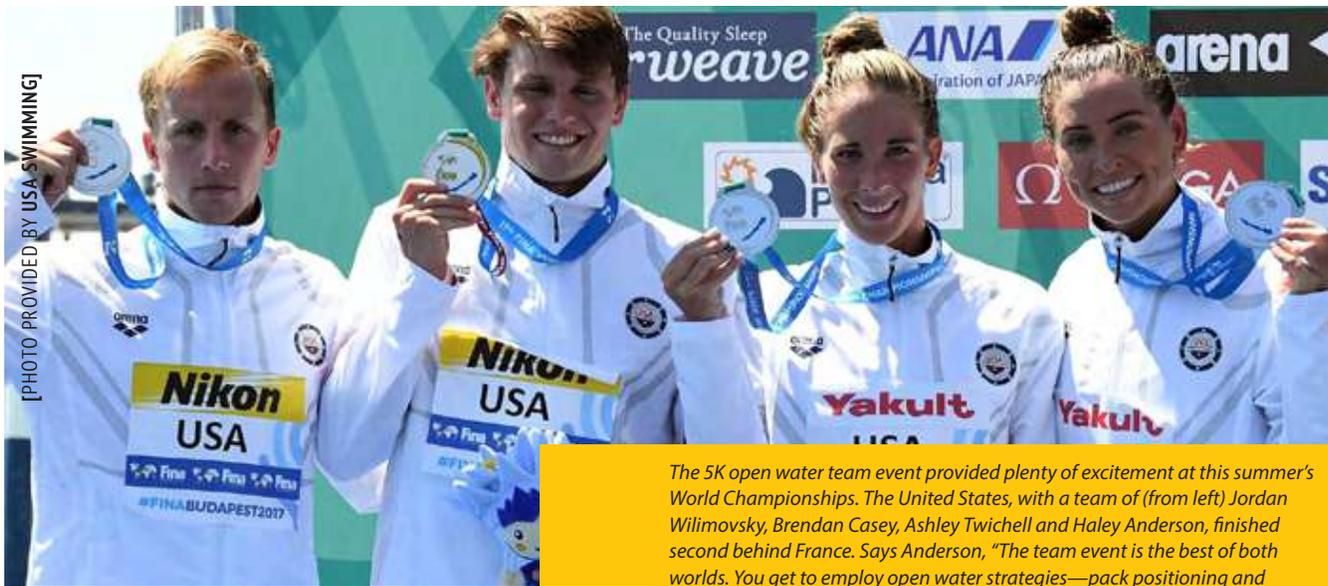
There’s nothing easy about winning consecutive international titles. Weertman never planned on 2017 being a relaxed post-Olympic year. After a brief 2016 holiday, he was back in the pool training with renowned Dutch coach Marcel Wouda.

Wouda, a Dutch Olympian himself, gained notoriety for coaching open water after swimmer Maarten van der Weijden won the first Olympic 10K at the 2008 Olympics.

In 2017, Weertman became the first Dutchman to win the 10K at World Championships and the first man to win the event at both the Olympics and the World Championships. But he’s not obsessing over historic stats like these while he’s racing. His consistently excellent performances are worth more than medals and milestones.

Open water swimming is growing in popularity in the Netherlands because of Weertman’s stellar swimming.

“We have a lot of ‘City Swims’ now throughout the entire country, where people swim 2K events,” Weertman said. “And I’ve heard some kids saying they want to be ‘the next Ferry,’ so that’s really rewarding!” ❖



[PHOTO PROVIDED BY USA SWIMMING]

The 5K open water team event provided plenty of excitement at this summer's World Championships. The United States, with a team of (from left) Jordan Wilimovsky, Brendan Casey, Ashley Twichell and Haley Anderson, finished second behind France. Says Anderson, "The team event is the best of both worlds. You get to employ open water strategies—pack positioning and drafting—and you get the relay aspect."

A PROPOSITION:

OPEN WATER RELAYS AT THE OLYMPICS

BY ANNIE GREVERS

Open water relays are already part of the swimming schedule at the World Championships. Why not add a 5K team event to the Olympics?

When the International Olympic Committee announced there would be mixed medley and freestyle relays at the 2020 Olympic Games, some swim fans rolled their eyes. "That's not a real event," traditionalists commented. Tossing men and women into one relay sounded entertaining...but not especially "Olympic."

However, the announcement of the new events caused the swimming powers of the world to take the event very seriously at the 2017 World Championships in Budapest, Hungary. And the fans loved it. Typically a loquacious NBC commentator, Rowdy Gaines fell silent in the middle of the 400 medley relay.

Swimmers were all over the map—world record holder Adam Peaty chased down world record holder Lilly King during the breaststroke leg of the mixed 4x100 medley relay. Was the U.S. in trouble?! It was a tough race to call, which made it fascinating to watch unfold. Team USA won, setting a world record. Matt Grevers, King, Caeleb Dressel and Simone Manuel celebrated their unified effort with hugs and high-fives. The crowd ate it up. Sceptics of the event became believers.

Haley Anderson, an Olympic silver medalist in the 10K open water event, has watched and envied the relay dynamic for years. A gifted distance swimmer in the pool, Anderson's last shot at swimming on a relay in the pool was during her collegiate years at the University of Southern California (2010-13). She's hoping the 5K team event could make it into the Olympic lineup someday...

BEST OF BOTH WORLDS

At the World Championships this summer, Anderson teamed up

with fellow Americans Ashley Twichell, Jordan Wilimovsky and Brendan Casey in the 5K open water team event.

"The team event is the best of both worlds," Anderson said. "You get to employ open water strategies—pack positioning and drafting—and you get the relay aspect."

The team event course is familiar for all swimmers: it's just broken up into 1.25K segments (a sprint for these open water athletes). However, relay exchanges in the team event are a little scary, says Anderson.

"The next swimmer is in the water, so you just swim up beside them and touch their hand," she said. "It's so nerve-racking. You just think, 'I hope that's them.' I was just aiming for the middle. We were beside Canada, and our caps are kind of similar."

Sure, this relay has each swimmer doing almost a mile compared to 100 meters, but to Anderson, this is the most fun event in the world.

"Ashley (Twichell) and I were second and third in the lineup," she said. "You know who you'll be racing 24 hours beforehand. So I had it in the back of my mind while swimming, 'I'm going to get trampled by some guys soon.'"

Just like the pool mixed relays, countries can line up their swimmers in whatever order they feel would be fastest. The United States opted to put the females in the middle of the relay.

But knowing there were guys creeping up on her during the race was a thrill for Anderson. "They didn't catch me until the last little bit, so...not bad!"

Wilimovsky was Team USA's anchor leg, and the squad had confidence in his closing speed. Wilimovsky blazed home, fighting to catch France's Marc-Antoine Olivier. But the French team secured the gold, touching out the Americans by 12 seconds. That might not sound like a close race, but when you're thinking in terms of a 54-minute relay, that's a nail-biter!

A FUTURE OLYMPIC EVENT?

"I don't know if it has a chance (of becoming an Olympic event)," Anderson said. "But being a distance swimmer, you don't get a chance to do relays. We only have one Olympic open water event, so I hope it has a chance..."

And maybe the IOC will take note of Anderson's plea. Swimmers and fans alike were caught up in the unpredictability of the 400-meter mixed relays in the pool. Who's to say an open water 5,000-meter relay at the Olympics wouldn't be 12.5 times the fun?! ❖



2017: A TIME TO REFLECT

BY DAVID RIEDER

Water temperatures, water quality and athlete safety are still hot topics in open water swimming.

On a late October Saturday back in 2010, the American swimming community awoke in shock and horror as the news broke: Fran Crippen, one of the country's all-time great open water swimmers, had died during a competition.

Crippen had never finished a 10K race in the United Arab Emirates that was part of the FINA World Cup, and the hot water temperature—close to 90 degrees Fahrenheit—was a key contributing factor.

Immediately, an outraged open water community demanded that water temperature limits be put in place. In the years following, that happened, but the controversy would never go away—even in 2017.

TOO HOT...

The setting this year was Taipei at the World University Games, and the fields competing in the 10K race were noticeably smaller than expected. Swimmers from the United States, Canada, Great Britain, Australia, South Africa and the Czech Republic had all pulled out, citing high water temperatures.

The water temperature for the race was below FINA's limit of 87 F, but the temperature had been close enough to the limit to discourage a lot of swimmers from taking part.

That temperature had been instituted in response to Crippen's tragic death and subsequent pressure from USA Swimming and the World Swimming Coaches Association. But USA Swimming had gone a step further with its rules.

USA Swimming's Lindsay Mintenko—in Taipei early with the American pool team—examined the open water venue as soon as she arrived in the city and realized that with air temperatures in the upper 90s (Fahrenheit), the combined air plus water temperature during the race would be above the USA Swimming limit.

USA Swimming's recently revised rulebook states explicitly:

"No open water race shall begin if the water temperature exceeds 85 F (29.45 degrees Celsius) or if the air temperature plus water temperature exceeds 145.4 F (63 C)."

So five days before the race, the American team became the first to withdraw.

"How do you recover after the race with the air being that hot?" asked Tyler Fenwick, the head coach of the U.S. Open Water team at WUGs. "And what if there is an issue, and an athlete has to come out of the water? They're not going to be able to cool off and acclimate quickly, and that was one of our biggest concerns."

At 8 p.m. the night before the open water swimmers were scheduled to depart for Asia, Mintenko called Bryce Elser, USA Swimming's open water program director, and along with Fenwick, that trio agreed to have the athletes postpone their travel plans.

Within a couple of days, they recommended that the swimmers not go to Asia at all. Of course, the athletes had the right to make the final decision about whether or not they would swim, and all four—Taylor Abbott, Katy Campbell, David Heron and Becca Mann—decided it would be in their best interests to withdraw.

Even if the race was happening in conditions that would have canceled a USA Swimming-hosted event, those four swimmers still had the right to compete. They all decided against it.

"It's a tough call to make, but at least from my standpoint, as long as you're siding with athlete safety, you're never going to go wrong," Elser said. "I'm personally proud of the four athletes for making that call because I know they were all looking forward to racing, going to WUGs and representing the United States."

Still, the organizers of the World University Games were within their rights to hold the race, and the swimmers who did compete had every right to do so.

“Does it surprise me that the race was continued to be held? I don’t think that surprises me because it was run based on the FINA rulebook,” Elser said. “Under the FINA rulebook, that was in the parameters for what you can race at.

“I’m proud of our rulebook for being a little bit stricter, taking a narrower approach,” he added.

WUGs was not the only time in 2017 a major race was conducted under extremely hot conditions. At the Asian Open Water Championships in May, the 5K race went off despite a recorded water temperature of 31.9 C (89.42 F).

Japan withdrew its athletes from the race—including Yasunari Hirai and Yumi Kida, who had won their respective 10K races earlier in the week—but a strict international limit had been violated.

It’s been seven years after Crippen’s death, but as long as races continue to be scheduled for hot-water venues, controversy and tough decisions will remain.

TOO COLD...

And how about if the water is too cold?

FINA went down that rabbit hole earlier in 2017, commissioning a study to figure out in what temperatures it would be too cold to race. The results led to rules legalizing wetsuits with water temperatures under 68 F and requiring their use if water temperatures dip below 64.4 F.

The rule change was announced only weeks before the U.S. Open Water National Championships, leaving athletes to scramble to figure out their best options, as unseasonably cold water temperatures made a sub-68-degree swim a legitimate possibility.

But even the option of wearing a wetsuit in 65-66-degree water made some coaches and swimmers uneasy. Wetsuits have been proven to offer a performance advantage, so what if athletes felt compelled to wear one, and the air temperature on race day ended up uncomfortably warm?

Catherine Vogt, who coached American Haley Anderson to an Olympic silver medal in the 10K in 2012, said she and her swimmers felt blindsided by the rule change. She thought back to a World Cup race in Portugal when her swimmers had been fine without a wetsuit in 65-degree water.

“FINA just added this new rule. I’m not sure they took a lot of the opinions and desires of the athletes and coaches,” Vogt said. “I’m not sure we’ve done enough research.”

In this case, in the name of athlete safety, did FINA go a little bit too far? After all, is part of open water swimming not dealing with slightly uncomfortable elements?

But Elser explained that he was unconcerned, indicating that he expects changes to the wetsuit rule in 2018.

“Sometimes that’s part of open water swimming—swimming in

temperatures that might be a little bit uncomfortable,” he said. “It can’t always be 75 degrees. I think FINA’s been paying attention to that feedback.”

WATER QUALITY

Hot water, cold water...how about dirty water? Well, water quality has popped up as a serious issue over the years as well. The 10K race at the 2014 Pan Pacific Championships was relocated and then canceled due to poor water quality on the race course.

And then, in the months leading up to the Olympics in Rio, there was concern that water quality issues could threaten the open water competitions there. But as it turned out, it was Rio’s lagoon that was polluted, while the bay off Copacabana Beach where the open water races would be held was in good shape.

Around the world, countries have different regulations for water quality. The World Health Organization (WHO) has established two levels of acceptable water quality for drinking and swimming: a weaker standard primarily for Third World countries and a tougher standard for developed countries.

Under pressure from coaches and governing bodies, race directors around the world have upped their standards for FINA-sanctioned races in recent years.

“Race directors know they can’t just get away with (ignoring water quality),” Elser said. “If a coach is asking for a certificate of water quality, the organizing committee needs to be able to provide that.”

ATHLETE SUPERVISION

But the biggest issue of all—at least for Elser and USA Swimming? Athlete supervision. In the race where Crippen passed away, supervision was lacking—reports indicated only one boat of safety officials was present, and there were no lifeguards on duty. Those on site in the UAE were only alerted to a problem when Crippen never showed up at the finish line.

“FINA can go focus on the limit and temperature changes,” Elser said, “but when it comes to the race day, there’s nothing more important to me than the supervision of our athletes and making

sure that we have not just eyes on our athletes, but capable eyes.”

However, Elser admitted that he’s seen plenty of positive change on that front since joining USA Swimming in 2011, with more able-bodied rescuers in place at events throughout the world.

“If I were able to time-travel back to some of those races in 2011, it would definitely be a step backward. We’ve come a long way,” he said. “Safety is no longer an afterthought—safety is one of the first things, you can tell, that they’re putting into place.” ❖



[PHOTO PROVIDED BY USA SWIMMING]

“It’s a tough call to make, but at least from my standpoint, as long as you’re siding with athlete safety, you’re never going to go wrong. I’m personally proud of the four athletes for making that call because I know they were all looking forward to racing, going to WUGs and representing the United States.”

—Bryce Elser

USA Swimming Open Water
Program Director

(in response to the American swimmers who decided to withdraw from the open water competition at the World University Games this summer)



PICKING UP THE PIECES

BY DAVID RIEDER

Most people who reside in the southeastern United States and Caribbean live their lives hoping to avoid hurricanes, but this year's batch of storms proved especially devastating. However, everyone in the area hosting swimming events intends to be back up and running again soon.

The recent rash of major hurricanes in the Gulf of Mexico and Atlantic Ocean devastated first southeast Texas (Harvey) and then the Caribbean and Florida (Irma). And then, much of the Caribbean got hit by two additional storms just weeks later.

Life stopped for the storms, and many of the locals who left their homes, particularly in Puerto Rico and the Florida Keys, had to wait days or weeks before they could get back. When they arrived, they had to pick up the pieces.

Hurricane Irma slammed into the Keys, Sept. 10, as a Category 4 storm, but even before the storm actually made landfall, it was clear to those organizing the Alligator Lighthouse Swim in Islamorada that their race, scheduled for Sept. 23, would be a no-go.

"When we started to see how close it was going to come to the Keys, we knew," said Rob Dixon, one of the race organizers. "We've all experienced hurricanes, any of us who have been here for more than 10 years. We've seen storms come and go, we know what they can do, and at that point, we knew there would be a lot of damage and (our open water swim) would be impossible to pull off."

Holding any sort of event—let alone an outdoors event—in the Florida Keys in mid-September seems unwise, to say the least. Historically, September has been the month when the strongest storms occur, and the exposed Keys are probably the U.S. location most susceptible to major storms.

But Dixon and the others involved in planning the race knew the risks when they started the annual Alligator Lighthouse swim back in 2013. Ironically, the weather was actually one of the main reasons they had picked September.

"We know August and September are typically the riskiest

months to try to do something like this, but it's our best chance at a calm day if you look at historical wind patterns," says Dixon, who believes that August and September have been the months with the calmest winds.

But this year, Sept. 23 came and went with only signs of rebuilding life in Islamorada and certainly no 300-plus visitors coming down to the island for a swimming race.

On the west coast of Florida, meanwhile, damage had been less severe, and a handful of swimmers who had planned on coming down for the Alligator Lighthouse swim decided to run their own charity swim that same day.

"They probably had 30 swimmers total, 100 people total. They raised some money—we have some donations that they gave to us for hurricane relief. They just wanted to let us know they were thinking about us and how much they missed doing our event this year," Dixon said. "That says something about your event, when people are willing to do that a few hundred miles away."

The rebuilding process is nowhere near complete in Islamorada, but Dixon says that next year's event has already been scheduled for Sept. 15, 2018, and he's expecting a packed race—perhaps even close to maximum capacity of 400 swimmers.

CUTTING IT CLOSE

Each year, St. Croix, the largest of the U.S. Virgin Islands in the Caribbean, hosts the Coral Reef swim at the Buccaneer resort. This year, the race will still go on—even after the island's two close calls with hurricanes.

But Irma missed the island, and even though it appeared Maria

**St. Croix
Buccaneer resort,
which hosts the
Coral Reef swim—
still good to go
for the Nov. 5 race
date**

[PHOTO BY MARJO AHO]



would hit the island directly, most of the impact was limited to the west end of the island. Thanks to its own generator, the Buccaneer kept power throughout the storm, and there was minimal damage.

Still, it took a few weeks for those on the island to convey exactly what had happened back to the United States. Suzanne Rychlik, an off-site race director based in the States, had to wait a few weeks before cell towers would be back up and running to know for sure that the resort would be good to go for the Nov. 5 race date. However, the field of swimmers might be a little bit smaller than usual this year.

“I think it’s probably going to be smaller than it has been over the past couple of years because there’s some people that were (going to) other islands,” Rychlik said. “Because St. Thomas was hit really hard, that’s changed some of their plans. There are some hotels on St. Croix that had some damage.”

Rychlik added a story about a group that was planning on renting a house on St. Croix, only for the hosts to pull the rental offer because of damages sustained in the storm. She went on to explain that the race is offering swimmers the chance to defer their swims until future years.

“We want to be as accommodating as we can, but it’s hard,” she said.

STILL ON TRACK

Barbados got lucky. Both Irma and Maria totally missed the island, which is one of the easternmost in the Caribbean. Because of that, the Barbados Open Water Festival, scheduled for Nov. 1-5, was unaffected.

“We were not affected by the recent hurricanes,” event co-director Kristina Evelyn wrote in an email. “We were very fortunate and not in the path of either storm. We received some rainfall and slightly windy conditions with rough seas for a day or two.”

Some of the other venues that host notable swimming events were less lucky when it came to avoiding hurricanes, but they have time on their side.

The Jacobs Aquatic Center in Islamorada was right in the path of Irma, but the facility, a popular destination for college teams seeking winter training sites and for the Orange Bowl Swim Classic held annually on Jan. 3, actually sustained relatively little damage.

“The pool is actually in pretty good shape,” assistant facility manager Abbie Fish said. “We didn’t have any severe damages to the actual pool itself. Our scoreboard was still standing, which is something we anticipated would have taken a hit. The biggest thing for us was we had a lot of flooding. The flooding went into our pump room and damaged portions of our pumps, so we couldn’t circulate any water.”

But by the time teams start making their way south this winter, Fish expects that Islamorada will be very close to normal again, and the pool should be good to go.

“We’re expecting to be up and running,” she said. “We’re actually getting a brand-new scoreboard installed for the Orange Bowl this year. By the time our teams arrive in the beginning or middle of December, you shouldn’t really see any difference.”

About an hour’s drive down U.S. Route 1 in Key West, the Florida Keys Community College staff returned to a pool still intact—even if there were some cosmetic issues.

“I pulled about 12 full garbage pails of leaves out of the pool,” aquatics director Lori Bosco said.

FKCC runs the annual Swim Around Key West, but that race is typically a June date—technically during hurricane season, but rarely a time when major storms develop and threaten the United States. Next year’s Key West swim is scheduled for June 18. ❖



[PHOTO BY LORI BOSCO]

**“Cosmetic”
damage at Florida
Keys Community
College, which
hosts the Swim
Around Key West
in June**

THE ULTIMATE CHALLENGE

BY DAVID RIEDER | PHOTOS PROVIDED BY JOE ZEMAITIS

Joe Zemaitis was looking for a challenge, a worthy goal. So, this past summer—after a year of planning and training—the head swim coach at Swim Neptune in Scottsdale, Ariz. accomplished that goal by crossing the English Channel from England to France in 12-1/2 hours.

While competitive pool swimming runs on a strict timeline, open water channel swimming doesn't work that way. Endurance is a must to swim, for instance, the 21-mile English Channel...and so is patience.

Arrive at the pool at 7 a.m. for 7:30 warm-ups for a 9 a.m. race? Sounds about right. To swim the English Channel, one typically reserves his/her spot three years in advance and then arrives in Dover to swim within a two-week window—but only if the conditions are good enough.

Joe Zemaitis did not want to wait three years. A competitive swimmer growing up and a professional triathlete after that, Zemaitis is now the head coach at Swim Neptune in the Phoenix area. Before signing up for the England-to-France journey, he had already conquered the Catalina Channel, the Strait of Gibraltar and the Swim around Manhattan.

In the summer of 2016, he traveled to Dover, England, to “scout it out” and to “de-mystify it.” He spoke with one of the boat captains who guides swimmers across the English Channel, and put down a deposit for a swim in August of 2017.

Yes, that was only one year out, but there was a catch. Zemaitis would be the captain's fifth swimmer aiming to cross the Channel within the two-week window. His brother, John, would be the sixth. Captains typically only take four swimmers for each window of time.

RISKY...AND COSTLY

It was a significant risk for the Zemaitis brothers. If conditions were not good enough on five different days to allow Channel crossings during that window, Joe would not be able to go. It would take six good-weather days for John to have the opportunity.

Traveling to England for two weeks is also costly, and if there was no chance for one or both of them to swim before their window was up—too bad. But all Channel swimmers know the risks of their investments.

“You spend all the money, you do all the training, and you go

over there, and the conditions aren't even good enough to give it a chance. You know there's a risk,” Zemaitis said.

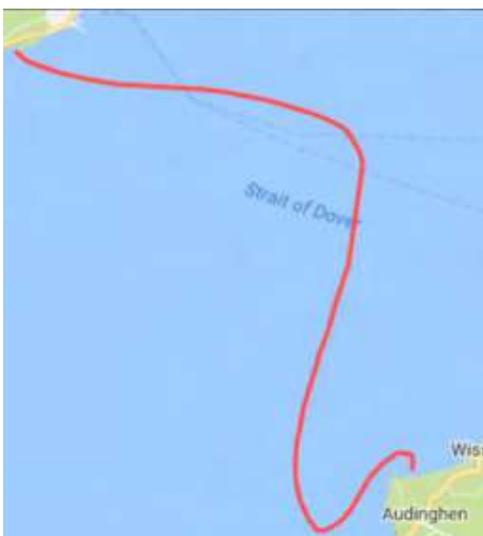
“The waiting really is the hardest part. You train a lot in the year leading up to it—you say, ‘Is this all going to be for nothing, and am I going to get a chance to do this?’ Each day that passes you get a little more nervous because you can see that the window is going to close.”

Zemaitis' first chance to cross the Channel would come up Tuesday, Aug. 22, and he would have to go off at either 12 p.m. or 12 a.m. that night as to coincide with the high tide. At 9 a.m. that morning, he called his boat captain to check on the conditions.

“He says, ‘Well, it's not looking great, but call me again in a half-hour and we'll decide for sure.’ At this point, I'm thinking, ‘Probably not going to go,’” Zemaitis said. “Then I call back in a half-hour, and he's like, ‘Yeah, looks good enough. We're going to go for it.’”

Zemaitis found out he was going to attempt the most famous swim in the world. He had two hours to prepare.

“It was just more relief than anything else when he gave me the green light,” he said. “I knew I was ready for it. I knew I had done the training for it. All I wanted was to swim.”



As it turned out, the 21-mile swim turned into more like a 28-mile adventure, since the ebb and flow of the tides made swimming straight across impossible.

TIME TO MAKE SOME HISTORY

Wearing only goggles, cap and his “standard swimming costume”—i.e., a brief—Zemaitis hopped off his boat and into the 63-degree (Fahrenheit) water, which he insisted is not all that cold. He swam to Shakespeare Beach, fully cleared the water and hopped back in for the 21-mile trip to France.

And he swam. For more than 12 hours. Every 45 minutes, someone from the boat would toss Zemaitis a bottle of Carbo-Pro and a gel pack so that he could refuel. He dragged his legs behind his long strokes, knowing he had hardly any need to kick.

“It's salt water, so your legs are more buoyant,” Zemaitis said. “If you're swimming for 12 hours, the energy cost of using your legs

and firing your quads isn't worth it."

The 21-mile swim turned into more like a 28-mile adventure, since the ebb and flow of the tides made swimming straight across impossible. Conditions were less than ideal—the crew knew a storm was in the vicinity—but Zemaitis' swim was not interrupted.

For the last four hours of the race, Zemaitis was swimming in pitch-black darkness. He had been able to avoid jellyfish stings during the day, but not at night, and he was stung twice.

But he persevered, and around 1 a.m. on Wednesday, Aug. 23—some 12-and-a-half hours after he departed Dover—Zemaitis exited the Channel onto the beach at Cap Griz Nez in France.

(By the way—Joe's brother, John, was also cleared to swim, and he successfully crossed the Channel a few days later.)

EXCITING AND CHALLENGING

Not everything had been perfect—the lousy weather, the darkness, the jellyfish stings. And, no, those parts of his swim were not exactly enjoyable.

But Zemaitis did not sign up to swim the English Channel because it would be "fun." He was looking for a challenge, a goal for which he could train. And he accomplished that goal. The nervous days spent wondering if he would even get to swim...and the adversity he faced while he was in the water? Well, that just added to the experience.

"The biggest obstacle that people overcome is the fear of the unknown," he said. "You go your whole life being able to see where you're going—the wall, the flip turn, the lane line—to just kind of being out there. I find that really exciting and challenging to be out there and not be able to see land anywhere you look and just locking into one stroke at a time." ❖



A competitive swimmer growing up and a professional triathlete after that, Zemaitis is now the head coach at Swim Neptune in the Phoenix area. In addition to crossing the English Channel, he had already conquered the Catalina Channel, the Strait of Gibraltar and the Swim around Manhattan.

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The Florida Keys
Key West
Close To Perfect - Far From Normal

SWIMMING THE ENGLISH CHANNEL: A LOOK BACK IN TIME

BY BRUCE WIGO | PHOTOS PROVIDED BY THE INTERNATIONAL SWIMMING HALL OF FAME

Legend has it that in 55 B.C., when Roman General Julius Caesar stood on a beach in Gaul, plotting his conquest of Britain, he looked across the sea, saw the white cliffs of Dover and asked one of his men: “Do you think we could swim it?”

“With all due respect, general,” his subordinate replied, “I think we should take boats.” They did, but an idea was born even though it would hibernate in the minds of men for nearly two millennia.

EARLY HISTORY

It wasn't until 1872 that J.B. “Billy” Johnson, one of England's best-known professional swimmers, announced that he would swim across the English Channel. But after swimming for 1 hour and 3 minutes, he called it quits. Swimming the “Big Ditch” was declared impossible!

Then in May of 1875, Captain Paul Boyton, an American, hopped in the water, wearing the pneumatic rubber lifesaving suit that would make him famous, paddled tranquilly from Cape Gris-Nez, France to Fan Bay, England, enjoying his lunch and puffing on a cigar as he went! Upon arrival, he was welcomed by an 11-gun salute and received cablegrams from President Ulysses S. Grant, Queen Victoria and the Prince of Wales (Albert Edward, heir of Queen Victoria). It was the first time anyone had crossed the English Channel without a boat.

Then a few months later, on Aug. 24, a little known English sailor, Captain Matthew Webb, covered in porpoise oil, dived into the Channel from the Admiralty Pier at Dover and started swimming in 65-degree water (Fahrenheit). Although he was stung by jellyfish, and strong currents kept him off the French coast for five hours, he finally landed at Calais after swimming breaststroke for 21 hours 45 minutes—1 hour and 33 minutes less time than it took Boyton to paddle it.

In comparing the two swims, Webb's was no doubt the more heroic, but while Webb swam strictly for personal fame and glory, Boyton swam to promote the utility of his famous rubber suit as a lifesaving device. He would go on to become one of the most recognizable persons on the planet in the last quarter of the 19th century. In his day, there was not a newspaper or magazine in the world that did not give in to “Boytonmania” and cover the exploits of this real-life superhero, lifesaver, treasure hunter, pearl diver,



In August 1926, American Gertrude Ederle became the first woman to cross the English Channel. Her time was nearly two hours faster than any of the men who swam before her! (Pictured: homecoming parade for Ederle in New York)

diamond seeker, Indian trader, sailor, mercenary for three nations, adventurer and showman.

Poor Webb! He would spend his remaining years living off his fame, lecturing and demonstrating his famous breaststroke at seaside resorts or in a glass tank on the vaudeville stage. His fame proved to be short-lived, and in a daring attempt to recapture the glory that had come to him from swimming the “Big Ditch,” he drowned trying to swim the Rapids of the Niagara River below the Falls in 1883. He died penniless.

Over the next 35 years, there would be 80 failed attempts, including three by Annette Kellerman, the era's most famous woman swimmer. When she was pulled from the water after 10 hours and 30 minutes—and still 10 miles from shore—she declared that swimming the Channel was impossible for a woman.

It was on his 16th attempt that Thomas William Burgess in 1911



Great Britain's Kevin Murphy (born 1949) owns the title of "King of the Channel" for crossing the English Channel 34 times, more than any other man. His 34th crossing came in 2006 in 15 hours 14 minutes. (Pictured: Murphy swimming in the River Thames in 1980)

became the second person to succeed. By 1924, there were still only five successful crossings...and all of them were swum by men.

marathon swims pitted men versus women, head to head, and it was not uncommon for the women—with the likes of Florence Chadwick, Greta Andersen, Sandra Bucha and Shelly Taylor-Smith—to come out on top.

GENDER EQUALITY

It was in this year that Charlotte Epstein, founder of the Women's Swimming Association of New York—a club that produced the greatest women swimmers of the 1924 Olympics—came up with a bold idea to promote gender equality. Her plan was to train a girl to swim across the Channel on the 50th anniversary of Webb's historic swim.

Two girls were selected, eventual International Swimming Hall of Famers Helen Wainwright (1972) and Gertrude Ederle (1965). When Wainwright was injured in a trolley accident in early 1925, the task was left to Ederle, whose first attempt that year ended in a controversial disqualification: her trainer, Jabez Wolffe, had her pulled out of the water when he thought Ederle might be drowning; Ederle, though, strongly disagreed with the decision, saying that she was resting, floating face down.

Ederle tried again a year later on Aug. 6, 1926. Swimming crawl the entire way, not only did she prove that women were equal to men, but her time was nearly two hours faster than any of the men who swam before her!

Instantly, she became famous. President Calvin Coolidge called her "America's Best Girl," and upon her return to New York, she was welcomed by an enormous ticker-tape parade that to this day remains the largest such event in the history of the city. She also remains an icon in the gender-equity battle. For many years, professional



The record for the most number of English Channel crossings by any man or woman is 43 by British swimmer Alison Streeter (born 1964). The "Queen of the Channel" made her historic 43rd crossing in 1995.

SIGNIFICANT RECORDS

Since the 1920s, thousands of men and women swimmers from around the world have attempted to follow in the wake of Webb and Ederle. While most are content to complete the swim and add their names to the list of those who have made it, others are determined to set records.

Among the most significant records:

- Most Individual Channel Crossings: Queen of the Channel—Alison Streeter, UK, 43 (1992); King of the Channel—Kevin Murphy, UK, 34 (2006)
- Fastest Time: Man—Trent Grimsey, UK, 6 hours 55 minutes; Woman—Yvetta Hlaváčová, Czechoslovakia, 7 hours 25 minutes. ❖



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Bruce Wigo has served as President/CEO of the International Swimming Hall of Fame for the past 12 years. Last May, he announced that he will be stepping down from his position, effective Dec. 31.

BEFORE THE BEEP WITH LEAH SMITH

BY ANNIE GREVERS

Twenty-two-year-old Leah Smith is not just one of the greatest distance swimmers in U.S. history. She's one of the greatest in history. Her career just happens to be overlapping that of the supreme Katie Ledecky's. But Smith doesn't groan about having to race the best ever—she knows Ledecky draws out the best version of Leah Smith.

The 2016 Olympic rookie won a bronze medal in the 400 meter free in Rio and teamed up with Allison Schmitt, Maya DiRado and Ledecky in the 4x200 free relay to seize Olympic gold. At last summer's World Championships in Budapest, Ledecky and Smith made history in the 400 free by finishing first and second, respectively. It was the first time since 1978 that the United States has placed two women on the podium in the event at Worlds. Smith also collected a bronze with a massive lifetime best in the 800 free (8:17.22, her first sub-8:20 swim) and a gold in the 4x200 free relay.

It's too difficult to encapsulate the magnificence of Smith's NCAA career as a member of the University of Virginia Cavaliers (2014-17). Smith showed glimmers of what was in store at the 2015 NCAA Championships—breaking the NCAA record in the 500 yard free and winning the 1650. She defended both titles at NAAs in 2016. The 2017 NAAs marked the beginning of Katie Ledecky's collegiate career. She overthrew Smith in both events, but Smith still beat the third-place finisher in the 1650 by 22 seconds! Yes, Ledecky and Smith are in a league of their own.



[PHOTO BY PETER H. BICK]

"I know talking (after warm-up and before the ready room) helps me get happy...and I swim fast when I'm happy."

—Leah Smith...who is also happy after she swims fast!

(Pictured with Elizabeth Beisel at last summer's nationals)

Every elite distance swimmer is tough. They take pride in their physical grit, but they swim races that give their mind hundreds—no, wait, thousands—of seconds to think. The thoughts can drag a swimmer out of a race or catapult them back into it. Leah Smith has learned how to rally her mentality over the years. Here's what race day looks like physically and mentally for Leah Smith.

HOTEL

"I'm waking up, and I'm a little bit nervous—it's good to have some nerves, but I'm trying to take things one step at a time." Smith's mind hasn't leapt to her race yet. She's just thinking about what she needs to pack in her swim bag and what she's going to eat for breakfast. She prefers to wake up early enough that she won't feel rushed in her preparations and so she has time to digest her "substantial" breakfast.

"I know that sometimes it's easy to get so nervous, you skip out on the food part," she said. But she knows her body needs good calories to pull from during her races, so she makes breakfast a priority.

Smith uses the commute to the pool to begin transitioning into adrenaline-revving mode. "I start listening to really loud pump-up music to get into the zone."

When Smith arrives at the pool, you'll seldom find her walking in solo. "I like to walk in with my teammates—

you just feel more powerful walking in together (a practice adopted from her time at UVA),” she said.

WARM-UP

Even though Smith is at the pool, she’s still not zeroed in on her race. She usually is looking for a heat sheet in order to map out how much time she has to do what she needs to do to get ready for her race.

“When you’re young, you’re sort of mindless at meets, not knowing when you’re swimming—you get in when everyone else gets in. But you’re not swimming the same race or at the same time as everyone else!” Smith said. “It’s really important to tailor your warm-up strategy to when and what your races are.”

For Smith, that means allotting an hour to race prep. She warms up for 30 minutes, then takes 10 minutes to get her suit on, and another 20 minutes to narrow her focus onto her race.

“My brain gets ready for the race as I go through this routine,” Smith said. The regimen is familiar and proven. She has confidence just by implementing the same steps at each meet.

After the body is warmed up and the suit is pulled on, Smith lets her social-butterfly nature flutter. “I tend to allow for time to talk to friends, but it’s really important for the individual to figure this part out on his/her own. I know talking helps me get happy, and I swim fast when I’m happy.”

In the minutes before heading to the ready room, Smith finally starts thinking about her race: “I listen to music and do a little visualizing, but if I catch myself getting too pumped up, I stop and breathe.”

Smith knows it isn’t integral to talk to her coach, Cory Chitwood, before every swim. They’ve mapped out strategies in the weeks and months prior to the race. But receiving parting reminders from Chitwood is part of her pre-race pattern.

“I’ll stop and ask Cory what he thinks I should do,” Smith said. “But he never gives me too much to remember, just some last-minute, easy tips to implement, like ‘really work the walls.’”

READY ROOM

When it comes time to enter the room filled with the seven other competitors and all of their nerves, Smith has her own vibe.

“Some people don’t like to talk, some are Chatty Cathies—I’m somewhere in between.”

But Smith encourages younger swimmers to find what works for them in the ready room. “I like to be in a really good mood before my race—the best is when there’s a teammate in the ready room with

me, and we can pump each other up.”

Ready rooms for different events come with varied energy levels. In Smith’s events, she says the most intense ready rooms are the 200 free and the mile. “The 200 free has so many big names—sprinters coming up from the 100 and 500 swimmers coming down to the 200. The mile is intense because every girl realizes she’s about to swim 66 laps (for the 1650)—no one is jumping up and down.”

Smith’s favorite ready room happens to be that of her favorite event—the 500 yard free: “You don’t have that intense sprinter mindset, but you don’t have the dread of a grueling mile.”

BEHIND THE BLOCKS

This part used to weigh on Smith. She would get uneasy when her name was about to be announced because it made her contemplate how many people were watching—she didn’t want to disappoint anyone.

“I had to work on it,” Smith said. “I know I needed to be more confident to swim fast. I tried to focus on how exciting it was to have the opportunity to do what I do. Now when I walk out, it’s one of my favorite things in the sport of swimming.”

It took Smith a couple of years to learn how to be invigorated rather than intimidated by the sound of the audience. In Budapest at the 2017 World Championships, the primarily Hungarian crowd was loud. But Smith translated those decibels into energy for her races. Now when her name resounds in an arena, she thinks, “How cool is it that I get to be doing this?”

THE RACE

Many sprinters black out once their bodies leave the starting blocks, but Smith swims races that don’t allow her that luxury. She has plenty of thoughts swirling in her head during her many laps.

In the 200 free: “I’m generally trying not to get psyched out by sprinters taking it out really fast. During the last portion, I tell myself, ‘I’m really tough, I do much longer races than this—I can finish this really well.’”

In the 500 free: “This is my version of a sprint—it’s more stressful in that aspect. It’s my favorite race because you go as hard as you can for five minutes, and it’s not too short that I feel I can’t hang with the sprinters.”

The 1650 free: “This one is all about mental toughness. A distance teammate of mine and I would always talk about what the worst laps were—you get to 33, and you realize you’re almost done with 1,000...but you’re only halfway. So the worst lap is 33. Once I’m in the 50s, I just turn my brain off and swing my arms.” ❖

Leah used to get uneasy when her name was about to be announced before her race because it made her contemplate how many people were watching—she didn’t want to disappoint anyone. “I had to work on it,” she said. “I tried to focus on how exciting it was to have the opportunity to do what I do. Now when I walk out, it’s one of my favorite things in the sport of swimming.”



[PHOTO BY SIPA USA]



GOLDMINDS
BY WAYNE GOLDSMITH

RELAX...IT'S ONLY SWIMMING

Stressed? Tense? Anxious? Not to worry...just...relax!



[PHOTO BY MATT RUBEL OF RUBEL PHOTOGRAPHY]

WHY is relaxation so important? Because...

- *Tension is the enemy of performance.*
- *Speed is important—it's what everyone is training for: the sport is about speed!*

However, at the very heart of speed...is relaxation. Quite simply, the faster you want to go, the more relaxed you need to be:

- *Swimming faster is not about trying harder: you can't force swimming speed.*
- *It's not about "effort": swimming fast should look and feel effortless.*
- *It's not about holding your breath, gritting your teeth and being aggressive: swimming fast is all about breathing deeply in and out, slowly and completely, without any facial tension...and staying calm at high speed.*

The concepts of speed and relaxation are connected. They should be developed in tandem to help swimmers realize their full performance potential.

THE SPEED AND RELAXATION MATRIX

There are four basic types of swimmers when it comes to how they combine speed and relaxation:

- *Low speed/low relaxation swimmers*
- *High speed/low relaxation swimmers*
- *Low speed/high relaxation swimmers*
- *High speed/high relaxation swimmers.*

The goal for swimmers should be to learn how to swim as fast as possible with the least amount of effort...and to stay smooth and relaxed at high speed during competition.

If you consider speed and relaxation as connected, it helps to explain how and why some swimmers are able to swim fast and race well in meets while others are not.

Swimmers who lack speed and who don't relax in the water find it difficult to compete at any level of the sport. They need to focus on building the basic skills

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and techniques of swimming and progressively improve their ability to move through water efficiently and effectively.

Swimmers with great natural speed who do not understand the importance of relaxation can usually win short sprint races and often appear to possess the talent necessary to be successful. However, without mastering the art of relaxation, their natural speed overly fatigues them, and they lack the capacity to finish strongly at the end of their events.

Swimmers who have learned how to relax in the water, but who haven't quite developed the speed to compete to their potential should be looking at the way they train for speed. Sometimes swimmers who develop a high capacity to relax, but who lack the speed they need to race well in competition, have been training in programs with a strong emphasis on long, slow, middle- and long-distance training. As a result, they look and feel comfortable in the water, but lack the real speed to race successfully over 50- and 100-meter events.

The ultimate goal for coaches and swimmers should be to develop the capacity to swim at maximum speed through their full race distance. This capacity demands the concurrent development of both speed and relaxation: effortless excellence!

10 BENEFITS OF LEARNING TO RELAX

Learning to relax...

1. Keeps you calm, composed and confident
2. Stops you from wasting energy and effort by worrying about things that don't matter
3. Prevents you from using too much energy when preparing for a race
4. Helps keep you relaxed, rested and ready for the right moment
5. Means you can swim your race in the pool and not in the locker room
6. Helps you to learn faster...which can help you swim faster
7. Helps you develop better "feel" for the water...which means you can improve your stroke technique
8. Helps you to swim for longer periods of time because you're only using the muscles and the energy you actually need to use...and nothing more
9. Improves your kick...because instead of pointing your toes and rigidly kicking your legs, you can learn to kick with smooth, easy, flowing movements
10. Helps you to swim faster!

AN EASY WAY TO REMEMBER THE IMPORTANCE OF RELAXATION

Think of relaxation this way—R.E.L.A.X.E.D:

- **Relax**—it's only swimming. There's no reason to be worried, stressed, tight or tense.
- **Easy**—swimming should be easy and effortless.
- **Learning**—everyone learns faster when they're relaxed. Learn more...learn it sooner...swim faster.
- **Attitude**—relaxation begins and ends with you. If you think of swimming as being "hard" or about "trying" and about "effort," it'll be difficult to relax. On the other hand, if you think of swimming as being "easy, effortless, smooth and soft," you can—and you will—

relax...and you'll swim faster than ever.

• **Xtra-ordinary**—It's what you'll become once you learn to stay relaxed!

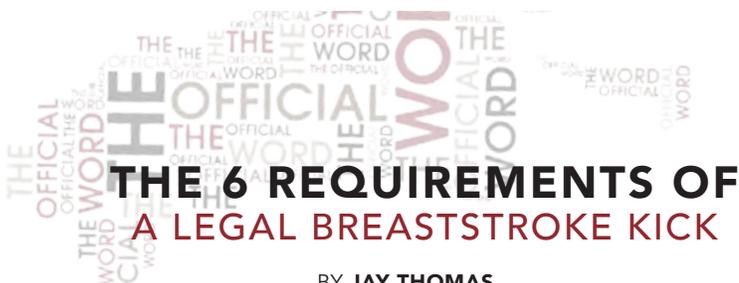
• **Every day**—Practice relaxation in everything you do...every day. Relaxation can become a habit—a state of mind that can help you achieve success in everything you do. Sometimes it's as simple as stopping and thinking, "RELAX!" Breathe in as you think and say, "RE," and breathe out as you think and say "LAX." A few of these RE-LAXes...and you'll be as cool as a cucumber in a snowstorm!

• **DON'T** stress about stress! You are not your feelings! You are so much more than your thoughts. It's normal and natural to feel a little stressed and anxious—it happens to everyone...even to the greatest and most talented swimmers. Whenever you feel a little tight and tense, breathe deeply and slowly—four seconds to breathe in, four seconds to breathe out slowly and four seconds of peace when you just say the word, "RELAX." Within a few moments, you'll feel cool, calm and confident...and totally relaxed and ready to race. ❖

Wayne Goldsmith has worked with swimmers, coaches, swimming clubs, swimming parents, sports scientists and swimming organizations all over the world for more than 25 years. He has contributed to Swimming World Magazine for 16 years. He is one of the world's leading experts in elite-level swimming and high-performance sport. Be sure to check out Goldsmith's websites at www.wgaquatics.com and www.wgcoaching.com.

SUMMARY

1. When swimmers and coaches think about and talk about swimming, quite often they use words such as "fast" and "powerful" and "skills." Yet, words such as "relax" and "smooth" and "easy" are just as important and potentially just as influential on swimming performance.
2. Swimmers and coaches should try to connect "mind and body"—for every physical action, there's a corresponding mental action! Want to go fast? Stay relaxed. Want to swim powerfully? Keep it smooth. Want to be brilliant? Stay focused on skills.
3. Being more relaxed in and out of the water will help you perform to your potential when it really matters. And for those other times—such as school, work and other areas of life when it's important to stay cool, calm, composed and collected—learning to relax is an important skill that that will ensure you are at your best in critical and important situations.



THE 6 REQUIREMENTS OF A LEGAL BREASTSTROKE KICK

BY JAY THOMAS

The breaststroke kick is the most specifically defined kick in USA Swimming's rulebook. Even with this specific definition, there are a wide variety of different executions by swimmers that look quite different, but are all completely legal.

Article 101.2.2 states that throughout the race, the stroke cycle must be one arm stroke and one leg kick in that order. It should be noted that the leg kick that is referenced is the breaststroke kick. Article 101.2.3 states that after the start and each turn, at any time prior to the first breaststroke kick, a single butterfly kick is permitted. This statement specifically permits this butterfly kick to occur prior to the first breaststroke pull and kick.

There are six components of a legal breaststroke kick:

1. All movements of the legs shall be simultaneous. This means, "occurring at the same time."

2. All movements shall be in the same horizontal plane, which means, "level with the surface of the water." NOTE: There is no requirement for the permitted butterfly kick to be on the horizontal plane. Depending on the timing of that kick, it may be impossible for the kick not to be on the horizontal plane.

3. Alternating movements are not permitted. "Alternating" would mean that "one foot is moving up while the other foot is moving down." One foot slightly streamlining up while the other foot does not appear to move would not normally be judged as alternating.

4. The feet must be turned outward during the propulsive part of the kick. When the feet are turned outward, propulsive force is created by the instep or bottom of the foot as opposed to the top of the foot. Compliance with this clause sets this kick apart from the butterfly kick.

5. Scissors kicks are not permitted. A scissors kick exists when the propulsive part of the kick is performed by the bottom of one foot and the top of the other foot.

6. Downward butterfly kicks are not permitted. After the breaststroke kick is completed, it is legal for the feet to rise up and even break the surface of the water. After rising, the feet may even travel downward provided that the downward movement is in conjunction with the recovery phase of the kick as the knees draw the legs forward.

The kick becomes an illegal downward butterfly kick when at the end of the legal breaststroke kick, the legs move upward—then move downward and stop—prior to the knees pulling the feet forward during the recovery phase of the breaststroke kick. See the "USA Swimming Officials Training Video Series—Breaststroke" at 3:00 minutes for examples.

When making an observation of an illegal downward butterfly kick, resist the temptation to focus on just the legs. You must ensure you observe the actual downward butterfly kick and not the water turbulence, which is sometimes caused by an illegal kick—but may also be caused by a completely legal kick.

As always, call what you actually see—not what you think you might have seen. Always give the benefit of the doubt to the swimmer. ❖

Jay Thomas is the chair for USA Swimming's Rules & Regulations Committee.



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Jack Yetter of Illinois Swimming was actually nominated for the Maxwell Excellence Award by someone who is not an official, but a parent who was so impressed with Yetter's dedication that, on behalf of his swim team, wanted to show their appreciation for all of his efforts. Yetter has officiated at many of Illinois Swimming's local, regional and championship meets. The LSC's officials chair, Tim Steffl, says, "Jack is 'hands-down' the hardest working official at any meet he works. He usually works every session of every championship meet. Last year, Jack worked more than any official in Illinois, serving at 123 sessions." Yetter was asked to serve on the Illinois officials' committee to help organize its training clinics. Says Steffl, "Jack has taken the ball and run with it, as he has averaged 12 clinics every year and helped expand our LSC-leading number of officials to well over 700. He is a great person, leader and friend."



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Olivet Nazarene's women enjoyed a 71-21 advantage in the 500 and 1650 yard freestyles over second-place SCAD at the NAIA Championships last March. Five ONU women placed seven times among the top 15 in those two events, with Sierra Rhodes (pictured) finishing second in the mile and third in the 500.

THE (SWIMMING) DISTANCE FORMULA

BY MICHAEL J. STOTT

Olivet Nazarene University (Ill.) swept the women's and men's swimming and diving titles at this year's NAIA Championships—in part because of its outstanding distance freestyle performances. Here, Coach Scott Teeters shares some of his training methods for ONU's highly successful distance program.

The Olivet Nazarene University campus, located 55 miles south of Chicago, has been the training camp home of the Chicago Bears since 2002. In more recent times, the resident ONU Tigers have established themselves as an NAIA aquatic powerhouse.

Integral to winning both the women's and men's national titles in 2017 was ONU's depth in distance freestyle. While the men's team won by 242-1/2 points, the women's margin of victory was only 6-1/2...but they enjoyed a 71 to 21 advantage in the 500 and 1650 yard freestyles over runner-up Savannah College of Art and Design! Five ONU women placed seven times among the top 15 in those two events. And it was no surprise that the Tiger men did much the same, with four swimmers placing six times among the top 11.

Tiger coach Scott Teeters favors a quadrennial training program for incoming freshmen. "We really try to work a four-year accumulation plan," says Teeters. "Basically, we are a small Christian, liberal arts school. We tend to get kids not fast enough for a D-I mid-major or D-II program out of high school, but who may be able to eke by and make an NAIA national time."

Compared to NCAA cuts, NAIA qualifying times tend to be generous. For instance, 2017 NAIA national championship Q times for the 500 and 1650 were 5:26.89 and 19:04.99 for women and 4:52.19 and 17:26.99 for men.

TEETERS' TRAINING PHILOSOPHY

Because of the slower cuts, "We don't ever rest our distance kids in November or December because they can make their cuts without

being rested. So, we get a full 24-week training cycle out of them. That is a lot better than a three-month or two-month adaptation if you are going to a shave meet.

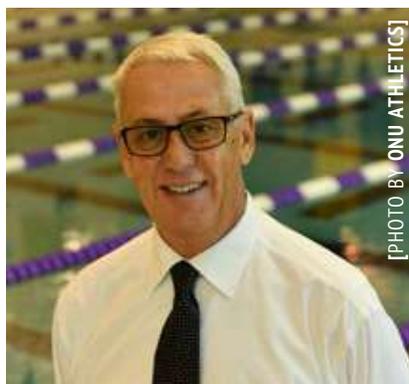
"At Thanksgiving, we send our distance swimmers home, let them refuel with good food from mom and dad, and come back. We pound right through the Christmas holidays. If the swimmers stay in shape during the summer, they get significantly better year after year.

"It might have been Eddie Reese who called it 'Rocktober' and 'Slovember.' That's where we are, too. We swim our meets, but train as much as we can...as often as we can...as hard as we can.

"We use the color charts developed by Jon Urbanek (*see accompanying 'Urbanek's Heart Rate Table' on next page*) and modified by Eastern Michigan's Peter Linn, and try to follow a similar season plan. Anyone who isn't familiar with them should be. We do a lot of base training and a lot of red in November, trying to hit aerobic overload, preparing to hit a lot more purple and blue in December."

By not reducing volume for early and mid-season shave meets, Teeters figures over four years he may gain as much as a full year of training. "Being in the NAIA gives swimmers, especially females who are not DI-ready out of a high school, a longer periodization and, hence, enhanced adaptation," he says.

Following are four sets that Teeters credits to other coaches. He offers them regularly as a part of his November training:



"It might have been Eddie Reese who referred to October and November as 'Rocktober' and 'Slovember.' That's where we are, too. We swim our meets, but train as much as we can...as often as we can...as hard as we can."

—Scott Teeters, Head Coach,
Olivet Nazarene University

Set #1: Women's send off-intervals
 (from Vince Gallant of Livonia Community Swim Team)
 • 12 x 500 Middle 200 Kick
 (Swim Base 1:10, Kick Base 1:30) @ 6:30/6:45

Set #2: Fish Burn
 (from Gus Stager, legendary University of Michigan coach)
 • 5 x 100 @ 1:30
 • 4 x 200 @ 2:30
 • 3 x 300 @ 3:30
 • 2 x 400 @ 4:30
 • 1 x 500 @ 5:30

Set #3: (used by Eastern Michigan's Peter Linn from Jon Urbanchek's color chart)
 3x straight/no break:
 • 3 x 300 @ 3:30 Pink: 25-27 HR (moderate/hard)
 • 4 x 150 @ 1:50 Red: 27-30 HR (hard-paced effort, any duration)
 • 5 x 100 @ 1:30 Blue: 30-32 HR (paced, but very hard, longer duration)
 • 6 x 50 @ :45 EZ

Set # 4: 400 IM set
 Straight/no break:
 • 4 x 100 Fly @ 1: 40—50 K, 25 D, 25 S
 - 400 IM Build Each 100 @ 6:30
 • 4 x 100 Back @ 1:40—50 K, 25 D, 25 S
 - 400 IM Build Each 100 @ 6:20
 • 4 x 100 Breast @ 1:50—50 K, 25 D, 25 S
 - 400 IM Fast @ 6:15
 • 4 x 100 Free—50 K, 25 D, 25 S @ 1:40
 - 400 IM Fast ❖

URBANCHEK'S HEART RATE TABLE

Purple >32 All out, unpaced, short to moderate duration
 Brown >32 All out, paced, moderate duration
 Blue 30-32 Paced, but very hard, longer duration
 Red 27-30 Hard paced effort, any duration
 Pink 25-27 Moderate/hard
 White 23-25 Moderate
 Orange 20-23 Easy/moderate
 Yellow <20 Easy

Says Coach Teeters: "On Jon's charts, we only use white, pink, red, blue and purple. There are two Excel spreadsheets out there. One Jon uses for those very elite athletes with VO2 max levels above 75, and the one we use for the non-super humans, I got from Peter Linn. If anyone would like to see the chart for the non-super humans, email me at spteeters@olivet.edu."



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[PHOTO BY HICKORY PHOTOGRAPHY]

Coach Jon Jolley

Director of Competitive Swimming
YMCA Seahorse Swim Team (YSST)
Hickory, North Carolina

- East Carolina University, bachelor of music, vocal performance and vocal pedagogy, '92
- Began coaching swimming at Greenville Swim Club, N.C. (1987)
- Joined YSST in 1992, named head coach in 1996
- Age Group Coach of the Year for North Carolina Swimming (2013, 2015)
- Franke Bell Senior Coach of the Year for North Carolina Swimming (2016)
- Staff member of the North Carolina Swimming Select Team
- Age group vice chair of North Carolina Swimming (2009-13)
- Member of the YMCA of the USA's Upper Southeast Regional YMCA Swimming Committee

As YSST head coach, Jolley has mentored 25 YMCA All-American performers, 18 junior national qualifiers, five senior national qualifiers, five North Carolina Swimming age group record holders, five YMCA national champions, two YMCA national record holders and a YMCA national age group record holder.

JON JOLLEY

BY MICHAEL J. STOTT

Coach Jon Jolley, music student and opera singer by training, has given voice to the Hickory Foundation YMCA, leading the women's team to the 2016 YMCA national title (long course) and YSST to USA Swimming Silver Medal status.

Q. SWIMMING WORLD: What was it about swimming that drew you to the sport?

A. COACH JON JOLLEY: As a kid, I swam summer league until I was 12. I began swimming year-round with the Greenville Swim Club in Greenville, N.C. and fell in love with the sport immediately. I was first coached by Rick Kobe and then John Richards. John was—and is to this day—a mentor in my life.

SW: And then to coach?

JJ: I started coaching in college as a part-time job under John Richards. At the time, I thought it would be a short-term thing. I graduated with degrees in vocal pedagogy and vocal performance and used to sing opera. When I graduated, I got married and had three choices: go to grad school to pursue teaching at a university, join a small traveling opera company or pursue coaching. I chose the latter and have no regrets. Glenn Peterson hired me in Hickory, N.C. as the head age group coach. He was a HUGE part of molding me as a coach.

Swimming as a sport offers so much more than achieving fast times. It teaches young people how to deal with success, failure, time management, respect, honesty, caring, responsibility and so much more that helps prepare them for life. Ultimately, my hope is that we are preparing these kids to be positive contributors to society as adults.

SW: YSST attained USA Swimming Silver Medal status in 2017. What does that mean to the club?

JJ: It's huge for us. It gives the program national recognition, and with the Silver Medal status, it gave us grant money from USA Swimming. We used those funds to purchase a comprehensive underwater camera system. It is going to be a great tool moving forward. We had earned Bronze Medal status four times before this, so the step up to Silver was very rewarding. I have to believe that we are one of the few teams with Silver Medal status with fewer than 100 kids in the program.

SW: Your three graduating seniors are swimming in college this fall. Is that a goal for most of your senior swimmers?

JJ: Definitely. There is a place for all to swim in college, as long as the school can meet their academic needs and the team is a fit for them. There are tons of programs out there from Division I, Division II, Division III and NAIA. This fall, we have Sophia Cherkez at Cornell, Maly Shores at Emory and Marissa Taylor at Ohio Northern.

SW: In season, what kind of meet schedule do you keep?

JJ: We generally compete once a month with shave-and-taper meets in December, April and August. Our focus is typically the Capital Classic, a closed Y meet hosted by YOTA (YMCA of the Triangle); USA Swimming Junior Nationals in December; Y Nationals in April; and Y Nationals and USA Swimming Junior Nationals in August. Of course, anytime we have a qualified athlete, we attend Olympic and World Championship Trials as well as USA Swimming Senior Nationals in June.

SW: What changed in your program over the last 10 years to lead to the team's success on a higher stage?

JJ: CULTURE! We created an environment that had big goals and big expectations. I say "we" because this is a process that involves all to be successful—the coaches, the athletes, the parents and the Y. We are very fortunate to have a CEO (Nat Auten) who supports our pursuit of excellence in the pool and what it takes from a scheduling standpoint in the pool. A lot of Y programs are not that lucky. Our program is not a success because of me—it thrives because of ALL who support the process.

SW: How did a 21-time All American such as Rachael LeClair end up coaching at YSST?

JJ: We are very fortunate to have Rachael on the coaching staff. She brings a wealth of swimming knowledge to the team. Her

— continued on 44

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HOW THEY TRAIN: ROSS DANT

BY MICHAEL J. STOTT

PHOTO BY HICKORY PHOTOGRAPHY



Hickory Foundation YMCA distance ace Ross Dant continues to build a whale of a resumé. Last year at age 15, he was the youngest male at U.S. Olympic Trials. Seeded 90th out of 97 swimmers, he posted a 15:41.56 to finish 44th. A little more than a year later, he is a member of USA Swimming's national junior team.

In April at the YMCA Short Course Nationals, Dant won the 500, 1000 and 1650 yard freestyles (4:21.33, 8:57.64, 14:57.03—a Y national record by more than 10 seconds) and finished fourth in the 400 IM (3:53.56).

He also competed well at this summer's USA Swimming National Championships before posting impressive results at the YMCA Long Course Championships in August. There he set a second national record, this time in the 400 meter free (3:56.82), and placed second in the 200 free (1:53.50) and 200 fly (2:05.40), third in the 200 back (2:04.39) and eighth in the 100 back (59.29) to continue what has been an extraordinary last 18 months.

Dant currently holds 12 North Carolina Swimming state records. With two years of high school remaining, collegesswimming.com ranks him second in the state of North Carolina and sixth nationally in the Class of 2019. Globally, he is ranked first in the 800 meter free and third in the 1500 for 16-and-unders for the year 2017.

Says Coach Jon Jolley, "Ross is a very unique athlete, and we are lucky to have him on the team. He is the real deal. He is not just a fast athlete—he is humble and a great leader to his teammates. He has what I call the 'it' factor. You can't teach it. You can't coach it. People either have it or they don't.

"On a daily basis, his goal is to bring his teammates to a higher level. He is also great with the younger swimmers, sometimes even giving them a pep talk before a big set at practice.

"Our goal is to develop Ross into the most well-rounded athlete he can be," Jolley said.

SAMPLE LONG COURSE SETS

Set #1

Focus of the set: 400s
3x the following with a 2:00 break between rounds:

- 100 @ 1:20
- 200 @ 2:30
- 300 @ 3:30
- 400 @ 4:20

(Ross was 4:14, 4:16, 4:14 on the 400s)

Set #2

Swim straight through

Coach Jolley: "Swimmers dread this one, but they embrace the hard work."

30 x 100 as follows:

- 5 @ 2:00
- 5 @ 1:50
- 5 @ 1:40
- 5 @ 1:30
- 5 @ 1:25
- 5 @ 1:20

Coach Jolley: "We ask swimmers to pick a target time for all 30 and hold it regardless of the interval. Ross' goal target time was 1:01 this past summer." ❖

PROGRESSION OF TIMES

SCY	2014	2015	2016	2017
500 Free	4:59.49	4:38.97	4:28.2	4:21.33
1000 Free	10:19.6	9:33.4	9:08.5	8:57.64
1650 Free	17:04.8	15:54.4	15:12.6	14:57.03
LC				
400 Free	4:26.02	4:08.11	3:58.9	3:56.60
800 Free	9:04.27	8:32.67	8:14.15	8:02.90
1500 Free	17:13.8	16:07.52	15:36.7	15:26.93

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primary role is leading our developmental group. She is the “Pied Piper” for our program. Her energy and enthusiasm for the sport and our team is immeasurable. She does things well beyond the deck to advance our program.

Rachael is an attorney in Hickory. Her daughter, Maly, is swimming at Emory this fall. Incredibly, despite her vigorous schedule as a lawyer, she finds the time to volunteer for the team. She is also a member of the board of directors at the Hickory Foundation YMCA.

SW: Your girls won the Long Course YMCA Nationals in 2016—up from 12th in 2015. How did that happen?

JJ: As a team, we started talking about that as a goal in May. It was a great season of training and one of those meets where everything fell into place. It was unique on a lot of levels.

Unfortunately, my father passed away just before the meet started. I was only at the meet for the first two sessions. Coaches Rachael LeClair and Ann Taylor stepped up

big time in my absence.

The turning point in that meet was the 400 free. Maria Turcanu set the stage in the “C” final by dominating the heat. Other girls followed her lead. Anna Durak, Faith Hefner and Sophia Cherkez went 1-2-3 in the “B” heat, and Emmaline Peterson and Madison Murtagh went 2-5 in the “A” heat. After that, things just meshed with ALL of the ladies stepping up.

It was personally gratifying and brought me to tears. On the last night after the last event, the girls FaceTimed me from the top of the podium as they were receiving their awards for winning the 400 free relay.

SW: What’s a typical mid-season practice schedule for your senior swimmers?

JJ: Monday through Friday, 3:30 to 5:30 p.m....Tuesday/Thursday, 5:30 to 6:30 a.m.... Monday/Wednesday dryland from 5:45 to 6:30 p.m....Saturday mornings, 8 to 10 a.m.

Monday afternoon is usually a mix of free and IM. Tuesday and Thursday mornings are stroke, and the afternoons are free. Wednesday is IM. Friday is a variety, depending on the week and where we are in the season. Saturday morning is speed.

A big part of that plan is our pool situation. I convinced the Y to shift most of the attention for lessons to Saturday morning. That gives us more pool space during the week. It also allows us to keep the water cooler during the week. We turn the heater up on Friday afternoon so the water is warmer for lessons on Saturdays, and then turn it back down Saturday evening.

SW: How do you handle weights and dryland?

JJ: We do not lift weights. Our dryland focus is core work and shoulder stability. I am fortunate to have qualified coaches for that part from our Y’s fitness department.

SW: You are very involved in LSC and YMCA state and regional swimming administration. What is the benefit to you, the team and the Hickory Foundation Y?

JJ: Honestly, I just want to give back to the sport that has given me so much. I have been on the board of directors of North Carolina Swimming for eight years in varying roles such as age group vice chair and junior coach and senior coach rep. I have been the president of the Greater YMCA Sunbelt Swimming Association since 2001. I also serve on the YMCA of the USA’s Upper Southeast Regional YMCA Swimming Committee. ♦

Michael J. Stott is an ASCA Level 5 coach whose Collegiate School (Richmond, Va.) teams won nine state high school championships. He has been named a 2017 recipient of NISCA’s Outstanding Service Award.

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UP & COMERS

AGE GROUP SWIMMER OF THE MONTH

BY TAYLOR BRIEN

Mariah Denigan

It's an impressive feat for a swimmer to qualify for big meets, such as the Phillips 66 U.S. Nationals or the U.S. Open Water Nationals—but it's even more impressive to do so as a 13- or 14-year-old. That's exactly what Mariah Denigan of the Northern Kentucky Clippers achieved in 2017.

Denigan was 13 at the Open Water Nationals last May, where she finished 40th in the 5K race with a time of 1:06:20.31. The following month, now 14, Denigan was one of the youngest swimmers at senior nationals and placed 34th in the 400 meter IM (4:53.77), 50th in the 200 back (2:16.18) and 61st in the 400 free (4:21.93).

In addition to competing in some of her first national meets this past summer, Denigan was named to the 2017-18 USA Swimming World-100 list and won the "B" final of the 400 meter IM at the U.S. Open in August, improving her time from nationals by five-and-a-half seconds to 4:48.26. Clippers head coach Norm Wright tells *Swimming World* that Mariah "is very coachable and eager to work hard—always going above and beyond." ❖



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WHAT IS THE BEST THING YOU DO IN SWIMMING?

I keep myself and everyone around me in a positive attitude. I build people up when they don't feel well in the pool, and I encourage them during practice. I do not accept negativity around me.

WHAT ARE SOME OF THE TOUGHEST WORKOUTS/SETS YOU'VE DONE?

2 x 100 free
 200 free
 3 x 100 free
 300 free
 4 x 100 free
 400 free
 5 x 100 free
 500 free
 6 x 100 free
 600 free
 7 x 100 free
 700 free
 8 x 100 free
 800 free
 Another set is 16 x 400 IM

WHAT IS YOUR FAVORITE THING ABOUT SWIMMING?

It's the friendships I make with my teammates and other competitors. My teammates are always there to cheer me up and motivate me when I feel like I don't have any motivation. It is also awesome to have friends from all over the United States from the camps and meets I've attended.

WHAT ARE YOU MOST LOOKING FORWARD TO THIS YEAR?

I am looking forward to the 2018 National Championships and Junior National Championships to be held in Irvine, Calif. (next summer). I am super-excited to race, accomplish my goals I have set for the season, and to spend two weeks in California with my teammates.

WHO IS YOUR SWIMMING IDOL...AND WHY?

Katie Ledecky—Katie is the most focused swimmer. She knows what she wants to accomplish, and she works hard every single day to accomplish that goal.

WHAT ARE YOUR FAVORITE HOBBIES?

Listening to music, binge-watching Netflix, doing things with my youth group and spending time with my family...I also am learning how to play the guitar.



WHY DO YOU ENCOURAGE YOUR SWIMMERS TO TRY OPEN WATER SWIMMING? AND WHY DO YOU THINK MORE CLUB AND COLLEGE TEAMS DO NOT INTRODUCE OPEN WATER SWIMMING TO THEIR ATHLETES?

BY ANNIE GREVERS



RICH DeSELm / Head Coach, University of North Carolina [PHOTO PROVIDED BY UNIVERSITY OF NORTH CAROLINA]

Open water swimming is not for everyone, so there needs to already be an interest or a developed interest by some exposure.

For the right person with interest, comfort level in open water environments, stamina and a bit of aggressiveness, open water is a fantastic opportunity to compete and, perhaps, swim beyond college years.

The challenges of open water include access to open water venues, weather/climate, NCAA restrictions on training calendars, allowable/countable hours and new legislation on time demands. And, college coaches' performance reviews are typically tied to college swimming performance.



BRUCE GEMMELL / 2016 Olympic Coach; Head Coach, Nation's Capital Swim Club [PHOTO BY TAYLOR BRIEN]

I encourage them to try it because some of them will really like it...and some will be really good at it. I know they won't all like it, but if some do and some pursue it, then it's a success. A few have also enjoyed it and gone the triathlon route with great success. It's a great alternative to the "long black line."

The calendar makes it very difficult to coordinate it with pool competitions. Lots of the country has a very limited window for competitive opportunities due to weather and water temperatures. Frequently, athletes and coaches are forced to choose or at least prioritize between pool and open water from a competition standpoint. Coordinating training is easy—it's not much different from training for "long sprint" pool events, but the competition calendar is frequently in conflict.



TYLER FENWICK / Associate Head Coach, University of Virginia [PHOTO BY AZARIA BASILE]

It's fun. It's a whole different environment to compete in. It's really exciting and a little bit scary. The fact that it's a new experience can be really stimulating. If you've been swimming in a pool your entire life, it's really cool to see you can use those skills in a different environment. And most of the time, races are in really beautiful venues—we were in Grand Cayman this summer...you can't really beat that! For some people, open water is their superpower—a mile isn't long enough, and walls can be debilitating.

A lot of club teams have introduced it. People tend to do what they know. Open water is relatively new. It's only been an Olympic event since 2008. A lot of people haven't experienced it yet, or they haven't been to a competition. You're not going to teach something you don't know.

It could be looked at as an interruption to short course or long course season. I look at Nats and Junior selections—it seems like more teams are joining every year. The other challenge is venues—many places are limited by geography, so you need to travel to competitions, which can get expensive.

Fitting open water training into a college program takes a head coach who is understanding and willing to put international teams above some college events. It's a balancing act. To help the team as a whole, you have to pick and choose.



DAVE KELSHEIMER / Head Coach, Team Santa Monica [PHOTO BY GRIFFIN SCOTT]

It's fun. It's different. It's another opportunity to be successful, particularly for distance athletes. It's another chance for them to race. There are a lot of things that can be learned about your own swimming with an open water race. A 5K certainly makes a 1500 look good.

For college teams, if it's not on the NCAA program, it's not what pays the bills. For club teams, it's mainly a lack of exposure and experience. Both here and in Australia, I've had athletes who finally made it onto national teams because of open water. They were supported sooner as a national team athlete and were able to make it onto big teams later on.

Klete Keller's first international team was Pan-Pacs in the 5K. Getting onto the open water national team gets swimmers all of the benefits of being in that elite group—it's a great opportunity for swimmers to get on the pathway.

The reality is that in the next three years, every major race is going to be held in a confined flat-water space—not an unknown scary thing with big waves. The 2020 Olympic course will be held in a bay with three sides enclosed, so most races leading up to the Olympics will be similar. Since all of these events will be held in friendly courses, that should encourage athletes who have only done pool events in the past to give it a try.



CATHERINE VOGT / Associate Head Coach, University of Southern California [PHOTO BY CATHERINE VOGT]

Open water swimming/training/racing brings a sense of something different. It's unique—not measurable like a pool session—and it's fun! Having a group of athletes who are aware, interested and can push each other is invigorating as a coach! It gets people out of their comfort zones. I love to challenge people to be open and try new things.

There is little you can control in the open water environment, so the conversations before and after open water swims or races are usually all-inclusive, and everyone experiences something different. As a coach, it's fun to watch their interactions, their responses and how they look at the challenge. I think with no flip turns and no walls, it's a hard workout—and you don't have to want to be a world champion in the 10K to enjoy it!

So many races of different lengths are available and can be a challenge in their own way. During my time at North Carolina, I saw the athletes who swam/raced in open water usually swam their best mile time about a month later! ❖

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