Measurement News

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This team of measurers from the U.S. and Canada performed a pre-validation ride of the US Men's Olympic Marathon Trials course in Birmingham, Alabama, August 15-17, 2003

Front row, crouching, left to right: Jack Karn, Carla Rogers, Doug Loeffler.
Back row, left to right: Al Dausman, Dave Rogers, Mike Wickiser, Bernie Conway, Pete Riegel, Rick Melanson, Laurent Lacroix.

MEASUREMENT NEWS

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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 November 2003 issue must be in the Editor's hands by October 20. Next issue will be mailed in early November.

ROAD RUNNING TECHNICAL COUNCIL

Founder	Ted Corbitt	MNForum	Jim Gerweck
Chairman Emeritu	Pete Riegel	Validations	Doug Loeffler
Chairman	Mike Wickiser	Finish Lines	David Katz
Vice-Chairman (East)	Paul Hronjak	Editor, Measurement News	Jim Gerweck
Vice-Chairman (West)	Tom McBrayer	RRCARepresentative	Carl Sniffen
Registrar of Courses	Karen Wickiser	Road Running Info Center Rep	Basil/Linda Honikman
Webmaster/Secretary	Bob Baumel	Athlete Reps.	Carol McLatchie, Dan Dillon

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).

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Chairman's Clatter - From Mike Wickiser

Greetings to new Tennessee Certifier, Dave Rogers. Dave is taking over in TN for Bob Harrison with Bob's praise and recommendation while Bob remains the MS certifier. I had the pleasure of meeting Dave and his wife Carla in Birmingham for the Trials Validation. Dave was a part of the measurement group and Carla assisted taking data at the key points of the measurement.

20 Year Certifiers: In addition to greeting new certifiers, let's take a look at some of the senior certifiers. With 20 years of continued certification service:

Bob Baumel - 1064 courses	David Reik - 412 courses	Pete Riegel -1498 courses
Rick Recker - 413 courses	Ron Scardera - 1062 courses	Bob Thurston - 742 courses
Wayne Nicoll - 1580 courses.		

Olympic Trials Validations: The Men's Trials Validation was completed the weekend of August 16&17th. Doug Loeffler did an excellent job of organizing and overseeing the Validation. I wish it had been so well done 4 years ago in Pittsburgh when I was in charge. The validation report should be in this issue of Measurement News. Once again, Great job Doug!
The Women's Trials ride has been held up due to roadway construction along the course and may take place as late as November this year. Amy Morss and Carol McLatchie are working together with Tom Eckleman and waiting for the road crews to finish. We had it pretty warm and humid for the Validation in Birmingham, while the Ladies may have temperature concerns that lean toward the other end of the spectrum.

RRTC Annual Meeting: Labor Day weekend was the RRTC Annual Meeting. This is something of a change since we usually have this meeting at the USATF Convention. Over the past several years it has become increasingly difficult to get the Technical Council officers together. Labor Day provided an opportunity when the officers were available and we had a very productive meeting, reviewing accomplishments and looking into new methods. Neville Wood presented his method of using a bike computer to measure a course where each revolution of the wheel counts as one increment on the trip odometer. This method looks promising but a procedure needs to be written and some testing remains. Several versions of the reliable Jones, Jones/Oerth, and J.O.L. counter were reviewed as well as a drive and a coupling repair kit that Laurent Lacroix has available.

Maps On-Line: All the Active course maps have been scanned and sent on to Keith Lively for posting on the USATF website. This includes every certified course map from 1993 to the present plus all renewed courses. I recently purchased an 8- Gig external hard drive and plan on loading the maps from the CD's they were saved on to the drive for safe keeping as well as making it possible to supply the scanned map files on CD. My plan is to be capable of creating state by state or year by year CD's of the map files should there be interest in getting them in bulk rather than going the search engine from USATF. That USATF course search engine is excellent and it provides several different ways to look up a single or several similar courses. The address for the USATF Course Search is **http://www.usatf.org/events/courses/search/** but I always find it easier to click on the link from **http://www.rrtc.net** As always, Bob Baumel works to make RRTC information readily and easily available.

Road Running Technical Council Executive Meeting
Crowne Plaza Quaker Square Hotel
Akron, Ohio August 30, 2003

Attending: Bob Baumel, Jim Gerweck, Paul Hronjak, Doug Loeffler, Mary Anne McBrayer, Tom McBrayer, Joan Riegel, Pete Riegel, Karen Wickiser, Mike Wickiser, Neville Wood.

The meeting was called to order at 12:10 by RRTC Chairman Mike Wickiser, who welcomed everybody to Akron, former rubber capital of the world and former home to Quaker Oats (whose facilities had been modified to create our meeting hotel). All present at the meeting introduced themselves.

Officers' Reports

Chairman, Mike Wickiser: Mike has completed the scanning of all maps on our active certified course list (about 12 750 maps), although about 400 of these maps hadn't yet been processed and posted online by the USATF central office at the time of this meeting. With completion of this project, Jim Gerweck agreed to publicize it with a write-up in Running Times. Others at the meeting expressed hope that knowledge of online map posting will encourage measurers to produce higher quality maps. To help this happen, Bob Baumel suggested revising our online Course Measurement manual to inform measurers that their maps will be posted on the web (This revision is now under way).

Mike also discussed timeliness of course listings, saying there have been cases when a certifier has assigned a course number and written the certificate, but allowed many months to pass before passing it on to the vice chairman for adding to the course list. Our sport can't tolerate such abuse. Some of these delays may have occurred because the certifier was also the measurer and hadn't received payment for the measurement, so delayed passing on the certificate until receiving payment. As a simple solution for such cases, don't write the certificate at all until payment is received. But always put certificates in the mail right away after writing them.

Course Registrar, Karen Wickiser: Roughly 750 courses have been certified so far this year (including Puerto Rico courses, which are now included in the US listing). While it's somewhat difficult to project (as it's three months earlier than reports have traditionally been submitted), totals for the year will probably be similar to previous recent years.

Webmaster/Secretary, Bob Baumel: Bob cited some usage statistics for our website at www.rrtc.net. For example, the site's home page gets about 38 hits per day. People download the Measurement manual and Course list from our site, but in addition, access other measurement related materials such as history of the Jones counter and measurement of the 1976 Montreal Olympic marathon course. Interestingly, one of our most popular pages is a computer-related page for avoiding sending of HTML-formatted e-mail (**www.rrtc.net/avoiding-html/**).

Mike's major project of scanning and posting course maps didn't require much work on our RRTC website, as all the maps were actually posted on the central USATF site (**www.usatf.org**), and USATF webmaster Keith Lively did the programming for the new certified course search engine on that site. All we had to do on the RRTC site was add a link to the location of that search engine on the USATF site. Even so, when people ask where to find the online maps, it's a lot easier to quote the URL of our site (**www.rrtc.net**) instead of the much longer URL where they're actually kept on the USATF site (**www.usatf.org/events/courses/search/**).

The major feature that we most recently attempted to add to the RRTC site was an online version of our Finish Line manual. A preliminary version was produced two years ago by Jim Gerweck, and remains accessible from the RRTC site, but is still in a very unfinished state. (Because of its very incomplete status, this material still resides in Jim's AOL account [which he hardly ever uses any more], as it was never deemed ready to move to the rrtc.net server.) At this meeting, little interest was shown in working on the Finish Line manual, so it's likely to remain in its present unfinished state for some time to come.

Vice-Chairman East, Paul Hronjak: Two recently appointed certifiers in the East were promoted to Final Signatory status: Larry Baldasari in New Jersey, and Ron Fitzpatrick, the certifier for Maine, New Hampshire and Vermont. Other recently appointed certifiers in the East include Paul Hess in Delaware and Dave Rogers in Tennessee. Also, Pedro Zapata was appointed certifier for Puerto Rico, whose courses are now considered part of our US course listings.

Vice-Chairman West, Tom McBrayer: Bob Langenbach, recently appointed certifier for Washington state, was elevated to Final Signatory status. Gene Newman has been well accepted as Arizona certifier after moving from New Jersey and relocating in Arizona.

Tom noted a potential problem in that increasing restrictions in big cities are forcing races outside of the cities, but many of these races aren't bothering with course certification. Jim Gerweck added that we seem to be in a second running boom, but many of the new runners aren't aware of course certification. Evidently, education is needed.

Tom wondered if we have a problem because the "Person in Charge of Measurement" language on our Application for Certification doesn't exactly match the "Measured by" language on our Certificates. We decided that this isn't a problem, so no change is needed.

It was suggested that Tom consider putting his Measurement video on DVD. Tom will look into it, to see if it's economically feasible. (Tom mentioned that he typically sells only about 5 of these videos in a year.)

Validations Chairman, Doug Loeffler: About 5 or 6 courses have been cleared so far this year, from about 10 needing validation. This is a time of year when Doug normally assigns validators, and he is currently in the process of doing this.

Doug led a pre-race validation measurement for next year's Men's Olympic Trials Marathon course in Birmingham, AL. The measurement, conducted August 15-17, involved about 10-11 people including 7 riders. A small amount (23.6 meters) was added to give the course the full Short Course Prevention Factor, although the pre-existing course was considered to pass validation. Unfortunately, it appears that race organizers intend to provide mile splits only on this course (no kilometers at all!).

Pre-validation of the Women's Trials course in St Louis, MO, to be led by Amy Morss, hasn't taken place yet and has gotten pushed back. It must be done before the end of 2003, or the money from USATF will disappear.

Measurement News / MNForum Editor, Jim Gerweck: Production of Measurement News was transferred from Pete Riegel to Jim Gerweck last November. Also since that time, printing and mailing of MN are being done for us by the USATF office in Indianapolis, although Pete had been using outside facilities. Moving this work into the USATF office caused delays, but these are getting resolved, as Jim

and USATF staff have worked out a production schedule.

Regarding online MNForum, Jim pointed out that material comes in spurts, often more in winter than summer. Pete Riegel complained that he's seen delays of around 5 days from the time he posts something to MNF until it's actually broadcast. Jim explained that during slow periods, he waits to collect several submissions before combining them in a broadcast. We decided that in such cases, Jim should send a broadcast earlier, even if it includes only one or two submissions.

Other Business

Budget and Meetings: Mike explained that USATF cutbacks had forced reduction of RRTC's budget, which was a major reason for holding this one-day RRTC meeting separate from the USATF Convention. As another motivating factor, we've never succeeded in gathering all of the RRTC officers at a USATF Convention, making this Akron meeting the first occasion when all of our officers have been together in the same place at the same time.

We all agreed that such meetings of the RRTC leadership are invaluable, so we should continue holding them in future years. This left open the question: What, if anything, will we do at the USATF Convention? We agreed that RRTC needs to maintain its visibility to the larger organization, so it will be necessary to have an RRTC meeting at the Convention. Which of us need to be at that meeting? Upon questioning, Mike said he could conduct that meeting on his own if necessary. Mike also said we would know in a few weeks, how much budget we have remaining for the rest of the year, and whether we can afford to send anybody else to the Convention.

Certifier Authority & Responsibility: Mike commented on two kinds of issues that have arisen. First, when a certifier measures a course outside of his/her own state, he/she has authority to certify the course by writing a certificate for it, and doesn't need to send an application for certification to the certifier of the state where the course is located (although a courtesy copy of the final certificate should be sent to that state's certifier).

In all other respects, however, the certifier for a state is the final authority in that state. Thus, for example, if a measurer (who isn't a certifier) decides to bypass his/her state's certifier by sending paperwork to the certifier in a different state, this denotes a serious breakdown of procedure, which the RRTC leaders must investigate and resolve.

Neville Wood – Using Bicycle Computer instead of Jones Counter: Neville Wood described a procedure he's developed for using an electronic bicycle computer in place of the Jones counter for measuring courses. The procedure involves tricking the bike computer to behave as a precise revolution counter. There are three components to this trickery: First, your bike computer must nominally register "distance" in increments of 0.01 km. Then, you must lie to the computer by telling it your wheel has a circumference of exactly 2.5 meters. Finally, you must mount four magnets (instead of a single magnet) on your bike wheel. Consequently, every time your wheel makes one full revolution, it sends 4 impulses to the computer, which thinks you've traveled a distance of 4 x 2.5 m = 10 m = 0.01 km, so the readout on the computer (ignoring the displayed decimal point) is exactly the number of full wheel revolutions.

We do, of course, require a level of precision finer than whole wheel revolutions (Recall that the original Jones counters recorded 20 counts per revolution, while our newer Jones/Oerth counters record

23.636363... counts per revolution); thus, Neville must also estimate fractional wheel revolutions. Originally, he did this by spoke counting, but that results in messy arithmetic (since a wheel typically has 32 or 36 spokes). Then he discovered that he could simply mark his wheel in tenths of a revolution, allowing him to estimate down to hundredths of a revolution.

Neville has experimented by mounting a Jones counter and two different bike computers (configured as above) on his bike at the same time; the three counters have all tracked each other perfectly. There are various subtleties in using Neville's method (e.g., to avoid extraneous impulses). When beginning a ride, you would start with your primary magnet adjacent to the sensor and "zero" spoke mark aligned with your mark on the ground. Then advance forward about 1/8 revolution, zero the computer, and start riding. When laying out splits, it's best to start out this way (zeroing the computer) when riding from each split – instead of laying out a continuous string of counts as traditionally done with a Jones counter (which isn't zeroable). The bike computer always advances forward whether the wheel rotates forward or backward, so you can't correct for overshooting as easily as with a Jones counter. Neville has, in fact, devised a procedure to correct for accidental overshooting, but it's more complicated to describe.

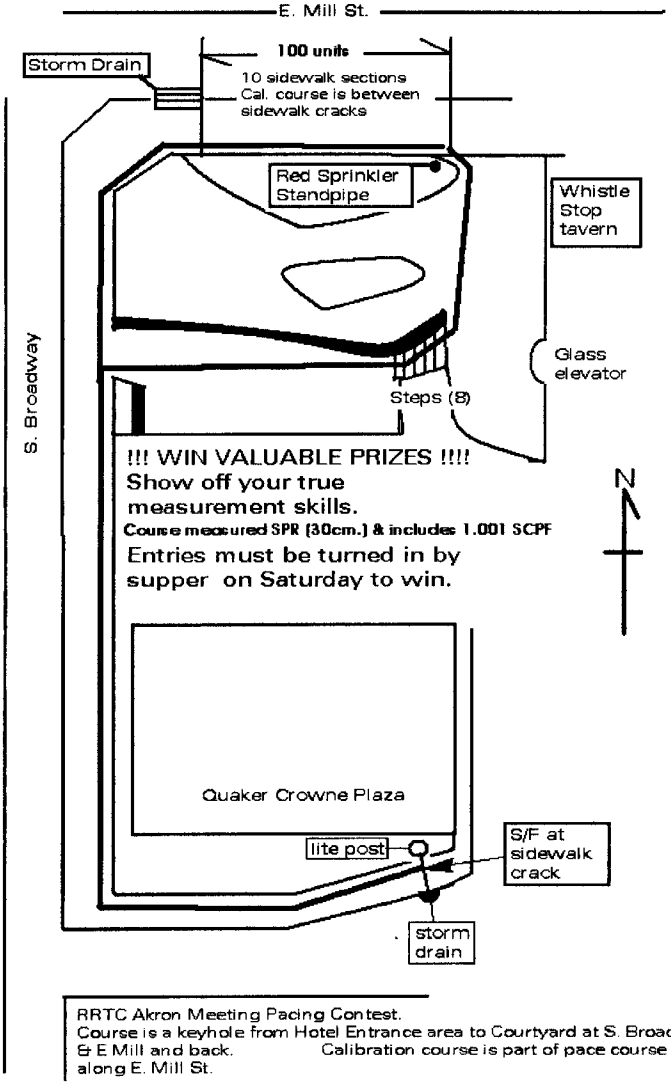
The consensus seemed to be that Neville's method is somewhat more complicated and less foolproof than our current procedure using a Jones counter. (Especially, it would require the certifier to trust the measurer a little bit more.) But the method works, especially in the hands of a competent measurer. And if the parts needed to make a Jones counter ever become totally unavailable, we may be forced to use this or a similar method.

Other Measuring Equipment/Accessories: Two other recent measuring aids were discussed, although their inventors weren't present at the meeting to describe them. First was the "JOL" Counter (Jones/Oerth/Lacroix counter) – Laurent Lacroix's variant of the Jones/Oerth counter with a cable connecting the gear drive and Veeder-Root counter, so the counter can be mounted on the handlebars. You can read about the JOL counter on Laurent's Canadian measurement site at **www.coursemeasurement.ca**, specifically on page **www.mts.net/~llacroix/jol.htm**. Mike claimed that in addition to selling JOL counters, Laurent can recondition worn-out Jones counters by replacing their gear drive units (assuming that only the gear drive has worn out, while the Veeder-Root counter is still good). This effectively converts an original Jones counter to a Jones/Oerth counter.

The other measuring aid we discussed was an Excel spreadsheet by Mike Moore of Windsor, Colorado, intended to automate the calculations and decisions required by our Bicycle Calibration Data Sheet and Course Measurement Data Sheet. This spreadsheet only works with "textbook" measurements at standard distances. But in those cases, it prints out copies of the data sheets exactly as needed for the certification application. Many of the cells in this spreadsheet are "protected" so the user cannot change them but can view their contents. The initially released version of this spreadsheet was hard-wired to work with constants in counts/mile, and assumed that splits will be placed at every mile and only every 5th km. However, Mike Moore has informed us that he can easily produce other customized versions, say, for a measurer who wishes to work in counts/km and lay out all metric splits.

Adjournment: The meeting was adjourned at 15:55.

Minutes prepared by Bob Baumel, RRTC Secretary



Name _____ Course Length_____ units

RESULTS OF RRTC MEASUREMENT-BY-PACING CONTEST
ANNUAL RRTC MEETING - AKRON, OHIO - AUGUST 30, 2003

Course was laid out by Mike Wickiser.

Course distance	2479.0025	units of measurement
True length of "Unit"	0.185928	meter
Length of Course	460.91598	meters

	Units Submitted	Difference Units	Percent Error
Pete Riegel	2469	10.00	0.40
Doug Loeffler	2490.5327	-11.53	-0.47
Paul Hronjak	2464.724	14.28	0.58
Jim Gerweck	2511.705	-32.70	-1.32
Mary Anne McBrayer	2439.6655	39.34	1.59
Tom McBrayer	2410.0898	68.91	2.78
Marcia Baumel	2386	93.00	3.75
Neville Wood	2801	-322.00	-12.99

Note: Upon arrival home, Pete Riegel read the instruction sheet more closely and discovered that he had neglected to use the 1.001 SCPF in his calculations. Whether others made the same mistake is unknown at this time. On such trifles is victory sometimes decided.

Pacing contest winners (L to R) Paul Hronjak, Doug Loeffler, Pete Riegel and Jim Gerweck display their spoils in Akron.

Measurement of US Men's Olympic Trials Marathon Course
Birmingham, Alabama
August 15-17, 2003

The course of the US Men's Olympic Trials marathon course was pre-validated in August by a team from the extremes of the US and Canada. Organized by Doug Loeffler of Florida, and Rick Melanson of Birmingham, it attracted Al Dausman, who flew in from the state of Washington for the chance to measure an Olympic Trials course. Laurent Lacroix, from Winnipeg, Manitoba, made a driving Odyssey. He came east and picked up Bernie Conway in London, Ontario, then swung south and collected Mike Wickiser in Akron and Pete Riegel in Columbus.

Mike Wickiser had a dandy point-and-shoot digital thermometer

This group of four was the first to arrive, and they went directly to the start, did some scouting, and laid out a 300 metre calibration course very close to the start.

The group then went to the Tutwiler Hotel and checked in. That evening the rest of the team arrived. Tennessee certifier Dave Rogers drove in with Carla, his wife. Doug Loeffler flew in from Florida. And Rick Melanson, who measured the course, was there. Doug passed out yellow shirts to be worn during the ride.

Next day, Saturday, the group laid out a calibration course on 6th Street, close to the finish. Now we were all set for an uninterrupted calibration-to-start-to-finish-to-calibration ride. The rest of the day was spent in touring the course and on individual pursuits.

Sunday at 7 AM everybody left the Tutwiler for the start line. We arrived at the calibration course at 7:30 and everybody got calibrated. Doug Loeffler collected all the calibration data. When the police escort showed up at 8:30, as agreed, we lined up behind Rick Melanson, who was our guide, and took off.

The team ready to start the course ride

We were met at each 5 mile split by Doug, who, with Carla Rogers and Jack Karn, was collecting data.

Upon reaching the finish line, we let Doug get the data and then went to 6th street, a few blocks away, to recalibrate. Then Pete, Doug and Mike went to Mike's room to enter the data into Mike's laptop. Pete had prepared a calculation program beforehand, and it correctly calculated the results.

Results were pleasing, as they showed that the course had passed its validation, and the adjustments needed to bring it up to the full nominal-plus-SCPF were minor.

Team after data-taking at mile 15

Pete Riegel had brought along a "London Marathon 2003 – Staff" jacket, and had announced at dinner that it would be awarded to the rider with the median measurement. This turned out to be Bernie Conway.

With calculations done, all were given a floppy disc with the data and rough calculations, and the various groups dispersed and went home. …….Pete Riegel

RESULTS OF TEAM PREVALIDATION OF US MEN'S OLYMPIC TRIALS MARATHON COURSE
BIRMINGHAM, ALABAMA - AUGUST 15-17, 2003

All calculations use average constant and include 1.001 Short Course Prevention Factor

Calibration Course Layout:

Location: Willow Lane, near Start, uphill to south	Location: 6th Avenue, near Finish, flat
August 15, 2003 - 1:00 PM	August 16, 2003 - 9:00 AM
Bernie Conway - tip, Laurent Lacroix - tail	Al Dausman - tip, David Rogers - tail
6 x 50 m = 300.00 m	6 x 50 m = 300.00 m
Pete Riegel - tip, Mike Wickiser - tail	Laurent Lacroix - tip, Pete Riegel - tail
10 x 30 m + 0.020 m = 300.020m	6 x 50 + 0.00 m = 300.00 m
Tape temperature - 50C	Tape temperature = 32 C
Average measured length = 300.01 metres	Average measured length = 300.00 metres
Temperature correction factor = 1.000348	Temperature correction factor = 1.000139
Corrected length = 300.1144 metres	Corrected length = 300.0418 metres
11.4 cm was removed from the course.	4 cm was removed from the course
Final length = 300.0004	Final length = 300.0018
300.00 was used in subsequent calculation	300.00 was used in subsequent calculation

Calibration course length = 300.00 metres

Counter readings as recorded

	Rick Melanson	Pete Riegel	Dave Rogers	Laurent Lacroix	Bernie Conway	Al Dausman	Mike Wickiser
Precalibration - Willow Lane, August 17, 7:30 AM, dry, sunny, 77F							
Begin ride 1	32587	74840	462000	11735	972800	6800	95700
End ride 1, begin ride 2	35980	78159.5	465387	15427	976248	10180.5	98508
End ride 2, begin ride 3	39377	81477	468774.5	19123	979700	13562.5	101316
End ride 3, begin ride 4	42769	84796.5	472161	22815	983151	16942	104124
End ride 4	46164	88113	475547.5	26510.5	986602.5	20327	106932
Course Measurements - Counter readings obtained in riding order shown from left to right above.							
Start	53200	3700	485900	30000	998000	31000	15600
Mile 5	144258	92556	576646	128953	1090453	121565	90782
Mile 15	227495	173869	659664	219472	1175042	204420	159572
Mile 10	235370	181556	667515	228030	1183042	212254	166082
Mile 25	310750	255181	742709	309989	1259660	287286	228405
Mile 20	318618	262858	750554	318534	1267651	295113	234905
Mile 15	326468	270522	758385	327072	1275630	302926	241389
Finish	333107	277002	765004	334282	1282377	309530	246875
Postcalibration - Willow Lane, August 17, 7:30 AM, dry, sunny, 77F							
Begin ride 1	341717	90020	777400	339555	289000	313000	50000
End ride 1, begin ride 2	345110	93337	780787	343245	292452	316380	52807
End ride 2, begin ride 3	348504	96653	784173	346935	295903	319759	55613
End ride 3, begin ride 4	351898	99969	787559	350624	299353	323139	58419
End ride 4	355289	103285	790945	354313	302803	326518	61225

CALCULATED VALUES

	Rick Melanson	Pete Riegel	Dave Rogers	Laurent Lacroix	Bernie Conway	Al Dausman	Mike Wickiser
	Precalibration elapsed counts						
Ride 1	3393	3319.5	3387	3692	3448	3380.5	2808
Ride 2	3397	3317.5	3387.5	3696	3452	3382	2808
Ride 3	3392	3319.5	3386.5	3692	3451	3379.5	2808
Ride 4	3395	3316.5	3386.5	3695.5	3451.5	3385	2808
Average count	3394.25	3318.25	3386.875	3693.875	3450.625	3381.75	2808
Precalibration counts/km	11325.48	11071.89	11300.87	12325.23	11513.59	11283.77	9369.36
	Postcalibration elapsed counts						
Ride 1	3393	3317	3387	3690	3452	3380	2807
Ride 2	3394	3316	3386	3690	3451	3379	2806
Ride 3	3394	3316	3386	3689	3450	3380	2806
Ride 4	3391	3316	3386	3689	3450	3379	2806
Average count	3393	3316.25	3386.25	3689.5	3450.75	3379.5	2806.25
Postcalibration counts/km	11321.31	11065.22	11298.79	12310.63	11514	11276.27	9363.521
Calibration change, cts/km	-4.17	-6.67	-2.09	-14.60	0.42	-7.51	-5.84
Constant for day, cts/km	11323.40	11068.56	11299.83	12317.93	11513.79	11280.02	9366.44
	Measurement - counts obtained on intervals						
Start							
Mile 5	91058	88856	90746	98953	92453	90565	75182
Mile 15	83237	81313	83018	90519	84589	82855	68790
Mile 10	7875	7687	7851	8558	8000	7834	6510
Mile 25	75380	73625	75194	81959	76618	75032	62323
Mile 20	7868	7677	7845	8545	7991	7827	6500
Mile 15	7850	7664	7831	8538	7979	7813	6484
Finish	6639	6480	6619	7210	6747	6604	5486

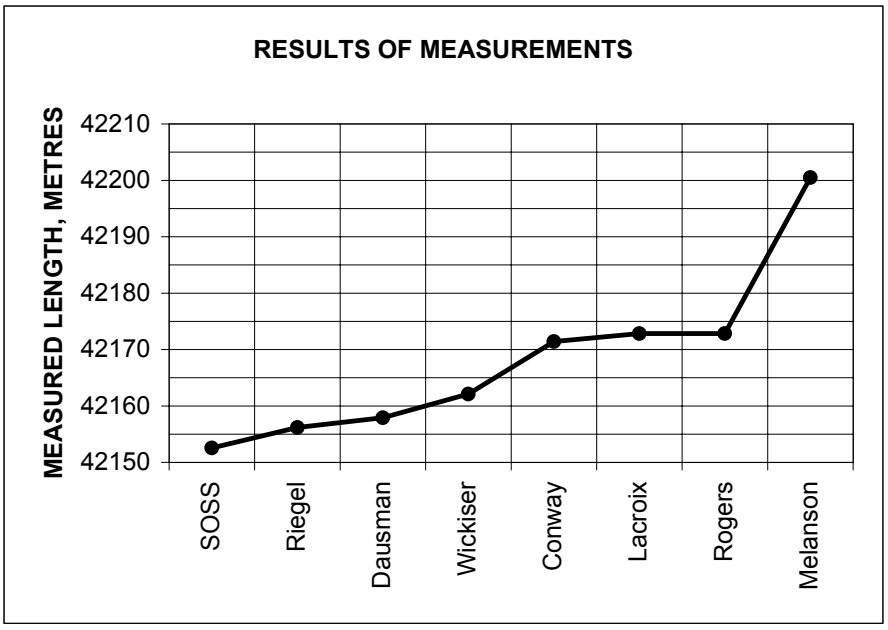
	Measurement - metres obtained on intervals							Shortest Split
Start								
Mile 5	8041.58	8027.79	8030.74	8033.25	8029.76	8028.80	8026.74	8026.74
Mile 15	7350.89	7346.31	7346.84	7348.56	7346.75	7345.29	7344.31	7344.31
Mile 10	695.46	694.49	694.79	694.76	694.82	694.50	695.03	694.49
Mile 25	6657.01	6651.72	6654.44	6653.63	6654.45	6651.76	6653.86	6651.72
Mile 20	694.84	693.59	694.26	693.70	694.04	693.88	693.97	693.59
Mile 15	693.25	692.41	693.02	693.14	692.99	692.64	692.26	692.26
Finish	586.31	585.44	585.76	585.33	585.99	585.46	585.71	585.33

OVERALL COURSE MEASUREMENTS

	Rick Melanson	Pete Riegel	Dave Rogers	Laurent Lacroix	Bernie Conway	Al Dausman	Mike Wickiser	Shortest Split
Start to Mile 15	15392.47	15374.09	15377.58	15381.80	15376.51	15374.09	15371.05	15371.05
Mile 15 to Mile 15 (loop)	8740.58	8732.21	8736.50	8735.23	8736.30	8732.79	8735.12	8732.06
Mile 15 to Mile 15 (loop)	8740.58	8732.21	8736.50	8735.23	8736.30	8732.79	8735.12	8732.06
Mile 15 to Mile 15 (loop)	8740.58	8732.21	8736.50	8735.23	8736.30	8732.79	8735.12	8732.06
Mile 15 to Finish	586.31	585.44	585.76	585.33	585.99	585.46	585.71	585.33
Total	42200.50	42156.17	42172.85	42172.83	42171.42	42157.91	42162.12	42152.55

SOSS	42152.55
Riegel	42156.17
Dausman	42157.91
Wickiser	42162.12
Conway	42171.42
Lacroix	42172.83
Rogers	42172.85
Melanson	42200.50

Median measurement



In group measurements, the median measurement may be taken to lie close to the best value.
Bernie Conway had the median measurement of 42171.42 metres.

In order to bring the course to full length, 23.58 metres will be added to the course at the start.

LOCATIONS OF SPLITS BY BERNIE CONWAY'S MEASUREMENT
Includes an addition of 23.58 metres at the start

	Unad-justed Calculated interval metres	Unad-justed Cumulative Length metres	Cumula-tive length after 23.58 Start Adjust metres	Desired Length metres	Split Adjust metres
Start		0	0		
Mile 5	8029.76	8029.76	8053.34	8046.72	-6.62
Mile 15	7346.75	15376.51			
Mile 10	694.82	16071.33	16094.92	16093.44	-1.48
Mile 25	6654.45	22725.78			
Mile 20	694.04	23419.82			
Mile 15	692.99	24112.82	24136.40	24140.16	3.76
Mile 10	694.82	24807.64			
Mile 25	6654.45	31462.09			
Mile 20	694.04	32156.13	32179.71	32186.88	7.17
Mile 15	692.99	32849.12			
Mile 10	694.82	33543.94			
Mile 25	6654.45	40198.39	40221.98	40233.6	11.62
Mile 20	694.04	40892.43			
Mile 15	692.99	41585.42			
Finish	585.99	42171.42	42195.00	42195	0.00

SUMMARY OF ADJUSTMENTS TO BE MADE TO THE COURSE

A positive value means the point must be moved forward, in the direction of running
A negative value indicates the point must be moved back, opposite the direction of running.

	Adjust-ment Metres	Adjust-ment Feet	
Start	-23.6	-77	split moves back
Mile 5	-6.6	-22	split moves back
Mile 10	-1.5	-5	split moves back
Mile 15	3.8	12	split moves forward
Mile 20	7.2	24	split moves forward
Mile 25	11.6	38	split moves forward
Finish	0.0	0	unchanged

Measurement of the Month

Jim Gerweck

FALMOUTH ROAD RACE

FALMOUTH, MA **16 &17 AUGUST 2003**

From its inception 31 years ago, the Falmouth Road Race was never supposed to be an exact distance. Tommy Leonard, barkeep of the legendary Eliot Lounge in Boston, came up with the idea of running betwee two Falmouth watering holes, the Cap'n Kidd in Woods Hole to the Brothers Four in Falmouth Heights. When the latter closed down, the finish was moved down the hill near the ball-fields to accomodate the increasing fields the race was attracting.

For the longest time the race was billed as 7.1 miles, but most who ran it knew better. Indeed, the final mile split was close enough to the finish you could almost trip on it and fall across the line (but not quite, as Olga Romanova discovered to her chagrin this year). More recently, the race website listed the distance as 7.05, and some officials claimed it was 38 or 58 yards over 7 miles.

Anyway, to clear up the confusion, and to make performances run at Falmouth eligible for consideration for national rankings, Rick Favier and I, with the blessing of the race organizers, rode the course to certify it to USATF standards.

I arrived on the Cape Saturday morning and met Rick, who had been there since Friday. It was raining quite steadily as we drove the course, and in fact puddles were beginning to form in the lower spots. The forecast didn't look good, either, calling for continuing rain most of the day. Figuring it would only get worse, we headed to the Shining Sea bike path to steel tape a calibration course.

We were met there by Courtney Bird, the race director of the Cape Cod Marathon, who had done a preliminary 1,000 foot course earlier in the year. We checked it and found it to be 15/16 of an inch short, adjusted it, and marked the ends. As we measured, the rain began to taper off and finally ended, which made taking notes much easier.

The next morning my alarm went off at 4 a.m. and I met Rick for the drive to downtown Falmouth. It was still dark as we rode to the calibration course, and dawn was just beginning to break as we started our cal rides, using a flashlight to write down the numbers on our Jones counters.

We then rode down the bike path to where it meets the course at Surf Drive, took a reading, and rode backwards over the first half of the course, which contains more twisting sections, so we could get it out of the way first. We took a reading at the start, then rode the course in the normal direction, checking the mile points for accuracy and locating the 5K split. When we arrived in Falmouth Heights, there was a bustle of activity preparing the finish area, but a quick look at our figures indicated the course would be somewhat short of 7 miles. When we saw Rich Sherman, one of the race co-directors, and gave him the news, it doubtless gave him a bigger jolt than his first cup of coffee that morning.

On our ride back to the midpoint traffic was beginning to build, and so was the wind, becoming so strong that large flags were flying straight out. That presaged at least bearable conditions for the race, which almost always challenges the runners with high heat and humdity.

But that breeze only masked the tropical conditions, as I was to find out a few hours later when I ran the course I'd just measured (and determined to be within less than 2 inches of 7 miles). Within a few hundred yards everyone was glistening with sweat, and by the time we rounded Nobska Light at a mile we were soaked. The rest of the race turned into a survival shuffle for most; even the two leading women failed to finish, and two third of the first group of elites required medical assistance. Rick was smart enough to stay on his bike and leapfrog along the course, watching their misery.

When I finally got home that evening, I had little trouble getting to sleep, having done two thirds of a triathlon that morning. But it was worth it, having answered a question that's perplexed many runners for some three decades.

From MNFORUM

MAP MEASURING SOFTWARE

In olden days I used to go over maps with a pair of dividers calibrated on the map scale. It was a tortuous exercise, but better than bike riding for getting an idea of how a course would work out. Later I graduated to a map measurer, a tiny wheel with an indicator dial attached.

Now there is an easy computerized way to do it. The program is called AccuRoute, and it does what divider-walking used to do. You need a map to work with - either a map you have scanned (with scale) or one downloaded from somewhere on the net.

You calibrate by clicking on two points a known distance apart. Then you trace your way around the route. At the end you have a good estimate of the course length.

Check it out (easy download) at:

http://homepages.tesco.net/~criticalpath/accuroute/

You get six free jobs, and then you can decide whether to purchase it.

I've used it and I like it a lot.

Pete Riegel
riegelpete@aol.com

PDAs IN COURSE MEASUREMENT

While measuring the Lakeshore Marathon in Chicago in May it occurred to me that widely available technology might offer a better solution to course measurement data collection and the preparation of documents.

I'll step back and explain how I usually do things. I record course measurement data in a notebook that I normally carry in my right hand as I measure. This provides access to the information but effectively denies me access to my rear brake and rear derailleur, the shifter for which is near my right handgrip (I'm more cognizant of such things after a nasty fall last September which left me in pain for more than a month). When I complete the measurement I hand copy the data onto the standard application forms, which I have downloaded from the RRTC web site and photocopied.

Late last year I purchased a Palm M515 and am beginning to scratch the surface of what I can do with it. It occurred to me that the Palm could probably be programmed to execute a number of course measurement functions and could somehow be mounted to the center of my handlebars, which would give me back my right hand.

I'm thinking I could use the Palm to: * Calculate counter readings for splits (replacing the calculator I carry) * Record calibration data and calculate measurement constants
* Record measurement data
* Record notes on locations of split points
* Transfer all of this data to a PC (or for the more enlightened among us, a Mac)
* From a PC or Mac, complete the application forms (and the intermediate split location information) and print them.

I'm wondering if anybody has already blazed this trail. I think it would involve the use of the Microsoft Office suite (more than likely Excel, although Excel spreadsheets can be embedded in Word documents, and Word would be better for much of this), and Documents To Go from DataViz. I would look to develop some way to modify a standard PDA case into a bicycle mount for the device. You can also purchase units from a couple of manufacturers that attach to the Palm and give it GPS capability.

If anybody else has looked into this, I welcome them to share what he or she may have discovered, and would be willing (time permitting, of course) to do some work to produce form templates that could be downloaded onto a PDA.

For the record, my Palm is running Palm OS 4.1 and my Mac is running OS 10.2.6 and Microsoft Office X for the Mac. The Microsoft applications will convert Windows files so if there's something out there we Mac users ought to easily be able to make use of it.

Thanks,
Jay Wight
jaywight@earthlink.net

Jay,

I've used my Handspring Visor quite a bit in measuring. I find its biggest advantage is the ability to store multiple constants (i.e. mile, km) at the same time and not lose them when it's turned off.

I've also used the Notepad feature to record split info. Since I create my maps electronically, it's easy to cut and paste into FreeHand.

I suppose you could used Docs To Go to set up and use a spreadsheet; I've uploaded a basic form which I'd be happy to send along to you.

The only thing I find missing is a drawing app. to detail the start and finish. I know there are some apps for PDAs available that do this.

I'd be worried about putting a device costing several hundred bucks on the handlebar of a bike unless it was mounted VERY securely. I tuck mine in the back pocket of my cycling jersey, and even then I worry about it falling out.

Jim Gerweck
zgerweck@optonline.net

Re: MAP MEASURING SOFTWARE for laying out an approximate course prior to riding I use Microsoft Streets and Trips. It has an option called Measuring Tool. After laying out an approximate route you can zoom in and adjust or add points. It is relatively accurate. Better than my car and quite good enough for knowing what streets to turn on and approximately where the ends will be. It's low cost and often free when bundled with PCs or Microsoft Works.

RE: PDA,s. I have given consideration to the use. There are bike mounts for some PDAs. Right now I have a spread sheet in Excel that:
Takes the calibration rides,
works out working constant,
takes the start count,
works out expected mile splits and finish,
takes two sets of measurement counts,
figures total distance and shortest ride,
takes the input from the second calibration rides,
Checks total rides and split variation,
Selects the shortest ride and then figures finish and split adjustments in feet and inches.

I must admit I have not run it on a PDA. I input my start count and print two ride sheets with expected counts to do an initial mark placement and a placement verification run. Then take blank sheets to record at least two more rides for the measurement rides.

My course work is strictly local so I use the calibration course out side my house. Since I don,t know the constant for the day until I have returned and re-ridden my cal course the final adjustments and nails are laid on a second visit to the course.

I could run this on a PDA running Excel. On a Palm you would need to run something like Quicksheet and then I am not sure all the formulas would translate.

Right now the spread sheet is not built proof or even user proof. Problems come when you start to do funny things like, keeping the finish fixed and adjusting the start and mile marks the other way. I just have not set it up to handle all the possible variations or prevent users from messing it up. I think it would probably be more effective in the long term if I just re-programmed it in a language that can be compiled.

James Musters
jmusters@bellsouth.net

EQUIPMENT

Jim commented: << I'd be worried about putting a device costing several hundred bucks on the handlebar of a bike unless it was mounted VERY securely. I tuck mine in the back pocket of my cycling jersey, and even then I worry about it falling out.>>

I agree. I resist quick-release wheels for the same ease-of-theft reasons. I use the bike all the time, so setting it up for specifically for measurement is inconvenient. Currently only a spanner and the Jones Counter are involved, and it takes about a minute. If I forget to bring the pocket calculator I can usually buy one for $2-$3 in a corner shop, likewise pen and paper.

When it comes to transcribing figures during documentation, I also find this "inefficient" method serves a purpose. It helps you to re-live the measurement. Often a particular count stimulates a precise mental image of where I was when I recorded it, even without the contemporaneous notes. For me this all helps in checking the measurement. I would be very reluctant to use a counter that could be zeroed. The simpler and more transparent the tools we use, the more convincing is the method.

Hugh Jones
aimssec@aol.com

SHARED COURSE REQUEST

Hi Paul,

I got a recorded message from a Race Director last night asking to have a course certified. He indicated that the course was currently certified for another race. What is the protocol for handling this type of request?

If the course is indeed certified, then the length is accurate, leaving issues like:

Should the application be submitted using the old Map, Course Measurement Data, and Bicycle Calibration sheets attached to a new application?

What should be the expiration date? The same as the original cerficate? (I suspect yes.)

There is also the issue of expense for the earlier measurement. I think it's only fitting that the cost be shared between the original certifier and the person requesting to use the course.

Have you had this experience?

Any advice would be much appreciated.

Ron
rjfitz@worldpath.net

Ron:

We certify courses not races. Any race which is run on a certified course without any changes to the course has it's performances considered as having been run on a certified course. There is no need for us to do anything at all.

I have heard before of race organizations getting bent out of shape because some other race used their course which they paid to have certified but my feeling on that is that they

should grow up! Of course it would be a nice gesture if the new race offered to pay something towards the measurement but it is not something we should get in the middle of. If the course is certified it is certified and that is all that is any of our business.

Best,

Paul
hronjak@simflex.com

SHARED COURSES

This issue has been raised here in Oklahoma. Doesn't it devalue a race when the course is used by another event? Would people want to pay an entry fee for a race they ran last month on the same course? When I asked, "who owns the course?" the answer was that there is no policy on ownership. Is this consistant with other states?

Don Garrett
DG Productions
Oklahoma City, OK
GarrettOk@aol.com

WHO OWNS THE COURSE?

This has been going on for years but only raises its head once in a while. Personally, I don't think that the RRTC should get involved in this debate. We measure and certify courses ... not races. At the same time, runners run in RACES ... they typically don't enter a race because of the course (of course, there are some exceptions on particularly interesting or scenic courses). In fact, familiarity comes to mind as an advantage in the argument for wanting to run another race on the same course.

If this does become an issue and if the cost of having the course measured/certified becomes an argument, I would suggest that the new race offer to pay part of the cost as a good-will gesture. Unless it is a long race the expense will be minimal.

Again ... I DON'T think this is something we should get into the middle of!

Paul Hronjak
hronjak@simflex.com

A NEW VOICE FOR INTERNATIONAL ROAD RACING

The sport of Road Running has too often been treated as a second-class activity, in comparison with Track and Field Athletics. It has lacked a voice that will stand up for the best interests of the sport, helping to ensure its rational and systematic development.

For this reason a number of individuals from across the globe, with extensive backgrounds in road racing, have formed an international Association of Road Racing Statisticians [ARRS] with the goals of:

a.. Establishing valid criteria for road record-keeping

b.. Maintaining a list of world road records based on these valid criteria

c.. Promoting communication and the exchange of information with regards to road racing.

The set of road record-keeping criteria will be designed to encourage and recognise marks made in women-only races which will in turn, enhance the status of women's road racing. It will also recognize a maximum separation of 30% between the start and finish to ensure that records represent valid achievements.

Such an association offers a tremendous opportunity for the development and promotion of the sport and will be of great benefit to Road Racing. Further details of the draft ARRS road record list can be found at **www.mattoleriver.com/ARRS.htm**

The founder members are road running statisticians, journalists and experts from around the world. Most of these individuals are active, very experienced runners with numerous marathons, and in many cases ultramarathons to their names. They are:

AFRICA

Riel Hauman (South Africa), the premier South African road running statistician and writer, and author of Century of the Marathon 1896-1996

ASIA

Ken Nakamura (Japan) - the foremost Japanese road running statistician.

EUROPE

Ian Champion (Great Britain), race director of the world famous ultra classic, the London to Brighton race, and a distance running historian and archivist.

Andy Milroy (Great Britain), global road running historian, writer and statistician, author of "The Long Distance Record Book" and the primary originator of the Ultra Marathon Race Handbook, the accepted rule book for Ultrarunning.

Indro Neri (Italy) - Editor of the Italian running magazine "Podismo" since 1976; co-director of Run The Planet (www.runtheplanet.com) since 1996; Journalist and author of several books on running.

Gunars Akerbergs, (Latvia) road running and marathon statistician,
www.marathon.lv

Wim van Hemert (The Netherlands) is a veteran sports journalist having covered Olympic, World and European Championships for over thirty years. Co-founder of the Rotterdam Marathon, he has written several books about the marathon, and has a strong interest in marathon statistics

Zbigniew Jonik (Poland) has a Master of Science degree in Mathematics and Computer Science. He maintains both track, road and indoor performances statistics for Poland and world lists for men and women .

Sergey Krashnoshchekov (Russia) maintains Russian rankings at the marathon, and collects national long distance road performances. He also maintains biographical information on leading Russian runners on his website
www.geocities.com/Colosseum/7583/atlas.html

Luis Arribas (Spain) is Editor of the Spanish e-News site **www.CorreryTirar.com**, writing for Spanish-speaking runners worldwide. His special interest is marathon statistics, trail races and ultra distance.

Birger Falt (Sweden) is a race walker at the highest level and competed in the 1999 World Championships at 20km; he is a race walking and long distance running statistician and also a course measurer .

Tomas Magnusson (Sweden) now resides in Switzerland. His main interests are in international athletic championships, including long distance, and researching and collecting full results.

NORTH AMERICA

David Blaikie (Canada), road running journalist and writer, well known for his highly respected website, Ultramarathon World, **www.ultramarathonworld.com** , is also author of "Boston: The Canadian Story"

Pete Riegel (United States) Former IAAF Measurement Coordinator for the Americas; Chairman of the USA federation Road Running Technical Council for many years, founding editor of Measurement News, the Newsletter that disseminated good practice in course measurement world wide.

Ken Young (United States), long time road running statistician and record keeper who set up the United States road running record system while director of the National Running Data Centre in 1980; editor of the Analytical Distance Runner weekly e-newsletter, **www.mattoleriver.com**

For further information:

Contact :

Andy Milroy: a.milroy@virgin.net

Ken Young: kcy@inreach.com

COURSE BASICS

In an otherwise fine article about designing a course in the August 2003 issue of Road Race Management, Jim Gerweck says, "Generally, right turns are preferable if participants are to run with the traffic, as this avoids crossing lanes." It seems he makes the implicit assumption that the runners should run with the traffic. I strongly disagree. Whenever possible, I lay out a course so that the runners facing traffic. This is a safety issue that many don't think about when configuring a course. Many years ago, someone put on a local race with the runners going with the traffic. I ran in the race. When I finished, I walked back from the finish to see the other runners approaching the finish line. All of a sudden I was horrified to see a promising young female runner fly through the air and land right near me. I was the first one to her and she lay in a heap moaning about her back. She had been hit from behind by a woman who was distracted by the many cars parked on both sides of the road and, I think, from the morning sun as she drove east. If the course had been set with the runners opposing traffic, the runner would have seen the car, which was traveling quite slowly, and avoided it.

Of course, if the race course is to be closed to traffic during the race, the direction does not matter.

The young runner did recover from her injuries but she was unable to compete in a marathon the next weekend which she had been training for.

Alan Jones
AlanJones@stny.rr.com.

Alan's right, that it's better for runners to see oncoming cars so they can avoid them. This is generally how most people train, and it may be even more important in a race, when fatigue or adrenalin makes them do stupid/unexpected things.

That being said, at least in these parts, the police generally prefer to have runners go WITH traffic. I think their rationale is that lead and trail vehicles will be on the same side of the road as the runners. I don't know if this makes complete sense, however.

Jim Gerweck
zgerweck@aol.com

MAP MEASURING SOFTWARE

The main advantage of using AccuRoute **http://www.accuroute.co.uk**) over Streets and Trips is that with S&T I believe you are limited to what maps Microsoft

offers you, and then only in built-up areas(?). With AccuRoute, you have the full range of whatever maps you can lay your hands on. This may be scanned in images of your own paper maps, top quality topographic maps from the US Geological Survey website or in the UK, the Ordnance Survey, or best of all, 1 metre resolution satellite images (also USGS website). With the latter, it's possible to get to within 2 yards per mile on most routes. It's got all the "zooming", "nudging", "replacing" functions you'd expect, plus a height profile and Word export option. Although it's not free, cost is only $20.

Tony Brinklow
tony.brinklow@tesco.net

RUNNING WITH/AGAINST THE TRAFFIC

Just a couple of items from SA on this matter:

We normally run the official races against the traffic for safety reasons and use motorcycles both for the lead vehicle and for referees (who are sometimes allowed to sit facing the rear so they see the runners) - In bigger races with vehicles as lead cars a police car will escort the front car.

It is perhaps important to state that there are around 1000 races a year in SA which are held under the Athletics South Africa and the provincial and club structure - The only events held 'privately' therefore are 'fun runs' / and generally limited to 5km distance - (even this is likely to change as a result of incidents such as the one I will relate below)

One fun run was an out and back up a and down one of our famous Comrades hills - Fields Hill - This is a dual carriageway road about 2km long and on the down side (with traffic) has 2 lanes and up side (with traffic) 3 lanes, but twists rounds a number of corners and is of considerable slope. The fun run organisers applied through the police and had permission to run with the traffic up and down - based presumably on the fact that it would be identical to the approach used for the Comrades (except it should be borne in mind that the traffic was generally restricted on the up section of comrades (not on the down) - Long story short a taxi's brakes failed on the down and ran away through the runners a few of whom were hit and a couple died. (No doubt the fact that most runners were used to running into traffic also played a part) - This brought home again the benefits of running into the traffic. - however when it came to running of Comrades this year (the next after the fun run) the race would be a down run down fieldshill and I raised the issue of which side they would run down - I was told that it would be with the traffic again ' as always'

I was very concerned about this because ont he down run traffic (although slow in a virtual nose to tail format) is still allowed down the hill and clearly a similar situation could occur. By comparison no vehicle has ever run away UP a hill - it is also important to note that fields hill is 64 km (40 miles) into the race so runner's agility is not optimum!
It took about 3 months to get this point through and the key issue quite frankly is that 'If' the situation had repeated itself the race organisation, and the police, and the federations would have been left wide open to a claim of negligence - since it had happened before and no steps had been taken to reduce the risk.

I have run the London to Brighton (same 55 mile / 90km distance) a few times and know that they run with the traffic, and find this quite hair-raising in a number of sections - It even encourages runners (and lead runners) to run on the pavements (pathways for US :-)) as opposed to the road in order to protect themselves.

Even if runners hear 'trouble' behind the very act of trying to turn around to see what is coming, not only takes time, but can make them vulnerable to problems (other runners / uneven ground etc) ahead, and automatically puts them off balance to take any evasive action.

Over and above the safety of the runner (prime issue) in this day and age I would suggest running with the traffic leaves the organisers open to claims.
The only suggestions I have ever heard in support are a) lead vehicle b) police authority demand it (hard to overcome, except by education) and c) that a runner coming into a vehicle increases the impact. This latter case shows a complete mis understanding of momentum - If a runner is hit by a car even doing 30 miles (50kph) the difference made by his own speed (which he will be decelerating anyway) is minimal. One assumes that relevant signage and cones are put out on the road and so on coming vehicles will have advance notice to be aware for runners

Regards,

Norrie Williamson
ultranor@netactive.co.za

COURSE DIRECTION

I always try to design my race courses following the traffic flow and with right hand turns. Right hand courses do not shut down intersections. Most of the communities here on Long Island are not trhilled with races running down their streets. Many of our residents work in New York City where they are fighting traffiic and road closings Monday through Friday. They escape to the suburbs for peace and quiet. Also increasing municpal budget problems are placing a strain on police budgets resulting in less support for complicated race routes.
It is important to work closely with communities and police departments to design courses that have a minimum impact on their residents.
Of course safety should be our main concern. And there are ways of achieving that goal (more course marshalls and coning off lanes or parts

of lanes). I have found that police departments and municipalities will support your race courses if you present ones that keep their needs in mind.

David Katz
katz@flrrt.com

FACING TRAFFIC

Just now I do all my training (just about) off road but I did go through a long phase of doing a lot of sunday running on a rural loop half of which was on main roads with little or no pavement/sidewalk.

Actually coincides with part of the Wilmslow Half Marathon route.

I have always had my doubts about the running/walking facing the traffic rule when it comes to such situations - winding and very undulating, carrying quite fast traffic (speed limit = 60 mph out of towns and villages).

Makes a lot more sense to me to be visible to the traffic you're sharing space with and this means climbing hills and humps back to traffic and going round the 'long' side of a bend whether this is with or against the traffic.

Involves a certain amount of road crossing but much much safer in my view than running over the crest of a hill into traffic on a narrow lane or hugging the 'short' side of a bend.

Very different to planning a race though.

Couple of recent experiences :

1. Welsh Castles Relay - ran leg 11 which is a big climb out of Newtown in mid wales (6.7 miles steady up) and then 4.5 mile swoop to the finish.

All but 400 metres is on main, but country road. Rule on this and all other 19 legs are run with back to traffic throughout and the traffic (very light at 7 am) was only controlled on this leg for the one turn from side road onto this main road.

There are time penalties for breaking the rule. It felt safe enough. The field is small (1200 or so take part, but only 60-ish per leg). We won the overall race - the first non-Welsh team to do so, and also the King of the Mountains, my leg included.

2. Tour of Tameside (52 miles in 6 races over 7 days) - most of the courses were new as this classic (21st running, established by Ron Hill) was revived after two year hiatus.

First leg was mostly on very minor roads or off road but there was one major road crossing after about 8 or 9 miles of the opening 12-miler. Runners ran up the verge of a steep climb on the against the traffic side and crossed at the top to the with the traffic side where there was a good off road surface.

There was a vast range of standards in the field of just under 300. From a jobbing Kenyan, an Ethiopian from my club, and four or five very good Brits to masters of 80-plus and recreational runners. The crossing created traffic havoc for traffic heading for a young farmers show. This must have lasted a good long time.

Has anyone come up with good system for such road crossings? I was wondering about alternating crossing at top and bottom every few minutes to give windows when the traffic could move.

On the one true road race of the series (even the half marathon was 90% off road) and the short road section of the last race (9 miles on canals) the runners had a free rein but gravitated to the with the traffic side of the road.

Again we won the team competition. And I missed out on being M45 champion by 2 seconds after 5 and a half hours running!

Best wishes
Chris Paul
idea@easy.com

As a police lieutenant as well as a race timer/organizer, I agree 100% with Dave Katz reply concerning "running with traffic and including mostly right hand turns". This definately allows for better traffic flow and less disruption. There are tons of races here in Fairfield County, almost to the point where some municpalities are beginning to say no to the permits because of residents complaints. The less disruption to the rest of the community, the better! Going with the flow, is the way to go in busy traffic areas.

Tom Kulhawik
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1908 RE-RUN

For those who haven't seen Runners World this month, there's an open invitation to take part in Ranulph Finnes and Mike Strouds 777 challenge (or rather, keep them company on the London leg of their challenge). They're doing 7 marathons in 7 days on 7 different continents

It's free to enter and they're running the original 1908 Olympics Windsor to White City route (which has been re-measured).

Expected date and time (still provisional) is 7:00 am on Friday 31st October.

Hopefully the following link will work. If not, search the "events" page for "777"

http://www.runnersworld.co.uk/events/viewevent.asp?sp=&v

=2&EN=20820

I remember this race and course was subject of discussion a year or so back.

Chris Paul
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THAT ORIGINAL MARATHON

Oh dear, Chris, all this pre-publicity makes me nervous.

As Chris Paul read in Runners World (UK) October issue (out on 1 Sept):

Ranulph Fiennes' and Mike Stroud's 7x7x7 challenge (7 "marathon distances" on 7 continents in 7 days) will incorporate the original 1908 route as the 6th of their 7 "marathon distances". It is only the final one which will be a bona fide race - New York on 2 November. Given that they are scheduled to do the London "distance" at 07.00 on 31 October, I don't know what happens on the intervening day (the sequence will be: Antarctica (King George Island); S America (Santiago, c/o Rodolfo Eichler and his contacts); Australia (Sydney, with assistance from Dave Cundy); Asia (Singapore, ditto, and the Singapore Marathon people); Africa (Cairo, with help from a recent graduate of a John Disley Seminar); then London & New York.

Chris says: "It's free to enter and they're running the original 1908 Olympics Windsor to White City route (which has been re-measured)."

Er - no. I had been asked to devise a London ("European") route for this enterprise a while ago, and suggested the 1908 route on the basis of ease of access to start and finish from Heathrow Airport (Fiennes and Stroud are sponsored by British Airways and by Land Rover). The route is more or less intact, the integrity of the original course mainly undermined by road widening. But given that the first half of this run will be during rush hour, they will have to stick to the pavements/sidewalks. This restriction eliminates the effect of road widening. The main places where the road layout has changed is in Uxbridge, in the ninth mile, and on the old stadium site (which now houses BBC TV Centre).

I'm looking forward to measuring this route, just to cross-check with the original measurement. I have previously measured from 1 to 3 miles, trying to reconstruct the old route where road re-alignments have since taken place. I found, for this small section, that it was simple to see where the old route went and that inaccuracy would mainly arise through the changed road widths. But that 2 mile section checked out within about 10m (incl.SCPF).

Any extra distance required for the Fiennes & Stroud project will be added on inside the phantom stadium. A rebuilt stadium existed on this site until about 1987, and I ran 1500m races on it in the Borough Schools Championships in the late 1960s/early 1970s. It was the venue for the classic duel between Gordon Pirie and Vladimir Kuts over 5000m

I had meant to email Mike Sandford, as measurement secretary of the South of England, when this piece first appeared in RW a few days ago. I wanted to warn him that the measurement had not actually been done, even though - with classic journalistic license - that had been announced. Mike - consider yourself emailed.

Hugh Jones
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DOUBLED 5K

I ran the NEW, IMPROVED Chase County Fair run course this a.m. with my GPS... the course is fun, and works well without any obvious backtracks for distance, with a specacular (OK, for Chase County) finish coming into the brick gates of the fair and down the flag lined midway. Much better than the anonymous finish beside the swimming pool of old.

I'm planning to do the 5K course and have the 10K run it twice, but need an extra .1 since the 5K overlaps just a bit. I'm thinking of starting the 10K a block earlier, to also help avoid confusion during the first lap (I have 2 colors of number too). The only problem I see with that is that mile marks would be different... do you have any experience/advice about this?

Jonathan Beverly
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OVERLAPPING 5KM & 10KM COURSES

I think I understand Jonathan Beverly's problem. The 1km point (or miles if he must) comes up 100m earlier for the 10km runners than those in the 5km.
However, at these respective points runners will have 9km to go and 4km to go. By the time the 10km runners have completed their first lap they will go through the 5km start line with 5km to go. In other words, the kilometre (or mile) points coincide if they are counted down as "km/miles to go". Obviously, the 5km runners will (or should) realise that none of the km/mile "to go" splits numbered higher than 5 or 3 respectively apply to them.

Hugh Jones
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Mark kilometers instead of miles. If the finish lines are the same they'll fall right on top of each other. Either that or have a turnaround on the 10K course so the 5K and 10K can start at the same point...

Jay Wight
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USATF/RRTC CERTIFIED COURSE LIST
New Entries, May - June 2003

DISTANCE	COURSE ID	ST	LOCATION	COURSE NAME/RACE	m/km DROP	pct SEP	MEASURER	REPLACES
42.195km	AK 03003FW	A	Douglas	Frank Maier Memorial Marathon	0	0.6	B Deal	AK 92006FW
5km	AK 03007FW	A	Fairbanks	Chena River Run	0.3	24	C Hebard	
10km	AK 03008FW	A	Fairbanks	Alaska Int'l Senior Games	0	0	C Hebard	
Cal	AK 03009FW	A	Fairbanks	Chena Pump Rd. 800meter Cal.	0	100	C Hebard	
1mi	AL 03016JD	A	Tuscumbia	Helen Keller Festival Run	0	0.9	D Michael	
1tmi	AL 03017JD	A	Sheffield	Outback Survivor 1 Mile	0	4.1	D Michael	
5km	AL 03018JD	A	Sheffield	Outback Survivor 5k	0	1.9	D Michael	
5km	AL 03019JD	A	Anniston	Woodstock 5k	0.3	5.2	R Melanson	
1tmi	AL 03020JD	A	Anniston	Woodstock 1 Mile Run	0.95	4.4	R Melanson	
5km	AL 03021JD	A	Decatur	Hot to Trot 5k	0	0	R Melanson	
2tmi	AL 03022JD	A	Birmingham	World's Fastest 2 Mile Run	33.5	71.5	R Melanson	
5km	CA 00308TK	A	Palo Alto	Palo Alto Baylands 5 km	0	1.2	T Knight	CA 87021TK
42.195km	CA 03007TK	A	San Francisco	The Chronicle Marathon	0	0	T Knight	
21.0975km	CA 03025RS	A	Sacramento	California Police & Fire Games	0	0	R Hanna	
5km	CA 03026RS	A	El Segundo	Keep LA Running 5 km	0	4.7	R Scardera	
10km	CA 03027RS	A	El Segundo	Keep LA Running 10 km	0	2.35	R Scardera	
5km	CA 03028RS	A	Sacramento	2003 Run Against Pain 5km	0	0.76	R Hanna	CA 01038RS
10km	CA 03029RS	A	Sacramento	2003 Run Against Pain 10km	0	0.76	R Hanna	CA 01039RS
5km	CA 03030RS	A	Dublin	Shamrock 5k	0	3.6	M Aiton	
10km	CA 03031RS	A	Davis	Fleet Feet Labor Day 10k	0	0.3	D Thurston	
5km	CA 03032RS	A	Davis	Fleet Feet Labor Day 5k	0	0.6	D Thurston	
10km	CA 03032RS	A	San Ramon	USCAA 10 km	0	2.21	L Goldman	
21.0975km	CA 03033RS	A	Los Angeles	Nike Relay Challenge	0	0.23	R Scardera	
5km	CA 03034RS	A	San Ramon	USCAA 5 km	0	0.35	L Goldman	
Cal	CA 03035RS	A	San Ramon	Iron Horse Trail 1000 meter	0	100	L Goldman	
10km	CA 03036RS	A	Los Angeles	Minnie Riperton 10km	0	3.3	R Scardera	CA 89053RS
5km	CA 03037RS	A	Los Angeles	Minnie Riperton 5km	0	6.6	R Scardera	CA 89045RS
5km	CO 03008DP	A	Loveland	Loveland Turkey Trot	0	3	M Moore	
5km	CO 03009DP	A	Denver	Stadium Stampede	0	0	P Tanui	CO 02017DP
5km	CO 03010DP	A	Denver	Summer Solstice	0	0	B Finken	
21.0975km	CO 03011DP	A	Georgetown	Slacker Half Marathon	3.05	76	P Tanui	
Cal	CO 03012DP	A	Loveland	Loveland E 1st. St. 1000 meters	0	100	J Finley	
10km	CO 03013DP	A	Loveland	Loveland Classic	0	8	M Moore	
5km	CO 03014DP	A	Fort Collins	The Human Race	0	1	M Moore	CO 92018DP
5km	CT 03004DR	A	Tolland	Cider Mill 5k	0.98	10	R Moore	
4tmi	CT 03005DR	A	Wallingford	Fishbein 4 Mile- Wallingford	0	1.6	B Stephenson	CT 02016DR
5km	CT 03007DR	A	Cheshire	Cheshire Autumn Jaunt 5k	0	4	B Stephenson	
5km	DC 02004JS	A	Washington	3M - 5K	2002	0	0 J	Sissala DC 02002JS
5km	DC 03001JD	A	Washington	Race For the Cure	-0.3	22	J Sissala	
10km	DC 03002JS	A	Washington	Sallie Mae 10k	0	0	J Sissala	
5km	DC 03026RT	A	Washington	Pace 5k	0	0	R Thurston	
5km	FL 03032DL	A	Miami	Miami-Dade Parks 4th of July	0	0.9	D Matuszak	
5km	FL 03033DL	A	Key West	Crime Stoppers 5k 0	0	D	Nelson	
Cal	FL 03034DL	A	Key West	Eagle Ave. 1000 ft. Calibration	0	100	d Nelson	FL 96041DL
5km	FL 03035DL	a	Boca Raton	Sophie's Run-Walk	0	0	D Loeffler	
Cal	GA 03008WC	A	Gainesville	GA. Rt. 60 - 300meter Calibration		0	100	B Sievert GA 00011WC
42.195km	HI 03029PR	A	Kailuna-Kona	Ironman Triathlon World Chmpshp		0.05	0.36	J Knoedel
5km	IA 03007MF	A	Waukee	RAT Race	0.4	0.4	M Franke	
Cal	IA 03008MF	A	Sioux City	Zenith Drive 1/4 mile Calibration	0	100	K Stanley	

DISTANCE	COURSE ID	ST	LOCATION	COURSE NAME/RACE	m/km DROP	pct SEP	MEASURER	REPLACES
42.195km	IA 03009MF	A	Sioux City	Weekender Lewis & Clark M'thon	0.07	3.8	S Uhl	
5km	IL 03042JW	A	Rockford	Y95 Rock 'N Run 5k	0	0.6	D Lindsey	
5km	IL 03048JW	A	Chicago	Running With the Bulls	0	0	J Knoedel	
1tmi	IL 03049JW	A	Belvidere	Belvidere Wheels Fest Mile	1.9	63	N Yarger	
5km	IL 03050JW	A	Chicago	Cougar 5k Run/Walk	0	1.6	C Hinde	IL 01094JW
5km	IL 03051JW	A	South Barrington	Strides for Stillman	-0.6	10.8	C Hinde	
5km	IL 03052JW	A	Alsip	John Guldan 5k	0	1.3	C Hinde	
5km	IL 03053JW	A	Bolingbrook	Rotary Run in the Brook	0	1.44	C Hinde	
5km	IL 03056JW	A	Chicago	La Villita 5k Run	0	12.4	C Hinde	
10km	IL 03057JW	A	Naperville	Windrunners 10k at Naperville	0	6.1	C Hinde	IL 99010JW
5km	IL 03058JW	A	Hoffman Estates	Unity Day 5k	0	0	J Knoedel	IL 02038JW
5km	IL 03059JW	A	West Chicago	Carelink 5k Run	-0.3	5.5	C Hinde	IL 03025JW
8km	IL 03060JW	A	Saint Charles	Great Western 8k	0	0.6	C Hinde	IL 03018JW
5km	IL 03061JW	A	Chicago	Chris Zorich Run	0	2	J Wight	IL 03047JW
5km	IL 03062JW	A	Chicago	Race to the Taste	0	0.04	J Knoedel	
5km	IL 03065JW	A	Palatine	Race for Young Life	0	2	C Hinde	
5km	IL 03066JW	A	Naperville	Run for the Mind	0	5	C Hinde	
5km	IL 03067JW	A	Flossmoor	Flossmoor Fest	0	2.2	C Hinde	IL 01057JW
5km	IL 03068JW	D	Chicago	Bastille Day 5k	0	1	J Wight	IL 02056JW
10km	IL 03069JW	A	Wheaton	Marianjoy 10k	0	0.3	J Knoedel	IL 02061JW
5km	IL 03070JW	A	Wheaton	Marianjoy 5k	0	0.6	J Knoedel	Il 02062JW
5km	IL 03071JW	A	Chicago	Fleet Feet Women's 5k Festival	0	2	J Knoedel	
10km	IL 03072JW	A	Chicago	Fleet Feet Women's 10k Festival	0	1	J Knoedel	
5km	IL 03073JW	A	Sterling	Fiesta Days/Sauk Valley 5k	0	0	D Lindsey	
5km	IL 03074JW	A	Palos Park	Hike for Mike	0	0.6	C Hinde	
5km	IL 03075JW	A	Chicago	Bastille Day 5k	0	0.9	C Hinde	
42.195km	IN 03003MW	A	South Bend	Sunburst Marathon	-0.18	7.6	T Konieczny	IN 98010MW
10km	IN 03004MW	A	South Bend	Sunburst 10k	-0.76	32	T Konieczny	IN 98009MW
5km	IN 03005MW	A	Indianapolis	Life Times Fitness Reindeer Run	0	2.6	J Sauer	
5km	KS 03026	BG	A	Topeka Fiesta Run	-1	8	D Fisher	
10km	MA 03011RN	A	Newton	Chart Bank 10k	0.34	2	D Hutchinson	
5km	MA 03014RN	A	Jamaica Plain	Mike LaDoucher Mainstreets 5k	0	0.4	J Kuo	
21.0975km	MA 03015RN	A	Edgartown	Martha's Vineyard Half Marathon	0.72	34.6	R Nelson	
10km	MA 03016RN	A	Foxboro	Foxboro Jaycees 10k	0	5	J Kuo	
5km	MA 03017RN	A	Foxboro	Foxboro Jaycees 5k	0	4	J Kuo	
5tmi	MA 03018RN	A	Wellesley	Marathon Sports 5 Mile	-0.08	5.6	S Vaitones	MA 86034JMC
5km	MD 03002JS	A	Bethesda	Wood Acres 5km	-1.8	1.6	P Quinn	MD 92004JS
5km	MD 03003JS	A	Rockville	The Opus 50th 5k Run	0	0	J Sissala	
10tmi	MD 03004JS	A	Baltimore	Jimmy Lears 10 Mile	0	0.6	W Diegel	
5km	MD 03005JS	A	College Park	Zack's Run	0	0	J Sissala	MD 00010JS
4tmi	ME 03002RF	A	South Portland	Rotary Waterfront Bridge 4-Miler	0	0	R Fitzpatrick	ME 98009WN
5km	ME 03003RF	A	Cape Elizabeth	Pond Cove 5k Challenge	-0.3	5	R Shevenell	
10km	MI 03008SH	A	Lansing	Standard Federal	0	1	S Hubbard	MI 02024SH
5km	MI 03009SH	A	Northville	Galyan's Solstice Run	0	1	S Hubbard	
5km	MI 03010SH	A	Grand Rapids	Gerald Ford Intl. Airport Flyby	-0.4	6	R Dewey	
5km	MI 03011SH	A	Flint	Flint Journal Catch Your Breath	0	3	S Hubbard	MI 98015SH
10km	MI 03012SH	A	Flint	Flint Journal Catch Your Breath	0	1	S Hubbard	MI 02031SH
10km	MI 03013SH	A	Grand Rapids	Standard Federal	0	1	R Dewey	MI 02028SH
5km	MI 03014SH	A	Wyoming	Wyoming Hot Streetz	0	16	R Dewey	MI 02022SH
5km	MI 03015SH	A	South Haven	National Blueberry Festival	1.8	3	R Dewey	
5km	MN 03015RR	A	Lakeville	Lakeville	4	2	R Recker	
21.0975km	MN 03016RR	A	Richfield	Wildland	0	0.7	T Moffatt	
5km	MN 03017RR	A	Perham	Perham	1.4	16	D Summers	
10km	MN 03018RR	A	Perham	Perham	0.7	8	D Summers	
10km	MN 03019RR	A	Moorhead	MSUM	0	0	D Summers	

DISTANCE	COURSE ID	ST	LOCATION	COURSE NAME/RACE	m/km DROP	pct SEP	MEASURER	REPLACES
5km	MN 03020RR	A	Minneapolis	Stone Arch	0	9.3	R Recker	
5km	MN 03021RR	A	Minneapolis	Unity	0	0	D Wright	
5km	MN 03022RR	A	Monticello	Monticello	-6	2	R Recker	
10km	MN 03023RR	A	Grey Cloud Island	Grey Cloud Island	-3	11.3	D Wright	
5km	MN 03024RR	A	Mankato	Mankato	0	3.3	R Recker	
10km	MN 03025RR	A	Twin Cities	Twin Cities Marathon	0.56	79.6	R Recker	
10km	MN 03026RR	A	Minneapolis	Bolder	0	0	R Recker	
5km	MN 03026RR	A	Minneapolis	Bolder	0	0	R Recker	
42.195km	MN 03027RR	A	Twin Cities	Twin Cities Marathon	-0.12	29.2	R Recker	
21.0975km	MN 03028RR	A	Bloomington	Run for the Car	0.1	1.1	D Wright	
5km	MN 03029RR	A	Cross Lake	Cross Lake	0	6.4	R Recker	
8km	MN 03032RR	A	Moorhead	Red River	0	1.6	M Erbes	
5km	MN 03033RR	A	Edina	Braemar	0	0	R Recker	
5km	NC 03025PH	A	Troy	Troyfest 5k	1.22	0.8	D Forbis	
4tmi	NC 03026PH	A	Ashville	Sunset Stampede	0	12	B Baldwin	
10tmi	NC 03027PH	A	Ashville	Sunset Stampede	0	5	B Baldwin	
5km	NC 03028PH	A	Winston-Salem	Flag Day 5k	0.98	4	K Stone	
5km	NC 03030PH	A	Charlotte	Run for Education	0	0.5	D White	
1tmi	NC 03031PH	A	High Point	Warren Rivers 1 Mile	2.84	8.5	D Forbis	
5tmi	NE 03006KU	A	Mahoney St. Park	Cornhusker Games 5 Mile	0	0.95	G Meyer	
1tmi	NE 03007KU	A	Mahoney St. Park	Cornhusker Games 1 Mile	0	4.7	G Meyer	
5tmi	NJ 03002DB	A	Belmar	Belmar Five ‘03	0	4.6	D Brannen	
5km	NJ 03013LMB	A	Clifton	Cambridge Crossing 5k	0	9.8	P Hess	
5km	NJ 03014LMB	A	Hamilton	RWJ University Hospital 5k	0.2	1.8	L Baldasari	NJ 92024DB
10km	NJ 03015LMB	A	Asbury Park	Asbury Park 10k 0	0.35	P	Hess	
5km	NJ 03016LMB	A	Livingston	West Essex 5k	0.43	4.77	P Hess	
5km	NJ 03017LMB	A	Bridgewater	Run for Runways 5k	0	0.15	L D’Ottavio	NJ 02029GAN
3.5tmi	NJ 03018LMB	A	Morristown	Morristown Chase 3.5	0	0	P Hess	
8km	NM 03001DS	A	Las Cruces	River Run 8k	0	0	D Shepan	
Cal	NM 03008DS	A	Rio Rancho	Unser Blvd 500.5 meter Calibration	0	100	R Nawrocki	
5km	NM 03008GAN	A	Santa Fe	Rancho Viejo 5k (new)	0	2	G Newman	NM 03004GAN
1km	NM 03009DS	A	Rio Rancho	Unser Blvd. 1k	0	0	R Nawrocki	
5km	NM 03009GAN	A	Albuquerque	Race for the Cure 5k	0	8	G Newman	
2km	NM 03010	DS	A	Rio Rancho Unser Blvd. 2k	0	0	R Nawrocki	
10km	NY 03024AM	A	New York	NYRRC Mini Marathon	-0.3	4	P Hess	
5km	NY 03025AM	A	Rochester	Airport 5k	0	0.6	G Tillson	NY 01022AM
5km	NY 03026AM	A	E. Quoque	Hampton Fest 5k	0	6	E Melnik	
10km	NY 03027AM	A	E. Quoque	Hampton Fest 10k	0	3	E Melnik	
5km	NY 03028AM	A	Rochester	Greece Police Athletic League 5k	0	3	B Laskowski	
5km	NY 03029AM	A	Rochester	Susan B. Anthony Legacy 5k	-0.6	87	G Tillson	
5km	NY 03030AM	A	Cheektowaga	FAMA 5k	0	4	J Felix	
10km	NY 03031AM	A	Buffalo	Empire State Games 10k	0	0	J John	
5km	NY 03032AM	A	Eden	Eden 5k	-0.6	5.9	J John	
Cal	NY 03033AM	A	East Quogue	Hallock Rd. 500 meter	0	100	B Beattie	
5km	NY 03034AM	A	Jeffersonville	Jeff Jam 5k	-0.12	3	B Cavanagh	
4tmi	NY 03035AM	A	New York	NYRRC 72nd St. 4 Mile	0	0.4	P Hess	
21.0975km	NY 03036AM	A	New York	Brooklyn Half Marathon	-0.03	0.4	P Hess	
21.0975km	NY 03037AM	A	New York	NYRRC Manhattan Half	-0.7	2	P Hess	
42.195km	OH 03005MW	A	Toledo	Glass City Marathon	0.12	0.4	D Standish	OH 01021PR
2mi	OH 03006MW	A	Toledo	Glass City 2 Miler	0	0	D Standish	
42.195km	OH 03007MW	A	Akron	Road Runner Akron Marathon	0.69	16.2	M Wickiser	OH 03001MW
21.0975km	OH 03008MW	A	Berea	Cleveland Clinic River Run	2.46	88	M Wickiser	OH 01018MW
5km	OH 03018PR	A	Celina	Lake Festival 5k	0	0	F LeBlanc	
5mi	OH 03020PR	A	Canton	Pro Football HOF Festival Kickoff	0	2.8	J Wilhelm	OH 88041PR
2mi	OH 03021PR	A	Canton	Pro Football HOF Festival Kickoff	0	6.4	J Wilhelm	
5km	OH 03024PR	A	Sylvania	Fall Bash/Frantic Finish 5km	0	0	D Standish	OH 97025PR

DISTANCE	COURSE ID	ST	LOCATION	COURSE NAME/RACE	m/km DROP	pct SEP	MEASURER	REPLACES
1mi	OH 03025PR	A	Sylvania	Race For the Cure 1 Mile Walk	-0.04	34	D Standish	OH 02020PR
Cal	OH 03026PR	A	Blue Ash	Malsbary Rd - Blue Ash 999.91 ft.		0	100	K Weissmann
10km	OH 03027PR	A	Blue Ash	Fleet Feet Sports Lady Distance	0.1	6.6	K Weissmann	
5km	OH 03028PR	A	Blue Ash	Fleet Feet Sports Lady Distance	0.2	13.2	K Weissmann	
5km	OH 03030PR	A	Oxford	State to State 5k	0	1	J Glaze	
21.0975km	OH 03031PR	A	Oxford	State to State 1/2 Marathon	0	0.2	J Glaze	
21.0975km	OK 03014BB	A	Wagoner	Wagoner - Half Marathon	0	1.2	G Lafarlette	
5km	OK 03015BB	A	Mannford	Mannford Centennial 5km Run	1.6	2.6	G Lafarlette	
5km	OK 03016BB	A	Tulsa	Corporate Challenge 5km 0	8	G	Lafarlette	
5km	OR 03002LB	A	Portland	Race for the Cure	0	8	L Barrett	OR 99013LB
8km	OR 03004LB	A	Eugene	USATF Masters 8k Road Run	-0.25	0.8	J Spaulding	
42.195km	OR 30003LB	A	Portland	Portland Marathon	0.07	0.2	L Barrett	OR 93005LB
42.195km	PA 03017WB	A	Galeton	God's Country Marathon	-2.89	95.4	M Courtney	PA 98014WB
10mi	PA 03018WB	A	Kutztown	Fool's Run 10 Miler - 2004	0	0.39	B Belleville	PA 96034WB
5km	PA 03019WB	A	Kutztown	Fool's Run 5k - 2004	0	1.27	B Belleville	PA 95003WB
5km	PA 03020WB	A	Harleysville	North Penn United Way 5k	0.3	2.39	B Belleville	PA 00009WB
5km	PA 03021WB	A	Great Bend	Tim Fancher Memorial 5k	0	0	R Nichols	
5km	PA 03001LMB		Washington Crossing	Wrightstown Road 5k	-0.92	0.64	LBaldasari	
5km	PA 03022WB		Lake Latonka	Lake Latonka 5km II	0	0	M Courtney	
42.195km	PA 03023WB		Philadelphia	Citizens Bank Philadelphia M'thon	0	0.3	B Belleville	PA 01031WB
42.195km	PUR03019PR	A	Carolina	Maraton Master Mundiales	-0.043	P	Zapata	
21.0975	PUR03023PR	A	Villaba	Maraton de Puerto Rico en Villaba		5.98	32.2	P Zapata
10km	RI 03003RN	A	Providence	Richmond Square 10k	0.49	2.4	R Nelson	
5km	SC 03016BS	A	Seneca	5k Challenge	0	0.84	WTerry	
5km	SC 03017BS		Columbia	A Divine Dash	0	1.9	S Blake	
5km	SC 03018BS		Columbia	Boys and Girls Club Run		0.8	1 E	Prytherch
Cal	SD 03017PR	A	Spearfish	First Ave. (Ramvac) 1537.6 0 ft.	0	100	J Meyer	
5km	TN 03014RH	A	Smithville	Fiddler 5k	-4.08	6.7	J Zeigler	
Cal	TN 03015RH	A	Smithville	Smithville W. Broad 1000 ft. Cal.	0	100	J Zeigler	
5mi	TN 03016RH	A	Nashville	Music Row 5 Miler	0	0.68	T DePaulis	
5km	TN 03017RH	A	Brentwood	Firecracker 5k	-0.49	6.1	J Zeigler	TN 02016RH
8km	TN 03018RH	A	Walland	Summer Solstice 8k	0	0	A Morgan	
5km	TN 03019RH	A	Gallatin	United Way 5k	0	0	J Zeigler	
10km	TN 03001DJR		Knoxville	Carter Mill 10k		0	0 A	Morgan
10km	TN 03002DJR		Nashville	Riverbank 10k		0	0 J	Zeigler
5km	TN 03003DJR		Vonore	Fort Loudon 5k Footrace		0	0 A	Morgan
5km	TX 02029ETM	D	Sugar Land	Freedom Run 2002	0	4.3	E McBrayer	TX 96053ETM
5km	TX 03014JF	A	Austin	Schlotsky's Bun Run	-0.8	3.2	J Ferguson	TX 03008JF
5km	TX 03031ETM	A	Houston	Running With the Bulls	0	6	E McBrayer	TX 02017ETM
5km	TX 03059ETM	A	Sugar Land	Fired Up 5k	-0.2	1.9	E McBrayer	
5km	TX 03060ETM	A	Chandler	Chandler TX 5k	0	0.2	t Cherry	TX 02063ETM
5km	TX 03061ETM	A	Houston	Lunar Rendezvous Race	0	4	WVanderbrink	TX 02023ETM
5km	TX 03062ETM	A	Sugar Land	HDSA Run/Walk	0	0	E McBrayer	
5km	TX 03063ETM	A	Houston	Runway Race for Life 0	0.7	R	Barnhill	
5mi	TX 03064ETM	A	The Woodlands	MS 5 Mile Run/Walk 0.02	1.1	R	Barnhill	
10mi	TX 03065ETM	A	The Woodlands	MS 10 Mile Run/Walk 0.01	0.6	R	Barnhill	
5km	TX 03066ETM	A	Katy	YMCA Turkey Dash	-0.2	1.6	E McBrayer	
5km	TX 03067ETM	A	Argyle	Bodies for Life	0	1.9	C Clines	
5km	TX 03068ETM	A	Fort Worth	River Run 5k	-0.4	12.3	M Polansky	TX 01061ETM
10mi	TX 03069ETM	A	Houston	Bay Area Running Club 10 Mile	0	0.3	WVanderbrink	
5km	VA 02030RT	A	Warrenton	Alive And Kicking 5k	0	0	R Thurston	
42.195km	VA 02046RT	A	Richmond	Richmond Marathon	0.7	1.3	R Thurston	

8km	VA	02047RT	A	Richmond	Richmond 8k	3.5	6	R	Thurston	
DISTANCE	**COURSE ID**		**ST**	**LOCATION**	**COURSE NAME/RACE**	**m/km DROP**	**pct SEP**	**MEASURER**		**REPLACES**
5km	VA	03018RT	A	Henrico County	5k Run/Walk for Autism	-0.2	2	M	George	
10km	VA	03019RT	A	Herndon	Herndon 10k	0.3	1.9	R	Thurston	
5km	VA	03020RT	A	Herndon	Herndon 5k	0.6	6.8	R	Thurston	
10km	VA	03021RT	A	Virginia Beach	Naval Amphibious Base 10k	0	1	R	Robinson	
Cal	VA	03023RT	A	Richmond	Sheppard St. 383.529m calibration	0	100	M	Powell	
5km	VA	03003JS		Vienna	Navy Federal 5k Run/Walk	0	1	J	Sissala	
5km	VA	03022RT		Virginia Beach	Naval Amphibious Base 5k	0	2	M	Robinson	
5km	VA	03024RT		Richmond	Reveille 5k	0	0.9	M	Powell	
21.0975km	VA	03029RT		Virginia Beach	Rock 'N' Roll Half Marathon	0	7.6	M	Robinson	
21.0975km	VT	03001RF		Waterbury	Leafpeepers Half Marathon	0	0.4	R	Murphy	VT 99006WN
5km	VT	03002RF		Waterbury	Leafpeepers Half Marathon 5k	0	1.8	R	Murphy	VT 99005WN
Cal	WI	03054JW	A	Pewaukee	Hickory St. 1000 ft. Calibration	0	100	K	Gilgenbach	
5km	WI	03055JW	A	Madison	Pewaukee Run to the Beach	0	4	K	Gilgenbach	
5km	WI	03100RR	A	Superior	Superior	0	0	R	Recker	
5km	WI	03101RR	A	Hudson	St. Croix	8	29	R	Recker	
10km	WI	03102RR	A	Hudson	St. Croix	12	40	R	Recker	
10km	WI	03063JW		Cudahy	South Shore YMCA 10k	0	0.7	J	Wight	
5km	WI	03064JW		Cudahy	South Shore YMCA 5k	0	1.4	J	Wight	
5km	WV	03025RT	A	Wheeling	Debbie Green 5k -2003	0.06	0.7	J	Corra	
5km	WV	03027RT		Wheeling	Debbie Green 5k 2003 (alt)	0	1.7	J	Corra	
21.0975km	WV	03028RT		Parkersburg	Parkersburg News & Sentinel	-0.27	1.73	J	Corra	

Foreign

Cal	AZE	03022PR	A	Baku	Boulevard 300 metres	0	100	C	Farrington	
5km	AZE	03032PR	A	Baku	Boulevard Friendship series	0	0	C	Farrington	
42.195km	AZE	03032PR	A	Baku	Boulevard Friendship series	0	4.3	C	Farrington	

Renewed

5km	CA	91080RS	A03	Santa Barbara	McConnell's Ice Cream Endurance		0	0	P	Gilbert
10km	MA	89023WN	A03	North Andover	North Andover July 4th Road Race		0	1.12	R	Nelson
42.195km	MA	92023WN	A03	Falmouth	Cape Cod Marathon	1992	0	0.2	R	Pokraka
5km	NH	93018WN	A03	Londonderry	Old Home Days	1993	0	0.4	W	Nicoll
10km	NY	93002AS	A03	New York	Advil Mini Marathon	1993	-0.4	4	A	Steinfeld
5km	NY	93033AM	A03	Vestal	Dick's Value of Life 5k	1993	0	0	G	Groome
5km	OK	93007BB	A03	Muskogee	Azalea Festival 5000	1993	0.2	3.8	G	Lafarlette
5km	OK	93016BB	A03	Tulsa	Tulsa Miracle Run	1993	0	8.8	G	Lafarlette
5km	OK	93045BB	A03	Tulsa	Route 66 Run	1993	1.8	4	G	Lafarlette
5km	OK	93045BB	A03	Wewoka	Sorghum Festival 5 km	1993	-1.6	14	G	Lafarlette
0.4km	WI	91006WG	A03	Kenosha	U of Wisconsin Parkside Track	1991	0	0	D	Mowles
21.0975km	MN	91003RR	A03	Duluth	Grandma's	1991	0.9	90	R	Recker

Copies of these certificates available from:

Karen Wickiser - Course Registrar
2939 Vincent Road
Silver Lake, OH 44224-2916
Phone 330-929-1605 FAX 509-351-5383
mikewickiser@neo.rr.com
(Send course name & ID number and $3.00)

Each certificate includes a course map.
A complete listing of USATF Certified courses is available at:

www.RRTC.net

42.195km
MN
91004RR
A03
Duluth
Grandma's
1991
0.73
82.9

R Recker

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.rr.com

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: CA92057 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 forma. 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, CA94123. 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

USAtopographic 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 USAfrom the above – it's a seamless street map of the whole USAat 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.

ROAD RUNNING TECHNICAL COUNCIL

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