

Measurement News



January 2001

Issue #105



Don Shepan is RRTC's New Mexico certifier. He lives in Las Cruces, which lies 200 miles south of Albuquerque. He journeyed to Albuquerque to lay out a measurement-by-pacing course which was used by USATF conventioners in our annual contest there. The course and contest were free of problems thanks to Don's accurate work. Here Don indicates the start and finish of the loop to be measured.

MEASUREMENT NEWS

Issue # 105 - January 2001

CHAIRMANS CLATTER - JANUARY 2001

The USATF Convention in Albuquerque, NM is now history. The meeting minutes appear in this issue of Measurement News. Quite a bit was accomplished at this year's convention and I am pleased to report the results.

A new policy regarding course renewals has been adopted. New courses expire after ten years and no courses will be renewed beyond December 31, 2010. This will allow for renewal of older courses and in time, update the measurement on all certified coursees. The new certificate to be used is reproduced in this issue of MN.

Elevation information will no longer be included on the course list. It was added on a trial basis earlier this year but the value added was outweighed by the extra space required as well as the effort required to post the data.

The reviewing fee maximum has been increased to thirty dollars from twenty-five and the registration filing fee increases from two to three dollars. These are the first changes in 16 years. The one dollar increase in the registration fee goes to support the Vice Chairs' operations, formerly funded by USATF.

Note: The reviewing fee is paid by the measurer. The registration filing fee is paid by the certifier.

With almost a year gone by since Pete Riegel retired as RRTC Chairman, it was my pleasure to present him with a few mementos of gratitude for his and Joan's long work. Pete received an all-weather jacket with USATF logo and 'Chairman Emeritus' embroidery, as well as a plaque and mantle clock. Joan Riegel, a thimble enthusiast, was unable to attend the convention due to illness but Pete graciously accepted a thimble and box for Joan's collection.

The convention wouldn't be the same without a measurement contest and Don Shepan, the New Mexico certifier, did a real bang up job with a walking course adjacent to the convention center. The only problem with Don's contest course is I think he cut the tangents too tight and got the distance way short. See the results elsewhere in this issue and you will see what I mean. The RRCA convention will be in Albuquerque next year. Look for Don to be there, promoting RRTC and course measurement.

Wishing everyone a safe and prosperous 2001

Mike Wickiser

REGISTRAR'S REPORT

Current & Complete Course List

Total number of courses	=	19,706	
Current year courses	=	980	
Breakdown by most common distances			
5 km	=	514	52% of total
10 km	=	131	13% of total
Marathon	=	56	5% of total
Calibration	=	49	5% of total
Half Marathon	=	38	4% of total
Renewed Courses	=	28	

Karen Wickiser, RRTC Course Registrar - November 29, 2000

Ed. Note: As of the listing in this issue of *Measurement News*, the 2000 course count is 1042.

NEW ELECTRONIC CERTIFICATE TEMPLATES

For certifiers who fill out certificates on the computer (hopefully, most of our certifiers), Bob Baumel has prepared an electronic template for the newly revised certificate using Adobe Acrobat technology. This cross-platform version is no longer tied to any word processor, replacing all of the templates Bob was maintaining for individual word processors on PC and Mac.

The new template requires version 4.0 or greater of Acrobat or Acrobat Reader. The current version of Acrobat Reader can be downloaded for free from www.adobe.com. The new template enables you to fill in certificates on the computer and print them. However, assuming you are using the free Acrobat Reader software, you cannot save changes to the template or save your filled-in certificates in electronic form. The template is available in both Final Signatory and non-Final Signatory versions.

Also, Bob can supply either a "vanilla" version usable by any certifier, or a customized version with the certifier's personal info (name, address, phone, etc.) already filled in at the bottom (You'll probably want a customized version so you don't have to re-type that info every time). Contact Bob at bobbau@horizon.hit.net or at webmaster@rrtc.net.

INTERNATIONAL MEASUREMENTS

Almost every time I travel to Detroit to do any measuring, something happens a little/lot out of the ordinary. In mid-September, while on my final measurement of the Detroit Free Press Marathon, an 'international incident' occurred. I talk to contacts ahead of time to set up times to go across a bridge from the US to Canada and to pass through the tunnel from Canada back to the US. I assume that my contacts have made sure folks on both ends of each crossing know what's going on. I've gone back and forth the past two years w/out incident (pretty much...) and through the tunnel in the past w/out much fanfare. The international crossings add a little spice to the mundane job of measuring.

When I emerged from the tunnel back into Detroit in mid-September I was pointed towards a particular toll booth. I pulled up and the gal there started saying things like, "You're not supposed to ride a bike through the tunnel. Can I see some ID? You didn't clear this w/customs." I didn't think I was in trouble because my tunnel contact was in a vehicle behind me but felt uneasy about the lack of communications. My contact went over to the US customs guy standing, watching, and had a few words with him. The customs guy came over and, w/out looking me in the eye, asked what citizenship I was. You do not give silly answers to these people so I said US and he waved me on. I thanked my contact and he was sorry about what happened.

It's always a bit of a chore co-ordinating the crossings and then dealing w/course markings in those areas. The Detroit Marathon is always the biggest puzzle I put together in measuring. I generally enjoy the work though because I have fond memories of running the race too many years ago.

Best, Scott Hubbard

EXCELLENT MEASUREMENT ADVICE

Check out Mike Sandford's measurement site at:

<http://website.lineone.net/~athletics/coursemeasurement/index.htm>

It is a gold mine. Last year Mike conducted a seminar in Abingdon, and he has published an 80 page PDF file of his educational materials. Once you get to the site, right-click on "abingdon-seminar99.pdf" and you can download the file to read at your leisure.

It is full of good advice, and you will be glad you read it. It is a very nice piece of work.

There is other material on the site that will be found to be of equal interest.

**Minutes — Road Running Technical Council
USATF 2000 National Convention — Albuquerque, NM**

1st Meeting — Friday, December 1, 2000

Attending: Bob Baumel, Norm Brand, John Erickson, Jim Gerweck, Norm Green, Frank Greenberg, Paul Hronjak, Bill Jackson, David Katz, Justin Kuo, Thomas LaBlonde, Ryan Lamppa, Bob Langenbach, AC Linnerud, Mary Anne McBrayer, Tom McBrayer, Ed Melnik, Pete Riegel, Chris Rush, Don Shepan, Mike Wickiser

The meeting was called to order by Chairman Mike Wickiser at 16:03. All present introduced themselves. Observing that this had been a year of major transition, Mike thanked all who helped him assume leadership of RRTC from previous Chairman, Pete Riegel.

Officers' Reports

Chairman, Mike Wickiser: Mike discussed personnel changes of the past year: While he ascended to the Chairmanship, his wife Karen became Course Registrar, and Paul Hronjak was appointed Vice Chairman East. Mike noted that, as an experiment, he began inserting elevations (start, finish, high, low) into the course list. However, as these don't seem to have provided any added benefit to justify the increased work, he is discontinuing the experiment. Also during this year, Mike was privileged to represent RRTC as part of the team measuring the 2000 Olympic Marathon course in Sydney, and had a great time doing so.

Course Registrar, Karen Wickiser: Karen was unable to attend the Convention but had submitted a written report which will appear in January *Measurement News*. According to this report (dated Nov 29, 2000), 980 courses had been certified so far in 2000.

Validations Chairman, Doug Loeffler: Doug was unable to attend the Convention but had submitted a written report which will appear in January *Measurement News*. It was noted that of 19 courses validated during the past year, only one had failed validation.

Webmaster, Bob Baumel: During this past year, our website was made easier to access, as we now have our own domain name (RRTC.NET), and the site can be accessed simply as www.rrtc.net. This was implemented in two steps: First, in April, we registered the "rrtc.net" name, although the web pages themselves continued to reside on Bob's personal ISP. The "www.rrtc.net" URL would, at that time, simply *redirect* to the pages' actual location on Bob's ISP, where you'd still see their original *long* URLs in your browser. The second step, in late November, was to move the web pages to a new server which is actually hosting our domain name. Now, all of our pages truly have URLs of the form <http://www.rrtc.net/xxx> (where "xxx" varies for each individual page). This move also gives us more server space (which we will need for posting the Finish Line book) and can provide various other capabilities. Any owners of websites who are still linking to the RRTC site using an old (hit.net) URL based on Bob's ISP need to update those links to use our new (rrtc.net) domain name.

Bob has been working with Adobe Acrobat software to design a PDF version of the Certificate template [completed at the time these Minutes are submitted] which will enable certifiers to fill in certificates on their computers but will not be tied to any word processor (Thus, it will eliminate all of the different templates for various word processors on PC or Mac). This PDF template will require at least version 4.0 of Acrobat or Acrobat Reader; thus, some certifiers may need to

upgrade, but the Acrobat Reader software is *free*. As future applications of Acrobat software, Bob may try producing a “single download” PDF version of the Course Measurement manual (as well as the Finish Line manual when it goes online), which was one of the features requested when we originally put the Measurement manual online in mid-1999. The possible drawback here is file size, which may be many megabytes (This depends mainly on how much the graphics can be compressed when rendering the document in PDF format).

Bob has scanned the text of the Finish Line book and run it through OCR software, allowing our proofreading team to begin the process of updating and assembling a new version of that book (See more info on the Finish Line book project below).

Vice-Chairman West, Tom McBrayer: We’ve had several personnel changes in the West: John Ferguson became the certifier in Louisiana, while Larry Smithee replaced Finn Hansen as Utah certifier. In Nevada, Bill Callanan was appointed Final Signatory. Tom and Mary Anne McBrayer have been putting together an updated measurement video, and expect to have it finished early in 2001.

Tom noted that the number of certifications in the West appears to have decreased this year, suggesting a disturbing trend. This touched off a long discussion about the possibility that runners are becoming less interested in certified courses. All agreed on the importance of improving communication to increase awareness of the value of course certification.

Vice-Chairman East, Paul Hronjak: There hasn’t been any turnover of certifiers this year in the East. Also, unlike the West, the number of certifications in the East may actually have increased slightly this year!

Former Chairman, Pete Riegel: Aside from his RRTC duties, Pete is the IAAF/AIMS Course Measurement Administrator for Americas. At an IAAF/AIMS conference that Pete attended this year, a paper was circulated containing a proposed standard for road running “World Best Performances.” This standard would require marks to be set on courses that drop no more 1 m/km and have start-to-finish separation no greater than 30% of the race distance (which are the same numbers that appear in the rule for acceptability of USATF road records). The proposed IAAF standard would also allow for the possibility of post-race validation measurements. The suggested “World Best Performances” would only be considered for races of 10 km or greater.

IAAF is currently revising their course measurement manual. However, this is only a revision of their hard-copy book. Pete hopes that the existing US and Canadian online versions will be acceptable to IAAF, eliminating any need for them to prepare their own online version.

Pete will be the official measurer for the World Championship marathon and race walk courses in Edmonton, Canada next year. This will be accompanied by a measurement seminar, and may also present an opportunity for a group ride. Pete noted that the seminar he conducted in Vancouver in 1999 provided the impetus for Canadians to set up their current certification program.

Finish Line Project, David Katz and Jim Gerweck: Last year, David Katz was charged with preparing a short pamphlet to explain basic requirements about finish lines for every race seeking a USATF sanction. Considering that our existing Finish Line book is, in many ways, out-of-date, we had intended this pamphlet to replace the current book. However, as the project proceeded, our Finish Line committee determined that the existing book does contain much valuable material and shouldn’t be discarded. Thus, they decided to prepare a short pamphlet **and** update the full

Finish Line manual, which will be placed online in the same manner that our Course Measurement manual is now online. As family commitments have limited the time David can spend on this project, Jim Gerweck has taken over many of the duties in heading the project.

At this meeting, Jim distributed a preliminary draft of the pamphlet. Jim also explained that he has assembled a group of people for updating the full Finish Line manual. As noted above, Bob Baumel has already scanned the book's text. Jim's team will proofread this text, and then work to bring it up-to-date, including current information regarding equipment (for example, transponder timing) and recent Rules changes.

When the pamphlet and book are completed, the USATF office will print thousands of copies of the pamphlet and send them to all Associations for distribution to all races seeking sanctions. The pamphlet will be posted on both the RRTC and central USATF websites. The full manual will be posted on the RRTC website.

Other Business

Course Renewals: This topic had received much discussion in MNForum, where many expressed the opinion that certifications shouldn't be renewable but should simply expire after 10 years, requiring new measurement and certification for the course to remain active. That opinion was upheld at this meeting, as most people felt that enough uncertainty creeps into every course after 10 years to make renewal inappropriate. Therefore, it was decided to phase out renewals. This process will actually take 10 years, as we need to honor the language on existing certificates which states that the certification is renewable after 10-year expiration. However, starting in 2001, all new certifications will be issued using certificates which feature a prominent expiration date and do not allow any possibility of renewal.

Larger vs. Average Constant: Pete Riegel and Bob Baumel had debated this subject vigorously in MNForum. There was no heated discussion at this meeting, however, as Pete and Bob had arrived at a compromise prior to the meeting. Thus, it was simply pointed out that we've revised the Bicycle Calibration Data Sheet in the packet of application forms downloadable from our website, so as to make it clear that use of Average Constant method is acceptable, although the Larger Constant is still strongly recommended. This matches language elsewhere in the Course Measurement manual. Measurers may wish to download the new forms if they haven't done so already.

Accolades for Pete Riegel: To honor outgoing Chairman, Pete Riegel, many gifts were bestowed on him. These included a reflective jacket bearing the title "Chairman Emeritus;" a glass mounted mantle clock inscribed with the legend: "Presented to PETE RIEGEL In Recognition of His Leadership and Accomplishments as Chairman of the Road Running Technical Council 1986-2000; and a plaque affixed with a huge PK nail and the words: "PETE RIEGEL - For serving as a reference point and baseline for measurement in the U.S. and the world." In addition, Pete was given a thimble & box to take home as a gift for his wife Joan, who wasn't able to attend this Convention.

In accepting all these gifts, Pete explained that he had started measuring simply so he would have accurate courses to run himself. He thanked everybody for the privilege of working with them.

2nd Meeting — Saturday, December 2, 2000

Attending: Bob Baumel, Norm Brand, Jim Gerweck, Finn Hansen, Paul Hronjak, Justin Kuo, Bob Langenbach, Carole Langenbach, AC Linnerud, Ed Melnik, Al Morris, Pete Riegel, Mary Rosado, Don Shepan, Larry Smithee, Mike Wickiser

The meeting was called to order at 15:15 by former Chairman, Pete Riegel, as Mike had miscalculated the meeting starting time and was late to arrive. The floor was then turned over to New Mexico certifier Don Shepan, to present awards for the pacing contest, which is always the highlight of our second meeting.

Measurement Contest: Don had laid out an interesting and clearly documented contest course in the Civic Plaza adjacent to the Convention Center. Perhaps the only problem was that people who waited until Saturday to pace the course found parts of it inaccessible due to the civic festival taking place on that day. Thirteen people entered the contest. Prizes for the top three were all “Kachina Dolls,” which are among the most recognizable symbols of New Mexico, and whose meanings were explained amply by Don. Pete Riegel won first place and received a “Mud head” Kachina. Second place winner Bob Langenbach received a “Bear” Kachina. Karen Gerweck was the third-place winner and received a “Sun face” Kachina.

Submission Date Clarification: Upon arriving at the meeting, Mike Wickiser issued a statement to clarify the meaning of the submission date on our certificates. This should be the date when the measurer sends the paperwork on to the next level of review. In cases where the measurer is a certifier, this is the date when the certifier sends it on to the Vice-Chairman (not the date of measurement). Thus, even for courses measured by Certifiers/Final Signatories, the paperwork needs to be in the mail before the race, just as for courses measured by anybody else.

Other Discussion: Several more topics were discussed. It was agreed that maps may be FAXed as part of a certification application, and may be usable as is if sufficiently clear, or else, sent in order to get everything submitted by race day but followed up later with a better map. Jim Gerweck noted that the number of MNForum subscribers had increased by about 25, roughly half of whom are outside the US. It was decided that Pete Riegel and Bob Baumel would work out the wording for our new certificates (which will no longer allow renewals). More discussion took place regarding the project of revising the Finish Line book. Finn Hansen stated that USATF would act quickly to post the updated 2001 Rules of Competition on their website. The meeting was adjourned at 16:19.

Minutes prepared by Bob Baumel, RRTC Secretary

THANKS FROM PETE & JOAN

At the first RRTC meeting at the recent USATF convention, I was surprised and pleased to receive some awards in appreciation of my work as Chairman. At the time I stammered my gratitude, and was moved by the expressions of thanks.

Now that the year is out, and the transition is complete, I'm very happy to see that things are going well.

I'd like to express again my gratitude and affection to all those hard-working RRTC people with whom I have been privileged to work over the years. I could name names, but I'm afraid I might leave out someone. In general, the more I have worked with you, the greater my respect for you and the work you have done. It's been very satisfying for me to be able to work with you, and I thank you from the bottom of my heart for the opportunity.



A note from Joan . . .

Dear RRTC Members,

Thank you for the surprise retirement gift. The beautiful bone china tinsle & pin box really touched my heart.

It has been my pleasure over the years to enter our certification data and to know each of you by your individual maps & unique handwriting.

Now that the course list is in the good hands of Karen Wickiser, I'll have more time for fun, seeking out unique antique sewing tools.

Thank you for 14 years of friendship & support.

*Fondly,
Joan Kiesel*

12/5/00



Not present but not forgotten: L to R: Sally Nicoll (former Validations Chair), Jennifer Hesketh Aviles (who, with Ken Young, operated the National Running Data Center), Wayne Nicoll (former Eastern Vice Chair).



Pete Riegel (L) being presented with an award of appreciation by RRTC Chairman Mike Wickiser (R).



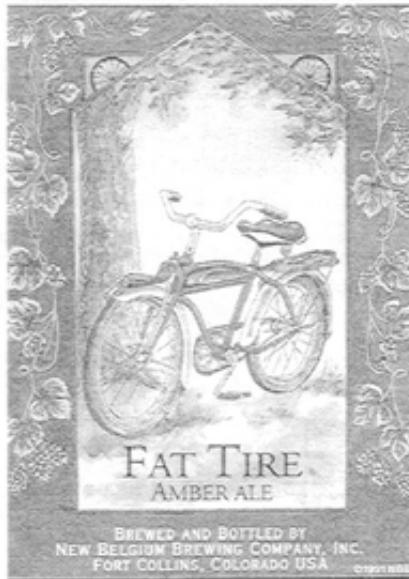
Jim Gerweck emulating the posture of New Mexico's long time senator Dennis Chavez.



Prizes for winners of the Measurement-by-Pacing contest.



Venue of the measurement contest. Contestants paced their way around the square, being careful to avoid the toes of El Senador.



After the vigorous exchanges of opinions at the meetings, exhausted participants repaired to a place of refreshment - what other beverage could they possibly consume?

PHOTOS FROM THE USATF CONVENTION

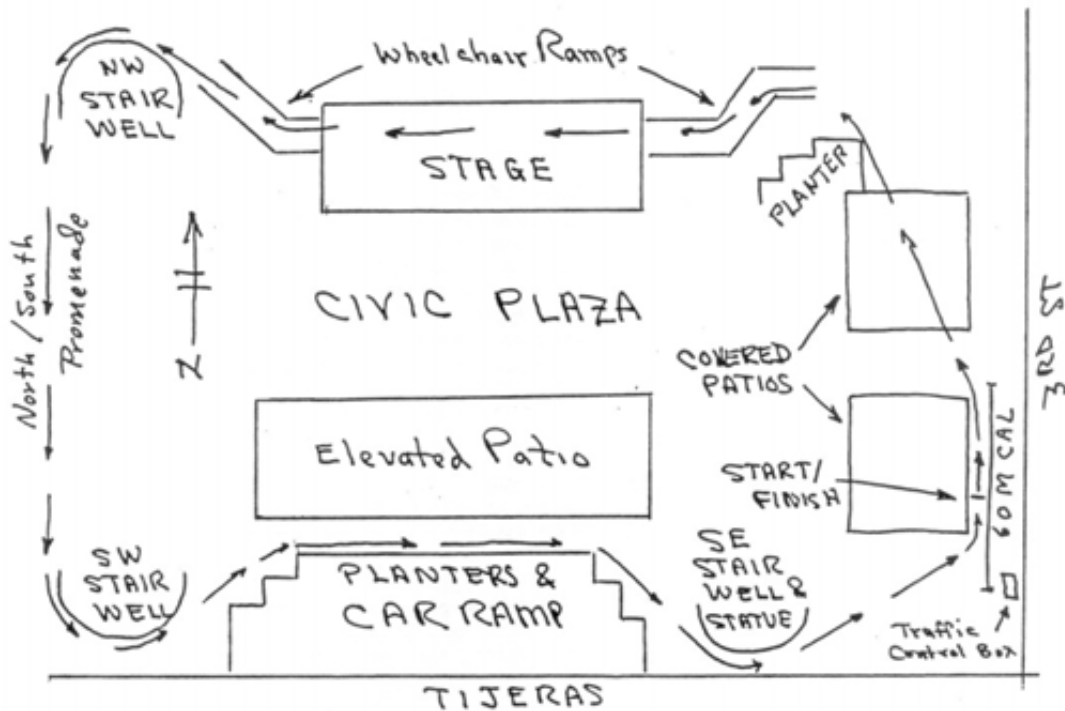
RRTC MEASUREMENT CONTEST

USA TRACK & FIELD'S 22ND ANNUAL MEETING * 29 NOV - 3 DEC 2000
 ALBUQUERQUE CONVENTION CENTER * ALBUQUERQUE, NM

WHERE: Civic Plaza. The plaza is due west of the Convention Center and due north of the Hyatt Regency. Third street is on the east and Tijeras is on the south. Civic Plaza is built on top of a large underground parking garage. Semi-circular stairwells at the four corners allow access to parking levels. An outdoor sound stage occupies the north end and a large elevated patio area complete with benches, trees, grass, and lights occupies the south end of the plaza. A bronze statue of former U.S. Senator Dennis Chavez is seated on a half wall around the semi-circular stairwell on the southeast corner of the plaza.

COURSE: Activity starts at the northwest corner of 3rd and Tijeras. A white traffic light control box is readily spotted at that location. The south end of the 60 meter calibration course is 8 feet west of the white box. The start/finish line for the course is 40 feet to the north.

The course will take you counter clockwise around the plaza. You start northbound on the east edge of a covered patio, pass under the next covered patio to the north, go up the wheelchair ramp onto the stage, cross the stage, go down the west wheelchair ramp, go around the NW semi-circular stairwell, follow the north to south promenade path, go around the SW stairwell, follow the up ramp past the large elevated patio, follow the down ramp to the SE stairwell, measure around the toes of El Senador and his constituent at the SE stairwell, and return to the point of origin.



Complete the form below, tear at the line, and place it in the contest entry box not later than 2 p.m., Saturday. Measure as often as you like but limit your participation to only one entry. Prize(s) at RRTC meeting, 3 p.m. Saturday. You must be present to win.

Name: _____

Course Length in Meters: _____

PUZZLE OF THE MONTH

As Mike Wickiser was willing to pick on poor Don Shepan, in spite of the near-perfect measurement contest, so will your Editor.

There is a mistake on this page. Find it.

**2000 Measurement-by-Pacing Contest
USATF Convention - Albuquerque, New Mexico**

Official Distance: 481.12 Meters

		Estimated Meters	Error Meters	Error Percent	Place	Prize
Pete	Riegel	481.640	-0.524	-0.11	1	Kachina doll
Bob	Langenbach	479.740	1.376	0.29	2	Kachina doll
Karen	Gerweck	478.200	2.916	0.61	3	Kachina doll
Bob	Baumel	477.940	3.176	0.66	4	
Tom	McBrayer	485.064	-3.948	-0.82	5	
Justin	Kuo	486.332	-5.216	-1.08	6	
Paul	Hronjak	486.498	-5.382	-1.12	7	
Steve	Vaitones	487.000	-5.884	-1.22	8	
Mary Anne	McBrayer	490.000	-8.884	-1.85	9	
Jim	Gerweck	493.333	-12.217	-2.54	10	
Mike	Wickiser	499.230	-18.114	-3.76	11	
Dave	Gwyn	516.531	-35.415	-7.4	12	
Gilberto	Moreno	301.700	179.416	37.3	13	

Notes:

The course was measured using a calibrated Rolatape measuring wheel by Don Shepan, RRTC's New Mexico certifier, who lives 200 miles to the south of Albuquerque in Las Cruces. Don traveled to Albuquerque and surveyed the course, then prepared flyers which had NO areas of ambiguity, which puts the contest among the best we have had.

Once again, rules were flouted. It was stated that winners must be present at the meeting to win. Because Tom & Mary Anne McBrayer had made their reservations before it was known that our last meeting was on Saturday, not Friday as usual, they were given a "bye" for the attendance requirement. At the actual meeting, Bob and Carol Langenbach were present, but Bob had to leave to supervise aspects of the voting. Carol was permitted to act as his representative in case he won something.

After the prizes were awarded, Jim Gerweck collected Karen's prize. Pete gallantly pointed out to Bob Baumel that he, as 4th place winner, had grounds for a protest. Pete figured that Don Shepan or Mike could then have fun working it out. Bob, however, declined to protest and the results stood.

Dave Gwyn noted on his entry: 1) Assuming cones will prevent jumping the corners of south path; 2) All trashcans will be moved, 3) Tent will be removed. It seems that late in the week the stag which was part of the course, was filled with electronic equipment for the upcoming civic festival on Saturday.

Eye-in-the-Sky (AKA Norm Brand) did not enter the contest, pleading insufficient time to look out of his hotel window to get an accurate fix. When cornered at the meeting, he offered an estimate of 500 meters. Later, when the correct distance had been announced, Norm mentioned that he had initially thought 481 meters would be about right. This is an astounding demonstration of Norm's expertise, worthy of at least an honorable mention, had the contest organizers seen fit to present that award.

PERCENT ERROR RECORDED IN RRTC PACING CONTESTS

	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	Average
Wayne Ambrust								1.15	1.86	1.74	-1.44				0.83
Bob Baumei	0.07		-3.03	-0.91	2.83	-0.72	-1.03	-1.18	-0.52	0.29	2.63	2.26	-0.17	0.66	0.07
Marcia Baumei	0.02				4.37										2.19
Andy Beach					-5.36	-2.42			-4.54						-4.11
Ken Bernard											-4.82				-4.82
Michael Blanchard						1.14									1.14
Boo Boar				27.76	-0.19	-4.33	1.72	2.75							5.54
Hag Bohegan				6.72											6.72
Norm Brand	41.61	8.07	0.80	-0.90	9.56	-24.63	-4.00	-6.84	1.44		3.29				2.84
Dan Brannen		-0.21													-0.21
Margaret Brooke	-6.52														-6.52
Nick Brooke	-6.61														-6.61
Jim Brown			0.36						-0.48						-0.06
Frances Childs					10.46						-27.34				-8.44
Felix Cichocki	2.14	0.76	6.51	0.99			-1.89								1.70
Sal Cortallo								-11.38	-10.11	-1.67					-7.72
David Coyne													-1.83		-1.83
Robert DeCelle				187.61											187.61
John Dunaway			4.58												4.58
Jim Genevick												25.95	2.04	-2.54	8.48
Karen Genevick														0.61	0.61
Minam Gomez		-3.86													-3.86
Sharon Good								3.13		15.90			5.57		8.20
Barb Grass					-1.11	12.17	-0.60								3.49
Bill Grass					-0.83	-3.73	-2.57			-3.13	-0.06	-0.94			-1.88
Dave Gwyn	-3.33		4.91	0.65	1.86	-10.20		0.63	4.55	-6.82	4.69	-91.41			-9.26
Ben Hablutzel	-3.05														-3.05
Finn Hansen	3.31	4.16	-1.02	4.28		-0.07	-1.04	2.05	2.75	1.46					1.77
Bob Hamson								-0.83		1.26					0.21
Walter High						-3.34									-3.34
Basil Honikman			5.67	-1.22	-29.89	-0.17	1.35	2.52	-0.06						-3.11
Linda Honikman								3.28							3.28
Bard Horton				-0.47											-0.47
Paul Hroniak									0.64						-0.24
Jim Jacobs				28.14											28.14
Alan Jones		0.01	1.27												0.64
Clan Jones			0.09												0.09
Bill Keesling					22.29										22.29
Bill Kehoe												1.10			1.10
Tom Knight	1.50														1.50
Carol Kuo					0.72			0.34	0.03	-0.61	3.08				0.71
Justin Kuo			17.14	-1.61	0.07	-2.85	40.21	-1.09	0.16	1.43	6.00	-0.51	1.75	-1.08	4.97
Bob Langenbat	-0.66		3.50		-0.93	0.33	0.42	-0.52	13.55	-3.21	3.91	1.08	3.53	0.29	1.77
Carole Langenbach						1.76		-2.23		1.06		-1.12	-0.18		-0.14
Mel Lemon								157.85							157.85
Tom Mayda				-0.21											-0.21
Mary Anne McBrayer	-2.91	0.14	4.06	-1.89	0.61	2.54	2.40				3.69		-1.58	-1.85	0.54
Tom McBrayer	-3.66	-2.38	-1.48	-0.90	3.07	-0.43	0.52		-1.63	1.34	4.10	-0.69	-0.20	-0.62	-0.24
G Mercator											-0.70				-0.70
Dick Mochne						-6.11	2.13								-1.99
Gilberto Moreno														37.3	37.30
Wayne Nicol	-1.11		-10.34	0.54	-2.55		1.32	-1.26	0.10						-1.90
Ron Pate				-7.62											-7.62
Bob Rauch											36.38				36.38
Rick Recker	-0.79	-2.22	-0.17	-1.96											-1.29
Joan Regel		1.74	-3.35	-1.40	2.28		-1.17				13.65	-4.38			1.05
Pete Regel	-1.00	0.95	0.08	-0.82	-1.25	-0.39	0.13	-0.99	1.16	-1.03	3.50	-0.46	0.60	-0.11	0.05
Bruce Robinson								4.00							4.00
Ron Scandera											-4.52				-4.52
Larry Schloss			2.07												2.07
Don Shepan								-0.82		2.75	67.39	-1.19	-0.86		13.45
Jim Skelly								0.15							0.15
Jim Smith	0.86														0.86
Christine Steele						-1.83									-1.83
Phi Stewart								6.48							6.48
Stephen Tabb	0.62														0.62
Bob Thurston		0.84													0.84
George Tilson								-1.65	2.43						0.39
Peter Torres, Jr.				33.21											33.21
David Troy					18.38										18.38
Steve Valtone										-5.57				-1.22	-3.39
George Varnosky				27.30	-1.49	-4.68	1.31	0.50							4.59
Karen Wickster				-1.53		-5.02				0.19					-2.12
Mike Wickster			2.49	0.22	-0.86	2.36	0.00	0.98		2.39				-3.76	0.48
Ric Wilson												-2.92			-2.92

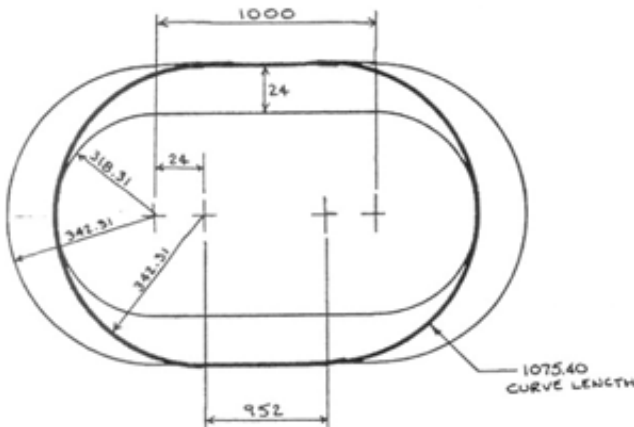
Contestant	18	11	18	26	22	22	18	25	19	19	17	10	11	13
Median	-0.72	0.76	0.58	-0.06	0.42	-1.83	0.47	0.15	0.19	0.29	3.50	-0.49	-1.58	-1.12
Average	1.14	0.73	1.68	11.90	1.56	-2.52	2.31	6.50	0.65	-1.48	9.08	-5.86	0.79	1.46
Std Deviat	10.46	3.28	5.57	38.30	9.91	6.64	9.92	32.43	4.49	8.05	18.08	28.04	2.26	11.36
High	41.61	8.07	17.14	187.61	22.29	12.17	40.21	157.85	13.55	15.90	67.39	25.95	5.57	37.30
Low	-6.61	-3.86	-10.34	-7.62	-29.89	-24.63	-4.00	-11.38	-10.11	-27.34	-4.82	-91.41	-1.83	-7.40

LAST MONTH'S PUZZLE

Tom Riegel submits: A motorcycle speedway has been built. It has a circuit length of 4 km along the inside line, with semicircular ends. The two straightaways are each 1 km in length. The width of the track is 24 meters. The track is flat, with no banking. Competitors must maintain constant speed with no accelerating or braking.

A 200 km race (50 laps) is to be held on the track. How far will the winner travel in completing the race?

THE ANSWER

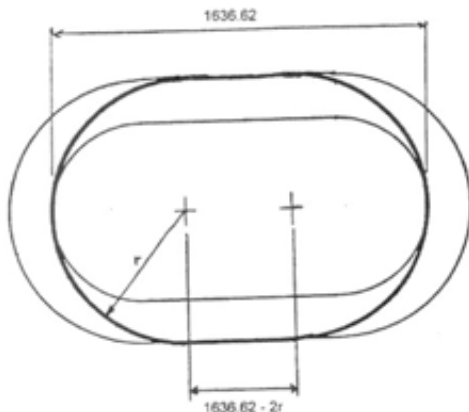


The problem is most easily solved intuitively. Those who have observed auto racing (most particularly the Indianapolis 500 Mile Race), will note that drivers make no effort to adhere to the Shortest Possible Route.

The fastest speed, without losing adhesion, is found on a line of the maximum radius of curvature. The path, shown at left (heavy line), combines the largest curve available within the confines of the track with the width of the track to produce the fastest line.

The length of a single lap, using this line, is seen to be $(952 \times 2) + 2 \times 342.31 \pi = 4054.80$ meters. Over 50 laps this comes to **202.74 km. The answer.**

THE PROOF



Here is the track. The length of a single lap is seen to be:

$$\begin{aligned} \text{Length} &= 2\pi r + 2(1636.62 - 2r), \text{ or,} \\ &= r(2\pi - 4) + 3273.24 \end{aligned} \quad (1)$$

Note that because the track has a width of 24 meters, r can vary only between 318.31 and 342.31.

Speed will vary with surface friction, but we do not care about actual speed, only which path will produce the fastest speed. So, we can say that:

$$\text{Speed} = Kr, \text{ where } K \text{ is a constant of proportionality.} \quad (2)$$

We know that $\text{Time} = \text{Length}/\text{Speed}$, so, combining (1) and (2) we obtain:

$$\begin{aligned} \text{Time} = \text{Length}/\text{Speed} &= (r(2\pi - 4) + 3273.24)/Kr \\ &= ((2\pi - 4)/K) + (3273.24/Kr) \end{aligned}$$

Examination, or a little playing with a calculator or spreadsheet shows that time is minimized at $r = 342.31$.

The winner was Ray Thompson, who identified the fastest route and provided proof. Bill Glauz gave the answer, but needed prodding to prove it. Malcolm Heyworth and Mike Sandford came up with the right answer, but needed some encouragement. Other answers were submitted by Bob Langenbach and Jim Gerweck.

PVI RUNFEST 5K

PAUL VI HIGH SCHOOL, FAIRFAX, VIRGINIA

USATF-CERTIFIED
COURSE
VA00023RT

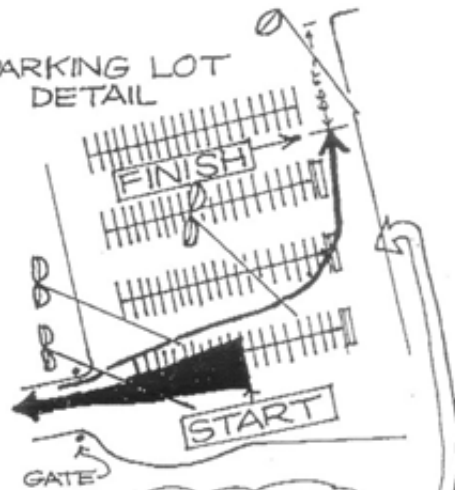


MAP NOT TO SCALE

KEY
—— 1ST TIME
- - - 2ND TIME

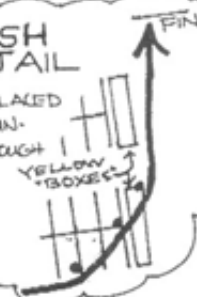


PARKING LOT
DETAIL



FINISH
DETAIL

CONES ARE PLACED
AS SHOWN. RUN-
NERS CUT THROUGH
LAST 2 PKG
SPACES, STAY
TO RIGHT OF
CONES

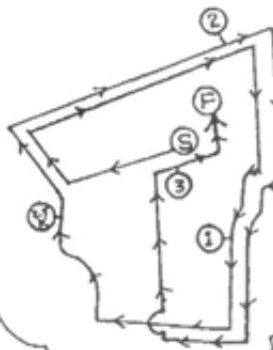


MAP OF
THE MOUTH

Locations

- Start: PVI parking lot, 304 ft E of gate at SW corner of lot; 5 spaces W of lightpole as shown; 119 ft E of double set of poles.
 - Mile 1: Keith Ave, 65 ft past stream crossing immediately S of Keith Ave Park; 12 ft past centerline (CL) of first driveway on left.
 - 2.5 km: 68 ft past CL, Second St; 7 ft past storm drain on left; 16 ft past "No Parking" sign on right.
 - Mile 2: Lee Hwy, 23 ft past end of school fence on R; 89 ft before corner, McLean Ave.
 - Mile 3: Panther Dr, at CL, driveway on L, even with block house at baseball field on R; 60 ft before gate at parking lot.
 - Finish: E edge of lot, 6 ft before lightpole, 66 ft before corner of lot.
- Note: Points marked with the letter "Z".

HOW THE RACE IS RUN:



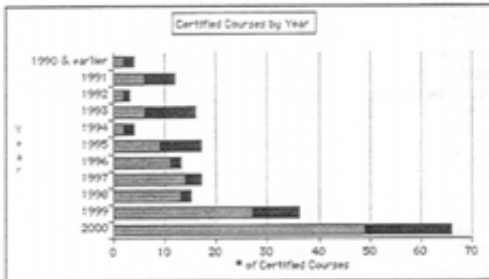
ELEVATIONS (METERS):
START 117, FINISH 119, HIGH 125, LOW 110
SEP (ST-FIN DISTANCE: 57m)
MEASURED 7/31/00 BY R. THURSTON



Chicago Marathon: Pat Furgal marks the course as Jay Wight waits on the measurement bike.
 Photo: Chicago Tribune Magazine, October 15, 2000



Jay Wight (left) waits on his measurement bike while Furgal (center) marks the mile and Chuck Hinde records distance information. Photo: Chicago Tribune Magazine, October 15, 2000



GROWTH OF COURSE MEASUREMENT IN CANADA



Readers last month saw Laurent Lacroix' article "Made to Measure," in which he described his handlebar-mounted counter. Here is his bike. Note he carries his paint in the water-bottle holder.



Road Running Technical Council
USA Track & Field

recognized by



Measurement Certificate

Name of the course _____ Distance _____

Location (state) _____ (city) _____

Type of course: road race calibration track Configuration _____

Type of surface: paved _____% dirt _____% gravel _____% grass _____% track _____%

Altitude (meters/feet above sea level) Start _____ Finish _____ Highest _____ Lowest _____

Straight line distance between start & finish _____ Drop _____m/km Separation _____%

Measured by (name, address, & phone) _____

Race contact (name, address, & phone) _____

Measuring methods: bicycle steel tape electronic distance meter

Number of measurements of entire course: _____ Date(s) when course measured: _____

Race date: _____ Course paperwork submission date: _____

Difference between two best measurements of the course: _____ Certification code: _____

Replaces _____ (if applicable)

Notice to Race Director
Use this Certification Code in *all* public
announcements relating to your race.

Be It Officially Noted That

Based on examination of data provided by the above named measurer, the course described above and in the map attached is hereby certified as reasonably accurate in measurement according to the standards adopted by the Road Running Technical Council. If *any* changes are made to the course, this certification becomes void, and the course must then be recertified.

Validation of Course — In the event a National Open Record is set on this course, or at the discretion of USA Track & Field, a validation remeasurement may be required to be performed by a member of the Road Running Technical Council. If such a remeasurement shows the course to be short, then all pending records will be rejected and the course certification will be cancelled.

This certification expires on December 31 in the year

AS NATIONALLY CERTIFIED BY:

Date: _____

VALIDATIONS 2000

Validations Pending											
Recv/Pass/Fail	Date of Event	Date of Validation	Course Name	Course ID	Measurer	Validator	Type	Advised Distance	Nominal Distance	Measured Distance	Percent Difference
			Clarksburg Country Run 30Km								
109	15-Nov-98		Pacific Sun 10 K	CA87015CW	Wisser		LDR	30,000 M	30,000 m		
	7-Sep-98		Fifty Plus 8KM	CA98013TK	Knight		LDR	10,000 m	10,000 m		
	6-Apr-97		CSU Monterrey Bay 1 km	CA97026RS	Carpenier		LDR	8000 m	8000 m		
	18-Sep-95		Buffalo Stampede 10 mi.	CA95031CW	Sorenson		RW	1 km	1 km		
	12-Sep-99		Portland Marathon	CA95028CW	Venditti		LDR	10 mi	10 mi		
109	28-Sep-99		Salle Mae 10 K	CR93005LB	Barrett	Thurston 7/13	LDR	42,195 m	42,195 m		
109	26-Apr-98		Saddle Brook Ultra Loop	DC09001DK	Kalz		LDR	10,000 m	10,000 m		
	16-Jun-98		Hiawatha Heron Hustle 8 Km	NJ96017DB	Brannen	Wickiser 7/12	LDR	50,000 m	5,000 m		
	21-May-99		Crocheron Park Loops	NY99013AM	Groome		LDR	8,000 m	8,000 m		
	8-Aug-98		Juniper Valley Park	NY98001DB	Brannen	Wickiser 7/12	LDR	12 hr. 0.9709 mi			
	22-Oct-97		Vineyard Scoops 5K	NY94003DB	Brannen	Wickiser 7/12	LDR	100 mi 1.1982 mi			
	5-Aug-00		Old Kent River Bank 25K	MA99002RN	Brown		LDR	5000 m	5000 m		
	8-May-99		Old Kent River Bank 25K	MI99008SH	Dewey		LDR	25000 m	25000 m		
	13-May-00		Rocket City Marathon	MI000115H	Dewey		LDR	25000 m	25000 m		
	11-Dec-99		GNC 50 K	AL94013JD	DeHaye		LDR	42195 m	42195 m		
	27-Mar-99		USA 5K Racewalk Championship	PA99001DB	Brannen		LDR	50 km	5 mi		
	25-Sep-99		TAMU 24 Hour/48 Hr	TN99001RH	Chaney		RW	1,000 m	1,000 m		
	12-Nov-99		USA 5K Racewalk Championship	TX99105ETM	DeMaree		LDR	2,489 km	2,489 km	Review cert #	
Validations Completed											
Pass	26-Jun-99	10-Oct-99	USA TF 20K RW	OR99006LB	Zemper	Barrett	RW	20,000 m	1000 m	1005.379 m	0.53
V		22-Aug-99	LaSalle Banks Chicago Marathon	IL99058JW	Wight		LDR	42,195 m	42195 m	42237 m	0.1
P	9-Jun-99	5-Sep-93	New Haven 20 Km	CT91001WN	Nicoll		LDR	20,000 m	20,000 m	20014.3 m	0.07
P	31-Oct-98	10-Oct-99	Tulsa Run	OK94041BB	Lafarite	Baumel	LDR	15,000 m	15,000 m	15013.4 m	0.09
V	19-Sep-98	19-Sep-93	Olander Park 24 Hr	OH93054PR	Standish	Wickiser	LDR	1,224 mi	1,224 mi	1,225 m	0.1
V	18-Sep-99	19-Sep-93	Olander Park 24 Hr	OH93054PR	Standish	Wickiser	LDR	1,224 mi	1,224 mi	1,225 m	0.1
V	22-May-99	12-Oct-98	Bedford Rotary 12 K	NH99004BT	Teschek	Nicol	LDR	12,000 m	12,000 m	12,015 m	0.12
V	20-Mar-99	13-Aug-00	Bull Run 2K	VA97042RT	Thurston	Sisalla	RW	2,000 m	2,000 m	2004.9 m	0.245
P	4-Sep-98	7-Aug-00	Nickel City Aid	NY97026AM	Grandits	Riegal7/12	LDR	5,000 m	5,000 m	5000.25 m	0.005
P	4-Oct-98	7-Aug-00	Thundering Herd 12 K	NY98030AM	Felix	Riegal7/12	LDR	12,000 m	12,000 m	11999.63 m	-0.003
P	13-Feb-99	21-Aug-92	Gasparilla Distance Classic	FL92001WN	Nicol	Loeffler	LDR	15,000 m	15,000 m	15010 m	0.007
Fail	20-Mar-99	12-Dec-99	Shamrock Sportsfest 8K	VA99009RT	Corzatt	Wickiser	LDR	8,000 m	8000 m	7993.5 m	-0.08
V	26-Mar-00	15-Mar-93	Carlsbad 5000	CA93001WN	Nicoll	Nicoll	LDR	5000 m	5000 m	5005 m	0.01
V	3-Jun-00	17-Aug-96	Freihofers 5K	NY96008WN	Nicoll	Wickiser	LDR	5000 m	5000 m	5005 m	0.01
P	26-Apr-00	8-Oct-94	Sri Chinnoy Six Day	NY92005DB	Brannen	Thurston	LDR	1 mi	1 mi	1 mi 3.1ft	0.006
P	13-Nov-99	6-Nov-99	Helen Klein Ultra Classic	CA98041RS	Scott	Young	LDR	50 km	50 km	50.216 km	0.009
V	7-May-00	19-Apr-98	Lilac Bloomsday	WA97006MR	Renner	Barrett	LDR	12,000 m	12,000 m	12,019 m	0.015
V	26-Feb-00	9-Oct-99	Outback Steakhouse 12 K	FL00012DL	Ward	Loeffler	LDR	12000 m	12000 m	12,047 m	0.39
V	18-Jan-97		Jed Smith Ultra	CA97004KY	Young		LDR	50,000 m	5,555 m		
V		20-Aug-00	LaSalle Banks Chicago Marathon	IL00007JW	Wight		LDR	42,195 m	42195 m	42237 m	0.1