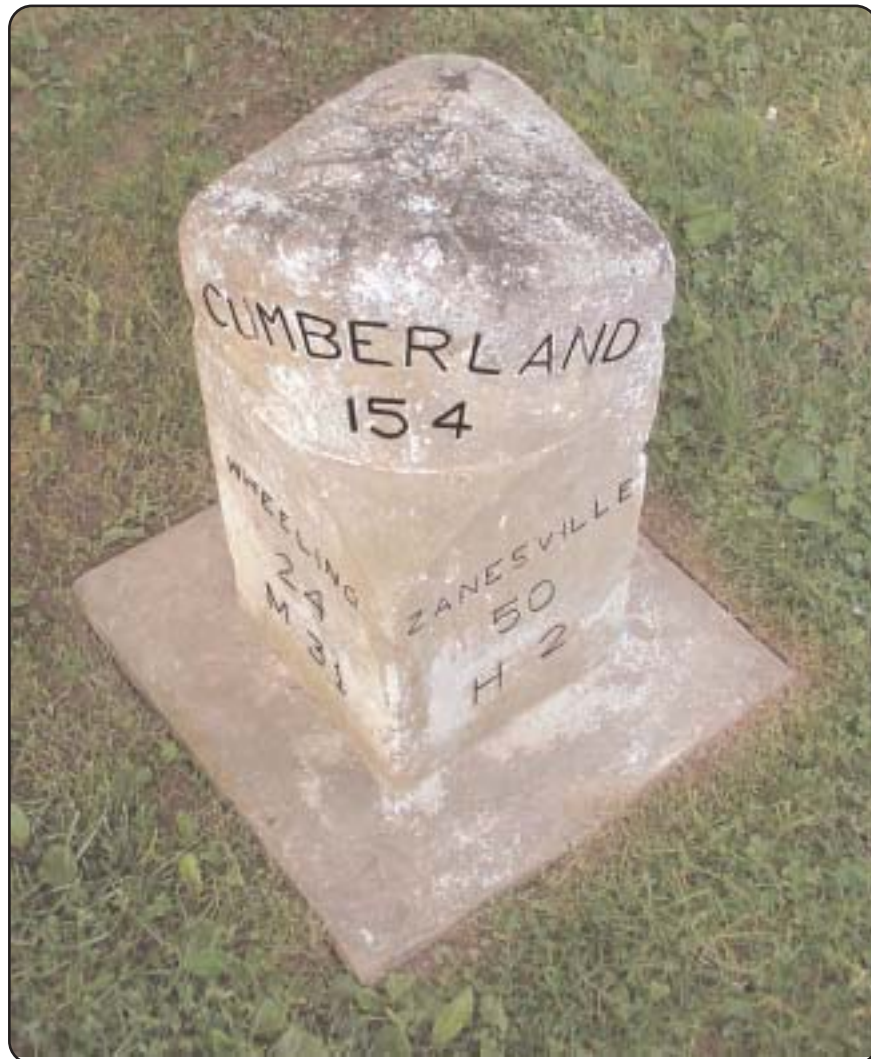


Measurement News

July 2004 • Number 126



On Interstate 70, on the route from Columbus to New York City , there are several rest areas. This stone is located in the one between Wheeling, West Virginia and Zanesville, Ohio.

The accompanying plaque reads:

Ohio Historical Marker

MILE MARKER The earliest highway signs along the National Road (Route 40) in Ohio were milestones located at one-mile intervals along the north side of the roadway. Each stone indicated the distance to Cumberland, Maryland, the eastern terminus of the National Road, and to the nearest cities and villages for both east and westbound travelers.

MEASUREMENT NEWS

#126 – JULY 2004

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ABOUT MEASUREMENT NEWS

Measurement News (MN) is the newsletter of the Road Running Technical Council (RRTC) of USA Track & Field (USATF). MN is our way to talk to one another, so that we all know what's going on.

MN is also sent to many foreign measurers associated with AIMS and IAAF, who are also invited to participate in the dialogue.

MN is published bimonthly beginning in January (six issues per year). MN is sent free to RRTC officers and certifiers, and AIMS/IAAF measurers. Others may obtain MN by sending \$20 (for a one year subscription - six issues) to the editor.

If you wish to reproduce or report on anything in MN, go ahead, but an attribution would be appreciated.

MN wants to make road course measurement as good as it can be. All opinions and grievances are solicited. No cows are sacred. If you have a new measurement technique, or if you think things should be done differently, send in your contribution to MN. Your opinion will be given space. Nothing changes until somebody tries!

Electronic copy or clean typed material is most welcome, but send what you can.

Deadlines: Material intended to be included in the September 2004 issue must be in the Editor's hands by August 20. Next issue will be mailed in early July.

ROAD RUNNING TECHNICAL COUNCIL

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Chairman
Vice-Chairman (East)
Vice-Chairman (West)
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Mike Wickiser
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Basil/Linda Honikman
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Visit the RRTC website at:

<http://www.rrtc.net>

A complete list of certified courses may be downloaded from this site.

A complete USATF measurement book can be downloaded from this site.

ONLINE MEASUREMENT FORUM

All it takes to become a subscriber is access to email. Simply send to mnforum-request@rrtc.net with "subscribe" as the subject (to unsubscribe, use "unsubscribe" as the subject).

To post messages to the list, send email to mnforum@rrtc.net. Please keep your comments in the body of the email (no attachments please). Also, please send only plain text; i.e., avoid formatted (HTML) messages (If you use HTML formatting, the formatting will be removed).

Chairman's Clatter - From Mike Wickiser

New Certifier for Montana: George Tuthill has chosen to retire as MT certifier. No newcomer to certification, Mike Franke has agreed to take on Montana in addition to his home state of Iowa.

Annual RRTC Meeting: The RRTC meeting in Stamford, CT is almost upon us. Anyone interested in attending over the August 21-22 weekend can go to the special web link for room reservations at <http://www.stayatmarriott.com/USATrackandFieldTechnicalCouncil> Agenda items are being developed. Any and all topics are welcomed for discussion. I am looking forward to getting together for RRTC business as well as socially seeing old friends and acquaintances. Hope to see you there.

FREE Bike Computer: Neville Wood has completed a procedure for using a bike computer to measure race courses for certification. Pete Riegel, Jim Gerweck, and I are testing this method for review and possible addition as acceptable measurement counter. The free computer is for anyone willing to try one out and provide comments and summary as to their experiences with using a bike computer for course measurement. Neville's procedure is available for down load from <http://home.earthlink.net/~caverhall/newrevcounter/abstractcontents.htm>

Now for the free bike computer. I will arrange to have a Sigma bike computer and the necessary three extra magnets delivered to the first person contacting me at my email address, mikewickiser@neo.rr.com.

Pete Riegel & I have tried using Neville's method. Jim is in the process of trying it out. Jim, Pete, and I were all advantaged in that we had an in depth presentation from Neville at last year's RRTC meeting. Having someone work from the procedure will provide some valuable insight and will certainly help evaluate bike computers as a measurement tool along with Jones, Jones/Oerth, and JOL mechanical counters.

A handwritten signature in black ink that reads "Mike Wickiser". The signature is written in a cursive, flowing style. Below the name, there is a small, stylized flourish or mark.

Athletics Canada

Road Race Measurement Seminar

May 8 and 9, 2004

University of Victoria

British Columbia



From left to right: Paul Adams, Evan Fagan, Laurie Upton, Sylvan Smyth, Fergus Mooney, Michael Stoehr, Mark Allison, Jim Allman, Brian Laslo, John Campbell, Gary Duncan, Rob Harmsworth, Phil McOrmond

Athletics Canada
Road Race Measurement Seminar
University of Victoria
British Columbia

May 8 & 9, 2004

By Paul Adams

The seminar was organized by Evan Fagan, a member of the Team West Coast Running and Triathlon Club of Victoria and a Grade “C” measurer. Evan organized everything, including the advertisement, the registration, the venue, the food, the calibration course and a practice 5 km route. In addition, Laurie Upton, a Grade “A” measurer, assisted with the seminar by adding his experience and by videotaping the proceedings.

Students and staff met at the McKinnon Building, Room 150 on the University campus at 10:00 AM on Saturday morning. The lecture room in the McKinnon building had seating for 100 and made a very comfortable base for the 10 students and 3 staff who were present for the weekend. The room was well equipped with projector to assist with the use of the lap top computer and video camera. Also included were chalkboards and a flip chart.

After introductions all around the instructor, Paul Adams, discussed the importance of safe riding and the hazards that measurers were exposed to, in addition to the usual bike riding hazards. **Think safety, stay alert and always wear protective equipment (helmets and safety vests).** The seminar began with a discussion of the general principles of measurement followed by some practice calculation exercises. With

this basic understanding covered the group spent some time discussing the layout and requirements for a calibration course. Since it was now almost lunchtime the group decided to spend a few moments mounting their Jones Counters on their bikes. This provided a good opportunity to discuss the different types of bikes that are used for measurements and some of the difficulties that can be experienced with the different types.



After lunch the group assembled outside and ensured that all Jones counters were mounted and functioning correctly. A short ride took them to Cedar Hill X Road where Evan had set up cones to keep traffic away from the area to be used for the 300 metre calibration course. Everyone wore safety vests while on the road and while riding their bikes. The students, working in pairs, each made two measurements of one of the two calibration courses (one near the curb and one 2.4 m from the curb).



A practice bike calibration (4 rides) was made by each student before returning to the classroom to review the data and adjust the

calibration course length for the ambient temperature (27C).

Two of the pairs had measurements with differences of more than 2 cm between their two measurements while the other three pairs had good agreement between their first and second measurements. The following table lists the average length of each pair, corrected for the ambient temperature.

Mike and Fergus	300.074
Rob and Sylvan	300.004
Jim and Phil	299.974
Brian and Gary	300.114
Mark and John	300.019

We decided not to use the pairs of measurements where the difference exceeded 2 cm, and averaged the remaining pairs of numbers to conclude that the curb course was 300.074 m and the road course was 300.067 m. After the seminar the pins were moved so that both calibrations lengths were 300.000 m.

Two of the students had used a 100 m tape and even though they only had to do 3 lengths they found it more difficult than going 6 lengths with a 50 m tape. The long tape was difficult to get straight and it was very hard to communicate with the person at the other end of the tape (0.1 km away).

The rest of the day was spent discussing course set up and measurement techniques that will help get the shortest possible route. The session abruptly ended when the University staff arrived to lock up the room at 4:30 PM.

As arranged, the group met at 8:30 the following morning and proceeded to calibrate their bikes in preparation for measuring the course. After calibration, the instructor led the group around the 5 km

practice course, stopping periodically to discuss how they would measure the shortest possible route.



For measurement of the practice course the class was split into two groups of measurers. Each of the five measurers took turns leading their group and determining where to stop to mark a split. In this way everyone got a chance to practice setting splits and to choose the shortest possible route.

After the post calibration rides, the group reassembled back in the lecture hall to complete their calculations, compare results and discuss problems and observations. The following table summarizes the total distance attained by each measurer:

Measurer #1	5.0096 km
Measurer #2	5.0043 km
Measurer #3	
Measurer #4	4.9996 km
Measurer #5	5.0025 km
Measurer #6	5.0016 km
Measurer #7	5.0065 km
Measurer #8	5.0027 km
Measurer #9	5.0056 km
Measurer #10	5.0127 km
Measurer #11	4.9983 km

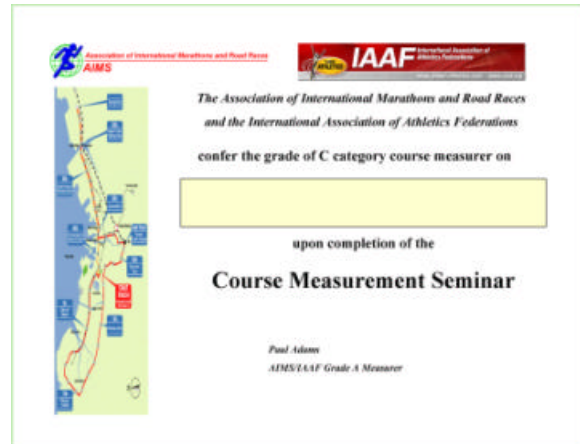
[note: the two groups measured to different end points, but the distances listed here are adjusted to the furthest point]

The course was quite complex and there were lots of opportunities to practice getting to the SPR. As a result, some of the measurements were well over the allowed 0.8% difference. This led to another discussion on the importance of riding a “tight” course. Laurie, who had been busy with his video camera for the past two days figured out how to feed his camera directly to the projector we had been using for the PowerPoint presentations. This allowed the class to observe the way we had all measured the course and easily determine how they could do it better next time.

After another fine lunch (this time pizza) a final hour was spent discussing maps, forms and documentation of splits. As the map is the most important part of the documentation several examples were examined in detail. In addition, examples of photographic split documentation were reviewed. Splits, although not usually part of the certification process is very important to the race director and it is critical that the splits can be accurately established.

As a final exam for the seminar each of the participants was asked to complete the certification forms for our practice route including a map. After the maps and application forms are submitted to the instructor he will critique them individually. As an added incentive to complete the assignment, a prize, consisting of a can of spray chalk, a can of spray paint and a surveyors notebook with waterproof pages. will be presented to the measurer who submits the best map.

Finally, AIMS/IAAF Measurer Grade “C” Certificates were presented to each of the participants for successfully completing the seminar.



Participants:

Brian Laslo, Parksville, BC
Mark Allison, Victoria, BC
Michael Stoeher, Saanichton, BC
Rob Harmsworth, Victoria, BC
Fergus Mooney, Sidney, BC
Jim Allman, Victoria, BC
Gary Duncan, Victoria, BC
Sylvan Smyth, Victoria, BC
Phil McOrmond, Victoria, BC
John Campbell, Duncan, BC

Instructor:

Paul Adams, Grade “A” Measurer

Assistant Instructors:

Laurie Upton, Grade “A” Measurer
Evan Fagan, Grade “C” Measurer

Venue Organization:

Winona Pugh

INFORMATION ON THE SEMINAR FOR COURSE MEASURERS Moscow (RUS) May 2004

In accordance with the plan of activities of the IAAF Moscow Regional Development Centre for 2004 a Seminar for Course Measurers took place in Moscow in the period of May 25 - 29. Mr. John Disley (Great Britain), IAAF/AIMS International Measurement Administrator, was the Chairman of the Seminar.

Twenty one (21) participants from the following sixteen (16) countries under Special Eastern Project took part in the Seminar: Samvel Buranian (Armenia), Dimitar Kojoukarov (Bulgaria), Ivan Malukha (Belarus), Obrad Dragicevic (Bosnia & Herzegovina), Andres Nirk (Estonia), Nurpeis Konysbaeb (Kazakhstan), Igor Mozgov (Kyrgyzstan), Yuris Belinskas (Latvia), Alfonsas Kazlauskas (Lithuania), Alexandr Ganchenko (Moldova), Vladimir Volkov, Maris Peterson, Anton Ujk, Yuri Knyshev, Vadim Zlobin (all Russia), Milorad Recevic (Serbia & Montenegro), Vadim Nigmatov (Tajikistan), Allaberdy Rakhimov (Turkmenistan), Yuri Lysenko and Vitaly Koretsky (Ukraine), Mirovoz Mirsadykov (Uzbekistan).



John Disley traveled to Moscow to give a measurement seminar. Here we see him (foreground, back to camera, standing next to woman) getting ready to address the students.

In the course of the theory and practice sessions participants were able to discuss the following topics:

the goals and tasks of measurement, importance of race course measurement taking into account the latest changes of the IAAF Competition Rules for 2004 - 2005;
Requirement of the unique procedure of measurement all over the world;
System of obtaining national and international qualification;
Use of Jones Counter;
Learning bicycle technique;
Explanation of Calibration Course, lay out of calibration courses;
calculation of the length of the course, measurement during different time and under different weather conditions;
filling documentation required for the course measurement.

After practical sessions and written examination all participants received the right to become National Measurers and to measure courses for National competitions. Should they continue to work successfully under supervision with Mr. John Disley, he will recommend them to IAAF for the consideration of Grade IB.

Anton Ujk (Russia) achieved the highest result with 100 points. Over 90 points were achieved by Alfonsas Kazlauskas (Lithuania), Maris Peterson and Yuri Knyshev (both Russia), Vadim Nigmatov (Tajikistan), Dimitar Kojoukarov (Bulgaria), Yuris Belinskas (Latvia).

Moscow RDC allocated Jones Counters among the representatives of all National Federations and provided them with the latest edition of the IAAF Manual "The Measurement of Road Race Courses" (in English and in Russian).

New Method for Course Measurement Using Electronic Bicycle Odometer

At last year's RRTC Annual Meeting in Akron, Neville Wood gave an informative and detailed presentation regarding his method of course measurement using an electronic bicycle odometer instead of the traditional mechanical revolution counters. A complete explanation of this process is posted online at

<http://home.earthlink.net/~caverhall/newrevcounter/abstractcontents.htm>

Space limitations prevent the publication of the presentation in this issue; however, the online description is quite thorough.

Pete Reigel tested this method and compared it to a traditional Jones / Oerth counter. His report appears in the following pages.

A Field Check of an Electronic Revolution Counter

Neville Wood has invented an electronic form of measurement which uses an ordinary and cheap electronic bike odometer, combined with a bike wheel divided into fractions of a revolution, to use as a substitute/replacement for the Jones/Oerth counter. You can read about it at:

<http://home.earthlink.net/~caverhall/newrevcounter/abstractcontents.htm>

I bought a Sigma Sport BC 600 electronic odometer and installed it according to Neville's instructions. Since I had recently measured a 10 km course for certification, and it was located only two miles from my house in a local park with no traffic, I thought it would be a nice place to check out the electronic counter.

My normal counter is a Jones/Oerth/Lacroix (JOL) counter which has the readout mounted on the handlebars. I have been very satisfied with this unit, and use an axle-mounted counter only when traveling.

I found that the electronic method produced results that were virtually identical to those obtained using the JOL counter. I also found that I liked using it, and found it easy. It takes a little getting used to, but soon the correct procedures become second-nature.

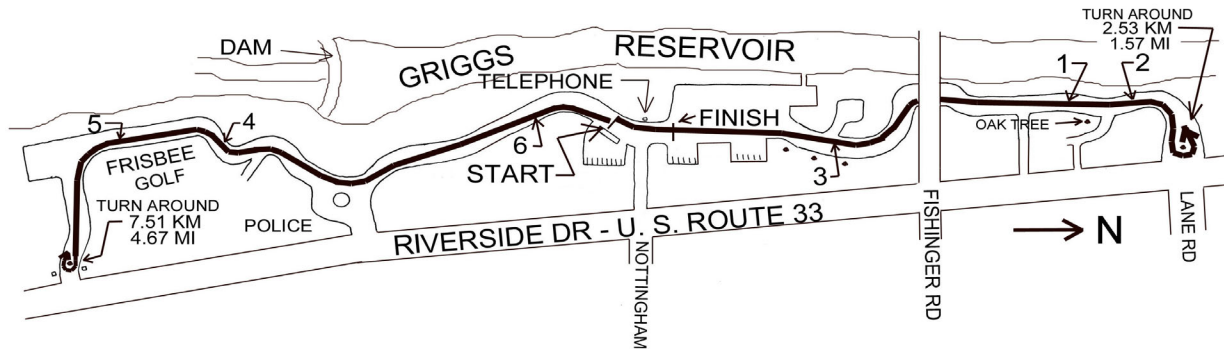
Initially I was a bit put off by the sheer volume of Neville's comprehensive work, but found that it was a lot like learning to operate a computer. Scan the manual, then get down and play with the thing. I soon found it easy to use. The precision of the electronic readings is slightly superior to that of the JOL.

I'm still a bit confused as to how one can be sure of the reading when the wheel rim lands exactly on zero. Has the counter turned over or not? When I read 754.00 is the real reading 754.00 or 755.00? This may be somewhat analogous to remembering to remove the backlash from the JOL counter when taking readings. Perhaps this, and other problems, will be successfully addressed at our next RRTC meeting.

The new counter was introduced by Neville and discussed at last year's RRTC meeting in Akron, Ohio. Since then Mike Wickiser, Jim Gerweck and I have purchased odometers and are in the process of investigation. We expect to have some more results to discuss at this year's meeting in Stamford, Connecticut, on August 20-22, 2004.

Pete Riegel

Check of USATF certified course OH 04043 PR - Buckeye Classic 10 km



Calibrations done on Kirkham Road 1000 feet - OH 90050 PR

All calculations use AVERAGE constant and short course prevention factor of 1.001

Precalibration - 11:40 AM - dry - 86F

Postcalibration - 1:23 PM - dry - 86F

JOL Counter		Electronic
76530		
79899	3369	142.52
79910		
83279	3369	142.51
83290		
86659	3369	142.51
86670.5		
90038.5	3368	142.5
Average	3368.75	142.51
Counts/m	11.0633817	0.46802005
Cts/mile	17804.787	753.205253

JOL Counter	Electronic	
4781		
8148.5	3367.5	142.47
8185		
11552.5	3367.5	142.48
11588.5		
14957	3368.5	142.5
14992		
18359.5	3367.5	142.48
Average	3367.75	142.4825
Counts/m	11.0600976	0.46792973
Cts/mile	17799.5017	753.059908

JOL Day's constant	11.0617397 counts/m
	17802.1444 cts/mile
	0.46799669 rev/m
	753.167666 rev/mile

Electronic constant	0.46797489 rev/m
	753.13258 rev/mile

Measurements - The electronic counter was reset to zero at the beginning of each interval.

	JOL Reading	Interval Counts	Interval Meters	Electronic Reading	Interval Meters	Elec-JOL Cm
Finish	92178					
Mile 1	109653	17475	1579.77	739.35	1579.89	12.3
Mile 1 N Turn	9668.5 19870	10201.5	922.23	431.6	922.27	3.9
N Turn Mile 2	19950 27593	7643	690.94	323.35	690.96	1.6
Mile 2 Mile 3	27656 45457	17801	1609.24	753.13	1609.34	9.8
Mile 3 Mile 4	45501 63300	17799	1609.06	753	1609.06	0.1
Mile 4 S Turn	63347 75255	11908	1076.50	503.81	1076.57	7.1
S Turn Mile 5	75283 81152	5869	530.57	248.29	530.56	-0.5
Mile 5 Mile 6	81192 99007	17815	1610.51	753.72	1610.60	9.3
Mile 6 Start	99038 102507	3469	313.60	146.78	313.65	4.6
Start Finish	102536 102871	335	30.28	14.2	30.34	5.9

Cumulative Measured Lengths, meters

	JOL	Electronic	Desired
Start	0		
Mile 1	1610.1	1610.2	1609.3
N Turn	2532.3	2532.5	
Mile 2	3223.2	3223.5	3218.7
Mile 3	4832.5	4832.8	4828.0
Mile 4	6441.5	6441.9	6437.4
S Turn	7518.0	7518.4	
Mile 5	8048.6	8049.0	8046.7
Mile 6	9659.1	9659.6	9656.1
Finish	10003.0	10003.6	10000.0

USATF/RRTC CERTIFIED COURSE LIST
New Entries, May - June 2004

DISTANCE	COURSE ID	STA	LOCATION	COURSE NAME/RACE	m/km DROP	pct SEP	MEASURER	REPLACES
5 km	AL 04009 JD	A	Florence	5k Run For St. Jude	-0.1	4	D Michael	
1 mi	AL 04010 JD	A	Florence	1 Mile For St. Jude	0.0	0	D Michael	
21.1 km	AZ 04002 GAN	A	Tucson	Tucson Half Marathon	10.3	74	G Newman	AZ 01004 ETM
42.2 km	AZ 04003 GAN	A	Tucson	Tucson Marathon	15.2	95	G Newman	AZ 99013 FC
10 km	AZ 04004 GAN	A	Flagstaff	Northland Hospice Run for Life	0.0	0	G Newman	
10 km	CA 04002 TK	A	Mountain View	The Human Race 10k	0.0	2	T Knight	
5 km	CA 04003 TK	A	Mountain View	The Human Race 5k	0.0	4	T Knight	
5 km	CA 04004 TK	A	San Francisco	Zippy 5k	0.0	0	T Knight	
8 km	CA 04005 TK	A	Stanford	Fifty Plus 8 km at Stanford	0.8	2	T Knight	CA 03002 TK
5 km	CA 04016 RS	A	Sacramento	Sacramento Race for the Cure	0.2	12	R Scardera	CA 03024 RS
5 km	CA 04017 RS	A	Calabasas	Calabasas Classic 5 km	0.0	0	R Scardera	
10 km	CA 04018 RS	A	Calabasas	Calabasas Classic 10 km	0.0	0	R Scardera	
5 km	CA 04019 RS	A	Modesto	Modesto Classic 5 km	0.8	6	R Hanna	
1 mi	CA 04020 RS	A	Modesto	Modesto Classic Mile	0.0	78	R Hanna	
Cal	CA 04021 RS	A	Susanville	Bizz Johnson Trail 1000.35 ft.	0.0	100	D Dreyfuss	
42.2 km	CA 04022 RS	A	Westwood	Bizz Johnson Marathon	8.3	63	D Dreyfuss	
5 km	CO 04004 DP	A	Fort Collins	CooperSmith's Father's Day	0.0	1	J Lonsdale	CO 02009 DP
21.1 km	CO 04005 DP	A	Cherry Creek ST. Park.	US Half Marathon	1.1	3	P Tanui	CO 03028 DP
10 km	CO 04006 DP	A	Fort Carson	Fort Carson 10k	0.0	2	B Bennett	
5 km	CO 04007 DP	A	Estes Park	Estes Park Optimist 5k	0.0	16	J Lonsdale	
10 km	CO 04008 DP	A	Estes Park	Estes Park Optimist 10k	0.0	8	J Lonsdale	
5 km	CO 04009 DP	A	Loveland	Valley 5000	0.0	8	J Lonsdale	
5 km	CO 04010 DP	A	Denver	Charity Chase	0.0	2	P Tanui	
Cal	CT 04003 PH	A	Killingworth	Fawn Hill Road 300m	0.0	100	S Sodergren	
Cal	CT 04004 PH	A	Hartford	Bushnell Park 1000 ft.	0.0	100	Guido Bros	
5 km	CT 04005 PH	A	Hartford	Komen CT Race for the Cure	0.3	2	Guido Bros	
5 km	CT 04006 PH	A	Hartford	Komen CT Race for the Cure	0.0	0	Guido Bros	
5 km	CT 04007 PH	A	Windsor	Shad Derby Road Race	0.0	1	D Bolt	
4 mi	CT 04008 PH	A	Guilford	Guilford Savings Bank Run	0.0	0	Guido bros.	
5 km	CT 04009 PH	A	North Haven	Connecticut Irish Festival 5k	0.0	2	B Stephenson	
10 mi	CT 04010 PH	A	Norwich	Rose City Challenge	0.4	1	Guido bros	CT 99004 DR
5 km	CT 04011 PH	A	Hartford	Komen CT Race For the Cure	0.3	2	Guido bros.	
5 km	DC 04001 RT	A	Washington	Hauns Point 5k (CCW)	0.0	2	R Thurston	
10 km	DC 04002 JS	A	Washington	Lawyers Have Heart 10k Run	0.0	0	J Sissala	DC 02001 JS
5 km	FL 04021 DL	A	Tarpon Springs	Beach to Bayou 2003	0.0	12	E McDowell	FL 03016 DL
5 km	FL 04022 DL	A	Tallahassee	Shamrock Scurry 2004	0.4	5	B McGuire	
5 km	FL 04023 DL	A	Boca Raton	Memorial Day 5k	0.0	5	G Witkowski	
5 km	FL 04024 DL	A	Ft. Lauderdale	Birch State Park	0.0	16	J Musters	
5 km	FL 04025 DL	A	St. Petersburg	Carillon 5k	0.0	2	A Johnson	
5 km	FL 04026 DL	A	Largo	Seminole Stampede 5k	0.0	9	E McDowell	
5 km	FL 04027 DL	A	Orlando	Carraba's Italian Grill 5k	0.2	5	T Ward	
5 km	FL 04028 DL	A	Naples	Tropicool 5k	0.0	2	M Sonneborn	
2.5 km	FL 04029 DL	A	Orlando	UCF 2500 meter Racewalk	0.0	0	T Ward	
1.25 km	FL 04030 DL	A	Orlando	UCF 1250 meter Racewalk	0.0	0	T Ward	
5 km	FL 04032 DL	A	Tallahassee	Jailbreak 5k	0.0	5	B McGuire	
5 km	FL 04033 DL	A	Palm Bay	Palm Bay 5k Freedom Run/Walk	0.0	0	B Dillard	FL 98012 DL
5 km	FL 04034 DL	A	Miami Beach	The Crunch Ocean Drive 5k Run	0.0	2	D Matuszak	
5 km	FL 04035 DL	A	Miami Beach	The Crunch Ocean Drive - Alt.	0.0	1	D Matuszak	
42.2 km	HI 04028 PR	A	Kailua-Kona	Kona Marathon	0.0	1	R Pate	
42.2 km	IA 04001 MF	A	Ames	Central States Marathon	-0.1	0	D Bryner	
5 km	IA 04002 MF	A	Hudson	Hudson Pump and Run	0.0	0	B Lorenz	
4 mi	IA 04004 KU	A	Eldridge	Moonlight Chase	0.0	2	K Ungurean	

DISTANCE	COURSE ID	STA	LOCATION	COURSE NAME/RACE	m/km DROP	pct SEP	MEASURER	REPLACES
5 km	IL 04002 JW	A	Chicago	Lifestart Wacky 5k	0.0	1	J Wight	IL 02001 JW
8 km	IL 04003 JW	A	Chicago	Shamrock Shuffle	0.0	0	J Knoedel	IL 03006 JW
21.1 km	IL 04003 KU	A	Rock Island	Quad Cities Distance Classic	0.2	2	K Ungurean	IL 03003 KU
5 km	IL 04004 JW	A	West Chicago	Carelink 5k Run	-0.9	9	C Hinde	IL 03059 JW
5 km	IL 04004 KU	A	Moline	Race for the Cure 5k	-0.2	5	K Ungurean	
5 km	IL 04005 JW	A	Quincy	Bridge the Gap to Health 5k	0.9	1	J Wight	IL 01008 JW
10 km	IL 04006 JW	A	Quincy	Bridge the Gap to Health 10k	0.5	1	J Wight	IL 01009 JW
5 km	IL 04008 JW	A	Romeoville	Cinco De Mayo 5k Run	0.0	0	C Hinde	
5 km	IL 04009 JW	A	Chicago	Wrigley Start Early 5k Run	0.0	1	C Hinde	IL 03007 JW
10 km	IL 04010 JW	A	Chicago	Wrigley Start Early 10k Run	0.0	0	C Hinde	IL 03008 JW
10 km	IL 04011 JW	A	Algonquin	Bear Run 10k	0.0	0	C Hinde	
5 km	IL 04012 JW	A	Saint Charles	Run for Hope 5k	0.0	0	C Hinde	
5 km	IL 04014 JW	A	Lincolnshire	Hewitt 5k	0.0	3	J Wight	
5 km	IL 04015 JW	A	Wheaton	Race for the Stars 5k	0.0	1	C Hinde	
5 km	IL 04016 JW	A	Highland Park	District 112 Fun Run	0.0	0	C Hinde	
5 km	IL 04017 JW	A	Wauconda	Following In His Footsteps	0.0	1	C Hinde	
5 km	IL 04018 JW	A	Villa Park	Run For The Kids	0.0	1	C Hinde	
10 mi	IL 04019 JW	A	Chicago	Lakefront 10	0.0	0	J Knoedel	IL 02024 JW
10 km	IL 04021 JW	A	Chicago	The Main Course	0.0	0	J Knoedel	IL 03032 JW
5 km	IL 04022 JW	A	University Park	I Care Run for Autism	0.3	4	C Hinde	IL 02066 JW
5 km	IL 04023 JW	A	Aurora	CIS 5k Run Thru the Park	0.0	4	C Hinde	
5 km	IL 04024 JW	A	Libertyville	Making Exceptional Strides 5k	0.0	3	J Knoedel	IL 03038 JW
21.1 km	IL 04025 JW	A	Libertyville	Trail Half Marathon	0.0	1	J Knoedel	
5 km	IL 04029 JW	A	Chicago	Run For The Zoo 5k	0.0	3	J Wight	IL 02015 JW
10 km	IL 04030 JW	A	Chicago	Run For The Zoo 10k	0.0	2	J Wight	IL 03046 JW
10 km	IL 04034 JW	A	Aurora	Walter Payton Classic 10k	0.3	2	J Wight	IL 01046 JW
5 km	IL 04035 JW	A	Aurora	Walter Payton Classic 5k	0.6	5	J Wight	IL 01045 JW
5 km	IL 04036 JW	A	Glen Ellyn	St. Petronille's 5k	0.0	0	J Wight	
5 km	IL 04037 JW	A	Wheaton	Marianjoy 5k	0.0	1	D Lamer Mayer	
10 km	IL 04038 JW	A	Western Springs	Tower Trot	0.2	8	C Hinde	IL 99012 JW
5 km	IL 04039 JW	A	Western Springs	Tower Trot	0.3	16	C Hinde	IL 99011 JW
3.541 km	IL 04041 JW	A	Claredon Hills	Claredon Hills Tri 2.2 mile	0.0	0	C Hinde	
8 mi	IL 04042 JW	A	Claredon Hills	Claredon Hills Tri 8 mile	0.1	0	C Hinde	
5 km	IL 04043 JW	A	Oak Brook	Run For Fun 5k	0.0	3	C Hinde	
10 km	IL 04044 JW	A	Oak Brook	Run For Fun 10k	0.0	1	C Hinde	
10.55 km	IL 04046 JW	A	Chicago	Chicago 1/4 Marathon	0.0	0	J Knoedel	IL 03043 JW
5 km	IL 04047 JW	A	Chicago	Run For the Rare	0.0	0	C Hinde	
5 km	IL 04048 JW	A	Homewood	Twilight 5k	0.0	1	C Hinde	
5 km	IN 04008 MW	A	Bloomington	Glaxo SKB 5k Challenge	0.0	0	J Sauer	
5 km	IN 04009 MW	A	Bedford	Limestone 5k	0.0	0	J Sauer	
5 km	IN 04010 MW	A	Bloomington	Habitat for Humanity 5k	0.0	1	J Sauer	
5 km	IN 04011 MW	A	Indianapolis	500 Mini-Marathon training 15k	0.0	0	J Sauer	
5 km	IN 04020 JW	A	Michigan City	Samarian Skedaddle	0.0	0	C Hinde	
5 km	KS 04018 BG	A	Overland Park	Corporate Woods	0.0	0	L Joline	KS 00028 BG
42.2 km	KS 04020 BG	A	Olathe	Olathe NAIA Marathon	-0.2	5	L Joline	KS 02016 BG
15 km	KS 04021 BG	A	Olathe	Olathe NAIA 15 km	-0.5	13	L Joline	
5 km	MA 04003 RN	A	Cambridge	An Ras Mor	0.0	1	S Vaitones	
10 km	MA 04004 RN	A	Halifax	John's Race - 10k	0.4	1	R Nelson	
5 km	MA 04005 RN	A	Halifax	John's Race - 5k	0.8	2	R Nelson	
Cal	MA 04006 RN	A	Devens	Auman Street 1000 ft.	0.0	100	F Wilkins	
5 mi	MA 04007 RN	A	Devens	Parker Road Race	0.0	0	B Nyer	MA 02002 RN
5 mi	MA 04008 RN	A	North Attleboro	Runaways RTM 5 Mile Road Race	-0.5	4	R Nelson	MA 03006 RN
5 km	MA 04009 RN	A	Medway	Medway Lions 5k Road Race	0.0	1	R Nelson	
5 km	MA 04010 RN	A	Natick	Marino Lookout Farm Road Race	0.0	3	S Vaitones	MA 00007 RN
5 km	MD 04001 RT	A	Largo	Prince Georges CC - 5K	0.0	4	R Thurston	
5 km	MD 04002 JS	A	Bethesda	Whitman in Motion 5k	0.0	2	P Quinn	
42.2 km	MD 04003 JS	A	Frederick	Frederick Marathon	0.1	1	J Capoccia	
7 mi	MD 04004 JS	A	Baltimore	Survivor Harbor 7	0.0	10	W Diegel	
4 mi	ME 04003 RF	A	Bridgton	Bridgton Four on the Fourth	0.0	6	S Collins	ME 89008 GN
21.1 km	MI 04004 SH	A	Kalamazoo	National City	0.0	0	R Dewey	MI 02011 SH
10 km	MI 04005 SH	A	Berkley	Mother's Day	0.0	0	S Hubbard	MI 89001 SH
5 km	MI 04006 SH	A	Lansing	Race for the Cure	-0.2	1	S Hubbard	
8 km	MI 04007 SH	A	Grosseville	Memorial Day	0.0	2	K Medelis	MI 01008 SH

DISTANCE	COURSE ID	STA	LOCATION	COURSE NAME/RACE	m/km DROP	pct SEP	MEASURER	REPLACES
15 km	MN 04000 RR	A	Rochester	Rochester	0.0	2	T Saxman	
5 km	MN 04003 RR	A	St. Paul	Phalen	1.2	3	R Recker	
5 km	MN 04004 RR	A	Minneapolis	Golden Gopher	0.0	6	R Recker	
10 km	MN 04005 RR	A	Chasta	Chasta	5.5	53	R Recker	
30 km	MN 04006 RR	A	White Bear Lake	Northern Lakes	0.0	4	R Recker	
21.1 km	MN 04007 RR	A	Burnsville	Burnsville	-0.4	2	R Recker	
5 km	MN 04008 RR	A	Alexandria	Apple Blossom	0.0	0	D Summers	
10 mi	MN 04009 RR	A	Champlin	Champlin	-0.6	2	R Recker	
5 km	MN 04010 RR	A	St. Paul	Melaleuca Freedom Celebration	3.8	19	D Wright	
10 km	MN 04011 RR	A	St. Paul	Melaleuca Freedom Celebration	1.9	10	D Wright	
10 km	MO 04017 BG	A	Springfield	Bass Pro	0.0	1	C Crowson	
5 km	MO 04019 BG	A	Kansas City North	Larry Fry Heart Run	0.0	0	L Joline	
10 km	NC 03060 PH	A	Brevard	CISTC 10k	0.3	4	B Baldwin	
5 km	NC 04027 PH	A	Raleigh	Race for Grace	0.0	0	N Wood	
21.1 km	NC 04028 PH	A	Charlotte	South Park Race Fest H'MAR	-0.3	1	D White	
10 km	NC 04029 PH	A	Charlotte	South Park Race Fest 10k	-0.3	1	D White	
8 km	NC 04030 PH	A	Charlotte	Elizabeth Community Assn. 8k	0.0	0	D Joffe	
10 km	NC 04031 PH	A	Winston-Salem	Hospice Hope 10k	0.3	2	K Stone	
5 km	NC 04032 PH	A	Salisbury	Dare to Run 5k	-0.3	1	D White	
Cal	NC 04033 PH	A	Taylorsville	Icar Ridge 518.2 meter calibration	0.0	100	M Surface	
5 km	NC 04034 PH	A	Fuquay-Varina	Tiger Trot 5k	-0.3	4	N Wood	
10 mi	NC 04035 PH	A	Cherry Point	Sprint Triathlon Bike Course	0.0	0	P Hronjak	
Cal	NC 04036 PH	A	Cherry Point	Duffy Road 1000 ft. calibration	0.0	100	P Hronjak	
5 km	NC 04037 PH	A	Wilmington	Run For Thalian Hall	0.0	0	F Guy	
10 km	NC 04038 PH	A	High Point	Leaping Lizard Run	0.1	1	P Hronjak	
10 km	NC 04039 PH	A	Fayetteville	Cinco De Mayo 10k	0.0	1	J Ramirez	
5 km	NC 04040 PH	A	Greenville	Flat Out Five 5k	0.4	7	P Hronjak	NC 90031 ACL
5 km	NC 04041 PH	A	Wilmington	Diligence Dash	0.0	1	F Guy	
42.2 km	NC 04042 PH	A	Hickory	Catawba Valley Runfest Marathon	0.0	0	M Surface	
5 km	NC 04043 PH	A	Kinston	Champions For Life 5k	0.0	0	P Hronjak	
21.1 km	ND 04025 PR	A	Fargo	Run for the Children	0.0	0	M Erbes	
5 km	NH 04001 WN	A	Concord	Rock 'N Race 2004	0.0	0	W Nicoll	NH 03001 WN
Cal	NH 04005 RF	A	Barnstead	Barnstead 500 meter Calibration	0.0	100	R Fitzpartick	
10 km	NH 04006 RF	A	Manchester	CMC Community Challenge 10k	0.0	0	R Fitzpartick	
Cal	NH 04007 RF	A	Newington	Pease 1000 ft. Calibration	0.0	100	R Fitzpartick	
Cal	NH 04008 RF	A	Moultonborough	Moultonborough Rt171 - 1000 ft.	0.0	100	D Severance	
5 km	NH 04009 RF	A	Moultonborough	Moultonborough 5k und Run	0.7	3	D Severance	
5 km	NH 04010 RF	A	Greenland	Jason Hussey Memorial	0.0	1	M Hussey	
5 km	NH 04011 RF	A	Barnstead	Barnstead Old Home Day 5k	0.0	0	R Fitzpartick	NH 01004 WN
5 km	NJ 04001 DB	A	E. Rutherford	Giants Stadium 5k	1.3	3	D Brannen	
5 km	NJ 04002 DB	A	Jersey City	LSP - Greenpark 5k '04	0.0	3	D Brannen	
42.2 km	NJ 04003 DB	A	Long Branch	NJ Marathon '04	0.0	45	D Brannen	NJ 03001 DB
10 mi	NJ 04003 LMB	A	Seaside Heights	Chillout 10 Mile	0.0	1	D Hoch	
5 km	NJ 04004 LMB	A	Seaside Heights	Chillout 5k	0.0	2	D Hoch	
5 km	NJ 04016 LMB	A	Elizabeth	Wee Run Wild 5k	0.0	1	J Parks	
5 km	NJ 04017 LMB	A	Warren	Bob Beckert Mem. Scholarship 5k	-1.8	4	L Baldasari	
5 km	NJ 04018 LMB	A	Bay Head	Bay Head 5k	0.0	1	L Baldasari	
10 km	NJ 04019 LMB	A	Cape May	Great Cape May Footrace	0.0	0	G Hoopes	NJ 85053 GD
5 km	NJ 04020 LMB	A	Cherry Hill	5k Run for Healthy Business	0.0	1	G Hoopes	
5 km	NJ 04021 LMB	A	Rockaway	Pamela Miller Scholarship 5k	0.6	6	L Baldasari	
10 km	NJ 04022 LMB	A	Jersey City	Newport 10,000	0.0	5	J Parks	
5 km	NJ 04023 LMB	A	Cranford	5k Run for Cerebral Palsy	0.0	1	J Parks	
5 km	NJ 04024 LMB	A	Wanaque	Lancer 5k Run	0.0	2	J Parks	
10 km	NJ 04025 LMB	A	Princeton	June Fete 10k - 2004	0.3	3	L Baldasari	
4 mi	NJ 04027 LMB	A	Cranford	Cranford Jaycees Firecracker 4	0.5	1	L Baldasari	
5 km	NJ 04028 LMB	A	W. Orange	Kilometers For Karyn 5k	0.3	3	J Parks	NJ 03011 LMB
10 km	NJ 04029 LMB	A	Atlantic City	Atlantic City 150th Birthday 10k	0.0	0	G Hoopes	
5 km	NM 04001 DS	A	Albuquerque	Run for the Zoo	0.0	4	J Locke	NM 97001 DS
10 km	NM 04002 DS	A	Albuquerque	Run for the Zoo	0.0	2	D Shepan	NM 97001 DS
42.2 km	NM 04003 DS	A	Shiprock	Shiprock Marathon	8.4	76	M Kelley	
10 km	NM 04004 GAN	A	Santa Fe	Rancho Viejo 10k	0.0	1	G Newman	NM 03005 GAN
5 km	NM 04005 GAN	A	Santa Fe	Rancho Viejo 5k	0.0	1	G Newman	NM 03008 GAN

DISTANCE	COURSE ID	STA	LOCATION	COURSE NAME/RACE	m/km DROP	pct SEP	MEASURER	REPLACES
42.2 km	NY 04001 DK	A	East Meadow	Long Island Marathon	0.0	2	D Katz	
Cal	NY 04001 KL	A	Rochester	Meadowbrook Rd. 1000 ft.	0.0	100	K Lucas	
21.1 km	NY 04002 DK	A	East Meadow	Long Island Half Marathon	0.0	0	D Katz	
10 km	NY 04002 KL	A	Rochester	Lilac 10 km	-3.0	2	K Lucas	NY 99026 AM
5 km	NY 04003 KL	A	Rochester	Lilac 5km	-0.6	4	K Lucas	
Cal	NY 04004 KL	A	Pittsford	Lucas Red Barn Circle 1000 ft.	0.0	100	K Lucas	
Cal	NY 04005 KL	A	Canandaigua	Lucas East Street 1000 ft.	0.0	100	K Lucas	
Cal	NY 04006 KL	A	Irondequoit	Lucas Washington Ave. 1000 ft.	0.0	100	K Lucas	
5 km	NY 04007 KL	A	Canandaigua	Bruce Bridgman Memorial Run	1.5	10	K Lucas	
5 km	NY 04008 KL	A	Irondequoit	Stepping Stones Learning Center	0.0	0	K Lucas	
5 mi	NY 04009 KL	A	Perinton	Firecracker 5 Mile	-0.8	8	K Lucas	
5 km	NY 04010 KL	A	Fairport	Scarecrow Safe Journey 5km	1.2	4	K Lucas	
Cal	NY 04010 AM	A	Plattsburgh	Burke Road 500 meters	0.0	100	R Schissler	
5 km	NY 04011 AM	A	Getzville	Run Walk 'N' Roll 5k Race	0.0	6	B Laskowski	
Cal	NY 04011 KL	A	Fairport	West Avenue 1000 ft.	0.0	100	K Lucas	
5 km	NY 04012 KL	A	Chili	Airport 5km	0.3	4	K Lucas	
5 km	NY 04012 AM	A	Staten Island	Dan McGuire 'To the Max' - 5k	0.0	3	J Parks	
5 km	NY 04013 KL	A	Irondequoit	Sunset House 5km	0.0	3	K Lucas	
5 km	NY 04013 AM	A	Chazy	Gordon McDonald Memorial 5k	0.6	4	J Sims	
5 km	NY 04014 AM	A	Hamburg	Kyle Reid Memorial Scholarship	6.6	1	B Laskowski	
Cal	NY 04014 KL	A	North Chili	King Road 1000 ft.	0.0	100	K Lucas	
3 km	NY 04015 AM	A	Buffalo	HPCTA Bushes 3k Run/Walk	1.1	13	B Laskowski	
5 km	NY 04015 KL	A	North Chili	St. Christopher's 5km	-0.3	3	K Lucas	
5 km	NY 04016 AM	A	Cheektowaga	Friends & Alumni Maryville 5k	0.5	6	B Laskowski	
5 km	NY 04016 KL	A	Rochester	Beth El 5km	-0.9	12	K Lucas	
5 km	NY 04017 KL	A	Rochester	Ten Ugly Men 5km	0.6	4	K Lucas	
3.5 mi	NY 04017 AM	A	Rochester	JP Morgan Chase Corp. Challenge	0.0	9	G Tillson	
4 mi	NY 04018 AM	A	New York	NYRRC 72nd St. 4 Mile 2004	0.1	0	P Hess	
5 km	NY 04018 KL	A	Hilton	Fitness Warehouse 5km	-0.3	1	K Lucas	
21.1 km	NY 04019 AM	A	Brooklyn	Brooklyn Half 2004	-1.2	46	P Hess	
5 km	NY 04019 KL	A	Mendon	Greater Rochester Track Club 5k	0.0	0	K Lucas	NY 90009 AM
4 mi	NY 04020 AM	A	Hamburg	Run For Izzy	0.0	0	J Felix	
5 km	NY 04020 KL	A	Mendon	Mendon 5k	2.7	16	K Lucas	
5 km	NY 04021 AM	A	Rochester	Pink Ribbon Run 5k	0.0	0	G Tillson	
5 km	NY 04022 AM	A	Buffalo	Running for Children 5k	-0.7	1	B Laskowski	
5 km	NY 04023 AM	A	Waterloo	Waterloo Celebrate Commemorate	0.0	3	G Tillson	
5 km	NY 04024 AM	A	Buffalo	Jog for Jake 5k	-0.1	13	J Grandits	
5 km	NY 04025 AM	A	Palmyra	Canal Town Days 5k	-2.4	5	G Tillson	
10 km	NY 04026 AM	A	Fayetteville	Fayetteville 10k	0.0	1	D Oja	
5 km	NY 04027 AM	A	Niagara Falls	MSMH Foundation 5k River Run	-3.4	100	B Laskowski	
42.2 km	OH 04001 MW	A	Akron	Akron Road Runner Marathon	0.5	1	M Wickiser	OH 03007 MW
5 km	OH 04002 MW	A	Berea	MMRF 5k Run	0.0	1	M Wickiser	
5 km	OH 04020 PR	A	Cincinnati	Flying Pig 5k	0.9	2	D Connolly	
10 km	OH 04021 PR	A	Cincinnati	Flying Pig 10k	-0.1	11	D Connolly	
5 mi	OH 04022 PR	A	Westerville	Fight for Sight	0.0	4	P Riegel	
5 km	OH 04023 PR	A	Mason	Adventures for Wish Kids 5k	-0.2	8	S Prescott	
5 km	OH 04024 PR	A	Columbus	Race for the Cure	0.6	14	P Riegel	OH 04004 PR
10 km	OH 04027 PR	A	Westerville	Hoover Dam 10k	2.4	5	P Riegel	
5 km	OH 04029 PR	A	Lithopolis	Stone City 5k	0.0	1	P Riegel	
5 km	OH 04030 PR	A	Dublin	Muirfield 5k	0.0	2	P Riegel	
5 km	OK 04013 BB	A	Broken Arrow	Run For Vision	1.2	7	J Smith	
5 km	OK 04014 BB	A	Tulsa	Cinco de Mayo (alternate)	0.0	1	G Lafarlette	
5 km	OK 04015 BB	A	Tulsa	TRC St Patrick's Brookside 5k	0.0	1	G Lafarlette	
1 mi	OK 04016 BB	A	Tulsa	TRC St Patrick's Brookside Mile	0.0	4	G Lafarlette	
5 km	OK 04017 BB	A	Norman	Old Glory	0.0	2	J Smith	
5 km	OK 04018 BB	A	Edmond	Waterloo Run	-0.1	2	J Smith	
10 km	PA 04001 LMB	A	Philadelphia	Liberty to Liberty Tri 10k	0.0	0	L Baldasari	
1 mi	PA 04001 RT	A	Chambersburg	Tim & Susan Cook Memorial Mile	1.5	100	N Reimenschnider	
5 km	PA 04002 WB	A	Riverton	P/R/C Rotary Club 5k for Life	0.0	2	B Belleville	
5 km	PA 04005 WB	A	Harleysville	Oak Ridge Spring Fling	0.0	0	B Belleville	
5 km	PA 04006 WB	A	Pittsburgh	St. Margaret Hosp. Fitness Classic	0.0	3	R Yurick	PA 97008 WB
5 km	PA 04007 WB	A	Philadelphia	Crohn's & Colitis Gotta Have Guts	0.0	2	B Belleville	
5 km	PA 04008 WB	A	Philadelphia	Race for Research 5k	0.0	0	B Belleville	

DISTANCE	COURSE ID	STA	LOCATION	COURSE NAME/RACE	m/km DROP	pct SEP	MEASURER	REPLACES
5 km	RI 04002 RN	A	Kingston	Matthew Siravo Memorial 5k	0.0	1	R Nelson	
5 km	SC 04013 BS	A	Winnsboro	Alcohol Awareness Month	0.0	3	S Blake	
5 km	SC 04014 BS	A	Spartanburg	Civitan Spring Fling Sprint 5k	-0.4	14	E Overcash	SC 01021 BS
10 km	SC 04015 BS	A	Greer	Run The Vern	0.0	0	J Roberts	
5 km	SC 04018 BS	A	Ware Shoals	Catfish Festival 5k	0.0	5	W Terry	
5 km	SC 04019 BS	A	Fountain Inn	Helping Hands Helping Hearts 5k	0.4	4	W Terry	
5 km	SC 04020 BS	A	Charleston	Riverdogs 5k	0.0	2	M Desrosiers	
5 km	SD 04026 PR	A	Brookings	Scotty Roberts 5k	0.0	4	A Stockholm	
21.1 km	SD 04031 PR	A	Deadwood	Mickelson Trail Half Marathon	20.2	92	J Meyer	SD 03016 PR
42.2 km	SD 04032 PR	A	Deadwood	Mickelson Trail Marathon	4.7	76	J Meyer	SD 03015 PR
5 km	TN 04010 DJR	A	Franklin	Sonic Sunrise 5k	0.0	0	J Zeigler	
10 km	TN 04011 DJR	A	Nashville	Bridges of Support 10k	0.0	0	J Zeigler	
5 km	TN 04012 DJR	A	Knoxville	Dogwood Classic #2 5k	0.0	4	A Morgan	
5 km	TN 04013 DJR	A	Nashville	Run for a Child 5k	0.0	1	J Zeigler	
5 km	TN 04014 DJR	A	Knoxville	Run for the Deaf 5k	0.0	0	A Morgan	
5 km	TN 04015 DJR	A	Greeneville	Greene County YMCA 5k Run	-0.4	4	D Rogers	
5 km	TX 04013 JF	A	Austin	Daisy 5k	0.0	0	J Ferguson	TX 04010 JF
1 mi	TX 04014 JF	A	Austin	Congress Avenue Mile	16.7	100	J Ferguson	TX 95088 ETM
5 km	TX 04015 JF	A	Austin	ABIA Runway 5k	0.0	0	J Ferguson	
5 km	TX 04016 JF	A	Austin	Sunstroke Summer Stampede	0.0	0	J Ferguson	
5 km	TX 04017 JF	A	Austin	Sunstroke Summer Stampede	0.0	1	J Ferguson	
5 km	TX 04038 ETM	A	Fort Worth	Buffalo Boogie	0.0	0	C Clines	
5 km	TX 04039 ETM	A	Houston	Houston Race for the Cure	0.7	17	E McBrayer	TX 01030 ETM
5 km	TX 04040 ETM	A	Houston	Rise and Shine Walk & Run	0.0	2	R Barnhill	
10 km	TX 04041 ETM	A	Fort Worth	Cowtown 10k	0.0	4	M Polansky	
5 km	TX 04042 ETM	A	Katy	Venture ON	0.0	0	M Hutcheson	
5 km	TX 04043 ETM	A	Frisco	Taylor's Angels	0.0	0	K Ashby	
5 km	TX 04044 ETM	A	Dallas	Angel Run	0.0	1	C Clines	TX 98078 ETM
5 km	TX 04045 ETM	A	Garland	Angels In Blue 2004 5k	0.0	0	K Ashby	
5 km	TX 04046 ETM	A	Wichita Falls	Wichita Falls Race for the Cure	0.0	3	C Clines	TX 01047 ETM
20 km	TX 04047 ETM	A	Dallas	Memorial Day 20k (2004)	-0.1	0	K Ashby	TX 02049 ETM
5 km	TX 04048 ETM	A	Keller	5k Run in the Dark	0.0	1	M Polansky	
1 km	TX 04049 ETM	A	Plano	Habitat Home Run 2004	0.0	0	K Ashby	
5 km	TX 04049 ETM	A	Plano	Habitat Home Run 2004	0.0	0	K Ashby	
42.2 km	UT 04004 DP	A	Salt Lake City	Salt Lake City Marathon	4.7	12	L Smithee	
5 km	UT 04005 DP	A	Salt Lake City	Salt Lake City 5k	1.2	60	L Smithee	
21.1 km	UT 04006 DP	A	Kaysville	Telford Financial Kaysford H'MAR	-1.8	65	L Smithee	
5 km	UT 04007 DP	A	Salt Lake City	Race for the Cure	3.0	5	L Smithee	UT 03002 DP
10 km	VA 04001 JS	A	Leesburg	Leesburg 10km	0.0	0	J Sissala	VA 92015 RT
20 km	VA 04002 JS	A	Leesburg	Leesburg 30km	0.0	0	J Sissala	
Cal	VA 04003 RT	A	Abington	Heritage Drive 1000 ft. Calibration	0.0	100	M Studholme	
5 km	VA 04004 JS	A	Chantilly	Angel Kisses 5km	0.0	1	P Quinn	
5 km	VA 04004 RT	A	Abington	Abington Town 5k	0.0	1	M Studholme	
21.1 km	VA 04005 RT	A	Hampton	Pomoco Group Running Crab	0.4	3	S Bartram	
1 mi	VA 04006 RT	A	Winchester	Bloomin' Mile	0.0	1	N Reimenschnider	
10 km	VA 04007 RT	A	Norfolk	Chesapeake Bay 10k	0.0	2	J Price	
1 mi	VA 04008 RT	A	Fredricksburg	Great Train Race Mile	3.8	19	V Culp	
10 km	VA 04009 RT	A	Fredricksburg	YMCA 10k	0.0	0	V Culp	
5 km	VA 04010 RT	A	Fredricksburg	River Run 5 km	0.0	1	V Culp	VA 95008 RT
21.1 km	VA 04011 RT	A	Belle Haven	Belle Haven Half Marathon	0.0	1	R Thurston	
42.2 km	VA 04011 RT	A	Belle Haven	Belle Haven Marathon	0.0	1	R Thurston	
21.1 km	VA 04012 RT	A	Burkes Garden	Varmint Half Marathon	0.0	0	M Studholme	
5 km	VA 04013 RT	A	Burkes Garden	Varmint 5k	0.0	0	M Studholme	
1 mi	VA 04014 RT	A	Burkes Garden	Varmint Mile	0.0	0	M Studholme	
5 km	VA 04015 RT	A	Occoquan	Occoquan 5k Run/Walk	-0.3	0	R Thurston	
5 km	VA 04016 RT	A	Abington	Maniacs 5k	0.1	7	M Studholme	
5 km	WA 04004 BL	A	Olympia	Evergreen Classic 5k	-0.2	32	T Cotner	
21.1 km	WA 04005 BL	A	Sequim	North Olympic Discovery HMAR	2.9	76	L Little	
42.2 km	WA 04006 BL	A	Sequim	North Olympic Discovery Marathon	1.4	65	L Little	

DISTANCE	COURSE ID	STA	LOCATION	COURSE NAME/RACE	m/km DROP	pct SEP	MEASURER	REPLACES
5 km	WI 04007 JW	A	Madison	Shamrock Shuffle 5k	0.0	0	T Aten	
8 km	WI 04013 JW	A	Madison	Crazylegs Classic 8k	0.7	38	J Knoedel	WI 03021 JW
21.1 km	WI 04026 JW	A	Eagle River	Journeys Half Marathon	1.4	75	B Menting	
42.2 km	WI 04027 JW	A	Eagle River	Journeys Marathon	0.3	78	B Menting	WI 98012 WG
42.2 km	WI 04028 JW	A	Green Bay	Cell Com Green Bay Marathon	-0.2	9	D Moore	WI 03122 JW
Cal	WI 04031 JW	A	Kenosha	East Interloop Road 1000 ft.	0.0	100	D Mowles	
2 km	WI 04032 JW	A	Kenosha	Petrifying Springs Park 2km Loop	0.0	0	D Mowles	WI 90008 WG
5 km	WI 04033 JW	A	Kenosha	Petrifying Springs Park 5km	0.0	0	D Mowles	
5 km	WI 04045 JW	A	Madison	Madison Race for the Cure	0.0	3	K Gilgenbach	WI 03035 JW
Renewed								
5 km	CA 91025 CW	A04	Burney	1991 Burney Classic 5k	0.0	0	C Wisser	
10 km	CA 91026 CW	A04	Burney	1991 Burney Classic 10k	0.0	0	C Wisser	
21.1 km	CA 91027 CW	A04	Burney	1991 Burney Classic Half Marathon	2.6	95	C Wisser	
5 km	CA 92013 RS	A04	Redlands	A Run Through Redlands 5k	-0.6	7	R Scardera	CA 86049 RS
10 km	CA 92014 RS	A04	Redlands	A Run Through Redlands 10k	-0.3	4	R Scardera	CA 86048 RS
42.2 km	CA 91024 CW	A04	Burney	1991 Burney Classic Marathon	0.0	95	C Wisser	
Cal	NC 91000 BS	A04	Charlotte	Richardson Dr. 0.25 mile Cal.	0.0	100	D White	
4 mi	NY 87016 BT	A04	Buffalo	Subaru 4 Mile Chase	0.0	3	D MacPhee	
5 mi	NY 89023 AM	A04	Pittsford	YMCA Turkey Trot	0.2	6	G Tillson	
5 km	NY 94040 AM	A04	Rochester	Bruegger's Bagel Run	-0.3	5	G Tillson	
5 km	OK 91026 BB	A04	El Reno	Youth & Family Services Bun Run	0.0	6	G Lafarlette	
10 km	OK 91040 BB	A04	El Reno	Youth & Family Services Bun Run	0.0	6	G Lafarlette	
10 km	OK 91046 BB	A04	Durant	Peanut Heart 10 km	-0.1	0	G Lafarlette	
5 km	OK 91047 BB	A04	Durant	Peanut Heart 5 km	-0.1	0	G Lafarlette	
5 km	OK 92027 BB	A04	Bixby	Green Corn Festival 5 km	0.1	1	G Lafarlette	
5 km	OK 92032 BB	A04	Okmulgee	Creek Nation Festival 5 km	-0.2	4	G Lafarlette	
5 km	OK 93023 BB	A04	Duncan	Duncan 5k Run	0.0	1	G Lafarlette	
21.1 km	OK 93036 BB	A04	Madill	Reuel Little Classic Half-Marathon	0.0	0	J Kiser	
10 km	OK 93037 BB	A04	Madill	Reuel Little Classic 10km	0.0	0	J Kiser	
5 km	OK 93038 BB	A04	Madill	Reuel Little Classic 5km	0.0	0	J Kiser	
5 km	OK 94008 BB	A04	Bristow	Wildflower Run	-0.6	2	G Lafarlette	
Cal	OK 94011 BB	A04	Oklahoma City	Stratford St. 308.8 meter	0.0	100	J Smith	
Cal	OK 94013 BB	A04	Moore	Tower Drive 368.13 meter	0.0	100	K Hardwick	
5 km	OK 94022 BB	A04	Jay	Huckleberry Festival Run	0.0	2	G Lafarlette	
5 km	TN 94008 RH	A04	Kingsport	Warrior's Path 5k	0.0	0	B Chaney	
Cal	TX 93061 PR	A04	Sugar Land	Sweetwater Blvd. 384.51 meter	0.0	100	P Riegel	
Cal	TX 94035 ETM	A04	Houston	Westcott II	0.0	100	E McBrayer	
21.1 km	WA 93004 MR	A04	Olympia	Capital City Half Marathon	-0.2	1	D Peck	

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A complete listing of USATF Certified courses is available at - www.RRTC.Net

PUBLICATIONS AVAILABLE FROM RRTC

Printed Course Lists - A list of certified courses for any state is \$2.00. (Free to RRTC certifiers). You will receive a list that is current as of the last published Measurement News. Courses can be sorted in a special way; otherwise it will be sorted by distance as it appears in MN. Other specially-sorted lists can be done - for instance, you might want to have all the 5k's in IL, IN, and MO. If you are online, lists can be sent that way. Contact Mike Wickiser at MikeWickiser@neo.rrc.net

Web Page Access to Course Lists: The complete list can be downloaded from the RRTC website at www.rrtc.net/download/ Also, try the new USATF Search Engine linked from www.rrtc.net or directly at www.usatf.org/events/courses/search/

Individual Certificates - These may be obtained by sending the course number and \$2.00 per course desired. **SEND THE COMPLETE ID, INCLUDING PREFIX AND SUFFIX LETTERS**, i.e.: CA 92057 RS. Send course name, length and location as well. If you are thinking of hiring a measurer, this is an excellent way to see the sort of work you can expect. In addition, you may wish to check out a course you intend to run. Bring the map to the course and see if the race director got it right!

Above material may be obtained from: Mike Wickiser - 2939 Vincent Rd. - Silver Lake, OH 44224-2906

Measurement Calculation Computer Program by Bob Baumel, version 1.2 for Macintosh or IBM PC. This software can be downloaded for free from the RRTC website at www.rrtc.net/download/ or Bob will distribute it by email attachment (send requests to webmaster@rrtc.net) or on floppy disks (send blank, formatted diskette and stamped return mailer to Bob at: 129 Warwick Road, Ponca City OK 74601-7424). Be sure to specify Mac or PC version.

Electronic Certificate Templates (available to Certifiers only), in Adobe Acrobat format. Requires Acrobat or Acrobat Reader 4.0 or greater (Current Acrobat Reader may be downloaded for free from www.adobe.com). The template allows you to fill in certificates on the computer and print them. Available in both FS and non-FS version. Distributed by Bob Baumel by email or diskette [same addresses as for Measurement software]. Bob can customize the template with certifier's personal info at the bottom to avoid re-typing it every time (Be sure to specify exact ID text desired when requesting a template).

Online course measurement book, edited by Bob Baumel. It's a revision of the one you can buy from USATF, but the basic procedures have not changed. Available at: www.rrtc.net

Course Measurement Procedures - the Bible of course measurement. Complete instructions for measuring courses for USATF certification. The same procedures are now used for IAAF and AIMS courses. \$9.00 postpaid. Available from: USATF - Book Order Dept. - PO Box 120 Indianapolis, IN 46206

Course Measurement Video - a concise 17 minute introduction to course measurement, intended as a supplement to Course Measurement Procedures. See how it's done! Version 2 sells for \$10 but there are still a few copies of the original version available for \$7.50. Send to: Tom McBrayer - 4021 Montrose - Houston, TX 77006-4956.

Historical/Technical Material Available on CD

Measurement News Archive - Every issue of Measurement News from #1 (1982) to #115 (2002). Full of material describing

measurement techniques, technical articles, and history, written by numerous people worldwide. Set of 2 CD's in pdf (Adobe Acrobat 5.0) format. Cost \$10.00, postpaid.

Historical Archive - A collection of technical articles, measurement reports, seminars spanning the period 1963 to present. Includes detailed full reports of several group rides of Olympic Marathon courses. All on one CD in pdf format. Cost \$5.00, postpaid.

The above two items are available from:
Pete Riegel, 3354 Kirkham Road, Columbus, OH 43221
email: riegelpete@aol.com

OTHER PUBLICATIONS AND EQUIPMENT

Road Race Management is a monthly newsletter providing race organizing ideas and news for race directors. \$97 per year from: Road Race Management - 4904 Glen Cove Pkwy - Bethesda, MD 20816 Phone: 301-320-6865 Fax: 301-320-9164

Jones/Oerth Counters - Paul Oerth - 2455 Union St - Apt 412 - San Francisco, CA 94123. Phone: 415-346-4165 Fax 415 346 0621. Email: Poerth@aol.com. US Price is \$70 for the 5 digit model, \$80 for the 6 digit model, postpaid. Foreign price is \$75/\$85 plus postage. Foreign orders shipped by airmail. Visa, MasterCard, American Express cards accepted. Advance payment is required.

RunScore - The flagship of IBM-style finish line programs. For information contact: Alan Jones - 3717 Wildwood Dr - Endwell, NY 13760. Online at: www.runscore.com

Apple Raceberry JaM - Race management software for Macintosh and Windows. Online at www.raceberryjam.com or call Jack Moran at (952) 920-0558.

TOPOGRAPHIC MAPS

USA topographic maps are available from:

U. S. Geological Survey 303-202-4200
USGS Map Sales
PO Box 25286, Bldg 810
Denver Federal Center
Denver, CO 80225
Delivery will be made in approx. 4 weeks. Ask for latest price.
Maps can be located and ordered online at: www.usgs.gov
Maps can be obtained in just a few days from:
Map Express - PO Box 280445 - Lakewood, CO 80228-0445
1-800-MAP-00EX (1-800-627-0039)
Maps can be located and ordered online at: www.mapexp.com

Topo Maps on CD-ROM - 3-D TopoQuads includes authentic USGS 7.5-minute quadrangle maps, assembled into one seamless database

See an interactive online demo at www.delorme.com

Also - check out Street Atlas USA from the above - it's a seamless street map of the whole USA at a decent price.

USGS TOPOGRAPHIC MAPS ONLINE - FREE

Maps.Com has a section where you can click on to all USGS maps, free. This can be very handy for obtaining accurate elevation information.

19 Check out: www.maps.com

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CERTIFIERS - Please check this listing to be sure we have your data correct.

May 6, 2004