Swim Arizona

Volume 29 Number 2

March-April 2004

Cour-age Helen Bayly

This event was originally planned for USMS Short Course Nationals in Arizona last May," said Stephanie Rollins of Tucson, "but early in 2003 my mother Charlene was diagnosed with breast cancer. As of December 2003, she is in remission, making a renewed commitment to achieve her goal of competing in a swim meet."

The XIV Annual Polar Bear Masters Swimming Meet in Tucson February 1st was the occasion for this first swim meet for Charlene Schoggen, aged 81. Three generations of women in the same family - grandmother Charlene; her daughter Stephanie, 49; and Stephanie's daughter Kate Rollins, 22 - swam in this meet for the same AZ LMSC team (Ford Aquatics). The family's three generations of men - Joe Schoggen, Tim Rollins and Dave Rollins (Kate's brother, if you're counting) were volunteer timers as well, making this Polar Bear Classic a uniquely memorable family meet celebrating age and courage.

Charlene, Stephanie and Kate swam events together and against one-another. They raced each other in the same heat of the 50 freestyle, with grand-daughter Kate sprinting yards ahead of her mom and grandmother, to wild cheers from the onlookers. The three women, gasping for breath but waving and grinning, acknowledged the cheers, and posed for photos on the lane lines. Joe, Tim and Dave quit their timers' posts for a moment, to embrace the swimmers and to help Charlene from the pool.

Stephanie, a nationally-ranked Masters swimmer, had undertaken, during Charlene's 2003 recuperation, the task of organizing her mother and her daughter to swim in this February meet. An All-American at college, Stephanie had a 23-year break from swimming as she raised her family and worked in Vermont, moving with the family to Arizona in the late 1990's.

Kate the college student swam competitively in club and college teams until two years ago. As Stephanie's daughter, Kate's concern was that her mom, who trains

regularly, would out-touch her in the two events they would swim together (50 back, 50 free). Kate needn't have worried - even without swim-workouts this past 2 years, she out-swam Stephanie by at least 2 seconds in each event.

Charlene, born in 1923, started swimming seriously in 1937, when she earned her Junior Life Saving Certificate. While never swimming competitively until now in this February '04 meet, Charlene enjoyed lifelong recreational swimming, and - says daughter Stephanie -"our mother instilled in her children a love for, and comfort with, the water."

Fondly named "The Three Gens" this week, Charlene, Stephanie and Kate carried the day for the Masters XIV Polar Bear Classic. Even the meet founder-organizer Jim Stites, though noting entries by two women swimmers named Rollins, was amazed to learn later that a third entry - Charlene Schoggen - was the mother of Stephanie and grandmother of Kate.

Kudos to Charlene on her new goals at age 81, and for sharing her recent victories (health and swim-wise) with us all. Kudos to Stephanie for the effort of bringing everything together for "The Three Gens" and for everyone at the meet. And kudos to Kate for supporting her family's one-of-a-kind contribution that thrilled us all, making the XIV Polar Bear Classic an unforgettable Masters gathering and celebration.

One young meet-swimmer from Kate's generation was heard to say: "That was the most inspiring thing I've ever seen." And everyone knows it wasn't just the swimming that was the inspiration - it was "the age and the courage", many agreed. Thanks always, Charlene, Stephanie and Kate, from your fellow Masters swimmers and friends of all ages!

Helen Bayly swims for Ford Aquatics Masters Swimming in Tucson AZ. She was also Chairman, AZ LMSC from 1999-2002. Currently she serves as USMS History and Archives.

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Last year many of us were preparing for US Masters Nationals. Our efforts were focused on a goal, to swim our best with the best in our sport. But now, what are we swimming for and why are we doing it?

From time to time, it is important to ask ourselves why we swim. Why would any sane person choose to swim at 6am in an outdoor pool with a cold, wet deck? It certainly is not for money or glory, that is for sure. Something motivates all of us who choose to swim and compete. Perhaps it is a motivation to remain fit, maybe the desire to compete still burns within, or swimming can simply be a way to reduce stress.

Whatever the reason, we all put a lot into our swimming. The hours, the distance, the pain all add up to a lot. So why not do the best we can and seek to improve? We can all learn more about our sport and become better at it.

With this in mind, I have found some articles that address different aspects of improvement. Each offers something different that we can learn from and incorporate into our lives. My hope is that everybody can gain something from these articles and make a difference in their lives.

Doug Adamavich Editor

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Upcoming Events

03/26-03/28	Southwest Zone Championship	SCY	
	Hillenbrand Aquatic Center	University of Arizona	Tucson, AZ
04/03	Rocky Point Triathlon Sea of Cortez	Open Water Plaza Las Glorias	Puerto Penasco, MX
04/15-04/18	YMCA Masters Nationals Hall of Fame Aquatic Center	SCY ISHOF	Ft. Lauderdale, FL
04/22-04/25	USMS Short Course Nationals IUPUI Pool	SCY University of Indiana	Indianapolis, IN
04/30-05/02	SPMA Regional Championships Anteater Aquatics Center	SCY UC-Irvine	Irvine, CA
06/03-06/13	FINA World Masters Championships Stadio del Nuoto	LCM City of Riccione	Riccione, IT
06/12	Las Vegas Long Course Meters Desert Breeze Pool	LCM Desert Breeze Park	Las Vegas, NV
06/20	Grand Canyon State Games Student Recreation Center	SCY Arizona State University	Tempe, AZ
07/31-08/2	SPMA Regionals Marguerite Aquatics Center	LCM Mission Viejo Natadores	Mission Viejo, CA

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Marilyn Fogelsong

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Secret to a Powerful Freestyle Dr. David Costill

It has been estimated that more than half of one's success in sprint swimming is dependent upon upper body strength. At distances from 50 to 500 yards freestyle, the individual who has the greatest strength during the pull is able to overcome more of the drag created by his/her body.

In 1982 and '83 we tested the arm strength of 40 college and 60 Masters swimmers and found that we could accurately predict how fast they could swim the 50 to 500 yard freestyle events.

We have two ways to test the upper body strength, the first being performed out of the water using a Biokinetic Swim Bench, which allows the swimmer to simulate the pulling phase of the arm stroke. Though this test measures the strength of the muscles used during swimming, it fails to reflect the forces that can be exerted on the water while swimming.

For that reason we developed a second testing system that enabled us to record the swimmers' power in the water. Masters swimmers who have the highest swimming power also have the fastest time for a 25 yard sprint. To put it another way, if you are slow in a sprint, you probably have little arm strength and power.

What factors determine one's strength? The ability to exert force against the water appears to be dictated by (1) the size of your muscles, and (2) your ability to use that strength effectively. The number and size of the muscle cells in your upper arm and shoulders determine, to a large degree, the amount of force you can apply to the water with your hand and forearm. Unfortunately, as we grow older the body tends to reduce the muscle cell size, and to discard those muscle fibers that are not used regularly. Strength and swimming training, on the other hand, tend to slow this loss of muscle mass. It should be pointed out that the body has special hormones (e.g., testosterone) that enable the muscles to retain protein and grow bigger. These hormones are lower in females than in males, which partly explains the gender difference in muscle size and freestyle sprinting ability.

Having big muscles does not guarantee that you will be a good freestyle swimmer. If you are unable to use your strength effectively, then no amount of training will make you faster. We see this most often when we test triathletes who are strong and highly-trained, but lack the skills of a competitive swimmer. Their time and attention would better be spent on improving their swimming mechanics than on strength training.

Who benefits from strength training? Individuals who are subpar in upper body strength will certainly benefit from training that is geared toward maximal contractions (i.e., weight lifting and sprint swimming). The only way to know for certain if you are "subpar in strength" is to be tested, but that may be unnecessary. Whether you are strong or weak, you still need to contract the muscle with maximal effort during training in order to maintain or improve you swimming strength.

But is lifting weights the only way to improve strength? Probably not! There are three rules to follow when it comes to optimizing swimming strength and power.

First, the muscle must repeatedly contract with maximal force.

Second, the actions performed during these contractions should mimic the motions used in swimming. Our studies with college swimmers has clearly shown that swimming strength can best be achieved by doing power training in the pool. When you do a sprint workout, the muscles contract with maximal force and in a manner that is specific to the skill you are trying to develop.

The third rule relates to the number of sprints performed in each set and how many times each week you need to do this type of training. Though this point seems to vary from person to person, it is my impression that performing a set (5 to 10) of 25 to 50 yard sprints, with relatively long rest, two to three times per week, is sufficient to optimize freestyle sprinting strength. As with any strength training program, maximal muscle contractions are exhaustive. Consequently, these sprints should be repeated only so long as you can maintain good mechanics. Typical sprint/strengthoriented sets might be as follows:

10 to 20 times 25 yard sprints with 30 seconds rest, or 5 to 10 times 50 yard sprint with 1 to 2 minutes rest

Though we recognize that arm strength is only one of the determinants of success in swimming, it is one that the factors that can be improved with a well-designed training program.

Dr. David Costill is the director of Ball State University's Human Performance Laboratory and is current chairman of the USMS Sports Medicine, Health and Safety Committee. A Masters swimmer for the past 12 years, he has won numerous national freestyle and individual medley championships.

How Much is too Much?

Jessica Seaton, D. C.

While talking with one of my older friends at Long Course Regionals last year, the topic of how much training is too much came up. We both agreed that as we age things change. As our bodies change, so must our expectations of what we can and should do. Changing one's expectations is a lot easier for some than for others.

Athletes show certain patterns as they age. I've observed that athletes in their early twenties can get away with a lot: they can train irregularly, train hard, injure themselves and bounce back pretty quickly. By the late twenties or early thirties a swimmer may experience a more or less serious injury which serves as the first "wake-up" call. If he or she gets good treatment, including rehabilitation exercises, future injuries to that area may be avoided. By the time athletes are in their late thirties they are beginning to understand that they are mortal. Irregular training, training too hard, training too little, all start making a bigger difference than they did ten years before. Poor training habits will lead to poor performance or to injuries (or both). By the time athletes are over forty they know they're not spring chickens anymore. Irregular training has more dire consequences, often leading more quickly to injury, and often of a more serious nature. This in turn leads to poor performance. It takes noticeably longer to heal and to get back up to one's former training level. As the years go on, all of this gets more pronounced.

With all those nice generalizations mentioned above, there is one caveat: we are all on our own physiological schedule. We have only to look at Karlin Pipes-Nielson, who in her thirties is swimming faster than in her twenties. As most of us have noticed we're not Karlin! We all age on slightly different schedules. Some of the factors that affect how quickly one ages are: genetics, quantity and quality of exercise, nutrition, illness, habits such as drinking alcohol or smoking cigarettes, outlook and attitude, and stress. Although "stress" is a kind of catch-word now, it is very significant. Most of us have seen friends practically age right before our eyes when they are under a lot of stress, either from work, family, friends, or relationships.

By far the most studies on swimmers have been done on college swimmers in their late teens and early twenties. While they each have their own genetic makeup with their own biochemical and physiological individuality, they are still a rather homogenous group. Their lives are all rather similar with similar stress levels. Also, they are also all within a five year age group (18 to 23). A good training program for a twenty year-old college student might only lead to fatigue and poor performance in a forty-five year-old swimmer. A good program when life is easy and stress is minimal might cause one to fall apart when life is filled with stress. So each person may have different optimal workouts for different times of their life.

Metabolism is the sum of catabolism (the process by which living tissue is changed into energy and waste products of a simpler chemical composition) and anabolism (the process by which food or any simple substance is changed into more complex compounds living tissue). Metabolism is a process that is constantly going on, whether we're active or inactive. The rate at which substances are being broken down and rebuilt is known as metabolic rate. Basal metabolic rate is the rate of metabolism when the body is at rest. We know that as we age this rate slows down. Something that I've noticed is that there appears to be a drop when one reaches the early forties. It seems that at that point, in order to maintain one's weight, one needs to eat less and/or exercise more. People in their sixties generally eat a lot less than people in their thirties. Often by then they've adapted to a slower metabolism.

This same slowing of the basal metabolic rate affects tissue healing. Training is a process of overusing a tissue (muscle), causing it to break down, and then a rebuilding of the muscle as a reaction. As we get older, this process is slower. If you're training hard every day of the week, or several days in a row, you're really not giving your body time to rebuild. The result is that you simply end up being broken down. This may show up as being constantly tired, easily injured, or just plain crabby. Some people do well swimming four consecutive days before they rest. Others can only swim two days in a row. Some can swim five days in a row if they alternate easy and hard workouts.

(Continued on page 10)

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Quick-Twitch Heaven

Dan Thompson

Are you a born sprinter? Do you have more in common with Carl Lewis than Janet Evans? Do you know how it is to have explosive overdrive but to hang on for dear life in any race beyond a 50? If you answer in the affirmative to the above questions, then Masters swimming is a fast-twitch package heaven-sent for you. Just think of it . . . 50s in every stroke, the 100 IM, and a short-course season spanning September through May!

The prospects are enticing, but do you lack the time and inclination for the back-and-forth lap swimming of workouts past? No problem. If Mr. Lewis can be a speeding locomotive without 10K training, then you needn't train for the Channel to be in top sprint shape for a 50 yard blast. Four sessions per week of focused sprint work will do the job. Here are the ingredients:

FLEXIBILITY

The time-constrained sprinter may view stretching as a luxury training item. But quick-twitch muscles are less fish-like in their elasticity than those of your slow-burn compatriots. Take ten minutes to stretch out before every practice.

STRENGTH

Pump iron if you really must, but remember that you already possess natural fast-twitch power. By using stretch cords, you can harness that power in ten minutes per day. Do four sets of 20 repetitions, using heavy cords and a butterfly pull-pattern. Stretch back far enough to get a major triceps muscle-burn.

WARM-UP

This is but preparation for the speed set that follows. Go far enough that you are loosened and have a feel for the water. Use stroke drills, and introduce speed play by pace-building every third 25.

SPRINT SET

Believe it or not, you can train to race 50s by doing sprints of half that distance in practice. Apart from warm-up and warm-down, this need be your only set. It is staggeringly simple: 8 x 25 kick, a full recovery, and then 16 x 25 swim. The key is to use long rest intervals, with a work-to-rest ratio of at least 1:4. Otherwise, lactate build-up will hamper your explosiveness.

Pure sprinters need a heavy kick, so work the kick set. Learn to stay aggressively focused. You can be sociable some other time. If your stroke falls apart, just stop, warm down, and go home. You're into power swimming, not punishment.

SECRET WEAPON

Weeks have gone by and you are feeling strong enough to handle a greater training overload. Now is the time to bring out the magic potion, if there ever was one, for the Masters sprinter. Instead of adding yardage to the program, simply keep the yardage where it is but add resistance! Adding yardage will train your speedendurance, but what you're after is raw speed itself.

You can get that raw speed by taining hard against drag forces greater than those ever encountered in competition. Track sprinters do it by sprinting in sand dunes and by using parachutes. We do it by wearing sleeveless sweat shirts and by using hand paddles. On our kick sets, we do the same by holding the kickboard like a barge, underwater with the flat surface forward.

Resistance efforts like this one are agenuine form of weight work for the sprinter, and should be carefully added to every other workout. They will keep your training time short and will add an overload that makes ordinary sprinting seem easy by comparison. On top of that, they will satisfy the hunger of the primal sprint beast within your soul.

TAPER

On this type of program, you are always ready to rumble. The danger is in over-resting. Ten days out from the big meet, drop the cords and resistance work. Taper back the number of sprint repetitions, but maintain your intensity and speed. Five days out, switch from 25s to 12 1/2s.

CAVEAT

The exuberance that sprinters are known for is a gift that sometimes works against them. It goes without saying that any training program, especially this one, should be entered into cautiously and progressively. Also, there is no suggestion here that you give up fitness conditioning, which we all know is good for your health. If time allows and you are looking for speed, you can graft this regimen into your endurance program.

Dan Thompson swam IM for Harvard in the late 1960s. He has coached a sprint-oriented Masters team, the Texas Sprinter-Beast. Last year, he gave up his Austin medical practice to become Head Age-Group Coach at Texas Aquatics. Dan has used minimum yardage training with great success. At age 44, he set a USMS national record of :23.63 in the 50 yard butterfly.

What Masters Swimming is About

Matt Shirley

At various times in various discussion groups I have noticed that a number of people who are new to swimming have a mistaken assumption about US Masters. To wit, they believe one has to already be pretty proficient at swimming before one can join a team and participate in its workouts, or participate in stroke clinics, or basically do anything that would help move past that awkward feeling beginner stage. Several people have tried to gently dispell this misunderstanding. Let me shout this from the rooftops: YOU ARE GOOD ENOUGH, FAST ENOUGH, AND COMPLETELY WORTHY TO JOIN USMS JUST THE WAY YOU ARE!

USMS is about anyone who wants to improve their swimming and enjoy the fellowship of like minded people, period. Any swimmer, regardless of ability, can have a goal, and no one's goal is more or less worthy because it is faster or slower than someone else's. We have some people in USMS who's speed and power in the water are almost beyond comprehension. But, there is no inherent significance in one of their world record swims. All significance is assigned by people. Your goal is just as important to you, and just as worthy.

Let's talk about the medium of water for a minute. At top speeds, it is much less forgiving than air, much more dense and resistant. However, for less intense exercise, it is much more forgiving. Your natural buoyancy will hold you up, or at minimum drastically reduce the weight you have to support against the effects of gravity. Moreover, water is a much more efficient medium for dissipating excess body heat. If you have some kind of physical problem, you really ought to be getting your exercise in the water because you can do it better, longer, and with less risk of injury than on land.

Now, let's talk about who can benefit most from swimming with a coach or a group. For all you triathletes out there (I know I pound on you guys a lot, but I really do admire your willingness to take on a completely foreign sport) let me use an analogy to bicycling. When you were a kid just learning how to ride a bike, did you do a lot of conditioning for your legs, maybe some jogging or lifting weights, before you jumped on the bike for the first time, because you wanted to be sure you were in good enough shape to bike a half mile that first time? Heck no! That isn't how people learn to ride a bike! So why would you think that you have to be able to do something like swim 500 yards without stopping before you can get coaching or join a team? The easiest and fastest progress you will make is refining your stroke technique so that you can swim at a sustainable pace (like easy walking) and go as far as you like. So get your instruction right away, conditioning can come later. And, a Masters team can be one of the best places to get your coaching.

On a similar topic, a number of former swimmers think they have to get themselves in shape before they start working out with a team. "So I don't embarrass myself." Why?! These people don't know you and don't know how fast you were _____ years ago. Why would you want to deny yourself the fellowship and the variety of working out with a group? (In the final analysis, the greatest enemy to regular exercise is not age, or busy schedules, or injury, or lack of athletic ability; it's boredom.) So start out in a slower lane, and amaze everyone by how fast you move up!

Let me offer a few tips for picking the right team for you. Please do not interpret this to mean "I am not worthy." Look at this as a method for directing traffic. For most Masters teams, you will have a difficult time if you cannot swim one length of the pool without stopping. Does that mean you need to suffer on your own? Of course not! Find yourself some good coaching to improve your technique. Conditioning can look after itself; let's get those training wheels off your bike. You may also find that you will benefit most from finding a coach who works with competitive or masters swimmers, rather than starting with a rinky-dink learn to swim class. Best to learn good mechanics right away, rather than the Australian crawl circa 1950.

When you want to find a team, understand that all teams are different. You should try several until you find the one that is most comfortable, and makes you want to come to practice. Understand that some teams have different levels of participation based in part on ability, and in some high Masters density areas, some teams even have strict ability and minimum participation requirements. That's cool. It is not about who is more worthy; it's about directing traffic.

Swimming can be a challenging and frustrating sport. It certainly allows less interaction with other people than most other sports. There is no need to turn it into a solitary sport. Find your group of swimming mates ASAP, and treasure them like gold. They will keep you far younger than you ever imagined possible!

Matt Shirley is a masters swimmer from Southern California. This article originally appeared in the Southern Pacific Masters (www. spma.net) web site.



2004 Southwest Zone and Arizona State Masters Championships March 26- March 28, 2004

- *Rules:* 2004 USMS rules apply. All events are timed final. Swimmers are limited to a total of 9 individual events for the entire meet, no more than 4 per day not including relays. Age on March 28th determines the age group of the swimmer for the entire meet.
- *Long distance events:* The 1000 and the 1650 events will be limited to the first 40 entries received for each event and will be run slowest to fastest, ages and sexes combined. You may swim either the 1000 or the 1650 but not both. Positive check-in is required for the 1000 and 1650 events. Check-in will close at 3:30pm for the 1000 and 4:00pm for the 1650.
- *Seeding:* All events (except the 1000 and the 1650) will be pre-seeded, men and women separately, slowest to fastest. *Absolutely, positively no deck entries or late entries will be accepted.*
- *Eligibility:* Any swimmer with a valid 2004 USMS registration, or a valid travel permit from another country is eligible. Each swimmer must submit a copy of their 2004 USMS registration card or travel permit. Failure to submit proof of registration will result in the entry being rejected. For further information on registration contact Marilyn Fogelsong, mfogelsong@aol.com or 991 E. Calle Mariposa, Tucson, AZ 85718.
- *Affiliation:* A swimmer's club affiliation as stated on the consolidated entry card will apply throughout the meet, except that a swimmer may unattach at any time.
- *Awards:* Ribbons for places 1-8 will be awarded. Male and female high point awards for each age group will be awarded. Team awards for teams finishing first, second, and third will be awarded.
- *Entries and fees:* Entries must be postmarked by March 13, 2004. Absolutely, positively no deck entries. A flat entry fee of \$35 includes a meet T-shirt. Be sure to include T-shirt size in the lower left corner of your consolidated entry card (S, M, L, or XL). Please use the Arizona consolidated entry card; fill it out completely (front and back) and be sure to note event numbers and seed times for all events you wish to swim.

Make checks payable to Ford Aquatics. Mail check, consolidated entry card with T-shirt size in the lower left corner and copy of USMS card to:

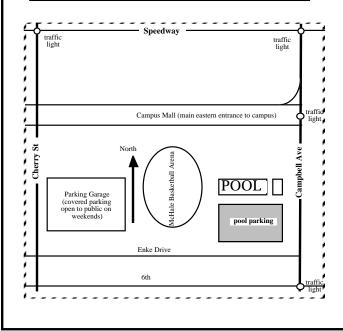
Rane Stites PO Box 44233 Tucson, AZ 85733

Consolidated entry cards are available online at www.arizonamasters.org.

- *Sanction:* Held under the sanction of USMS and the Local Master Swim Committee of Arizona, Sam Perry, Chairperson, (480) 941-0232, email azperrys@hotmail.com Sanction number: 484-0002
- Location: University of Arizona Hillenbrand Aquatic Center located on the west side of Campbell Road between 6th Street and Speedway. Outdoor, 18 lane, 25 yard pool operated at 80° F with non-turbulent lane lines and electronic timing. We will run 8 lanes for competition and set aside other lanes for warm-up. A snack bar will be set up at the meet. Pool phone is 621-4203. Questions????? Call the meet director: Rane Stites at (520) 621-4203.

2004 Southwest Zone and Arizona State Masters Championships Order of Events

	Friday, March 26. Warm-ups start at 3:00 PM, meet				
starts at 4:00 PM. Check-in required!! Men and					
	women seeded together, slowest to fastest.				
1	Women's 1000 Free check in by 3:30PM				
2	Men's 1000 Free check in by 3:30PM				
3	Women's 1650 Free check in by 4:00PM				
4	Men's 1650 Free heck in by 4:00PM				
	day, March 27. Warm-ups start at 8:00 AM, starts at 9:00 AM. Seeded slowest to fastest.				
5	Women's 200 Free				
6	Men's 200 Free				
7	Women's 50 Fly				
8	Men's 50 Fly				
9	Women's 100 Back				
10	Men's 100 Back				
11	Women's 200 Breast				
12	Men's 200 Breast				
13	Women's 50 Free				
14	Men's 50 Free				
15	Women's 100 Fly				
16	Men's 100 Fly				
17	Women's 50 Back				
18	Men's 50 Back				
19	Women's 200 IM				
20	Men's 200 IM				
21	Women's 200 Free Relay				
22	Men's 200 Free Relay				



Sund	ay, March 28. Warm-ups start at 8:00 AM,			
meet starts at 9:00 AM.				
Seeded slowest to fastest.				
23	Women's 500 Free			
24	Men's 500 Free			
25	Women's 100 IM			
26	Men's 100 IM			
27	Mixed 200 Free Relay			
28	Mixed 200 Medley Relay			
29	Women's 50 Breast			
30	Men's 50 Breast			
31	Women's 100 Free			
32	Men's 100 Free			
33	Women's 200 Fly			
34	Men's 200 Fly			
35	Women's 200 Medley Relay			
36	Men's 200 Medley Relay			
37	Women's 200 Back			
38	Men's 200 Back			
39	Women's 100 Breast			
40	Men's 100 Breast			
41	Women's 400 IM			
42	Men's 400 IM			

The \$35 entry fee includes the meet T-shirt.

Please indicate your T-shirt size in the lower left corner of the consolidated entry card.

(Continued from page 5)

A well-meaning, but uninformed coach may be encouraging you to do more than your body is able to do well. As masters swimmers, we really need to listen to our own bodies. If you are feeling worn out or tired, that is your body telling you to take it easy. If you are under a lot of stress, your body's ability to repair itself may be impaired. Training hard during such times does not make sense and may very well lead to injury. If you know that five years ago you were able to train a certain way, it doesn't mean that you can train that way now. If you are constantly fatigued, your form will suffer and you'll be practicing sloppy and not perfect strokes.

If you need to be in the water five or six days per week for your mental health, then focus on kicking for a couple of those workouts. Most of us could use more kicking, and our shoulders could probably use the rest.

Dr. Seaton is a chiropractic orthopedist in private practice in West Los Angeles. She swims with West Hollywood Aquatics and is a member of the USMS Sports Medicine Committee.

Last Month's Trivia Answers

1. C - Henry Ford. In 1921 Henry Ford wanted to find a use for the growing piles of wood scraps from the production of his Model Ts. Ford learned of a process for turning the wood scraps into charcoal briquets, and one of his relatives, E.G. Kingsford, helped select the site for Ford's charcoal plant.

2. D - Automobile tires. DuPont Chemist Stephanie Kwolek invented Kevlar in 1965 to reinforce the treads of radial tires, making them lighter as well as more fuel-efficient.

3. A - Mercury (Hg)

4. D - Cactus Wren

5. C - Warren Buffet (Berkshire Hathaway) graduated from the University of Nebraska (Class of 1950).

6. D - Lumber. William Boeing moved from Detroit to Seattle in 1908 to expand his family's large, successful lumber business to the Pacific Northwest. Eight years later he started Pacific Aero Products Company, which became Boeing Aircraft in 1934.

7. False - Persian (Farsi) is the official language of Iran.

8. B - Methyl tertiary-butyl ether (MTBE)

9. A - General Electric. Silly Putty was discovered accidentally when the General Electric Company attempted to find a substitute for rubber during World War II. It failed as an industrial material but was very successful as a toy.

10. True - In a Parliamentary system (ex. Canada), the ruling party selects the Prime Minister.

Arizona LMSC Board

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