

# Badwater Ultramarathon

The Challenge of the Champions



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SINCE 1851

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2004 Kiehl's Badwater Ultramarathon Race Magazine





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**Monica Scholz** / Ultrarunner / Canadian 24 hr Record Holder , 23 100 Mile Races in one year / 3rd PI '03 Badwater

" Your Injinji socks worked perfect for me at the seven day stage race Marathon des Sables in Morocco. I wore them every single day of the race and did not get so much as one hot spot, let alone a blister! This is significant because only about 5% of the entire field did not have to visit the medical tent for blister treatment !

**Christopher Bergland** / Triple Ironman Winner three years consecutively 2000, 2001, 2002 / 4th PI '03 Badwater

" These socks are incredible. Not only are they great for preventing blisters but they turn the 'toes that slip to the toes that grip'. By allowing my toes to take hold inside the sneakers, my feet take on a dexterity which improves my entire stride. I feel nimble and agile when I'm running in the tsoks. I like them for cycling too for the same reason-each pedal stroke is improved by the ability to pull with my toes inside the shoes."

**Scott Eppelman** / Ultrarunner / Race Director of Ultra Centric / 1st Place Combelt 24 hr, Umstead 100 & Bandera 100K

" Running stride feels more "grippy," like the difference between gloves and mittens. I feel like I have more control, especially on technical trails. The removal of skin-to-skin contact between the toes will remove a potential blister source. Blistering or not can be the difference between a good run and a DNF in a ultra."

**Greg McMillan** / Discovery USA Marathon Coach

" The tetratsoks are the best fitting, most technologically advanced socks I've ever tried. Not only do they prevent blisters better than any sock on the market, but they stand to the 120+ mile weeks that my athletes put them through. I highly recommend them for all runners."

**Dave Sellers** / New Product Review Editor of **RUNNER'S**  
WORLD

" These socks solve blister problems better than anything we've tried. "



Official Race "Sock"



Now Available:





# Badwater Ultramarathon The Challenge of the Champions

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Front Cover: *The Big Four from 2003*: Pam Reed, Dean Karnazes,  
Monica Scholz, and Christopher Bergland in a virtual reality composite of photos  
by Dave Nelson and Randuz Romay.



# adventureCORPS™

“We're Out There”

Dear Badwater friends:

Welcome to the 2004 Kiehl's Badwater Ultramarathon, the world's most difficult ultra running event. This legendary 135 mile running race from Badwater in Death Valley (elev. 280 feet below sea level) to Whitney Portals on Mt. Whitney (elev. 8360 feet) takes place July 12-14, 2004. Just prior to this epic race, the 2004 Kiehl's Badwater Ultramarathon will feature the induction of Richard Benyo and Tom Crawford into the Badwater Hall of Fame.

AdventureCORPS is an athlete-run extreme event production company and we are very proud to carry on the legacy of Al Arnold, Jay Birmingham, Richard Benyo, Tom Crawford, and the other heroes of the desert who have gone before. Now in our fifth year producing this race, we are pleased to welcome the return of our title sponsor, Kiehl's Since 1851, the hair and skin care company founded in New York City in 1851. We also welcome the support of E-CAPS Endurance Supplements and Injinji Anatomical Interface Systems. We appreciate the ongoing support of the National Park Service, Furnace Creek Inn and Ranch Resort, Whitney Portal Store, and Lone Pine's Dow Villa, Seasons Restaurant, Pizza Factory, and Lo-Inyo Elementary School.

Further thanks go to all the people behind the scenes who help to make this race happen. An incomplete list of these generous folks must include Dan Dominy, Dave and Margaret Nelson, John Wiley, Jamie Wiley, Leon Draxler, Joe Garza Jr., Don Meyer, Keith Kostman, Anna Boldon, Mike Angelos, Stephen Matsuda, Dr. Lisa Stranc-Bliss, Dr. Kent Wang, Michael McGilgerry, Liza Carlson, Jeff Key, Jon Friedline, Rick Scott, Kelly Clancy Garvey, and many others. We also extend special thanks to Kevin Fung for the design and layout of this Race Magazine. Thanks, team!

We wish you the best of luck with your training and organization and we also encourage you to supplement your preparation by carefully studying both this Race Magazine and our race website, [www.badwaterultra.com](http://www.badwaterultra.com). We look forward to meeting you in Furnace Creek. Feel free to call, write, fax, or email at any time. We are here to help, motivate, and congratulate!

Sincerely,



Chris Kostman

11718 Barrington Ct., #342 Los Angeles, CA 90049-2930 USA  
[www.adventurecorps.com](http://www.adventurecorps.com) • [www.badwaterultra.com](http://www.badwaterultra.com)



## GENERAL INFORMATION

**DATE:** Monday-Wednesday, July 12-14, 2004.

**DISTANCE:** 135 miles.

**WHO:** An international, invitational field of approximately eighty endurance athletes representing twelve or more countries and fifteen or more American states.

**OFFICIAL CHARITY:** The official charity of the 2004 Badwater Ultramarathon is the Challenged Athletes Foundation. One of the goals of the 2004 race is to raise awareness of, and funds for, this organization. The Challenged Athletes Foundation was created on the belief that people of all abilities should have the opportunity to pursue a life full of physical activity and of sports. Be they recreational or in pursuit of a gold medal at the Paralympic Games, people with a physical disability are limited only by their access to funding. Visit [www.challengedathletes.org](http://www.challengedathletes.org) or [www.badwaterultra.com/cafi/](http://www.badwaterultra.com/cafi/) for more info.

**MANDATORY RUNNER CHECK-IN:** 12:00-2:00PM, Sunday, July 11, 2004, Visitors Center Auditorium, Furnace Creek, CA. Every runner must personally attend at some point during the two hour time-frame. Photo identification is required for all runners. Please bring the completed Runner Check-In Form and signed waivers for all crew members and the runner. All paperwork must be complete before walking in the door.

**PRE-RACE MEETING:** 3:30PM to 5:00PM, Sunday, July 11, 2004, Visitor's Center Auditorium, Furnace Creek, CA. Runner and at least one crew must attend for the entire meeting. All crew members should attend.

**MEDIA MEETING:** There will be a brief meeting of all journalists after the Pre-Race Meeting in the auditorium.

**STARTING LOCATION:** Badwater, Death Valley, CA, 280 feet below sea level.

**STARTING TIME:** 6:00AM, 8:00AM, and 10:00AM, Monday, July 12, 2004. Up to 30 runners per group. Runners may attend only their assigned start time. Runners must check in at Badwater, ready to race, 30 minutes prior to their start.

**ENDING LOCATION:** The end of Whitney Portals Road, above Lone Pine, CA, on Mt. Whitney, elevation 8360 feet. The race does not continue up the Whitney Trail further onto the mountain.

**ENDING TIME:** The event is officially over 60 hours after each starting group, so either 6:00PM, 8:00PM, or 10:00PM, Wednesday, July 14, 2004.

**COURSE RECORDS:** Men's: Anatoli Kruglikov, 2000, Russia, 25:09:05. Women's: Pam Reed, 2002, USA, 27:56:47.

**RACE IDENTIFICATION:** Each entrant is assigned a race number for identification purposes. The race number must be worn on the front of the body, unmodified, unfolded, and visible at all times during the race. It may not be worn on the head or hat. Racer numbers are listed on the race roster. The actual race number to be worn will be issued to the runner only during the Pre-Race Meeting.

**POST RACE GET-TOGETHER:** 6:00PM, Wednesday, July 14, 2004, Lo-Inyo Elementary School, Multi-Purpose Room, Lone Pine, CA. All racers are encouraged to complete the race in time for this event! Pizza and drinks will be served at this informal get-together. No charge.

**POST RACE BREAKFAST:** 8:00AM to 10:00AM, Thursday, July 15, 2004, Seasons Restaurant, 206 South Main Street, Lone Pine, CA. This will be an informal get-together, planned to provide one last opportunity for Badwater runners and crews to get together and share stories. Juice, coffee, eggs, muffins, yogurt, and the like will be provided. Room for 75 people total! First come, first served. No charge.

**AWARDS:** All racers who begin the event will receive a Badwater Ultramarathon race t-shirt, hat, and Race Magazine. All racers who officially complete the event within 60 hours will receive a commemorative certificate, a finisher's medal, and a finisher's t-shirt. All racers who officially complete the course within 48 hours will also receive a commemorative Badwater Ultramarathon buckle (Buckles, t-shirts, and certificates are sent in the mail after the race).

**RACE HEADQUARTERS:** This will be set up in a hotel room in Furnace Creek, then in Lone Pine. Time Station splits will be collated here and updates posted to the race website on a continual basis.

**WEBCAST:** Spread the word that we will post time splits, commentary, and images on a continual basis for the duration of the 60 hour race at [www.badwaterultra.com](http://www.badwaterultra.com). We will be "live" throughout July 12-14, plus will keep the entire webcast indexed there forever! We will



**Keith Kostman is the Webcast Guru.**

post time splits, images, and much more, beginning a few hours after the start of the race. As for time splits, keep in mind that the first time station is 17 miles into the race and it will take people several hours to get there. And remember, this is a webcast, not television. You have to be patient and keep in mind that you are not "viewing" the race in "real time." That said, it's going to be great!

**DONATE YOUR LEFT-OVER GEAR:** After the race, when you're staring at coolers, folding chairs, umbrellas, and things you can't get on the plane with you, please donate them to a good cause, such as the Lone Pine Chamber of Commerce, Good Will of Santa Monica, and the Las Vegas Rescue Mission.

**PERMITS:** This event is held under permits from the Inyo National Forest, Death Valley National Park, California Department of Transportation, and Inyo County. (If one of them won't issue us a permit, this race is history. So don't screw up!)

**RENTAL CAR SPECIAL RATES:** Participants in AdventureCORPS events can receive special discount rates on cars and vans from Enterprise Rent-a-Car. Call 800-325-8007, 800-593-0505, or any local branch and mention account # 32C4746.

**DIRECTIONS TO FURNACE CREEK:** Here is the most direct route from Los Angeles (or anywhere that passes through Mojave on the way to Death Valley): Reset odometer to zero in Mojave and take Hwy14 north. At mile 20, veer right onto Randsburg Road. At mile 32.2, stay straight (not right). Go left at the t-intersection junction with Hwy 395 at mile 40.5. At mile 43.6, turn right on Searles Station towards Trona (easy to miss). At mile 50, a t-intersection, turn left to Trona. At

mile 58.4, another t-intersection, turn right on Hwy 178 towards Trona. Pass through Trona, including its Texaco gas and mini mart, at mile 71.0.

At mile 104, you have two options. If it's nighttime or you don't like a little adventure, turn left towards Death Valley via Hwy 190. At mile 117.5, turn right at the t-intersection on Hwy 190 towards Death Valley. You will go over Townes Pass (elev. 4965'), pass through Stove Pipe Wells (gas, mini mart, hotel, and restaurant), then arrive at Furnace Creek at mile 170.

Your second option back at mile 104 is infinitely more fun and interesting, as well as even quieter. It's truly epic and feels like going back in time a few zillion years. So, at mile 104, if it's daylight and you have a working spare tire in your car, stay straight towards "Death Valley via Wildrose" instead of veering left as in option one. You will ascend over Emigrant Pass (elev 5318'). But first you'll go over three very short gravel stretches. They are only a few tenths of mile each and are easily passable in a normal car, unless there's a storm dumping on you. Be sure to check out the neat little oasis-like canyon you'll pass through. At mile 113.5, go left at the t-intersection towards Stove Pipe Wells and Furnace Creek. At mile 121 you'll summit Emigrant Pass. At mile 134.3, turn right at the t-intersection with Hwy 190 towards Furnace Creek. You'll pass through Stove Pipe Wells at mile 143.5 on your way to Furnace Creek, which you'll reach at mile 168. Voila!

**RACE HOTELS:** We have reserved blocks of rooms in Furnace Creek, Stovepipe Wells, and Lone Pine during our event. Use the information provided here to make your reservations and to secure the special rates that we have obtained for Badwater Ultramarathon racers, crew, and staff. Do not delay in making your reservations; the Death Valley area is a very popular place during the summer.

#### **Furnace Creek Inn and Ranch Resort (mile 17)**

Phone 760-786-2345, Fax 760-786-2307

Booking Number: 5696

Password: Badwater Ultra

Rates: \$105/night for one or two occupants; \$20 per room extra for each additional occupant; \$20 for a roll-away bed.; plus 9% tax and a \$2.50 energy surcharge. Reservations must be made by phone or fax. Do not use their website if you want to use these special rates or use rooms that we have blocked for our group. Be sure to use the booking number and password and be clear on exactly what type of accommodations you require. We have a block of 35 rooms reserved on 7/10 and 90 rooms reserved on 7/11.



**Stovepipe Wells Village (mile 42 on race route)**

Phone 760-786-2387, Fax 760-786-2389

Password: Badwater Ultra

Password: Badwater Ultra

Rates: \$75/Standard: two beds; \$95/Deluxe - larger room with TV and fridge - with one or two beds; plus 9% tax. Reservations must be made by phone or fax. Be sure to use the password and be clear on exactly what type of accommodations you require. We have a block of 40 rooms reserved on 7/11.

**Lone Pine (mile 122 on race route):**

**Dow Villa**

Yolanda Chavez, Manager

310 South Main Street

Lone Pine, California, 93545

800-824-9317, 760-876-5521. 760-876-5643 (fax)

email: dowvilla@qnet.com

They have 45 rooms set aside under "Badwater Ultra."

**Alabama Hills Inn**

1920 South Main Street

Lone Pine, California, 93545

800-800-6468 (toll free), 760-876-8700,

760-876-8704 (fax)

**Mt. Whitney Motel**

305 North Main Street

Lone Pine, California, 93545

800-845-2362

**Lone Pine Budget Motel**

138 West Willow

Lone Pine, California, 93545

760-876-5655, 760-876-5738 (fax)

**Trails Motel**

633 South Main Street, PO Box 65

Lone Pine, California, 93545

800-862-7020

**Portal Motel**

425 South Main Street

Lone Pine, California, 93545

800-531-7054, 760-876-5930, 760-876-5517 (fax)

nation or proportion as determined by event officials.

For more information, visit the race website.



**Badwater Ultramarathon: What to Bring**

**GEAR:**

Flashlights and battery lantern.

Ice chests and large fluid containers.

Folding chairs and/or cot.

Umbrella, tarp, and/or canopy.

Garbage bags, plastic bags, baggies.

Utensils, plates, cups, etc.

Bucket or basin.

Scale for runner weighing during race

Water sprayer.

Clipboard, pens, pencils, notepaper.

Duct tape, rope, cord, string.

Towels of various sizes.

Paper towels and toilet paper.

Camera and film, if needed.

Cellular phone (often won't work).

**FOOD AND DRINKS:**

Water and ice (lots and lots).

Electrolyte/fluid: E-CAPS, Gatorade, Club Soda, plus pretzels, peanuts, corn-nuts, salt, etc.

Carbohydrate: Sustained Energy, Hammer Gel, Perpetuum, fig newtons, pop tarts, plus watermelon, cantaloupe, oranges, and other fruit.

Caffeine helps at night: Soda, coffee, tea, cocoa, etc.

Other food: Bread, sliced turkey, cheese, peanut butter, jelly, cup-of-soup, oatmeal, jerky.

**MEDICINES:**

Sun block, lip balm, etc. (provided by Kiehl's)

First aid kit.

Thermometer for body and outside air temperatures.

**FOOT BOX:**

Toe socks, "Tsoks," by Injinji. See [www.injinji.com](http://www.injinji.com)

Micropore tape (3M), Band-Aids, dressings, etc.

Compeed, Elastogel, Duoderm, etc., for pressure areas and blisters.

Swabs, needles, razor blades, tweezers, scissors, etc.

**RUNNING GEAR:**

Toe socks, "Tsoks," by Injinji.

Full coverage solar-protective clothing.

Race number, worn unmodified and unfolded at all times.

Light-colored running shoes (several), including one size larger.

Insoles such as Sof Soles.plus orthotics, etc.

Hat with long-bill or wide brim plus neck shroud.

Dark glasses, summit goggles, swim goggles.

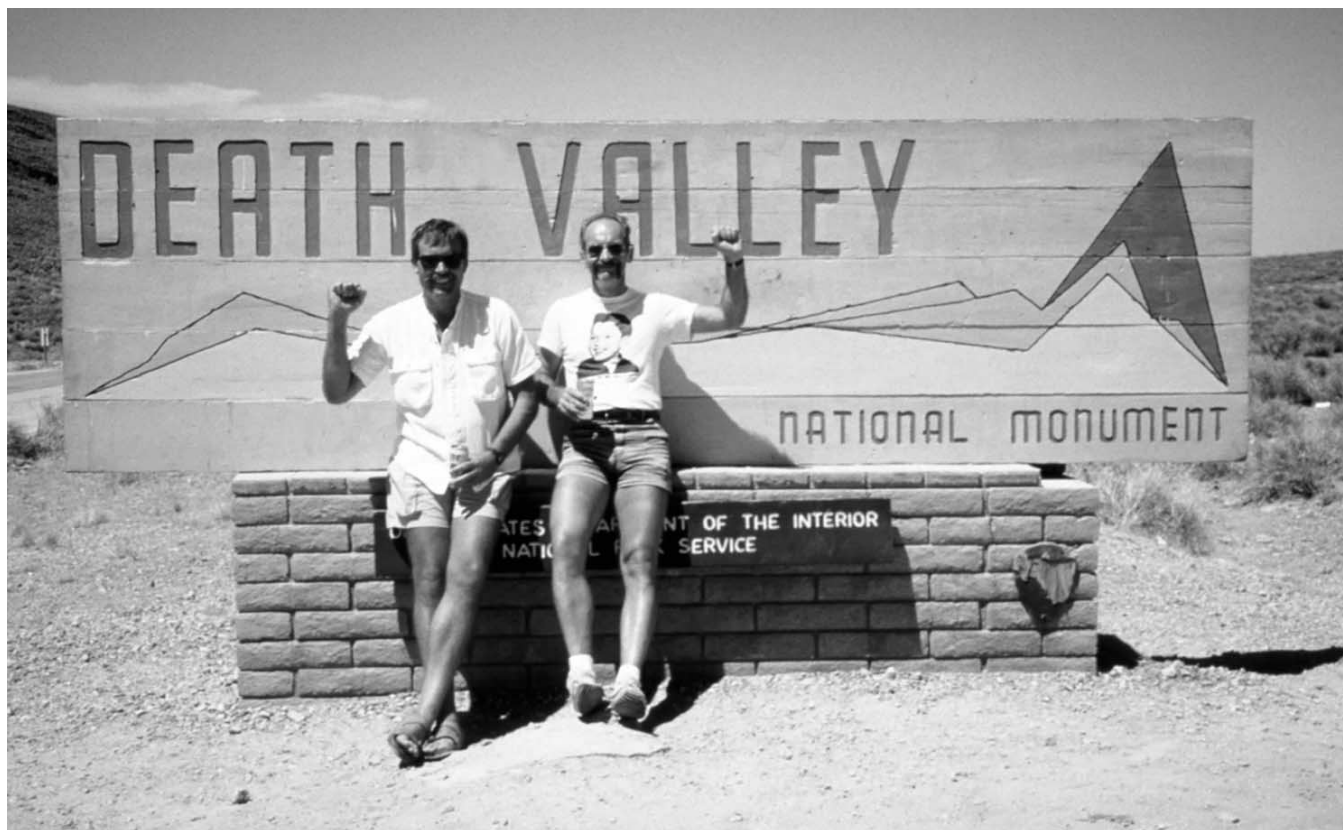
Scarf or handkerchief.

Reflective gear (mandatory): strobe light, flashers,

reflective vest. Awesome little strobes available from

<http://www.roadid.com/?referrer=978>





## FOR PETE'S SAKE

*It All Started With A Little Glass of Beer;  
But Then, So Many Adventures Do--*

*By Richard Benyo*

It all started with beer.<sup>1</sup> And ended the same way.

Between lay the opposite ends of a continent, more than three decades, and 300 miles of bad roads and trails.

The first beer came when I was six years young. Surreptitiously--and seemingly ritualistically--fed to me by Peter Herman, the patriarch of the Herman tribe.

Peter Herman was German. Germans drink beer. Peter Herman drank beer. So did his three sons, Puda (Norbert; Puda pronounced Poo-da), Eppie (Edward), and Richard. My "three musketeer" uncles.

I was special to Peter. I was not just the first male grandson of Peter Herman, but the first grandchild.

Period. Still steeped in Old World customs, remnants of the rights of primogeniture, in which the first male offspring inherits the kingdom, I was treated special by Peter Herman. I was treated to Saturday--the holy day in Peter Herman's week when he had four hours to himself. Which he shared with me and only me.

Peter Herman was the janitor for St. Joseph's Church in what was then East Mauch Chunk, Pennsylvania. St. Joe's consisted of a huge church, a rectory, a grade school, a residence for the Sisters of Christian Charity who taught at the school, and a cemetery. The complex took up half a block of our little down-on-its-luck coal town. Peter Herman maintained the property through snowstorms, 5:15 a.m. masses, and annual top-to-bottom cleanings that would have stirred jealousy in a Quaker homemaker.

As a kid, I helped him maintain his own house by cutting grass and hauling ashes from the coal furnace. And was rewarded with shiny coins and with Saturdays.





*11 months*

**Despoiler of little kids, Pete Herman preps little Richie Benyo for his expeditions to Death Valley.**

On Saturdays Peter Herman would draw the shades in the front room, position his comfortable chair toward the clunky black-and-white TV, set up a dining room chair for me to sit next to him, and we'd spend the afternoon watching cowboy movies beamed through the world's first cable television system from stations in Philadelphia and New York City.

Peter Herman loved cowboy movies. And he had a marathon capacity to watch them. Roy Rogers. Tom Mix. Bob Steele. Hour after hour.

While we watched cowboy movies, Peter Herman drank beer, poured from a frosty bottle into a six-ounce glass. One day he brought in two glasses. And poured beer into both glasses. "Here," he said, handing me one. "You've got to learn how to drink beer. Wash that trail dust out of your throat."

I tried it and made a face. He smiled; he seldom laughed outright; he was seldom out from under a heavy burden of worries and woes. "You'll learn to like it," he said, "else you ain't much of a German." He smiled again, then became serious. "Don't ever tell your mother about this. This is between you and me."

He never gave me more than a six-ounce glass of beer. I learned to nurse it all afternoon. From the cowboy movies like Roy Rogers' Saga of Death Valley (also starring Gabby Hayes and Don Barry), I learned about the infamous valley of death. From Peter Herman I learned to drink beer.

We never talked during the movies. The fact that I had become a severe stutterer when I came out of anesthesia early during a tonsillectomy at age five didn't bother him. After all, we were cowboys; we were supposed to be laconic.

Peter Herman, cowboy movie aficionado, never got to go to the Wild West, much less Death Valley. Hell, Pete Herman never got west of Harrisburgh, Pennsylvania. On a regular basis I told Peter Herman that someday I was going to go to Death Valley. He'd smile and raise his little beer glass and say, "Tell Roy Rogers I said 'Hello!' And send me a postcard."

At the end of the afternoon, after the cowboy movies ended, he'd raise the shades and limp into the kitchen where Mary Herman, my grandmother, who towered over him, had returned to begin making supper. On the way to the kitchen, he'd slip me a Senz-Senz to cover the beer on my breath. Whichever uncles were around would come by and we'd mosey up the street to the St. Joe's Club, where they'd drink nickel beers and I'd play the pin-ball machine. Pete Herman had been crippled in one leg as a child and he limped like a Pony Express rider who's been in the saddle too long.

He never saw Death Valley. But he lived there once a week. For a few hours. Breathing in the alkali dust, squinting into the furnace sun, free to roam away from Mauch Chunk to find some escape from the mundane, some peace while riding tall in the saddle.

\* \* \* \* \*



Al Arnold was a big fella. Hulking, like a benign Frankenstein monster. Not your classic concentration-camp skinny long-distance runner with spindly arms. And somewhat better looking.

He arrived at the offices of *Runner's World Magazine* in Mountain View, California one day in 1977. He'd called ahead. He had a story to tell us; pictures to show us. We were about to introduce a new magazine devoted to marathon running. Marathoning had outgrown itself and our February issue could no longer hold the annual marathoning summary so we were giving it its own quarterly magazine, *The Marathoner*.

Al had a fantastic story to tell of how he ran from Badwater in Death Valley, the lowest point in the Western Hemisphere, to the peak of Mt. Whitney, at 12,494 feet the highest peak in the Lower 48. In the middle of summer. With temperatures in the 120s. He'd been crewed by Eric Rahkonen, a photographer for the *Contra Costa Times*. He'd almost died on the mountain when someone stole a cache of warm clothes he hid on the way up.

The 1977 first-ever successful solo crossing of the course had been Al's third attempt. He'd tried and failed in 1974 and 1975. He'd taken a bye in 1976 to get married.

Athletes had run the course some years before as a relay (In fact, a 16-minute film had been made of such a relay by Bruce Maxwell and Tate Miller; you could buy your very own 16-mm copy from an ad on page 137 of the February 1979 issue of *Runner's World* for a mere \$195.), but it was felt that no runner was capable of doing the course solo. Big, tough, soft-spoken Al Arnold had proved them wrong.

The feature story in the first issue of *The Marathoner* (Spring 1978) opened the dam gates. Dozens of runners went to Death Valley each summer to attempt to do what Al Arnold had done.

But it took another four years until another runner succeeded. That runner was Jay Birmingham, who in 1981 ran the course in 75:34; Al Arnold had taken 84 hours to complete the distance.

But Birmingham didn't merely run the course. He followed it up by writing a book about the adventure, a book he called *The Longest Hill*, named after the 18-

mile-long climb from Stovepipe Wells to Towne Pass, which effectively gets a runner out of Death Valley--and away from the worst of the heat.

Dozens of runners continued to travel to Death Valley each summer and dozens of runners went home crushed.

In 1982 New Zealander Max Telford brought the course record down to 56:33. Greg Morris went to Death Valley in 1983 and completed the course in 76:38.

\* \* \* \* \*

The next major insanity on the course came in 1986 when, inspired by Jay Birmingham's book, two Santa Rosa, California ultrarunners attempted to organize an official race on the course, which they called The Longest Hill Ultra. And they almost pulled it off. But not quite.

Tom Crawford, a grade school principal, and Mike Witwer, a medical doctor, were the guiding lights behind the California Untrrunners, and they wanted to put on the ultimate ultra: from Badwater to the peak of Whitney in the middle of summer.

They began getting the word out. They took trips to Death Valley to scope it out and to explore getting the necessary permits. They put together a multi-paged entry form--a rarity in ultrarunning in those days when entry forms were usually one side of one sheet of paper. They wanted to spell out the dangers of the course. Give fair warning of what could be expected. Scare away the timid.

Incredibly, they received several dozen entries, many of them runners who'd failed on the course in past years, but who felt that being part of an official race would increase their chances of success. Crawford and Witwer even managed to finagle an insurance agent to write them a policy so that, should something go wrong, they wouldn't lose their homes--and everything else they owned. But the agent canceled the policy when he got word of some of the inquiries from potential entrants that Crawford and Witwer were fielding. Inquiries such as: Will there be day care available? Inquiries such as: Can I bring my horse?

Without insurance, but with a year's worth of training behind them (Crawford and Witwer intended to both



direct the race and run it, not uncommon in an ultra back in those ancient times.), the California Ultrarunners canceled the official race and on July 4, 1986 the two of them, supported by Witwer's brother, left Badwater. Some 70 hours and 27 minutes later, they became the fifth and sixth runners to complete the course, although in the process they nearly froze while huddled together in the stone hut on the peak of Whitney where they were trapped overnight after they summited.

\* \* \* \* \*

When they returned to Santa Rosa, two things happened.

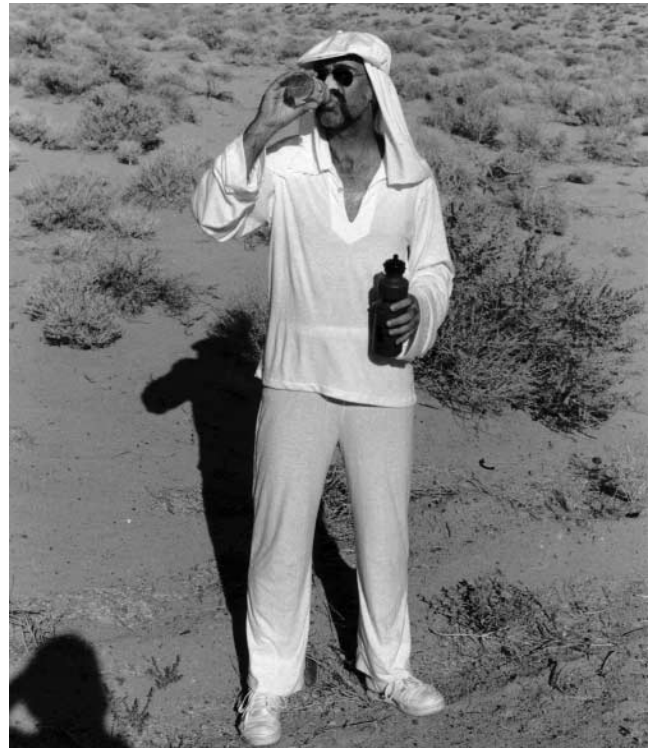
I got a call from Witwer, who wanted publicity for their incredible feat. I was at the time writing on running for the *San Francisco Chronicle*. I drove over and interviewed them and wrote a story for the newspaper. (They never offered me a beer.) When it was published, it instigated a challenge to Crawford and Witwer from Kenneth Crutchlow, an expatriate Brit who had done all sorts of long-distance challenges over the years (some of them in Death Valley), and who was looking for a new challenge and the accompanying publicity.

In a show of typical Crutchlow bravado, he barged into the Bullmoose pizza emporium where Crawford and Witwer were eating, and loudly challenged them to a team race in July of 1987: Crutchlow and a fellow Brit against Crawford and Witwer, representing America. The wager: a pint of English ale.

Crawford and Witwer bit. At first.

Crutchlow put an ad in *Athletics Weekly*, an English track & field publication, looking for a partner to take on Crawford and Witwer and got but one response. That response, however, was from Eleanor Adams, at the time the best damned female ultrarunner in the world; perhaps even the best ultrarunner of any sex.

When Witwer heard Crutchlow was teamed with a female who might actually kick his sorry ass, he pulled out of the race. So, at the last minute, Crawford enlisted the assistance of Jean Ennis, a fellow Santa Rosan. Both of them were coming off the Western States 100. Both of them quickly changed gears to Death Valley. I was invited to go along to cover the challenge race for the *Chronicle*. It would be my first trip to Death Valley. Pete Herman would be thrilled.



**IT AIN'T BEER, but for the meantime, it'll have to do.**

On the way through Lone Pine, we took a side trip to the Alabama Hills between town and Whitney Portal. Literally hundreds of Westerns had been shot in the Alabama Hills. It all looked very familiar, as it should: I'd spent nearly every Saturday afternoon of my childhood in the Alabama Hills, even if only vicariously. We sat on the tailgate of the truck and had a beer. I thought of Pete Herman and washed down more of the trail dust.

The race itself, the first-ever on the Death Valley/Mt. Whitney course, was extremely interesting--not only because of the race itself, but also because of all the activity we encountered.

A week or so earlier, Linda Elam had become the first female to finish the course, and seventh overall. Her running partner, Adrian Crane, also finished the course. Gill Cornell of nearby Ridgeway was on the course when the U.S./U.K. race started and he would ultimately set a new course record of 45:15. There was also an elderly guy from Washington State on the course: Richard Kegley, in his 60s, would become the oldest man to run the course. And David Bolling, a journalist who was covering Crutchlow, and who decid-



ed to "run" the course with him in the hopes of doing an inside-rhe-race story on the race, had the opportunity to, with Crutchlow, set the slowest time (126:30) ever recorded on the course, as Crutchlow, bringing up the tail of the U.S./U.K. race went so far as to have his driver take him into town for sit-down meals.

In the real race, which was not run as a relay, but rather as a team race where the times for each team runner added together would constitute the team's time, Eleanor Adams went out like a shot, while Crawford and Ennis ran together. Eleanor Adams reached the top of Whitney in 52:45, knocking more than 15 hours off Linda Elam's new women's record. Crawford and Ennis did 58:57. Scorewise, the American team triumphed. Coursewise, 1987 was the year the course came into its own:

1. First woman to finish the course (Elam).
2. New course record (Cornell).
3. Oldest finisher (Kegley).
4. First race on the course (U.S. vs. U.K.).
5. New women's record (Adams).
6. Slowest time on the course (Crutchlow & Bolling).
7. Most successful crossings (9; more than in the entire previous history of the course).

\* \* \* \* \*

Almost a year to the day of the U.S./U.K. race, Crawford threw a party on his deck in Santa Rosa. Most of the U.S./U.K. team members (runners *and* crews) were there. As the night wore on and the beer flowed, I hatched a very fateful theory: If you do the one-way course, from Badwater to the peak of Whitney, in order to get off the course, you have to descend a dozen miles on foot to get to Whitney Portal before you can get to a paved road--and a car. Aren't you, in effect, already started on a return trip to Badwater? Why not just keep going?

Besides relaxing a person, beer can make the world seem so much simpler. Life had been so much simpler sitting in Pete Herman's darkened livingroom watching Western movies. The reality of Death Valley was nothing like Western movies portrayed. Life was that simple. Everything was black and white. And easy.

Even though it was night and dark, Crawford was wearing cheap plastic sunglasses. "Well, hell," he said. "Let's go do it--!"

"Do what?" I asked. Too much beer can also make a person stupid.

"Let's go do the out and back--next year. At this time." He nodded his head up and down as though this were the most natural suggestion in the world. "You said it yourself," he pushed. "Coming down off the mountain, you're already on your way back to Badwater. Let's just keep going."

What I didn't want to mention, what would have spoiled the moment, was the fact that I'd never even done the course in one direction, much less two; I sucked when it came to running in heat; and I didn't do very well at altitude.

"Well, OK," I said. "We'll do it."

Crawford lowered his sunglasses. "Look me in the eye and say that--"

"OK, we'll do it," I said, and suddenly the beer I'd drunk that night turned bitter in my belly.

The next morning, the phone rang. It was Crawford. "Did we say last night what I think we said--?"

"You mean about doing the Death Valley course out and back?" I supplied.

"Yeah, that--"

"We did," I admitted.

There was a pause. "Did anybody hear us?"

"Couple people," I supplied, feeling at this point that Crawford deserved everything he got for saying it loud enough for even us to hear.

"Well, then--" he eventually said. "Well, then, I guess we gotta do it."

And we did.

\* \* \* \* \*

We trained for a full year to do the out-and-back in 1989. In 1988, while Crawford and I were drinking too much beer and getting ourselves into potentially lots of trouble, the Hi-Tec shoe company staged a race on





the course with eight runners, four of them racing to the top of Whitney, after they were told weeks in advance by the rangers that there were no official races allowed on the National Forest lands. The runners who made it to the top were cited by ranger Marty Hornick, quite an athlete in his own right—he held the record for traveling on foot from Whitney Portal to Whitney's peak. We closely followed the activity on the course throughout the summer of '88, but the activity didn't match '87's insanity.

Our concerns for the out-and-back were simple: We could die. So everything we did was aimed at preventing just that occurrence.

Hell, it wasn't that long before that a two-person relay team claimed that no human being would ever solo it; and it was now a mere 12 years since Al Arnold had done just that. Now Crawford and I, two less-than-stellar runners, both with marathons right around the three-hour mark, were going to commit aerobic suicide.

Of course we needed a team to watch us die.

Tom's wife's uncle, Billy Owens, a grizzled World War II marine who'd spent three years landing on Japanese-held islands, said he'd help—but only if Crawford and I joined ECV (known as The Clampers), an all-male group of Western historians, who, like the Hash House Harriers in running, were either historians with a drinking problem, or drinkers with an historic problem. We went through the initiation in June and are still members. It's a deal similar to the U.S. Marines and alcoholics: once you are, you are—for now and forever.

I recruited my wife, a nurse anesthetist, to be my crew chief, and she in turn recruited Ed and Niki Hengenius, she a recovery room nurse and Ed an engineer at Lockheed.

Tom recruited his wife Nancy and Carol Cognata, both teachers, who could fit the race into their summer vacations, as well as the aforementioned Uncle Billy. Crawford and I lived 45 minutes away from each other so we trained alone. Doing 36-mile workouts on Saturday, followed by 25-mile workouts on Sunday to teach our bodies to recover while still working. Crawford did workouts in a dry sauna at a health club; I didn't live near a health club so I had a hotbox built, installed electric heaters, and worked out in it as noon



***With no worries about their manliness, Crawford and Benyo enjoy a bearhug at the finish.***

as it sat in the pasture absorbing heat from the sun on the outside and from the electric heaters inside.

Our social lives went to crap. Other than work each day, the rest of our time was spent training. And worrying.

Two weeks before the fateful day, we spent a week camped outdoors at Panamint Springs, doing 4-6-hour workouts around high noon.

When the day of the "race" arrived, we lined up at the crosswalk on the road in front of Badwater, Uncle Billy sent us off, and many days later we returned, sort of safely. Tom had a wonderful day on the top of Whitney and began dying near the Darwin turnoff on his return trip, as he began urinating blood. While he sat in a folding chair rehydrating, he watched the storm roiling on the top of the mountain, worrying about my sorry ass, which was caught in the middle of a lightning storm that snuck up on us from behind.



Tom finished the out-and-back course in 126 hours and 34 minutes.<sup>2</sup> I finished in 170 hours and 58 minutes.

Tom helped crew me on the final miles, but kept pushing Pepsis down me, which provided sugar and caffeine but also made me suffer diarrhea every half-mile. When I finally reached Badwater, Tom pushed me into his little Isuzu Trooper II. There was a Styrofoam ice chest on the floor in front of me. Nestled in ice was a six-pack of Coors Light, Tom's favorite beer. He yanked one out, popped the tab, and handed it to me. "Here!" he said. "Drink this down. I expect them all to be gone before we reach Panamint Springs." He popped the clutch, the little engine caused the rear wheels to make a little squeal, he pulled a beer for himself from behind the driver's seat, popped it, and downed half of it. "We're getting the hell out of here and we ain't ever coming back. I ain't ever coming back to this sinkhole."

Two years later both of us were back, Tom to attempt a fast one-way, me to attempt to improve my out-and-back time. Both of us failed, Tom at Whitney Portal, me 26 miles from the finish at Badwater. We had a few more beers to commiserate.

<sup>1</sup> Born-again-newly-sober folks need not waste their time or a 37-cent stamp sending irate condemnations denouncing people who drink alcohol when they spent way too much time abusing what we're merely using.

<sup>2</sup> I won't draw out the whole adventure, as it is more than adequately covered in *The Death Valley 300: Near-Death and Redemption on the World's Toughest Endurance Course*, and if you buy a copy, I'll be able to make some space in my garage--for more beer.



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### DANGERS OF RUNNING IN THE HEAT

By Jason Hodde, MS, ATCL

Running in hot weather can pose many dangers to ultra-runners. Although most runners are aware of the dangers of running for prolonged distances in hot and humid weather, many are also inadequately prepared for the intense stress placed on the body during these hot weather runs.

In July 2002, I participated in the 25th anniversary of the Badwater Ultramarathon, a 135-mile trek from the lowest place in the continental United States (Badwater Basin), through Death Valley National Park, and to the foot of Mount Whitney, the Whitney Portals, at an altitude of 8,360 feet (2,548 meters). The run was held in the middle of one of the most severe heat waves southern California has ever seen. In preparation for the run, I made sure my crew was aware of the signs and symptoms of heat illness, as well as how to treat me should problems occur. Although the most extreme weather is likely behind us for the year, the combination of moderate heat and humidity can still make some of those fall ultras dangerous to your health. Here are some of the dangers of ultrarunning in the heat, and preventative measures that can be taken to avoid potential problems.



**Dr. Lisa Stranc-Bliss tends to Jody Lynn-Reicher during the 03 race.**

#### The Heat Index

The heat index is the apparent temperature felt by the body due to the combined effects of actual temperature and humidity. Most people understand that as the air temperature goes up, so does the heat index, but humidity also plays a role. As the humidity rises, the

body is unable to efficiently evaporate the sweat it produces. Therefore, the perceived temperature is much higher than the actual air temperature. The loss of cooling efficiency thus makes exercise extremely dangerous.

Although it is convenient to use a single number to describe the apparent temperature your body feels, keep in mind that heat and humidity affect everybody differently. Several assumptions are made to calculate the heat index measurements in the table below. Specifically, the heat index assumes the body to be:

- 5' 7" (170 cm) in height
- 147 pounds (67 kg) in weight
- Caucasian
- At 98.6° F (37° C) body temperature
- Clothed in long pants and a short-sleeved shirt
- In shade
- Walking at a speed of 3.1 mph (5 kph)
- In a breeze of 6 mph (10 kph)
- Not dripping with sweat

Changing any of these factors can either increase or decrease the heat index from those shown in the table. Be aware that heat index values of over 100 significantly increase your risk of heat-related illness.

	Air Temperature (Degrees F)											
	70	75	80	85	90	95	100	105	110	115	120	
Relative Humidity	Heat Index											
0%	64	69	73	78	83	87	91	95	99	103	107	
10%	65	70	75	80	85	90	95	100	105	111	116	
20%	66	72	77	82	87	93	99	105	112	120	130	
30%	67	73	78	84	90	96	104	113	123	135	148	
40%	68	74	79	86	93	101	110	123	137	151		
50%	69	75	81	88	96	107	120	135	150			
60%	70	76	82	90	100	114	132	149				
70%	70	77	85	93	106	124	144					
80%	71	78	86	97	113	136	157					
90%	71	79	88	102	122	150	170					
100%	72	80	91	108	133	166						

Data from the US National Weather Service

#### Heat Illnesses

There are three major heat illnesses—and all of them can be exacerbated by ultra distance running and prematurely end an ultrarunner’s race. In all cases, the main reason that runners experience heat illness is dehydration. If you replace lost fluids and electrolytes and are able to train your body to process a high volume of fluid in a short period of time, you significantly decrease the risk of experiencing these race-ending medical emergencies.





**Heat cramps:** Exercising in hot weather can lead to muscle cramps, especially in the legs. This is usually caused by imbalances or deficiencies in your body's electrolyte stores. A cramp is characterized by sharp, stabbing pain in the muscle and rarely works itself out on its own. On a training run earlier this year in Death Valley, many runners complained of cramps in their legs; I suffered from cramps in my diaphragm and had difficulty breathing for more than an hour! Cramps become less frequent with heat training, but for those of us unaccustomed to such extreme conditions, maintaining adequate hydration and electrolyte balance is critical to avoiding them. To eradicate cramps, you should stop running, drink fluids containing electrolytes, cool your body with wet towels, and immediately get out of the sun.

**Heat exhaustion:** Losing fluid and electrolytes through sweat leads to dizziness and weakness if the lost fluids are not replaced. Heat exhaustion is characterized by a moderate rise in body temperature, dizziness, nausea and vomiting, and a headache. You might also experience weakness, lack of coordination, heat cramps, heavier than usual sweating accompanied by moist and cold skin, and "goose bumps." Your heart rate may rise and you won't be able to run as fast due to fatigue. Many runners – even those who are well trained – will suffer from mild heat exhaustion after running for several hours in hot and humid conditions. If you experience the signs of heat exhaustion, stop running immediately and drink fluids containing electrolytes, cool your body with wet towels, lie down and elevate your feet a few inches above your heart, and immediately get out of the sun. Since heat exhaustion can lead to the most severe form of heat-related illness, heat stroke, seeking prompt medical attention for heat exhaustion is also highly recommended.

**Heatstroke:** In extreme cases heat can upset the body's thermostat, causing body temperature to rise to 105 degrees F or higher. This is a life-threatening situation that requires immediate medical attention. While it is common for untreated heat exhaustion to rapidly progress to heatstroke, heatstroke can (and does) occur without the signs of heat exhaustion being apparent. Symptoms of heatstroke include lethargy and extreme weakness, confusion and odd or bizarre behavior, disorientation and unconsciousness. Because heatstroke is a complete failure of the body's temperature regulation system, sweating ceases and the skin becomes hot and dry. Convulsions or seizures can occur as the brain begins to shut down. Coma and death are also possible in extreme cases. Heatstroke is a medical emergency

that requires immediate medical attention. Call the emergency response system immediately! Get the runner out of the sun, remove all clothing, and immediately rub their body with ice or immerse the runner in cold water.

By staying properly hydrated and recognizing the early warning signs of heat illness, as a runner you can prevent a heat-related problem from becoming a life-threatening situation. As a volunteer, recognizing these heat-related dangers may one day help you save the life of a runner who has underestimated the intensity of the surroundings.



**Jay Hodde and Chris Kostman in 02.**

#### **About the Author:**

Jay is a nationally Certified Athletic Trainer (ATC) licensed to practice in Indiana. He holds Master's degrees in Exercise Physiology and the Basic Medical Sciences, both from Purdue, with an emphasis on tissue repair and healing. He is currently pursuing a Ph.D. in Pathology, where his emphasis is on the immunopathologic response to soft tissue implants. Jay also works full-time as a scientist for Cook Biotech Incorporated, a medical device company in Indiana. He has completed over 60 ultramarathons, including the Grand Slam of Ultrarunning, but has yet to conquer the Death Valley heat.







## THE DANGERS OF HOT WEATHER RUNNING:

*Dehydration, Heat Cramps, Heat Exhaustion, Heatstroke & Hyponatremia*

*By Claudio Piepenburg (Originally published by Road Runner Sports)*

Running in hot weather can pose dangers to runners. Particularly dangerous is racing in hot, humid summer conditions. Here's how to protect yourself from these five serious (and potentially fatal) conditions.

### Dehydration

Dehydration is not limited only to the summer months, although it's probably more likely to occur during that time. Many physicians believe that most people are in a constant state of dehydration. Since coffee, tea, soda and alcohol act as a diuretic, anyone who drinks these fluids on a daily basis, and doesn't drink at least an equal amount of water, will probably be dehydrated. If the person is physically active, the potential for dehydration is even greater.

Working out in hot, humid conditions promotes sweating, which in turn can cause dehydration. Sweating is good for you because it cools your body, but when you lose too much water you become dehydrated. If you're already slightly dehydrated, sweating will only make it worse. It's important to maintain an adequate fluid intake all the time. Don't expect that you can make up for several days of not drinking enough by downing two cups of sports drink before your next long run or race. It's important to keep hydrated all the time. Once you start to feel thirsty, it's too late.

The average (sedentary) person needs a minimum of eight 8-ounce glasses of fluid a day. Runners need more: anywhere from four to eight quarts of fluid. That translates to at least sixteen 8-ounce glasses daily. Remember that diuretics don't count! Drink water and sports drinks, and if you don't have to worry about calories, fruit drinks or juice.

Two hours before your daily summer workout or a race, you should drink 16 ounces of fluid. Then ten minutes or so before you start to run, drink another one or two cups of water or sports drink. Drinking early and drinking often is the key. During a race you should drink six to twelve ounces of fluid every 15-20 minutes. If the weather is very hot, you may need to drink even more. Training in warm weather, you should drink at least every 35 to 40 minutes. (Remember you will have already had two 8-ounce glasses before you started.) If you're running a

race shorter than 30 minutes, you probably won't need any water other than what you drank before the start. The same goes for the last few miles of a longer race. If you're racing or training for longer than an hour, drink sports drinks as opposed to strictly water.

Start drinking immediately after finishing a run, no matter if it was a race or a workout. Minimum is 16 ounces for every 30 minutes you ran. If you tend to sweat a lot, you'll need more. Weigh yourself after you've run. Drink at least 16 ounces of fluid for every pound you lose through sweating.

By monitoring the color of your urine you can tell if you're hydrated. It should be pale yellow or even clear. If it isn't, you need to drink more fluids. It's important that you retain the fluid, so be careful if you're urinating every fifteen or twenty minutes. To restore your fluid balance, eat something salty (a bag of pretzels, salted nuts, crackers or potato chips), then drink a sports drink. The salt will make you thirstier, so you'll take in even more fluid and urine production will decrease.



**Joe Prusaitis is tended to by his crew in 03.**



### Heat Cramps

Have you ever seen a runner bent over at the side of the road massaging their calves during a race? Chances are that he or she had heat cramps. Heat cramps are very painful (envision someone stabbing a knife deep into your muscles!) and rarely "work themselves out". The cramps occur because you've lost minerals through sweating and dehydration. Once you've reached the point of heat cramps, it's too late to try to replace fluids on the run. To make the cramps go away you should:

- Stop running
- Drink fluids immediately. The fluids should include sports drinks as well as water
- Massage the muscles once the pain begins to subside
- Cool your body with wet towels
- Get out of the sun

### Heat Exhaustion

Heat exhaustion is a very serious condition that can lead to heatstroke. The symptoms of heat exhaustion are:

- Dizziness
- "Goose bumps" (particularly on the torso and arms)
- Nausea (sometimes accompanied by vomiting)
- Moderate to severe headache
- Weak legs
- Lack of coordination
- Rapid pulse
- Heavy sweating often accompanied by moist and cold skin
- Muscle cramping

If you experience any of these symptoms you must:

- Stop running immediately
- Get medical attention
- Drink large amounts of fluids, including sports drinks
- Get out of the sun
- Lie down and elevate your feet above your heart
- Loosen your clothing

### Heatstroke

Heatstroke can be fatal. Unfortunately runners will sometimes ignore the symptoms of heat exhaustion (particularly in races longer than 10K) and will continue to push themselves until they're nearing a total thermoregulatory breakdown. The symptoms of heatstroke

are very similar to those of heat exhaustion, but rapidly progress to:

- Disorientation
- Weakness in the legs to the point that the runner may fall
- Strange behavior (including flailing with the arms and shoving)
- "Fuzzy" thinking
- Rapid pulse
- Cessation of sweating and hot/dry skin
- Body temperature that may reach 104 degrees or higher
- Lack of consciousness
- Convulsions or seizures
- Coma

Someone suffering from heatstroke needs immediate medical attention. They should be moved out of the sun, cooled by either rubbing their body with ice or immersing them in cold water and given fluids intravenously.

### Hyponatremia

Within the last few years the condition known as hyponatremia has begun to attract the attention of sports medicine physicians, exercise physiologists, and the medical directors at some of the larger marathons around the country. Hyponatremia has been called water intoxication because of the symptoms it produces. According to Dr. Tim Noakes, Professor of Exercise & Sports Science Director at the University of Cape Town, "...a person with hyponatremia looks like he or she is mildly drunk. They can't concentrate normally...they forget what you were talking about and start to concentrate elsewhere."

Hyponatremia occurs when the body becomes dangerously low in sodium. It's caused when you literally take in too much water. Although scientists have known about it for a long time, it has only been in the last few years as more runners have been competing in marathons that it has become a concern. According to Dr. Noakes, fluid has to be ingested at high levels for several hours for hyponatremia to occur. He suggests that a runner would have to be drinking water regularly for at least four to six hours to develop the condition. So runners taking four to six hours or more to run a marathon are at particular risk.

Unfortunately, symptoms of hyponatremia tend to mimic those of severe dehydration and/or heat exhaustion. By giving the athlete more water to drink the hyponatremia becomes worse, as more and more sodium is flushed



**Scott Weber gets the squirt that refreshes in 02.**

out of the system. If a runner with hyponatremia is given fluids intravenously, they can suffer a fatal reaction. Dr. Noakes and other sports medicine professionals recommend that physicians and other medical personnel at road races be alert for the signs of hyponatremia. One of the earliest symptoms is a craving for salty food.

Although hyponatremia is rare, it's wise to be aware that it can occur, particularly if you're running a marathon in unusually hot weather. Hyponatremia serves as a reminder that water is good, but don't forget sports drinks, which replenish your body with the sodium, potassium and other trace minerals you lose through sweat. It's worth repeating: if you're going to be running (or racing) for longer than an hour, you should be drinking a sports drink as well as water.

**About the author:**

Claudia Piepenburg has been running for 21 years and is the current editor for Peak Run Performance. She holds or has held state age-group records in Michigan, North Carolina, Florida, Tennessee and Virginia. In 1990, she was ranked 18th fastest masters woman in the world and 8th fastest masters woman in the U.S. in 1990 and 1991. She competed in the 1988 Olympic Marathon Trials, was 20th woman overall in the 1987 Boston Marathon and women's winner of the 1986 Virginia Beach Marathon. If you have questions or comments for Claudia, she can be reached at [cpiepe@roadrunnersports.com](mailto:cpiepe@roadrunnersports.com).



**MEDICAL RISKS IN THE BADWATER ULTRAMARATHON**

This 135 mile race is probably the most physically taxing competitive event in the world. It also has considerable medical risks. All runners and crews must appreciate these two facts both before and during the race.

Heat illness and heat stroke are serious risks. These can cause death, renal shutdown, and brain damage. It is important that runners and crews be aware of the symptoms of impending heat illness. These include: nausea, vomiting, headache, dizziness, faintness, irritability, lassitude, weakness, and rapid heart rate. Impending heat stroke may be signaled by a decrease in sweating and goose bumps, especially over the chest. Heat stroke may progress from minimal symptoms to complete collapse in a very short period of time. Deaths and renal shutdown (kidney failure) have been reported in other ultra-marathons. Adequate conditioning is mandatory.

Adequate fluid and electrolyte intake is the most important preventative for heat illness. Runners may well require dozens of gallons of fluid during this race. Proper pace is crucial.

The high altitude plus exertion can also produce various degrees of altitude sickness. This can lead to severe lung and brain swelling, and even death. The main treatment is rest, and especially to get to a lower altitude.

Blisters are also a problem on this course, with pavement temperatures perhaps reaching 200 degrees. Proper foot care & preparation are essential for having a successful race.

Remember, you are responsible for your well-being while participating in this race. There are no aid stations. Know where your limits are and know your body. Your acceptance of invitation to this race declares that you are aware of the risks & potential health problems.





# Kiehl's

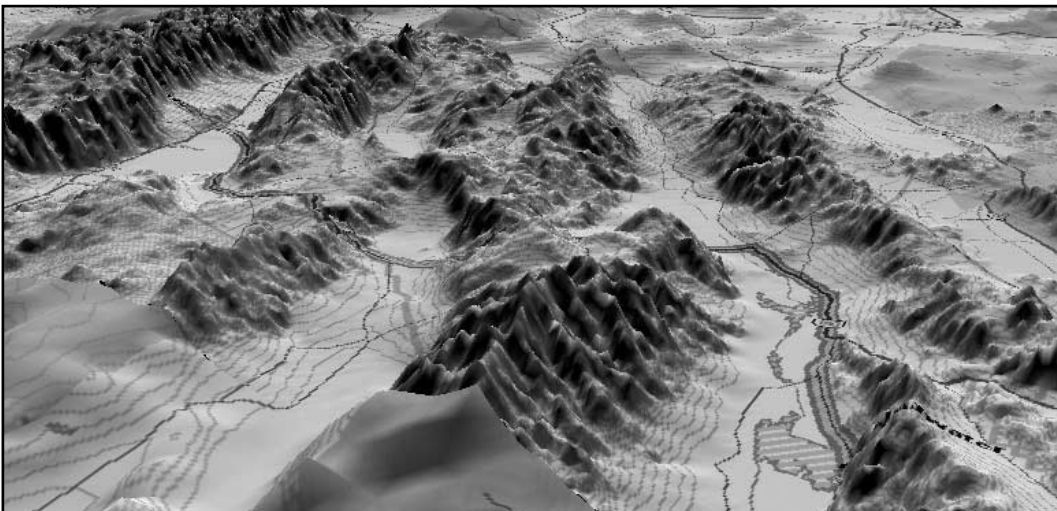
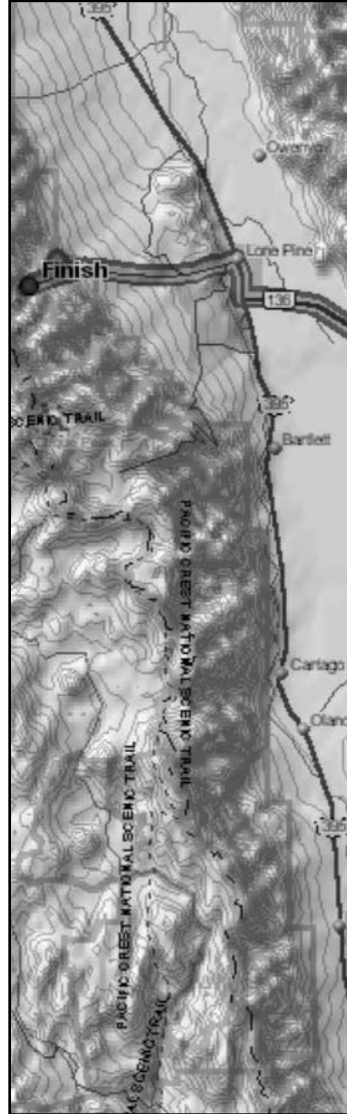
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# Badwater Ultramarathon

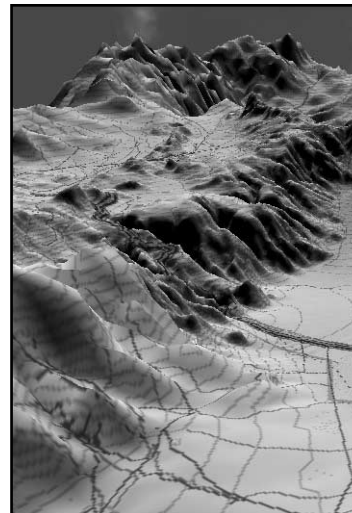
The Challenge of the Champions

3D COURSE MAPS AND VIEWS

By Doug "Dog" Sloan



From Badwater, looking north-west at the entire route.

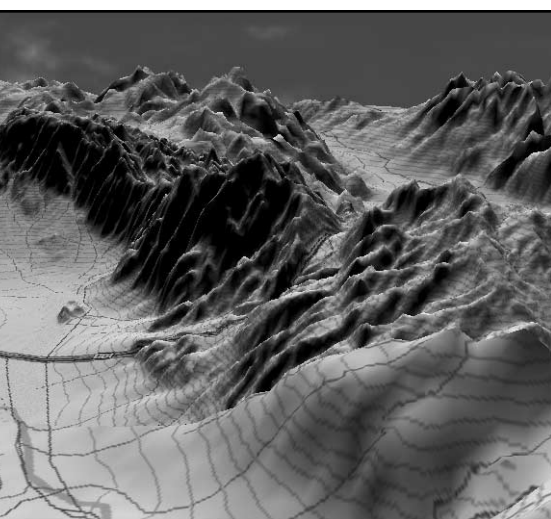


Panamint Valley, looking north

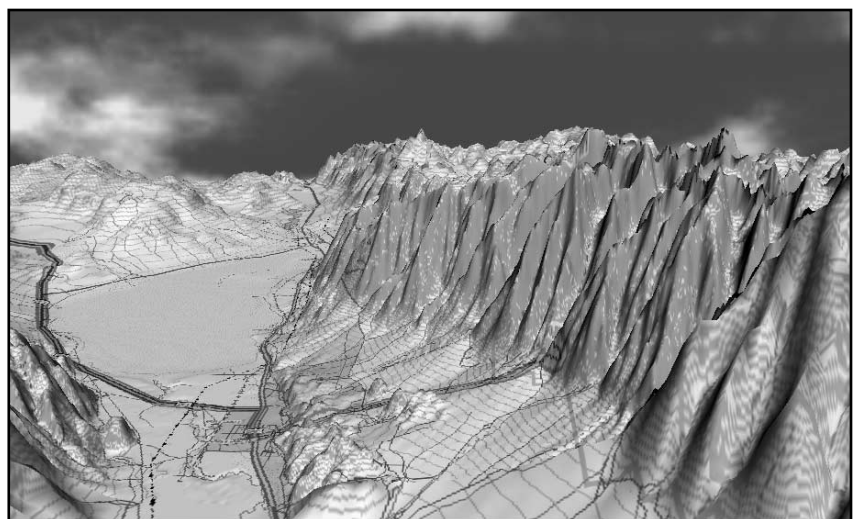




Overhead view of race course.



Looking north to Hwy 190 and Townes Pass on right.



Looking south in the Owena Valley, towards Lone Pine and Mt. Whitley on the right.

## HEAT TRAINING ANALYZED

By Stephen Simmons, 1999 Finisher

After over a month of heat training preparation, I was fortunate to have had a successful run from Badwater to the summit of Mt. Whitney in the July 99 Hi-Tec Badwater race. I had no real knowledge of heat training before I began heat training, but I posted questions about it to the ultra list and got responses from others who had experience with, or were at least knowledgeable about, heat training.

Many of the ideas expressed were scientific; I did my best to interpret them. Some were more simplified, and out of all of them, I tailored a regimen to suit me personally, as anyone should do. Regardless of the different approaches there are some ideas and beliefs about training for and performing in extreme heat that are common, and as a conclusion to my experience with heat, I will write some of the more basic and simple ideas that I think are sound advice and good knowledge for dealing with it. These are only my opinions, and this is what worked for me.

### 1. Your body is a machine.

Your body is a machine that cannot be thrown into a very foreign and hostile environment such as extreme heat and be expected to perform at its usual high caliber. No matter how tough you perceive yourself to be, simply dealing with heat and accepting it won't be enough; you must physically adapt to the rigors of heat beforehand.

### 2. Simplified, sources of heat are:

A. External, from the environment, real ( sun, humidity, air temps, ) or simulated ( heavy layers of clothes that trap heat, blankets, ect...).

B. Internal, generated from physical exertion and output.

C. Both

### 3. When enduring extreme heat it is most important to stay cool internally.

A. By adding coolant. Drinking lots and lots of cold water and ice, the colder the better.

B. By keeping physical effort to a minimum.

### 4. External cooling.

People naturally sweat to cool off. In extreme heat however, your body might not sweat enough to cool you off,

or, the outside environment might be so hot and dry that any perspiration evaporates off your body before it can have any cooling effect on it. Either way, sweat can be simulated by wearing very lightweight or cotton material clothing, long sleeve and preferably covering the legs also, and "continuously" soaking, spraying or saturating the clothing with cold water. The wet clothes against the skin will have the same cooling effect as sweat

### 5. The combination of keeping cool internally by:

A. drinking lots of cold water,

B. generating as little internal heat as possible by keeping physically exertion to a minimum,

C. and cooling externally by producing outside coolant in the form of artificial sweat should keep most people cool in the hottest environments if a person has these resources available.



**Dean Karnazes encourages an "ice cream headache" with a bucket of ice water in 00.**

### 6. Humidity.

When considering the temperature performing in, take humidity into consideration. From experience I know humidity is a silent killer. It is rare in the West, common in the East. Humidity zaps strength, dehydrates a person very quickly, and does these things suddenly without warning. A warm humid day is probably more dangerous than a very hot dry day.

In my opinion, the best way to deal with humidity is respect it. Even if it doesn't feel that hot, prepare for it by taking it easy and drinking lots and lots. Basically the same as for dry heat; that's why I say, above all else, respect it.



**7. Regardless**

Regardless, to perform in a hot environment at a race like Badwater some heat must be generated internally, and heat must be endured. To do so you must teach your body to adapt to the heat by teaching your body to sweat more, and locate a tolerable medium between physically pushing yourself and yet not overheating internally.

**8. Over-dressed heat training.**

A. Can be dangerous. Use good judgment and train in a safe environment, particularly one that is safe from traffic.

B. In the heat of the day, either go the whole nine yards and train in many heavy layers right from the start and run very limited mileage to understand how you will personally react to it, or, start with more routine mileage with perhaps just a sweatshirt and cold weather cap and add more layers and increase mileage as you adapt.

C. Drink lots and lots of water. Drive to pre-determined spots along your route and put cold water and ice out, or always be close to a source of cold water.

D. Pace yourself. It's easy to feel just as strong at the start, aside from feeling heavy, than normal. It "won't" last. Remember to generate as little internal heat as possible and plan on lots of walking.

E. Be prepared for nausea. In my opinion this results from the large amount of water in your stomach. Consider salt, rock salt, and E-Caps supplements to assist with this.

F. Keep up your energy. Just like in normal training, if you run for x amount of time, energy is needed, and even though you might not feel like eating, you must. You might require less energy intake than normal however. Liquid energy is one of the better or "easier" ways to supplement energy in the heat.

G. Keep your wits. The heat is something that can be very overwhelming mentally. If you start to panic or get the slightest bit confused or dizzy, slow down, sit in the shade, recover and cool down. You won't be able to escape the heat in the actual environment, however, so if at all possible, cool down by resting and minimizing your effort rather than by taking off any clothing. Tolerating the overwhelming heat can be a big moral victory, but when it comes down to it, safety is your main concern.

H. Make sure others know what you're doing, where you're training, when to expect you.

I. Know the symptoms of heat exhaustion and heat stroke. Prevention is easier than treatment.

J. The frequency of over-dressed training sessions is up to an individual. For me, I opted for about 2 extreme heat sessions a week, and then added one lesser element of heat to each regular training session, by running normally but in the heat of the day, or in the evening wearing a sweatshirt and hat, just always enduring a little more heat than I normally would in order to build an overall tolerance and acceptance for heat. My most extreme heat sessions consisted of wearing a Coolmax t shirt, a sweatshirt, a thick, insulated navy working jacket topped with a rubber, non-breathable, dark green raincoat and cold weather hat. Plus sweatpants off and on, and towards the end of my preparation gloves as well.

K. Run / Walks with climb from 1-2 hours average. Maximum heat endured dressed like so, 90 degrees + 100 % humidity for 4 hours, 9 miles with climb. Overall 10-11 "extreme overdressed sessions" over 5-6 week period before Badwater.

**Important advice.**

Have a good crew who has knowledge of what it takes to keep you going in the heat. My crew was very experienced and kept handing me another water bottle of ice water even before I could finish the one I already had. I probably wouldn't have drunk quite as much had it not been handed to me so often. Have your crew think for you and keep you hydrated.

**Personal race notes.**

Temps at Badwater were lower than normal in 1999 but humidity was high. I stayed well hydrated throughout the race, wore Solar Eclipse sun hat, long sleeved Sun Precautions shirt, shorts. Wore cotton pajama pants some. Very dependable crew misted me down often and I stayed cool and never once suffered with the heat. Successful finish.

Heat-wise, I suffered much more enduring the heat during my over-dressed training than I did during the actual race. In my opinion I was able to perform well because I had physically adapted to heat and had mentally learned to accept heat, in addition to the cooling methods we used during the race.

GOD bless.



## HEAT TRAINING IN THE SAUNA

*By Arthur Webb, six time finisher*

There are a number of ways to train for all the heat one will encounter in the Badwater Ultramarathon. Two effective methods are training in the desert, recommended by Dr. Ben Jones, and simulating the heat conditions by wearing layers of clothing while running, as suggested by Stephen Simmons. Definitive articles by these two gentlemen are posted on the badwaterultra.com website and elsewhere in this race magazine. Either method or a combination of both should help one adapt or acclimatize to the heat for a successful trek across Death Valley.

When desert heat is not available and one has problems running in lots of clothing, there is Tom Crawford and Richard Benyo's bake in the sauna option. I have used their method in a modified format and I firmly believe that it has been instrumental for my four successful journeys across Death Valley.

Most people don't have a sauna, so one has to make use of the local fitness center. If money is a problem, just let them know about Badwater and the charity you are running for and they will probably make you a deal.

Have no fear for there is still plenty of time to complete a training program. I won't begin mine until the last week in June.

1. The sauna serves two extremely important functions. First, it prepares the body to deal with the blistering heat out in Death Valley. Secondly, but equally as important, it gets the body used to drinking and processing the tremendous amount of liquids you are going to need to survive and finish this incredible race.

2. Heat training in the sauna should take no more than four weeks; usually three weeks is enough. When you have to wear a sweater or light jacket at work or around the house because you feel a little chilled, you are acclimated. It is best to stop sauna training at least three days before the race. You will need the time to super hydrate and the effects of heat adapting will not start wearing off for several weeks.

3. Train every day, although you may have to take a day off to completely hydrate yourself. If there is a steam sauna available, use it one day a week. Two years ago, at Badwater, tropical storms lashed the area for several



**Art Webb, age 61, during the 03 race.**

days and it became extremely hot and humid. Fortunately, I had rotated between dry and steam saunas in my training and was ready for anything. It made a huge difference.

4. The goal is to stay in the heat of the sauna for as long as possible. If you attempt any kind of rigorous workout inside the sauna you will have to leave it too soon, which defeats the purpose. So, just be content with simply sitting on the planks or doing a light abdominal workout. Save your harder workout for your daily run. I find it easier to run my daily 10 to 20 miles first and then go lay down in the hot box. Running after a session is extremely difficult. Save this time for re-hydrating.

5. Be patient. Begin at low temperatures and gradually work towards hotter sessions. The first day I usually start at 110 degrees and stay as long as possible. Sometimes when it gets overbearing I leave for a few minutes and



take a cool shower before going back inside. The first few days are the hardest but as the days go by you will be able to raise the temperatures and stay in longer. By the fourth week, you should be able to handle 30 minutes at 180-degrees. Below, I have added a sample four-week regimen that I have used every year.

6. Drink, drink, drink. It is extremely important to continuously hydrate inside the sauna in order to replace all the liquids you will be profusely sweating out. This will simulate the conditions you will be facing in the desert and after three weeks the body will be able to efficiently process all the liquids it will be going to need.

I usually take in three 2-liter bottles of ice water. Two bottles are for drinking and the third is for rinsing the body; it acts as a coolant for a minute or so, which helps you stay in the sauna longer.

7. Time constraints. You may be pressed for time because of all the training. I suggest you taper on the mileage and hit the sauna or forget the run and just bake in the box.

Everyone has run more than enough at this point in time. Skip a run or two; the heat training is much more important. It will probably do you some good taking a day off. You will benefit more by spending some time getting blasted in the sauna.

8. Recovery. Immediately after the sauna I lay down on a bench in another room in order to let the body cool off. You will sweat again for ten to fifteen minutes while you reenter the normal world. Then take a nice long cool shower before continuing to hydrate for the rest of the day. Constant liquid intake is essential; drinking will enable you to start the next day fully hydrated and you will be able to continue to properly train.

9. Race Day. Pace yourself and make sure you wear a complete sun-protective suit and hat anytime the sun is out. It is much better if you keep the jacket and hat wet as suggested by Stephen Simmons. I have kept mine wet during the heat of the day and it has made an enormous difference. It probably cools you off by 10 or 20 degrees. My crew uses a super-soaker (large squirt gun) and blasts me with cold water every few miles. You will discover that if the suit gets dry it may keep out the ultra violent rays, but it also tends to retain the heat and you start baking inside. It is also best to keep the water from running into your shoes because large ugly blisters will develop. If you get lucky, "The Blister Queen," Denise Jones can help you here.

**Art's Heat Training Schedule**

Day	Minutes in sauna	Temperature
1	30	110
2	45	110
3	30	120
4	45	120
5	30	130
6	45	130
7	30	140 (steam)
8	45	130
9	30	140
10	30	140 (steam)
11	45	140
12	60	140
13	30	150
14	Rest Re-hydrate	
15	30	150
16	45	150
17	45	150
18	30	160
19	30	160
20	30	140 (steam)
21	Rest Re-hydrate	
22	30	160
23	45	160
24	30	170
25	30	170
26	30	180
27	30	180
28	45	180

That's it. Other than a few days in the steam sauna all other days are in the dry sauna. Do the best you can and remember even a couple of weeks will help you out. Good Luck. It would be nice to see everyone finish this fantastic race.



# The Death Valley Cup

**The Death Valley Cup** recognizes male and female athletes who complete both the Badwater Ultramarathon running race and the Furnace Creek 508 bicycle race in the same calendar year. This is a form of recognition for those athletes who complete both races in the same year, and also an actual plaque that is awarded each time an athlete breaks the current overall record for either the men's or women's divisions. Thus, there are, at any given moment, two Death Valley Cup Record Holders, as well as an ongoing, slowly increasing list of Death Valley Cup Finishers. To earn this recognition is a very significant achievement in endurance sports and especially for those athletes who have come to know and love Death Valley and its environs.

## Current Death Valley Cup Record Holders

**Kaname Sea Lion Sakurai**, 36, Nagoya, Japan  
 2000 Badwater, 27:52:14, 3rd place  
 2000 Furnace Creek, 32:31:56, 2nd place  
 =60:24:10 total time\*

**Angelika Cat Castaneda**, 56, San Diego, CA  
 1999 Badwater, 36:58, 1st place  
 1999 Furnace Creek, 43:46:40, 3rd place  
 =80:44:40 total time\*

(\*To receive the Death Valley Cup plaque, these combined record times must be broken.)



**David Jackass Jackson during the 2002 Furnace Creek 508.**

## Death Valley Cup Finishers

**Marshall Unicorn Ulrich**, Ft. Morgan, CO  
 1996 Badwater, 33:01, 1st place  
 1996 Furnace Creek, 38:32:45, 16th place  
 =71:33:45 total time

**David Jackass Jackson**, Lexington, KY  
 2002 Badwater, 47:12:30, 25th place  
 2002 Furnace Creek, 38:56:12, 15th place  
 =86:08:42 total time

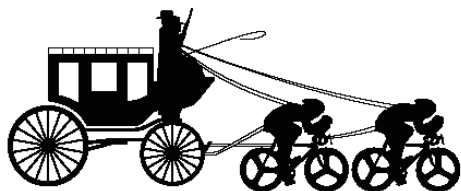
**Del Spider Scharffenberg**, Portland, OR  
 1997 Badwater, 48:16, 13th place  
 1997 Furnace Creek, 42:15:26, 10th place  
 =90:31:26 total time

**Charlie Lizard Liskey**, Somis, CA  
 1996 Badwater, 58:26, 14th place  
 1996 Furnace Creek, 39:32:08, 17th place  
 =97:58:08 total time

For information on Furnace Creek 508, visit: [www.the508.com](http://www.the508.com)



# FURNACE CREEK 508



"WHERE THE WEST IS WON!"

You are invited to join this non-stop, 508 mile bicycle race from Santa Clarita through Death Valley and the Mojave Desert to Twenty Nine Palms. Produced by AdventureCORPS since 1990, but founded in 1983 by John Marino, the 2004 edition celebrates the 21st anniversary, and 30th edition, of this incredible race.

Revered the world over for its epic mountain climbs with 35,000 feet of cumulative elevation gain, its stark desert scenery, and its desolate roads, Furnace Creek 508 is one of the toughest but most gratifying endurance challenges avail-

able, bar none. Known as "The Toughest 48 Hours in Sport," Furnace Creek 508 is "Where the West is Won!" Solo, tandem, and two- and four-rider divisions are offered in this exciting and unusual bicycle race.

**DATE: October 16-18, 2004**

Live Webcast Throughout the Weekend at [www.the508.com](http://www.the508.com)

## WHY "THE 508" IS ONE-OF-A-KIND

- Over 120 competitors from around the world!
- Desolate, epic, and legendary route!
- Awesome pre-race banquet and meeting with movie theater-size video presentation!
- Furnace Creek 508 Hall of Fame Inductions!
- Your own unique Animal Totem: your spirit guide or alter-ego for life!
- Nifty 508 goodie bag schwag and Race Magazine!
- Insane webcast with over 1,000 images posted during each race!
- Classy finisher's medal and coveted Official Finisher's Jersey (but only if you finish!)

Visit [www.the508.com](http://www.the508.com)  
to **download the entry form**  
and to register for our free  
email newsletter!

**New for 2004:**  
Fixed Gear Division!  
Just one gear and NO COASTING!  
(no aerobars, either)

**AdventureCORPS Expedition Cycling Events coming in 2005 and 2006** (no support crews allowed):

2005 California Millennium 1000 Mile Expedition Ride, SF-Tahoe-Mt. Shasta-SF, June!

2006 Furnace Creek 508 Expedition Ride, April!

2006 Trans-America Cycling Classic: SF to DC, 3,127 miles with three week time limit, June/July!

Once again proudly serving as the original RAAM Qualifier and John Marino Competition event.

AdventureCORPS proudly sponsors and supports the Challenged Athletes Foundation and Major Taylor Association.

Sponsored by The City of Santa Clarita, E-CAPS, Hammer Nutrition, Injinji Tetratsoks, and PlanetUltra.com.

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"We're Out There"



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Los Angeles, CA 90049-2930 USA

Fax 888-812-3347. Phone 310-472-1983.

[www.the508.com](http://www.the508.com) / [OutThere@adventurecorps.com](mailto:OutThere@adventurecorps.com)



## OFFICIAL RULES

### General Race Rules

1.) There are three starting times for the 2004 Badwater Ultramarathon (6am, 8am, and 10am on July 12, 2004), but all racers in all groups are competing in the same race. Runners may attend only their assigned start time. Runners must check in at the start line, ready to race, 30 minutes prior to their start time. Starting Groups are assigned by the race director and are non-transferable. Split times will be collated throughout the race to maintain overall standings. There are only two divisions: men's and women's. The racer to arrive at the finish line in each division with the lowest overall time, based on their starting time, will be considered the winner.

2.) The race number must be worn on the front of the body, unmodified, unfolded, and visible at all times during the race. It may not be worn on the head or hat.

3.) The clock does not stop for any reason until the race course officially closes 60 hours after each designated official start time.

4.) Running must always be single file, on the far left side of the road or off the left side of the road, facing traffic (pacers, too).

5.) Racers must make their presence known at all Time Stations located in fixed locations along the route. Runner times into the Time Station will be recorded.

6.) The race ends at the Mt. Whitney Portals. If you choose to hike to the summit, please remove any official race logos. Be sure to have the appropriate permits from the Forest Service.

7.) Racers, crew, and staff must not litter, mar, or pollute the landscape or environment.

8.) All racers, crew and staff must display courtesy, good taste, decorum, and sportsmanship at all times. Nudity is specifically not allowed.

### Legal and Bureaucratic Issues

1.) All racers must follow and complete the entire application and entry process, filling out all forms and paying all necessary fees.

2.) All racers must sign the Entrant Contract.

3.) All racers and crew must sign the Accident Waiver and Release of Liability / Release of Name and Likeness

4.) All race vehicles must meet the minimum requirements of property damage and personal injury liability automobile insurance for the state of California. All vehicle drivers must be fully licensed.

5.) All racers and at least one crew member for each entrant must attend all of the Pre-Race Meeting. Those racers who do not attend the meeting will not be allowed to participate. No exceptions.

6.) All racers must be willing to submit to a drug urine test before, during, or after the race. If any banned substances are detected, the racer will be disqualified from competition and the final standings of the race itself.

7.) No TV, film, or video crew, person, producer, director or other broadcast media representative may accompany or cover any racer or the race itself without the specific written permission of the Race Director. All film crews must sign a Non-Exclusive Licensing Agreement and pay a Rights Fee. Additionally, Death Valley National Park will also require payment of a filming fee and signature of a filming agreement.

8.) All racers and crew must pay the Death Valley National Park Entrance Fee of \$5 per person or \$10 per car. Proof must be brought to Runner Check-In on July 11. Runners will not be allowed to check-in for the race without proof of paying the Park Entrance Fee.

9.) All entrants must bring one U.S. dollar (or more) in a sealed envelope to the pre-race meeting. Please write the runner number on the envelope. This envelope will not be returned.

### Support Crew

1.) Each racer must have a support crew comprised of at least one four-wheeled motor vehicle and two crew members at all times. Each racer must have his or her own personal support crew and vehicle; crew and support vehicles may not be shared, except informally in the spirit of the event, i.e., crews may lend assistance to other racers or crews.

2.) Runners must progress under their own power without drafting, helping, pushing, supporting, or any other type of physical assistance. Runners may not use walking sticks, ski poles, or the like. Crewmembers may not carry an umbrella or shade cover for a runner.



**Thanks to John Radich for these wise words.**

3.) Runners may not be accompanied by more than one pacer, either on foot or bicycle, at any given time. Additional crew members that are handing off supplies to the runner and/or pacer must be off the roadway at all times (i.e. left of the white line on the shoulder).

4.) Runners must not run abreast with other runners or with pacers on the roadway. All running must be single-file on the roadway. If runners or pacers want to run next to one another, they must be OFF the roadway, i.e. left of the white line.

5.) Crewmembers may not use illegal drugs, stimulants, or dope, as well as alcohol of any kind, during the race or at any race events or activities.

6.) Runners under the age of 60 may not be accompanied by pacers or moving crew members between Badwater and Furnace Creek.

### **Support Vehicles**

1.) The support vehicle may not be wide than 78" in width, as stated in the manufacturer specifications. Small Cars, Minivans, and SUVs are recommended. All motorhomes, RVs, oversize SUVs, vans, and trucks, or other types of oversize vehicles are strongly discouraged, even as a secondary support vehicle. Also, if a racer has only one support vehicle, it may not be wider than 78".

2.) All support vehicles must have their headlights on whenever the engine is running, 24 hours a day.

3.) All race vehicles must have highly visible signage on the back of the vehicle stating "CAUTION RUNNERS ON ROAD." This type of sign can be made, for example, using yellow, white, or pink adhesive shelf paper with at least 6 inch letters. Magnetic, reflective, professionally made signs for this purpose can be made to order by your local sign shop. Additionally, all runners will receive

two race-legal caution signs at Runner Check-In that may be used as well or instead.

4.) All support vehicles must have their racer's name and race number easily visible on all four sides. This type of sign can be made, for example, using yellow, white, or pink adhesive shelf paper with at least 6 inch letters. This should be done in advance of coming to Death Valley.

5.) Vehicle windows may not be blocked or obstructed with any signage, paint, or the like.

6.) Only one support vehicle is allowed for each racer at the Start Line before the race and then between the Start Line and Furnace Creek during the race. This support vehicle may not be an RV or motorhome. No RVs or motorhomes are allowed between the Start Line and Furnace Creek.

7.) No RVs or motorhomes are allowed between the Lone Pine and the Finish. Due to a severe parking shortage at the finish line, no more than two vehicles per runner may be on the Whitney Portals Road and/or parked at or near the finish line.

8.) Vehicles must "leapfrog" the runner at all times. Attempt to make each "leapfrog" at least one mile or more in length. Racers may not be "shadowed" (driving a vehicle at the runner's speed) and vehicles must not "caravan" (drive together, like a train, at any speed). Driving may never be at the speed of any racer. Driving must be done at the speed of traffic, never slowing down to encourage, talk to, or lend assistance to any racer while moving. All assistance must be provided by pedestrian crew members; handing off of supplies from the vehicle is never allowed.

9.) Vehicles must be parked completely off the road surface whenever they are stopped (with all four tyres right of the white line). Many areas of the route have very little shoulder for parking so care must be taken in choosing stopping places. When stopping/parking, vehicles may not stop on the left side of the road. All stopping/parking must be on the right side of the road, off the roadway.

10.) All vehicles must obey the vehicle code laws of California at all times.

### **Safety and Medical Issues**

1.) Remember, at all times and in all situations, safety is the most important issue. This means safety for racers, crew, staff, and the general public. The roads are not closed for this event and are, in fact, quite busy with tourist and local traffic.



2.) I.V.s (intravenous fluids) are not permitted during the race. If a racer receives an I.V. during the race, for any reason, then that racer is disqualified and may not complete the course officially.

3.) Racers and crewmembers/pacers must wear reflective material facing in all four directions, as well as blinking LED lights facing front and rear, at night. Racers and crewmembers are encouraged to wear reflective material during the day as well.

4.) Racers are responsible for both their own and their crew's actions; crews are responsible for both their own and their racer's actions.

5.) Always look and listen both ways before crossing the highways. Remember that drivers will not expect to encounter a racer or parked vehicle out on the course. Remember we are on public roads. Racers should not cross over the highway more than necessary; crew should cross the highway carefully to bring assistance to their racer.

6) All entrants and crew must study "Medical Risks in the Badwater Ultramarathon," "Dangers of Running in the Heat," and "The Dangers of Hot Weather Running".

**Leaving the Course or Withdrawing**

1.) Every inch of the course must be traveled by each racer. In the event of a routing error, e.g., wrong turn, the racer may be driven back to the exact original spot where he/she left the course and continue running from that location. There will be no allowance made for lost time or miles run in the wrong direction.

2.) If a racer needs to leave the course, his/her crew must note the exact location with a numbered stake in the ground. This numbered stake must be visible from the road in both directions. The racer must then resume the race from the same place that he/she left it. The numbered stakes will be provided to all runners at Runner Check-In. Racers may only leave the course for appropriate reasons such as rest or medical attention. Focus must be kept on the speedy completion of the course.

3.) If a racer withdraws, he/she or his/her crew must contact Race Headquarters or a Time Station immediately. Name, reason for withdrawal, time of withdrawal, and miles completed must be stated. All racers and crew who drop are encouraged to come to the finish line and both post-race events to greet and celebrate with their fellow racers and crew.

4) All Emergency Evacuation costs for participants or crews will be borne by that person or their heirs. The race organizers are in no way liable or responsible for emergency evacuation.

**Awards**

1.) All racers who begin the event will receive a Badwater Ultramarathon race t-shirt, hat, and Race Magazine.

2.) All racers who officially complete the event within 60 hours will receive a commemorative certificate, a finisher's medal, and a finisher's t-shirt. Certificates and t-shirts will be mailed after the race.

3.) All racers who officially complete the course within 48 hours will also receive a commemorative Badwater Ultramarathon buckle. Buckles will be mailed after the race.

**Rule Enforcement and Penalties**

1.) Race rules are designed to provide a safe and fair experience for everyone involved.

2.) Major rule infractions by racers or their crew, especially those regarding "cheating," will result in immediate disqualification of the racer.

3.) Other, lesser offenses will result in the following cumulative time penalties:

First Penalty: One hour

Second Penalty: Disqualification

4.) Time penalties are imposed by stopping at the final Time Station in Lone Pine to serve his/her time. The race and clock will continue while the penalized racer waits out his/her penalty time. A Race Official will be present to oversee this process.

5.) The Race Director has the authority to overrule any rule or invent a new rule based on extenuating circumstances. The Race Director has ultimate authority in regards to all rules, their interpretation, and their enforcement. There is no "appeals committee" or "appeals process."

**Finally**

1.) Have fun and keep smiling!





### COURSE DESCRIPTION

#### Badwater, Death Valley

The race begins here adjacent to a pool of saltwater located at the lowest place in the Western Hemisphere.

#### Furnace Creek Ranch, Mile 17.4

The first oasis in our journey. A gas station, small general store, hotel, restaurant, camping, and ice machine are available.

#### Stove Pipe Wells, Mile 41.9

A small market, gas station, restaurant and motel. This is not open 24 hours.

#### Townes Pass (4956'), Mile 58.7

Long ascent, then long descent, followed by approx. 12 long straight miles. It's a steep and narrow road with limited opportunities to park. Support vehicles, crews, and runners must be cautious and extra aware of the traffic.

#### Panamint Springs Resort, Mile 72.3

Restaurant, gas station, and motel with limited hours. A long, steep climb follows on a steep and narrow road with limited opportunities to park. Support vehicles, crews, and runners must be cautious and extra aware of the traffic.

#### Father Crowley's Turnout, Mile 80.2

This isn't the top. The road continues to rise to 5000' over rolling hills, then eventually descends into the Owen's Valley.

#### Keeler, Mile 107.8

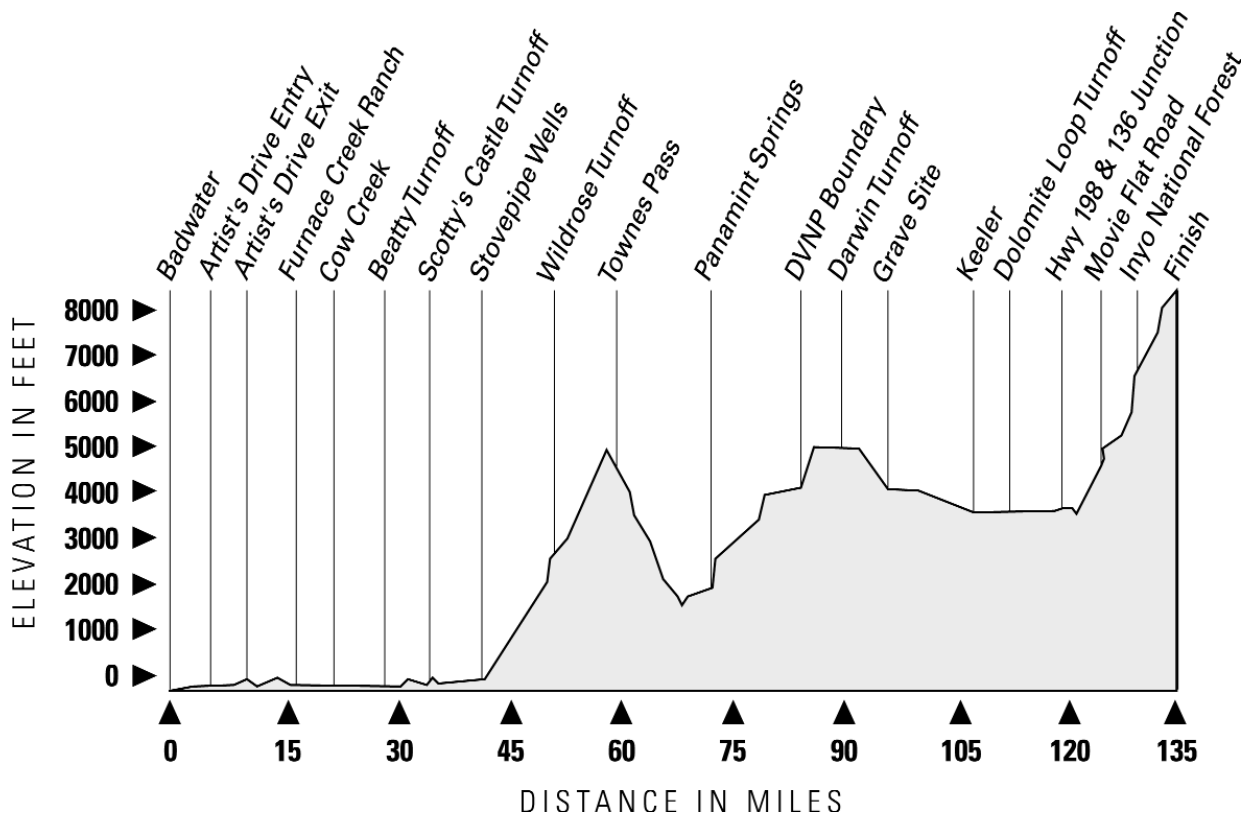
A small mining town with no facilities.

#### Lone Pine, Whitney Portal Road, Mile 122.2

Lone Pine offers the weary runner and crew all the amenities of a real town: fast food, pizza, restaurants, motels, gas stations, grocery stores, and more, not to mention our Webcast Headquarters. Restock here for the climb to the portals. Turn left onto the Whitney Portal Road to begin the final leg, the longest and steepest climb of the race. Temperatures will steadily decrease. Be prepared with extra layers of clothing and rain gear the final few miles. Be sure your support vehicle is completely off of the road and that you do not block traffic.

#### Mt. Whitney Trailhead, (8360'), Mile 135

Congratulations! You have finished the most extreme running race in the world! A small diner/shop are open daylight hours. There is also a stocked fishing pond and a campground.





## BADWATER ULTRAMARATHON OFFICIAL RACE ROUTE

<i>Landmark</i>	<i>Distance (mi.)</i>	<i>Elevation (ft.)</i>	
Badwater	0	-282	
Telescope Peak Sign on L.	1.8	-200	
Wide Shoulder on R.	3.1	-200	
Natural Bridge on R.	3.5	-170	
Devil's Golf Course on L.	5.5	-165	
Artist's Drive entry on R.	7.9	-165	
West Side Road on L.	10.5		
Artist's Drive exit on R.	11.6	-70	
Mushroom Rock on R.	12.9	-170	
Golden Canyon on R.	14.4	-165	
Hwy 190 & 178 – Go Left	16.4	0	
<b>Furnace Creek Ranch on L.</b>	<b>17.4</b>	<b>-165</b>	<b>-First Time Station on Left after entrance</b>
Chevron Gas and ice on L.	17.6	-165	
Visitor's Center on L.	17.7	-170	
Harmony Borax Works on L.	19.0	-170	
Cow Creek on R.	20.7	-170	
1st Marathon	26.2	-170	
Beatty, NV turnoff on R.	28.3	-165	
Salt Creek turnoff on L.	30.7	-165	
Sea Level Sign on L.	31.9	0	
Scotty's Castle turnoff on R.	34.7	-130	
Sea Level Sign on L.	35.2	0	
Sand Dunes turnoff on R.	35.8	0	
Devil's Cornfield sign on R.	36.1	-80	
Sand Dunes on R.	39.9	0	
<b>Stovepipe Wells Village</b>	<b>41.9</b>	<b>0</b>	<b>-Second Time Station on Right before Store</b>
Mosaic Canyon turnoff on L.	42.1	5	
1000' elevation sign	46.6	1000	
2000' elevation sign	50.5	2000	
Wild Rose turnoff on L.	51.0	2500	
2nd Marathon	52.4	2800	
3000' elevation sign on L	53.3	3000	
4000' elevation sign on L.	55.7	4000	
2nd Radiator Water Tank on R.	58.5	4900	
Townes Pass summit	58.7	4965	
4000' elevation sign on R.	61.5	4000	
Vista Point (view of Whitney)	62.2	3500	
3000' elevation sign on L.	63.8	3000	
2000' elevation sign on L.	66.1	2000	
Adopt-a-Highway sign on R	67.7	1800	
Panamint lake bed, east edge	68.1	1640	
Panamint lake bed, west edge	69.1	1640	
Trona turnoff on L.	69.8	1750	
<b>Panamint Springs Resort</b>	<b>72.3</b>	<b>1970</b>	<b>-Third Time Station on Left at Resort</b>





2000' elevation sign on L.	72.9	2000	
<b>Darwin Falls turnoff</b>	<b>73.3</b>	<b>2500</b>	<b>-Dangerous, narrow area! - miles 74 to 81*</b>
3000' elevation sign on L.	75.8	3000	
3rd Marathon	78.6	3400	
4000' elevation sign on L.	80.2	4000	
Father Crowley's Point on R.	80.2	4000	
DVNP Park Boundary	84.9	4200	
Saline Valley turnoff on R.	86.0	4800	
5000' elevation sign	87.0	5000	
<b>Darwin turnoff on L</b>	<b>90.1</b>	<b>5050</b>	<b>-Fourth Time Station on Left at turnoff</b>
5000' elevation sign on L.	92.4	5000	
Grave Site on R.	96.3	4100	
27.5 mile post marker	100.0	4050	
4000' elevation sign on L.	101.6	4000	
Hwy 136 & 190 – go straight	102.9	3935	
4th Marathon	104.8	3800	
Keeler	107.8	3610	
Adopt-a-Highway sign on R.	108.5	3605	
Dolomite loop turnoff on R.	112.6	3600	
Dolomite loop turnoff on R.	116.9	3610	
Owen's River	117.7	3610	
Hwy 190 & 395 – go Right	120.3	3695	
<b>Dow Villa Hotel on Right</b>	<b>122.3</b>	<b>3610</b>	<b>-Fifth Time Station on Right at Dow Villa</b>
Portal Road light – go Left	122.4	3610	
Tuttle Creek turnoff on L.	122.9	3770	
LA Aqueduct	123.0	3855	
Lone Pine Creek	124.1	4200	
Movie Flat Road on R.	125.1	4590	
Lone Pine Creek	125.3	4800	
Horseshoe Meadow on L.	125.5	5000	
Cuffe Ranch turnoff on R.	126.7	5100	
Olivas Ranch turnoff on L.	128.0	5300	
<b>Lone Pine Campground on L.</b>	<b>129.0</b>	<b>5700</b>	<b>-Dangerous, narrow area! - miles 129 -135*</b>
Lone Pine Creek	129.2	6000	
Inyo Nat. Forest sign on R.	129.5	6400	
Large pullout on R.	130.8	6890	
5th Marathon	131.0	7000	
Switchback to left	131.7	7215	
Vista Point	132.4	7400	
"Campsites 39-44" sign on R	133.3	7700	
Meysan Lakes trailhead on L.	133.5	8035	
Family Campsites	133.7	8100	
Overflow Parking	134.3	8200	
Finish	134.4	8360	

**Official distance is 135.0 miles. Remember all car odometers have error. Distances above are accurate in a relative sense, but you may find variation in the overall distance, as we did when creating the above routesheet.**

**RACE ROSTER****6:00 AM START**

#	M/F	First Name	Last Name	Age	City	State	Country	History
18	M	Dr. Burkhard	Baier	38	Müncheberg	Brandenburg	Germany	Rookie
21	M	Jim	Bodoh	51	Tampa	FL	USA	Veteran
22	M	Guenter	Boehnke	47	Hofheim		Germany	Rookie
6	M	Ruben	Cantu	61	Santee	CA	USA	Veteran
30	M	Philippe	De Witte	54	Louvain-La-Neuve		Belgium	Rookie
11	M	Jack	Denness	69	Rochester	Kent	UK	Veteran
43	M	Michael M.	Doppelmayr	43	Hallein	Salzburg	Austria	Veteran
56	M	Francis	Faure	56	St. Quentin Sur Iserre	Tullins	France	Rookie
60	M	Dr. Holger	Finkernagel	60	Bad Berleburg	NRW	Germany	Veteran
41	M	Winfried	Friedel	41	Gelnhausen		Germany	Veteran
5	M	Frank	Fumich	36	Falls Church	VA	USA	Rookie
57	M	Alfred	Gerauer	57	Pocking		Germany	Rookie
59	M	Herbert	Hausmann	56	Würzburg		Germany	Rookie
70	M	Alfred	Hintzmann	70	Norderstedt	Hamburg	Germany	Rookie
33	M	Said	Kahla	53	Kirchheimbolanden	RLP	Germany	Rookie
73	M	Dimitri	Kieffer	38	Seattle	WA	France	Veteran
50	M	Dieter	Knoblich	50	Menden	NRW	Germany	Rookie
49	M	Christian	Lampe	41	Freiburg		Germany	Rookie
74	M	Dan	Marinsik	45	San Jose	CA	USA	Veteran
61	M	Albert	Martens	56	Steinbach	Manitoba	Canada	Rookie
71	M	Pierre	Ostor	47	White Bear Lake	MN	USA	Rookie
75	M	Ian	Parker	53	Irvine	CA	USA	Veteran
78	M	Wayne	Simpson	43	Leeds	West Yorkshire	UK	Veteran
67	M	Marvin	Snowbarger	67	San Jose	CA	USA	Rookie
44	M	Charles	Vincent	44	Monaco		Monaco	Veteran
10	M	Scott	Weber	51	Isle of Palms	SC	USA	Veteran
86	M	Henry	Wibberg	42	Salzkotten	Nordrhein	Germany	Rookie

**8:00 AM START**

19	M	Jean-Claude	Bertholet	62	Le Mont sur Lausanne	Vaud	Switzerland	Rookie
47	M	Thomas	Betz	47	Petite-Roselle	Moselle	France	Rookie
65	M	Marv	Bradley	65	Canon City	CO	USA	Rookie
23	M	Antony	Brimsted	38	Gillingham	Kent	UK	Rookie
25	M	Mike	Brooks	58	Danville	ME	USA	Rookie
27	M	John	Butterick	53	Tampa	FL	USA	Rookie
66	M	Eberhard	Frixe	54	Meine	Niedersachsen	Germany	Veteran
45	M	Bruce	Gungle	45	Tucson	AZ	USA	Rookie
46	M	Ferg	Hawke	46	White Rock	BC	Canada	Rookie
20	M	Mike	Henebry	60	Cypress	CA	USA	Veteran
51	M	Michael R.	Hernandez	51	Gold River	CA	USA	Rookie
52	M	Juergen	Hofmann	52	Eisenberg	Rheinlandpfalz	Germany	Veteran
31	M	David	Horsley	36	Halton	Buckinghamshire	UK	Rookie
26	M	Mike	Karch	35	Mammoth Lakes	CA	USA	Veteran
42	M	Karl W.	Keltner	42	N. Kansas City	MO	USA	Veteran
58	M	Charlie	Liskey	48	Ojai	CA	USA	Veteran
63	M	Kym	McConnell	36	London		New Zealand	Rookie
72	M	Eric	Pence	38	Leadville	CO	USA	Rookie
76	M	Angel	Perez	32	Moreno Valley	CA	USA	Rookie
77	M	John	Radich	50	Monrovia	CA	USA	Veteran
79	M	Jim	Scott	44	Chico	CA	USA	Rookie
82	M	Mike	Stephens	46	Simi Valley	CA	USA	Rookie
84	M	Thorsten	Treptow	38	Cologne		Germany	Rookie
85	M	Gerry	Van de Wint	65	Surrey	BC	Canada	Rookie
55	M	Uli	Weber	55	Würgau	Bavaria	Germany	Veteran



10:00 AM START

#	M/F	First Name	Last Name	Age	City	State	Country	History
15	M	Rudy	Afanador	45	Medford	NY	USA	Veteran
4	M	Christopher	Bergland	38	New York	NY	USA	Veteran
9	M	George	Biondic	51	Newmarket	Ontario	Canada	Veteran
83	M	Jay	Birmingham	58	Blair	NE	USA	Veteran
32	F	Francesca	Conte	32	Charlottesville	VA	Italy	Rookie
54	M	Conrad	Daniel	55	Redlands	CA	USA	Veteran
53	M	Chris	Frost	53	Malibu	CA	USA	Veteran
2	M	Dean	Karnazes	41	San Francisco	CA	USA	Veteran
98	M	Andrei	Kazantsev	41	Moscow		Russia	Rookie
40	M	Timothy TJ	Key	60	San Diego	CA	USA	Rookie
48	M	Randy	Klassen	51	Ridgecrest	CA	USA	Veteran
99	M	Ivan	Labutin	45	Moscow		Russia	Veteran
64	M	Adalberto	Mendoza	52	Los Angeles	CA	Mexico	Rookie
14	M	Mark	Morris	46	Tyler	TX	USA	Veteran
16	M	Peter	Mueller	41	Kloten	Zurich	Switzerland	Veteran
68	M	James	Nelson	43	Layton	UT	USA	Rookie
1	F	Pamela J.	Reed	43	Tucson	AZ	USA	Veteran
17	F	Jody-Lynn	Reicher	41	Midland Park	NJ	USA	Veteran
3	F	Monica	Scholz	37	Jerseyville	Ont	Canada	Veteran
80	F	Carolyn	Smith	39	Milwaukee	WI	USA	Rookie
39	M	James	Smith	39	Grand Rapids	MI	USA	Veteran
81	F	Lynne	Stark	42	Newcastle		UK	Rookie
36	F	Lisa	Stranc-Bliss	36	Spokane	WA	USA	Rookie
8	M	Steve	Teal	38	Phelan	CA	USA	Rookie
12	M	Marshall	Ulrich	53	Idaho Springs	CO	USA	Veteran
62	M	Arthur	Webb	62	Santa Rosa	CA	USA	Veteran
34	M	Robert	Wimmer	39	Nuemberg	Bavaria	Germany	Rookie

Curt Maples to Run Badwater in Iraq, Help Iraqi Children



Curt Maples, the three time Badwater finisher who received the "Badwater Ambassador Award" at the 2003 race, is currently deployed to Iraq with the US Marine Corps. This July 12-14, he will run 135 miles in Iraq simultaneous to the 2004 Kiehl's Badwater Ultramarathon. As an honorary race entrant, he will wear his customary bib number 13 while doing so. His Marine Corps support crew will be emailing photos to our race headquarters for inclusion in the race webcast.

Curt is asking for support of the local Iraqi school children for this effort: "Really anything people can send will help (but do not send money). Maybe we can do something to help these kids who have the misfortune to be caught up in all this mess! Thank you!"

The following items should be sent to Curt at this address:

Major Maples, W.C. CE G3  
1FSSG, HQSVC Bn, HQ Co  
UIC 42095  
FPO AP 96426-2095

School supplies such as spiral-type notebooks, crayons, pencils, coloring books, folders, notebook paper, etc. Soccer balls/Frisbees. Kids' clothing such as t-shirts and socks.

For more about Curt and all of his correspondence, click <http://www.badwaterultra.com/2004web/maples.html>





## Mission

The mission of the Challenged Athletes Foundation is to provide opportunities to people with physical disabilities to pursue an active lifestyle through physical fitness and competitive athletics. The Challenged Athletes Foundation believes that involvement in sports at any level increases self-esteem, encourages independence and enhances quality of life.

## What do we do?

Established in 1997, the CAF is a unique organization that recognizes the athletic greatness of people with disabilities and supports these efforts by providing grants for training, competition and equipment needs. Grants are awarded to persons with any type of physical disability and for a wide range of sports. The CAF does not discriminate by age, disability, sport or level of ability. The hundreds of athletes that the CAF has assisted range from world class athletes competing on an international level to those who are recently disabled and desire to become more active. Grants are distributed once a year with applications being accepted year round.

## Why do Challenged Athletes Need Funding?

There are 49 million people living in the US with a physical disability. Equipment to be active for someone who is disabled is very expensive and therefore prohibitive for many to pursue an active lifestyle. Funding through the CAF helps make it possible for more people to gain self-esteem through sports. If you're a family with three children, one with a physical disability, you can buy two bikes at Wal-Mart for less than \$200 – for the third, you must purchase a handcycle that runs upwards of \$1,500.

## Fundraising

The ten-year goal of the CAF is to create a \$1,000,000 endowment fund that will continue to assist physically challenged athletes indefinitely. Of the revenue generated, 80% will be set aside for the endowment fund or be used for individual grant payments. To date, the CAF has provided over 1000 grants and raised over four million dollars.

Challenged Athletes Foundation 2148 – B Jimmy Durante Blvd. Del Mar, CA 92014  
858-793-9293 [www.ChallengedAthletes.org](http://www.ChallengedAthletes.org)



# PHOTOS FROM BADWATER 2003



**1.** World famous adventure cameraman Dan Dominy never misses a shot. **2.** Chris Kostman with Abbie Schiller of Kiehl's. **3.** The Mayor of Malibu, Chris Frost. **4.** Ruben Cantu, en route to four-in-a-row. **5.** Major Curt Maples hoists the flag. **6.** Jay Birmingham returns after twenty years. **7.** Monica Scholz's Injinji toe socks. **8.** Team Frixie heads for their start line.

RACE NOTES

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