

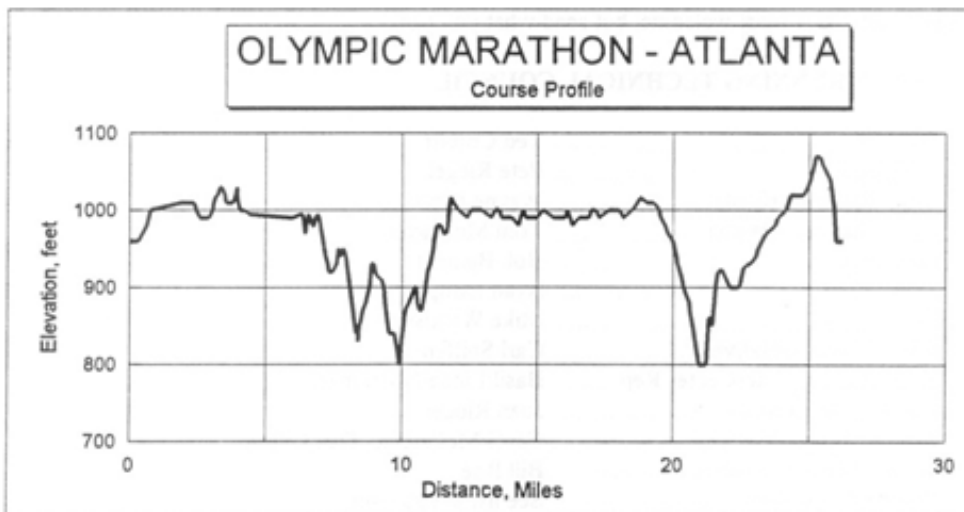
Measurement News



November

1995

Issue #74



The course of the Olympic Marathon has been defined and mostly measured. See details inside.

MEASUREMENT NEWS

#74 - November 1995

* * * * *

CONVENTION AGENDA

Please send Pete Riegel items you think should be discussed at RRTC meetings at the 1995 USATF Convention.

OLYMPIC MARATHON MEASUREMENT - STATUS REPORT

The course of the Atlanta Olympic Marathon has been determined. It will begin in the Olympic Stadium (still under construction) and proceed northeast into the City of Atlanta, passing by the home of Dr. Martin Luther King, Jr, enroute to a turnaround point near Oglethorpe University. It will return via a somewhat different route to finish at the Olympic Stadium. A portion (roughly 400 meters) of the return route was under construction at the time of measurement and could not be measured.

Atlanta measurer **Jack Grosko**, along with Georgia certifier **Woody Cornwell**, measured most of the course on September 24, obtaining good agreement. They have tied down 39 kilometers of the course, and established a series of enroute reference points for future use in laying out the splits. **Julia Emmons**, as ACOG person in charge of the out-of-stadium running events, did some stadium measurements, assisted by **Phil Henson**. These measurements, while not exact, indicate that the "out" route of the course is about 1344 meters. The return route was found to be about 644 meters. Julia's measurements and Grosko's met at a reference point outside the stadium.

As a result of the above, it appears that an additional portion is required near the turnaround point, amounting to about 973 meters. Grosko is working on this at present. When the stadium and track are complete it will be possible to obtain exact measurements and adjust the turnaround accordingly. Measurement data and a sketch of what has been measured may be seen in the following pages.

Those who come to the USATF convention may wish to tour the course. RRTC members will drive around the course on Saturday, December 2.

A group measurement of the entire course will be conducted in late May 1996. We will finalize the date at the USATF Convention. If you are interested in participating, contact Pete Riegel.

Pete Riegel has prepared a course profile. It is on the cover of this issue. If you would like a disk with the distances and elevations, as I plotted them, get in touch. I have the data in Lotus 1-2-3, but can send it in ASCII form as well. Some may wish to do some course analysis, and this data will give you something to work with. The profile includes 215 separate distance/elevation points.

OLYMPIC MARATHON MEASURERS

To date, the following people have expressed an interest in coming to Atlanta to participate in the measurement of the Olympic Marathon: Bernie Conway (CAN), Jean-Francois Delasalle (FRA), John Disley (GBR), Julia Emmons, Hugh Jones (GBR), Doug Loeffler, Rodolfo Martinez Figueroa (MEX), Tom McBrayer, Wayne Nicoll, Ted Paulin (AUS), Pete Riegel, Mike Wickiser, Jay Wight, Bob Woods, Dave Yaeger (CAN).

If you have expressed an interest, and your name isn't here, remind Pete that he forgot you.

Olympic Marathon Measurement - 24 September 1995

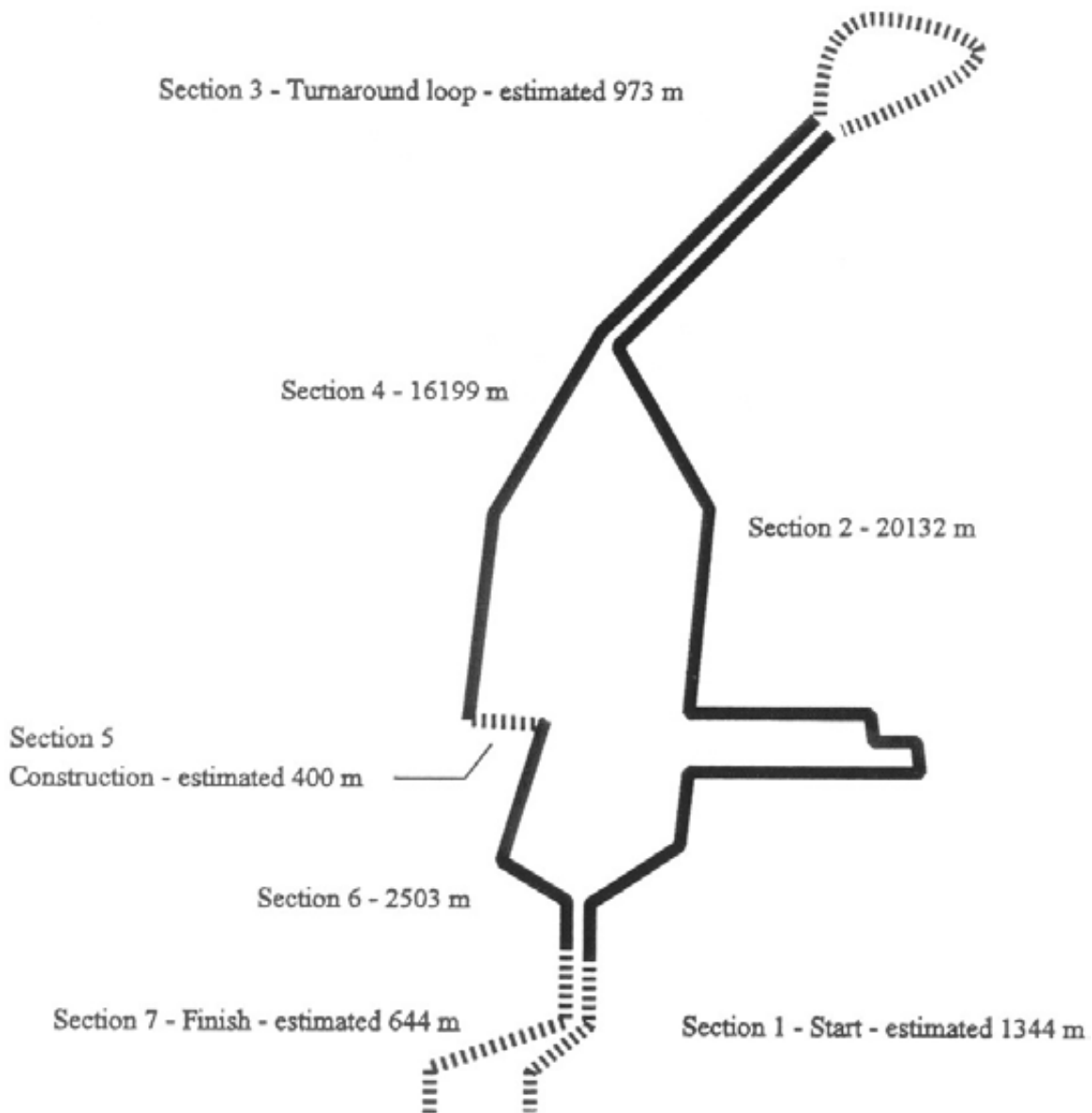
Measured by Jack Grosko and Woody Cornwell

Calibrations on Powers Ferry Road Calibration course - 1000 feet
USATF Certified as GA 93010 WC

	Precal Jack	Postcal Jack	Precal Woody	Postcal Woody
	2865	2863	3431	3428.5
	2865	2863	3430.5	3428.5
	2864	2862	3429.5	3428
	2864	2862	3430.5	3428
Average for 1000 feet	2864.5	2862.5	3430.375	3428.25
Counts per kilometer	9407.364	9400.796	11265.77	11258.79
Larger day's constant	9407.364		11265.77	

Average constant		Jack 9404.08	Woody 11262.28	Calculations below are based on Average constant			
Section	Reference Point	Counts Jack	Counts Woody	Meters Jack	Meters Woody	Difference Meters	Shorter Split
2	Start	97000	51300				
2	1	102091	57394	541.36	541.10	0.26	541.10
2	2	113057	70517	1166.09	1165.22	0.87	1165.22
2	3	121223	80293	868.35	868.03	0.32	868.03
2	4	129881	90660	920.66	920.51	0.16	920.51
2	5	138626	101159	929.92	932.23	-2.31	929.92
2	6	147054	111253	896.21	896.27	-0.06	896.21
2	7	156048	122025	956.39	956.47	-0.07	956.39
2	8	164178	131743	864.52	862.88	1.64	862.88
2	9	175917	145804	1248.29	1248.50	-0.22	1248.29
2	10	185562	157365	1025.62	1026.52	-0.91	1025.62
2	11	195456	169229	1052.10	1053.43	-1.33	1052.10
2	12	206981	183011	1225.53	1223.73	1.80	1223.73
2	13	220687	199424	1457.45	1457.34	0.11	1457.34
2	14	229770	210319	965.86	967.39	-1.53	965.86
2	15	236843	218770	752.12	750.38	1.74	750.38
2	16	249569	234000	1353.24	1352.30	0.94	1352.30
2	17	258895	245160	991.70	990.92	0.78	990.92
2	18	268171	256266	986.38	986.12	0.26	986.12
2	19	276779	266567	915.35	914.65	0.70	914.65
2	20	286345	278031	1017.22	1017.91	-0.69	1017.22
Total Section 2				20134.35	20131.90		20124.77

Section	Reference Point	Counts Jack	Counts Woody	Meters Jack	Meters Woody	Difference Meters	Shorter Split
4	Start	18000	37200				
4	1	26320	47161	884.72	884.46	0.27	884.46
4	2	33989	56345	815.50	815.47	0.03	815.47
4	3	43245	67424	984.25	983.73	0.53	983.73
4	4	51514	77328	879.30	879.40	-0.10	879.30
4	5	60158	87676	919.18	918.82	0.36	918.82
4	6	66219	94937	644.51	644.72	-0.21	644.51
4	7	74635	105012	894.93	894.58	0.35	894.58
4	8	83824	116020	977.13	977.42	-0.29	977.13
4	9	92922	126921	967.45	967.92	-0.47	967.45
4	10	101926	137703	957.46	957.36	0.10	957.36
4	11	111145	148737	980.32	979.73	0.59	979.73
4	12	117123	155900	635.68	636.02	-0.34	635.68
4	13	125550	165991	896.10	896.00	0.10	896.00
4	14	136047	178561	1116.22	1116.12	0.10	1116.12
4	15	146961	191638	1160.56	1161.13	-0.57	1160.56
4	16	154921	201178	846.44	847.08	-0.63	846.44
4	17	163056	210919	865.05	864.92	0.13	864.92
4	18	170340	219643	774.56	774.62	-0.06	774.56
Total Section 4				16199.35	16199.48		16196.80
6	Start	73000	23000				
6	1	79518	30792	693.10	691.87	1.24	691.87
6	2	84507	36762	530.51	530.09	0.43	530.09
6	3	91480	45103	741.49	740.61	0.87	740.61
6	4	96564	51192	540.62	540.65	-0.04	540.62
Total Section 6				2505.72	2503.22		2503.19



Olympic Marathon Course - Atlanta
As of 24 September 1995

Distance and Elevation Data for the Olympic Marathon

Based on measurements of 24 September 1995 and USGS Topographical Maps.

Cumulative kilometers	Elevation Feet	Cumulative kilometers	Elevation Feet	Cumulative kilometers	Elevation Feet	Cumulative kilometers	Elevation Feet
0.000	960	13.390	840	18.415	980	31.438	990
0.250	960	13.515	840	18.540	970	31.713	980
0.500	960	13.540	830	18.740	970	31.863	970
1.000	980	13.565	840	18.815	980	32.163	960
1.200	1000	13.590	850	18.865	1000	32.263	950
3.050	1010	13.665	855	18.940	1010	32.388	940
3.615	1010	13.715	860	18.990	1017	32.438	930
3.815	1010	13.790	870	19.140	1010	32.588	920
3.915	1000	13.990	880	19.440	1000	32.713	910
4.140	990	14.065	890	19.990	990	32.813	900
4.465	990	14.190	900	20.190	1000	32.963	890
4.690	990	14.315	930	20.315	1000	33.138	880
4.890	1000	14.440	930	20.440	1000	33.188	870
4.965	1010	14.515	920	20.815	1000	33.263	860
5.115	1020	14.615	914	21.415	990	33.363	850
5.190	1020	14.890	910	21.615	1000	33.713	800
5.315	1030	15.040	900	21.865	1000	33.788	800
5.440	1030	15.065	890	21.990	990	34.138	800
5.640	1020	15.115	880	22.490	990	34.313	860
5.690	1010	15.165	870	22.615	990	34.463	860
5.815	1010	15.240	860	22.815	985	34.538	850
5.890	1010	15.290	850	22.990	980	34.688	900
6.115	1010	15.340	840	23.115	990	34.763	910
6.340	1030	15.665	840	23.290	1000	34.838	920
6.365	1020	15.740	830	23.415	990	35.088	923
6.415	1010	15.840	820	23.690	990	35.563	900
6.515	1000	15.965	800	23.990	990	36.088	900
6.615	1000	15.990	800	24.115	990	36.338	925
6.815	1000	16.015	810	24.464	1000	36.588	930
7.065	995	16.040	820	25.088	990	36.738	930
9.495	990	16.090	830	25.213	990	37.063	940
9.615	990	16.140	840	25.513	990	37.188	950
10.140	995	16.190	850	25.788	990	37.638	970
10.215	995	16.240	860	25.913	1000	38.213	980
10.365	970	16.340	870	26.088	990	38.363	990
10.565	995	16.540	880	26.213	980	38.838	1000
10.690	990	16.715	890	26.388	985	39.138	1020
10.765	980	16.865	900	26.588	990	39.313	1020
10.915	980	16.965	900	26.713	990	39.638	1020
10.965	990	16.990	890	27.213	990	39.763	1020
11.115	995	17.040	880	27.338	1000	39.888	1020
11.215	990	17.140	870	27.588	1000	40.138	1030
11.490	950	17.290	870	27.788	990	40.288	1040
11.615	940	17.365	880	28.388	1000	40.413	1050
11.740	930	17.465	890	28.763	1000	40.513	1060
11.790	920	17.515	900	28.888	1000	40.588	1070
12.015	920	17.590	910	29.013	1000	40.863	1070
12.240	930	17.640	920	29.213	990	41.013	1060
12.365	950	17.790	930	29.763	1000	41.213	1050
12.490	940	17.890	940	30.063	1010	41.463	1040
12.640	950	17.965	950	30.213	1017	41.713	1000
12.790	940	18.015	960	30.638	1010	41.800	960
13.040	900	18.090	970	31.038	1010	42.195	960
13.340	850	18.190	980	31.338	1000		

Note: Purists may decry the mixing of kilometers and feet. The maps were scaled in kilometers, but the contour lines were shown and read in feet. Rather than degrade the original data, it is here presented exactly as it was obtained. Data read and recorded by Pete Riegel.

DRAW YOUR OWN COURSE PROFILE

In any technical activity it is good to have a check on one's work. Although I thought I was being careful in my preparation of the course profile, it is likely that some errors exist. An independent check of the elevations may discover some differences. The topography is confused in portions of the course, and I found some of the contours difficult to read because of the gently rolling characteristic of some of the course. If you would like to check my work, here's what to do:

- 1) Begin with the course description, which follows:

ROUTE OF THE OLYMPIC MARATHON

Start in Olympic Stadium
exit northwest gate, go north on Washington Street
Pass to the west of Fulton County Stadium, turn right on Clarke Street
Turn left on Capitol Avenue
Bear right onto Piedmont Avenue
Right on Auburn Avenue
Left on Howell Street
Left on Irwin Street
Right on Jackson Street
Left on Baker/Highland
Right on Piedmont Avenue
Right on Peachtree Road
Turnaround approximately at Hermances Drive/Lanier Drive near Oglethorpe University
Return south on Peachtree Road which becomes Peachtree Street
Left on Edgewood Street
Right on Gilmer Street
Right on Courtland Avenue
Left on Memorial Drive
Right on Capitol Avenue
Right on Clarke Street
Return to Olympic Stadium by same route used on the way out.

- 2) Obtain a good street map of Atlanta, and the following USGS 7.5 minute quadrangles:
CHAMBLEE, GA
NORTHEAST ATLANTA, GA
NORTHWEST ATLANTA, GA
SOUTHEAST ATLANTA, GA
SOUTHWEST ATLANTA, GA
- 3) Use the course description and the Atlanta street map to locate the proper streets on the USGS maps.
- 4) Record distances and elevations along the route until you are done.
- 5) Plot the data in profile form.

GROUP MEASUREMENTS

A letter from **Bob Letson**, who measured part of the Seoul Olympic Marathon course during an IAAF measurement seminar in 1986:

PR,

7 Sept 95

Of the 24 group measurements listed in MN73, the lowest standard deviation was achieved in Seoul, Korea, by 13 excellent bicyclists who had no measuring experience. These 13 belonged to a bicycle club. They were all excellent riders, had good balance and control. But none of them knew what "SPF" or "SPR" meant. None of them had any experience measuring road race courses, so they were all "beginners." The reason they did so well is that the measuring line - the one we all imagine to exist on an unmarked course - was expertly painted with extreme precision. The line was easy to see, 2 inches wide, blue, and was PERFECTLY located exactly 30 cm from curbs and exactly on straight lines between curves. All of the "untrained" measurers had to do was ride on top of the blue line.

What this illustrates is the fundamental key to achieving a good measurement: definition of the measuring line.

Except for the 2 groups that had more than 4 m/km standard deviation, the average standard deviation is less than 0.5 m/km, which is very good. The Koreans achieved less than 0.1 k/km, which is probably the ultimate limit that can be achieved with ideal conditions.

However, we should beware of the illusion created by focusing too much on consistency. We could be repeating the same mistakes. Because of this illusion, I prefer to ignore consistency, and focus on definition and measurement of the measured line.

Bloomsday Marks Invalidated Due to Error in State Certifier's Calculations

Long after the euphoria of world record (or American record) performances subsides there is one additional hurdle before the marks end up in the record book¹—the course validation mandated by USATF's Records Committee and carried out by USATF's Road Running Technical Council.

At this year's Lilac Bloomsday 12k in Spokane, WA the event organizers' worst nightmare came true as the course, on which Josphat Machuka and Dellilah Asiago set world records, was found to be 50 meters short when post-race validation measurements were made. Event founder and Board Member Don Kardong told *RRM*: "We thought we had taken care of the course accuracy by hiring the State Certifier to do our measurement and paperwork, but we found out that that is no guarantee. Right now we are waiting for him to report back to us on where the error occurred and which years' times will be affected." Kardong fears that Olga Appell's 1994 American record time may also be affected, as he thinks the last time the course was certified was before the 1994 event. The 1996 race will be the site of the first \$100,000 PRRO World Road Racing Championship.

A Primer on the Process

According to USATF rules, courses must be certified in advance of race day. Anyone can measure a course; the measurer's figures must be reviewed for accuracy by a "final signatory" in each state. "Final signatories" are proven measurement specialists who are accorded the status by virtue of their measuring experience. Course certifiers are required to add one-tenth of one percent of the distance to their certification measurements (this additional distance is called the "Short Course Prevention Factor" or SCPF) in order to increase the statistical probability that the course will measure at

least the stated distance if it has to be validated. [In Bloomsday's case this means adding 12 meters to the 12 kilometer distance as the SCPF.] Once the course is certified, validation is required only if a World or American record is set. The RRTC sends in another proven measurer to perform the validation (in order to avoid conflicts, the individual who certifies the course is not allowed to validate). As mentioned above the validator must only find the course to be the exact distance (without the SCPF) in the validation process.

What Happened at Bloomsday

In order to ensure the highest degree of accuracy possible for the initial certification, the Bloomsday organizers employed the "final signatory" for the state of Washington to do the certification—figuring that he would be the most qualified individual in the area to do it and thus limiting any anxieties about the route passing post-race validation should a record be set.

According to incomplete information obtained by RRTC Chair Pete Riegel, the problem stemmed from an alteration in the course when a temporary bridge was constructed on the course while the original bridge was undergoing repairs. The temporary bridge added 70 meters to the length of the course. To compensate for this added distance the starting line was moved forward by 70 meters. When the original bridge was reopened, the problem occurred because the course measurer erroneously moved the starting line back only 10 meters, rather than the 70 meters needed to go back to the original starting line.

On race day 1995, Machuka bettered the existing world record by one second, while Asiago was 16 seconds faster.

Traditionally elite athletes receive bonuses from their running shoe companies for world and course records. Mike Cook

of Reebok said his company was able to dodge the bullet in this case because, although Machuka wore a Reebok singlet, his contract with the time incentives had not been finalized. Nonetheless, Cook made it clear that if Reebok had paid the bonus only to have the time fail the validation test, he would have wanted a refund. "If an athlete would have received a bonus, I would have asked for it back," Cook said. He further explained that many agents don't ask for the bonuses until the end of the year, by which time the validations are usually completed. Cook expressed faith in the measurement process but suggested that perhaps courses should be recertified each year.

If nothing else the Bloomsday incident should raise the consciousness of agents and shoe companies alike that a record is not official, and perhaps bonuses should not be paid out, until all the paperwork is done.

The RRTC's Position

Road Running Technical Council chairman Pete Riegel defends the current measurement and validation process. "We don't take anyone's measurement as gospel; it is verified," he says. "Your heart is in your boots [during the validation process] because anyone can make a mistake."

Riegel states that courses measured by "anyone" [non-proven measurers] check out as accurate 84% of the time; courses measured by the state certifiers are upheld 95% of the time. "We have a failure rate," Riegel admits, "we are human."

Interestingly, no post-event validations are required for track events. A track is measured and certified once at the time it is completed and is never subject to a remeasurement. Riegel feels the more rigorous treatment of road courses (and the

See Bloomsday on Page 8

¹ World records for road running are still not accepted by the International Amateur Athletic Federation (IAAF). In the absence of IAAF-approved records, USATF Executive Director Ollan Cassell authorized USATF's Road Running Information Center to initiate the collection and compilation of world marks.

Bloomsday. . .

(Continued from page 6)

fact that road courses are more likely to be subject to alterations due to construction, municipal restrictions, etc. than tracks) simply assures that the records are of higher quality. "It's a matter of philosophy," he says. You can certify and assume the record is OK, or validate and have records that are of higher quality."

Riegel points out that races can have their courses validated in advance of the race, ensuring that the records will be upheld as long as the course is run as certified and validated in advance. He does not favor races rushing out and doing this, however, stating that the RRTC does not have the manpower to validate courses the majority of which will not have record setting times. The RRTC has a backlog of

courses waiting to be validated and adding to that courses that may not produce records simply adds to the RRTC's overworked validators, Riegel feels. Currently only a handful of U.S. races utilize this pre-validation process. Riegel says these events still are required to have the validator either ride a lead vehicle while the race is under way or review actual video tapes of the front runners to ensure that they run the course as validated.

"The whole problem arises because we check," Riegel sums up. "We recognize that measurers are not perfect." That's tough medicine for Kardong, who says "We're very upset about this because we take great pride in our elite field and what their times mean." */Phil Stewart/ ■*

The preceding article was reproduced from **Road Race Management**, October 1995, with permission.

CAN WE DO BETTER?

On July 29, 1995, **Doug Loeffler** performed a validation of the Lilac Bloomsday 12 km course (WA 95003 MR). The validation measurement obtained a length of 11950 meters - short by 50 meters. This was very bad news for the race organization, as world records were involved. **Mike Wickiser** (Validations Chairman), **Basil Honikman** (Road Running Information Center), **Doug Loeffler** (validator), **Mike Renner** (measurer of the course and RRTC Washington Certifier) and I immediately sought to establish what went wrong. When a race with the distinguished history and quality of Bloomsday gets hit with a short-course problem, it's a matter of concern for everybody.

While it is true that we have a good success rate measuring courses, this is cold comfort for the Bloomsday people, who are justifiably upset. We must try to find a way to do better.

What about Mike Renner? He's a certifier, and aren't certifiers supposed to produce perfect measurements? Of course we are, but we are human and fallible. I can think of a score of mistakes I have made during measurements, all of which I was able to correct before I finished the job. How many mistakes have I made that neither I nor anybody else knows about? I know of the mistakes of many others as well. Where we differ from Mike is only that so far we have not been caught in the gears of the laws of probability. Measure enough and sooner or later you'll botch one, same as in every other field of human endeavor.

This is a troublesome situation. Does anyone have any ideas how we might improve?



Michael A. Wickiser
Validations Chairman
Road Running Technical Council
2939 Vincent Rd.
Silver Lake, Ohio 44224-2916

216-384-4700 (work)
216-929-1605 (home)
216-384-4791 (fax)

October 17, 1995

Pete Riegel
3354 Kirkham Rd.
Columbus, Ohio 43221

Dear Pete,

I am writing this over the continued concerns regarding Lilac Bloomsday. The 1995 race is of course in the dumper but conversations with Basil Honikman, Doug Loeffler, and Mike Renner have cast a serious shadow over the validity of the 1994 course.

Marks from 1994 were ratified upon my belief that Mike Renner's adjustments were reliable. It has come to my attention that Mike Renner feels that the 1994 course adjustment was probably in error at about the same magnitude as the 1995 course. This as you know was shortage of approximately 50 meters under the 12,000 meter distance.

My understanding from the correspondence received was that a temporary bridge constructed between the 4 and 5 mile intermediate splits was the cause of additional distance to the course. This allowed for moving the Riverside start west 56.4 meters. Mike Renner indicated over the phone that the temporary bridge was constructed adjacent to and parallel to the old (and subsequently new) bridge. He further indicated that while there were some distance changes to the course due to the temporary bridge, those changes would have a minimal difference to the overall course distance. His estimate of the impact would be in the 5 to 6 meter range. This is somewhat supported by a 1984 AAA street map obtained from the local library. An enclosed photocopy of the area in question indicates that this section of the course is something of a long S-curve. Therefore a parallel bridge over the river would have limited impact on the overall distance. It is also supported by the 5.6 meter adjustment from 94 to 95. Gains or losses in distance approaching the bridge would be negated or diminished by the time the runners reached the 5 mile mark on Pettit Rd.

As Mike Renner and I discussed this, in attempt to figure out what went wrong, he may have determined the original error. It seems that due to the temporary bridge in 94, Mike measured the distance between the 4 mile and 5 mile intermediate points. He then adjusted the start and splits accordingly. This same procedure was used in

adjusting the course for 1995. In doing so the 5 mile point was easily located from prior years. The 4 mile point had been paved over and had to be reestablished. Improper establishment of that 4 mile location could very well account for course failing validation in 1995. Unfortunately this would also have had the similar effect on the overall distance for 1994.

Mike did state that he was going to attempt to reconstruct his measurements of prior years courses. He has every bit of measurement info from the mid eighties to the most current measurement and he has all of his field notes. We may never be able to reconstruct the 1994 course but it appears as though there exists adequate information to say that the 1994 course was significantly short.

I am withholding official comment on this matter until the convention nears or Mike Renner replies with further information. A copy of this letter is being sent to Mike Renner for his information and his comments.

Best regards,



cc:Renner

\blooms94

PUZZLE OF THE MONTH - CUTTING THE DOUGHNUT

This one is from **Alan Jones**. You are given a doughnut and a knife. Into how many pieces can you cut the doughnut using only three cuts? You may not rearrange the doughnut between cuts. Assume the doughnut is a perfect torus, and has no lumps and bumps to help you out.

Your Editor had a lot of advance notice on this one, since Alan sent it to me months ago. I worked on it for hours, and sent Alan my answer. It was so wrong it was pathetic. I even sent Alan a detailed drawing of what I was thinking, and it is embarrassing to remember how bad my reasoning was. So, chalk up one wrong answer. You can do better, or at least no worse.

19 April 1995



TO: Ray Bell
 FROM: Dan Brannen
 RE: Men's 45-49 USA 50km records

NATIONAL ULTRARUNNING
 SUBCOMMITTEE

CHAIRMAN
 Dan Brannen

The current Men's 45-49 50km track record is 3:25:28 by Bernd Heinrich; the road record is 3:44:55 by Roy Pirrung. Your 3:39:53 in Tallahassee would be a new road record, pending ratification by USATF at its annual convention in December. It depends on whether all of the criteria were met, including certified & validated course, lap sheets, timing, etc. I have received some documentation from Fred Deckert, the Tallahassee race director. I have forwarded it to the USATF Road Running Information Center for processing. They will contact Fred Deckert for more details of documentation, and if everything is in order your mark will be ratified. I'll keep you posted.

Your 3:24:04 from the Knight Trail 50km is a different story. I have also received a documentation letter from race director Alan J. Frank which I am passing on to the USATF-RRIC. Alan mentions measuring the course with a surveyor's wheel, but does not say whether he received a Measurement Certificate and a certification number from the USATF Road Running Technical Council. Since surveyor's wheel measurement is almost never accepted for certification (except in very rare circumstances), at this point, unless a Measurement Certificate does exist, I'm assuming the course was not certified. That would make it ineligible for a record.

This is a very unusual situation (in fact, the only such one of which I'm aware). Generally, people don't run trail races for records, and they usually (I would venture to say, until now, 100% of the time) run slower on trails than on roads. Trail races are usually NOT certified, and in fact most (if not all) are technically uncertifiable. Until now this has been a moot point, a virtual non-issue. Assuming a Measurement Certificate does not currently exist, even if the Knight Trail course were to be examined and deemed certifiable by a national certifier (which is doubtful and probably not worth the bother), USATF rules prevent "after-the-fact" processing of paperwork for certification.

My own recommendation is to view this as a one-time anomaly. I would not recommend that any trail race be certified, or that anyone attempt or expect a national record in a trail run. Let's hope the Tallahassee mark holds up to scrutiny, because it appears that you really do deserve the record.

cc: Deckert, Frank, USATF/RRIC, USATF/RRTC

19

Dave Yaeger
19 Carondale Crescent
Scarborough, Ontario
M1W 2A9

October 19, 1995

Pete Riegel
3354 Kirkham Road
Columbus, OH 43221-1368

Dear Pete:

I am interested in participating in the group measurement for the 1996 Olympic Marathon course. I very much enjoyed and benefitted from the 1994 Phoenix gathering and I would appreciate the opportunity to again get together with other measurers. Please include me on your preliminary list for the Atlanta measurement.

I struggled long and hard with the Triangle Puzzle of the Month, however, I could not come up with a "pythagorean" solution - elegant or otherwise. I was able to solve the puzzle though based on: area of triangle ABM equals the area of triangle ACM. The area can be calculated with a formula using the length of the three sides. Since length BM = MC and the other lengths are all known, you have one equation with one unknown. It sure helps though to have a computer to solve the equation. The length of BC is $2 \times 31^{0.5} = 11.136$.

The article on the IAAF World Championship Marathon and the comments by John Disley were interesting. I'm not sure I agree with John's first lesson: never believe that track and field officials know enough about the off stadium events to make them competent to take charge. I would think that track officials would be experts at counting laps as long as they knew what they were counting. I found the detail map of the start confusing and it took me a while to figure out whether the reference to 3 laps referred to the start line or the finish line. The most confusing part was probably the fact that the start line and the eventual exit from the stadium were so close together - almost 4 laps; 3 laps plus quite a bit!

Some input to the debate about mile versus km splits. Most of the races in Ontario are metric distances and races such as half marathons and marathons are measured/reported as metric distances. The "standard" is to mark every km along the course. The 1 mile split though is usually included. My perception is that the top runners really like the first mile, however, I'm sure it could be eliminated with little complaint. The middle of the pack runners that I know really appreciate being able to check their pace every km particularly in a marathon.

An exception to the metric "rule" is a race that I have been organizing for 10 years called the Night Crawler 5 Miler. Why 5 miles? Well to be different from the multitude of 10 km. Gives people a chance to run something different and it is marked and times called every mile. Using miles reduces the number of split timers I need! Our governing body initially had some difficulty with the distance and wanted to report it as 8.05 km. Either km or miles are accepted, however, you will not find a 6.21 mile race in Ontario.

Cheers,





October 25, 1995

Dave Yaeger
 19 Carondale Crescent
 Scarborough, Ontario M1W 2A9
 CANADA

Dear Dave,

You have been added to the list of people who have specifically asked to be considered as part of the Olympic Marathon measurement crew. To date, the following people have expressed an interest in coming to Atlanta to participate in the measurement of the Olympic Marathon: Bernie Conway (CAN), Jean-Francois Delasalle (FRA), John Disley GBR), Hugh Jones (GBR), Doug Loeffler, Rodolfo Martinez Figueroa (MEX), Tom McBrayer, Wayne Nicoll, Ted Paulin (AUS), Pete Riegel, Mike Wickiser, Jay Wight, Bob Woods, Dave Yaeger (CAN).

I just made up this list from memory yesterday. I think I have remembered everybody, but I may have forgotten somebody. In the next MN I'll remind people to let me know if I have forgotten them. I am not sure how we will organize the measurement or how many people we can use - we will discuss this at our Convention. We are fortunate to be meeting in Atlanta, and the course measurers, Jack Grosko and Woody Cornwell, will be there. They will initially certify the course when the stadium construction is done. Our measurement will merely fine-tune it; hopefully we will have good agreement with their measurement.

Your puzzle solution is correct. I did not know that computer equation-solvers could come up with exact answers such as $2 \times 31^{0.5}$. I thought they just crunched until they got a numerical answer. Obviously I have not mastered my own equation cruncher.

Several other people have noted that John Disley's map of the World Championship course was hard to follow. However, the organizers already had their own large-scale maps, made from aerial photographs, that they had used to initially measure the course! John's map was just a sketch to show me what he had done - I had double-checked his measurement figures (we agreed). John had to add only 156 meters to what the organizers had already established. They were not relying solely on his maps. Also, he spent considerable time with the organizers going over the course. Everybody knew what was to be done, but the 3-lap announcement confused the runners, since, as you pointed out, it's almost a complete lap from where they start to where they exit the stadium. It was a bad day for everybody.

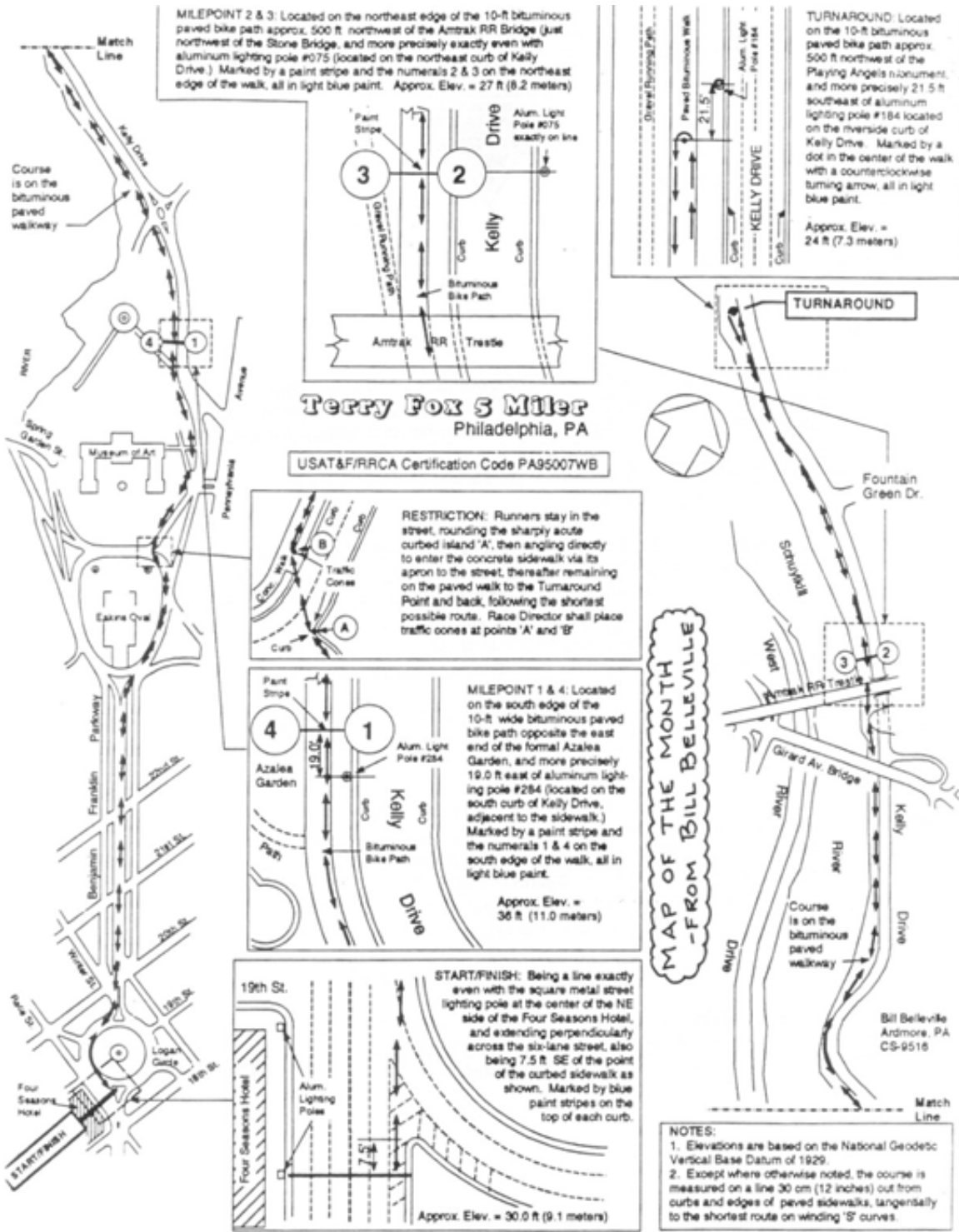
When people are called to measure foreign courses, it is the responsibility of the race organization to do the mapwork, not the measurer. In cases where the race organization falls short, the measurer does what he can. In the case of Göteborg, a good map already existed.

Best regards,

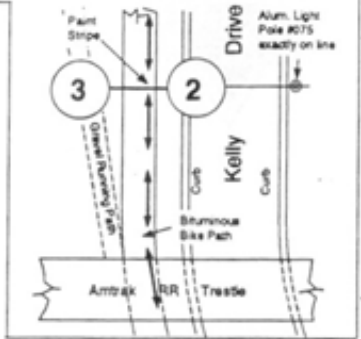
A handwritten signature in cursive script, appearing to read 'Pete'.

21

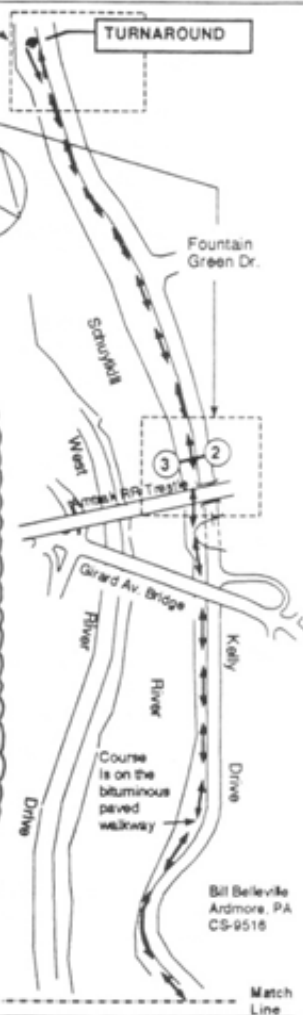
PLEASE REPLY TO: PETER S. RIEGEL, CHAIR, ROAD RUNNING TECHNICAL COUNCIL
 3354 KIRKHAM ROAD, COLUMBUS, OHIO 43221-1368
 HOME PHONE 614/451/5617, FAX 614/451/5610



MILEPOINT 2 & 3: Located on the northeast edge of the 10-ft bituminous paved bike path approx. 500 ft northwest of the Amtrak RR Bridge (just northwest of the Stone Bridge, and more precisely exactly even with aluminum lighting pole #075 (located on the northeast curb of Kelly Drive.) Marked by a paint stripe and the numerals 2 & 3 on the northeast edge of the walk, all in light blue paint. Approx. Elev. = 27 ft (8.2 meters)



TURNAROUND: Located on the 10-ft bituminous paved bike path approx. 500 ft northwest of the Playing Angels monument, and more precisely 21.5 ft southeast of aluminum lighting pole #184 located on the riverside curb of Kelly Drive. Marked by a dot in the center of the walk with a counterclockwise turning arrow, all in light blue paint. Approx. Elev. = 24 ft (7.3 meters)



Terry Fox 5 Mile Race
Philadelphia, PA

USAT&F/RRCA Certification Code PA95007WB

RESTRICTION: Runners stay in the street, rounding the sharply acute curbed island 'A', then angling directly to enter the concrete sidewalk via its apron to the street, thereafter remaining on the paved walk to the Turnaround Point and back, following the shortest possible route. Race Director shall place traffic cones at points 'A' and 'B'

MILEPOINT 1 & 4: Located on the south edge of the 10-ft wide bituminous paved bike path opposite the east end of the formal Azalea Garden, and more precisely 19.0 ft east of aluminum lighting pole #284 (located on the south curb of Kelly Drive, adjacent to the sidewalk.) Marked by a paint stripe and the numerals 1 & 4 on the south edge of the walk, all in light blue paint. Approx. Elev. = 36 ft (11.0 meters)

START/FINISH: Being a line exactly even with the square metal street lighting pole at the center of the NE side of the Four Seasons Hotel, and extending perpendicularly across the six-lane street, also being 7.5 ft SE of the point of the curbed sidewalk as shown. Marked by blue paint stripes on the top of each curb. Approx. Elev. = 30.0 ft (9.1 meters)

MAP OF THE MONTH
-FROM BILL BELEVILLE

NOTES:
1. Elevations are based on the National Geodetic Vertical Base Datum of 1929.
2. Except where otherwise noted, the course is measured on a line 30 cm (12 inches) out from curbs and edges of paved sidewalks, tangentially to the shortest route on winding 'S' curves.

A FRENCH MEASUREMENT SEMINAR

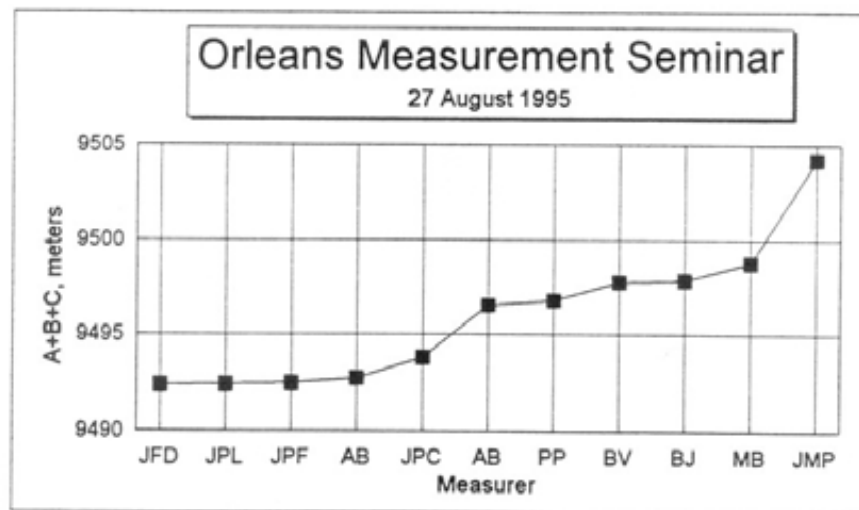
Jean-Francois Delasalle conducted a seminar in Orleans over a multi-loop course. Results are extremely close for a group of ten measurers. Once the riding was done, the participants were asked to say what needed to be done to create courses of 5 and 10 km, arriving at "A" and a 15 km course departing from "S."

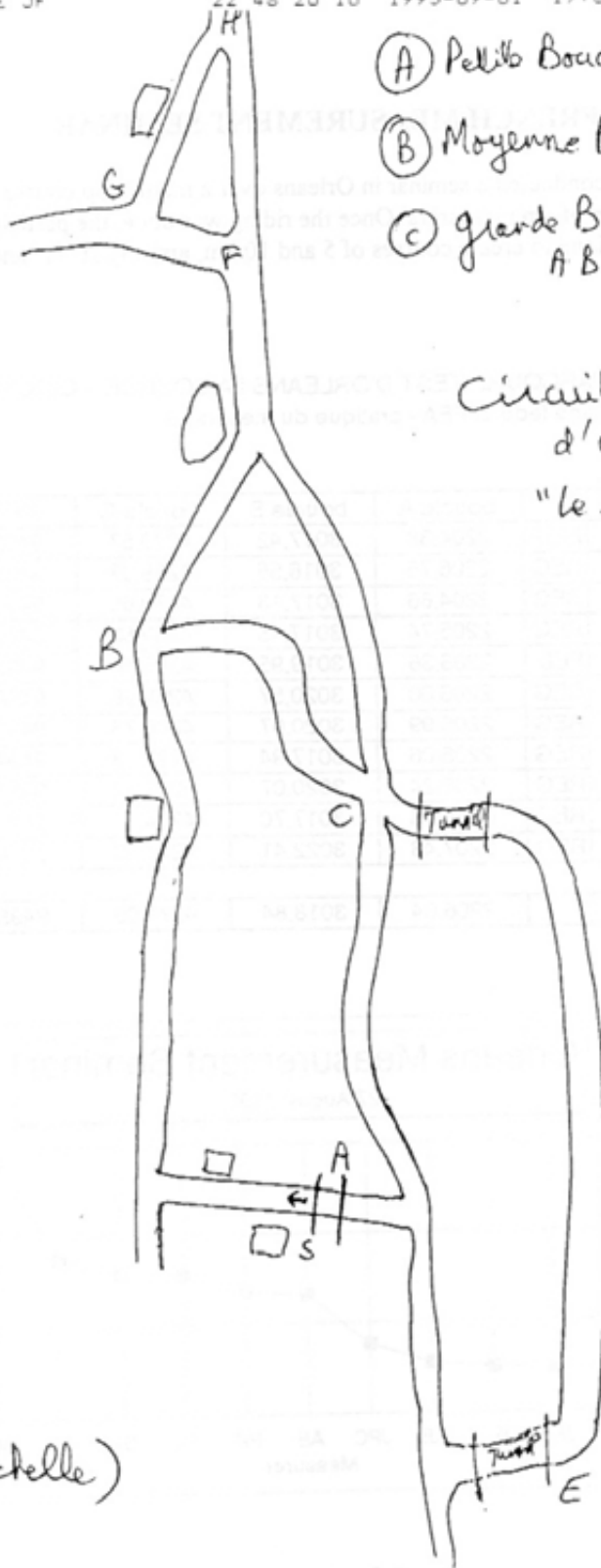
MESURES DES PARCOURS TEST D'ORLEANS LA SOURCE - CIRCUIT LE BOUCHET
le 27 août 1995 - stage fédéral FFA - pratique du mesurage

NOM		boucle A	boucle B	boucle C	A+B+C
J.F DELASALLE	FED	2204,38	3017,42	4270,57	9492,37
J.P LEROY	REG	2206,76	3016,56	4269,08	9492,40
J.P FLEUREAU	REG	2204,66	3017,13	4270,69	9492,48
A. BULOT	REG	2205,74	3017,45	4269,53	9492,72
J.P CALLENGE	FED	2206,36	3019,95	4267,46	9493,77
A BOUILLON	REG	2206,00	3020,57	4269,95	9496,53
P. PONTAROLLO	REG	2205,99	3020,07	4270,73	9496,79
B. VINOT	REG	2206,06	3017,94	4273,78	9497,78
B. JULIEN	REG	2206,24	3020,07	4271,54	9497,85
M. BOUREZ	REG	2206,78	3017,70	4274,30	9498,78
J.M PIWON	REG	2207,43	3022,41	4274,40	9504,24

médiane

moyenne-		2206,04	3018,84	4271,09	9495,97
----------	--	---------	---------	---------	---------





- Ⓐ Petite Boucle ABCA
- Ⓑ Moyenne Boucle ABCEA
- Ⓒ Grande Boucle ABFGHFEA

Circuits Tests
d'ORLEANS
"le BOUCHET"

(non à l'échelle)

JFD

John Disley CBE

Hampton House
Upper Sunbury Road
Hampton
TW12 2DW

30 October 1995

Tel: 0181 979 1707
Fax: 0181 941 1867

Fax Letter to:- Pete Riegel, Ted Paulin and Jean Francois
De la Salle.

I have just chaired the annual meeting of our UK Regional Course Measurement Secretaries. The group includes some eminent measurers - Max Coleby, Paul Hodgson, Roger Gibbon and Mike Tomlins.

We discussed most aspects of measurement, most of it concerned our own domestic administration. However, when I reported on the update of the IAAF measurement book one point of change was asked for by all of them.

It concerns pages 14 and 15 of the current book.

My group would wish to recommend two changes:-

1. That it is made clear that pre-race checking by the IAAF validator is done with the SCPF included and that corrections to the course will ensure that the certificated course will include the 1:1000 factor.

At the moment this is not made clear in the present book. I support this recommendation.

2. They are not comfortable with the post-race procedure. They argue that the race that doesn't take the trouble to have the course certified prior to the event will gain an advantage by having it measured afterwards. The book says that the SCPF will not be used in post-race ^{on a course} checking, so ipso facto that event could get a record which was, in the case of a marathon - 40m shorter than a pre-measured course, if the measurer would have been the same person.

My group, and I agree, claim that our present system rewards bad practice by race directors.

I recognise that Pete's USA method of certificating record courses relies on post-validation but the rest of us are committed nationally and through AIMS to establishing a regime where without a measurement certificate there is no permit for that event to be on the calendar.

But in any case there seems to be little or no justification for having a checking procedure which varies from pre to post. Both should have the SCPF included.

Comments:

25

Pete Riegel - 3354 Kirkham Rd - Columbus, OH 43221
Phone: (614) 451-5617 FAX: (614) 451-5610

October 30, 1995

Dear John,

Some commentary on your two recommended changes in your fax of today:

1) This is not really a change, rather an emphasis. I think it is a good idea to be sure the full SCPF is used uniformly. It will help avoid situations like Dave Bendy's in which the only way he could fit the Athens World Cup Marathon into the available space was to eliminate the SCPF or start World War III with the organizers. Non-use of the SCPF was bad practice, and should be discouraged. I support this change being made clear in the book. It will reinforce the authority of the measurer against organizers who want to shave the course. The 1.001 should be fully applied on all courses. When the US does a pre-race validation (we sometimes do this) the course is adjusted to fully use the extra 1.001. This should be uniform practice worldwide.

2) The practical reason why this will not work is that if you want to be **sure** that your course will pass a remeasurement that includes the 1.001 SCPF, you will have to use **1.002** as your layout SCPF. Do you really wish to propose this? If an expert measurer obtains 42199 on a marathon remeasurement, it is likely that the original measurement had some safety factor applied. If I want to be **sure** that my 10 km course will remeasure out to at least 10010 metres, it would behoove me to lay it out at least 10017 to 10020 metres long. Is this desirable? I think it makes things too long. If you lay out a 10 km at only 10010 metres, there is a 50 percent chance that it will fail to remeasure to at least 10010. I smell a Coleby here - he has been on about this for years.

The 1.001 is applied on all layouts to give a high probability that the course is at least as long as nominal. The only test of the success of this is to remeasure to see if it works. Our US system has checked enough courses that we have determined that it works unless an outright mistake is made. We are not in the least perturbed when a 10 km course remeasures out to 10002 metres. It only shows that the system worked. The SCPF gave the needed protection. The record stands.

It comes down to whether a remeasurement is intended to reward good athletic achievement or punish bad measurement. If a course remeasures to more than its nominal distance, the athlete did what was needed, even if the measurer did not. By luck or intention, the course survived. Why make the athlete pay the penalty?

Two or more measurements of a race course will **always** disagree. There is never agreement on the exact length of a course - no one correct answer. The SCPF assures that all will agree that the course is at least as long as it is supposed to be. There is no reason why all should agree that the course is 1.001 times as long as it is supposed to be. You need to rethink this one, John.

Best regards,



copy: Delasalle, Paulin

ORGANIZATION OF INTERNATIONAL COURSE MEASUREMENT

A meeting was held in Paris on October 13 to discuss the best way to promote accurate course measurement throughout the world. Before going further, I will summarize what has gone before:

In the early 1980's US measurement and certification was beginning to grow fast. The principal motive for accurate measurement was the possibility of having fast times recognized as records. At this time AIMS, an organization of marathon race organizers, was founded. Its core were the New York, London, and Boston Marathon organizations, now joined by more than a hundred others. Recognizing that for the sport to be credible it must have accurate courses, AIMS set up the requirement that its member races must have their courses checked by a foreign expert measurer, and that the race itself must be observed by the same measurer to verify that the route was correct. The measurement techniques were based on the US model, at the urging of **Allan Steinfeld**, who was, at that time, AIMS Technical Director and head of USATF Road Running Technical Committee. Over the years AIMS has tried hard to follow this precept.

In response to an early AIMS request, I was asked to provide a list of people who could be considered as expert measurers, good enough to perform the checking of courses. I provided a very long list, but for political reasons it was pruned to a smaller number - now listed as "A" measurers.

In 1990 AIMS published **AIMS Course Measurement Procedures**. This was followed closely by the almost-identical IAAF document **The Measurement of Road Race Courses**.

In February 1993 a meeting was held in Nice, France. At this meeting four people were appointed by IAAF as Area Administrators for course measurement. They included John Disley, Technical Director of the London Marathon, Pete Riegel, Chairman of USATF/RRTC, Jean-Francois Delasalle, head of French course measurement, and Ted Paulin, AIMS Technical Director. The world was divided into areas for which each of these people were responsible. At this meeting it was decided that measurers should be graded as A, B, or C. The existing listing of AIMS measurers was turned into the joint IAAF/AIMS listing of "A" measurers.

What does A, B, C mean? Basically a "C" measurer is a beginner. With experience they become "B." With more experience, plus being checked out by an "A" measurer, they rise to "A" status. The only practical difference between an "A" and a "B" is that A's may measure Olympic and World Championship races, while B's may not.

A meeting was held in 1994 in Monte Carlo, which I was unable to attend. Definitions and procedures were further refined. In October 1995 the meeting addressed the creation of a joint IAAF/AIMS measurement book, which is being worked on, although no changes to measuring methods are being made. At the meeting I asked whether IAAF/AIMS could use some more US measurers, or whether we were still restricted to a small list. It appeared that more could be used, so I proposed adding our certifiers to the list of "A" measurers. This was refused, since a person must be a "B" for at least two years before becoming an "A."

In any case, the following list contains those who are now on the joint IAAF/AIMS listing of measurers. Appearing are all active final-signatory certifiers who actually measure courses. In two years I will recommend that all be elevated to "A" grade.

IAAF Graded Measurers in the USA

Measurer	US		IAAF Grade
	Courses Measured	Years Experience	
Bob Baumel	43	10+	A
Scott Hubbard	175	10+	A
Tom Knight	115	10+	A
Doug Loeffler	61	10+	A
Tom McBrayer	257	10+	A
Wayne Nicoll	418	10+	A
Pete Riegel	192	10+	A
Bob Thurston	294	10+	A
Mike Wickiser	67	9	A
Jay Wight	118	8	A
Lee Barrett	67	10+	B
Bill Belleville	59	10+	B
Felix Cichocki	67	10+	B
Woody Cornwell	55	7	B
John DeHaye	24	10+	B
Michael Franke	35	10+	B
Bill Glauz	46	10+	B
Bill Grass	79	10+	B
Finn Hansen	71	10+	B
Bob Harrison	53	7	B
Amy Morss	44	9	B
Ray Nelson	79	10+	B
Gene Newman	90	10+	B
Dave Poppers	51	10+	B
Don Potter	24	10+	B
Rick Recker	184	10+	B
David Reik	37	10+	B
Mike Renner	24	10+	B
Ron Scardera	367	10+	B
John Sissala	104	10+	B
Brian Smith	21	10+	B
Karl Ungurean	45	10+	B
Frederic Wilson	10	8	B
Carl Wisser	145	10+	B
Total courses	3521		

Note: "US Courses Measured" reflects totals as of 1 September 1995.
 "Years Experience" is the time elapsed since the measurer's first course appeared on the course list.



The Oklahoma Association of
USA TRACK & FIELD
P. O. Box 2008
Tulsa, OK 74101

September 21, 1995

Mr. Pete Riegel
3354 Kirkham Rd.
Columbus, OH 43221-1368

Dear Pete:

With regard to metric splits there is no one who has had more experience with runners and race directors and their reaction to metric splits than I have had over the past eight years.

If we were asking runners to learn some complicated formula which required a slide rule or calculator to figure out, it might be understandable that some would object to this change. Fact is, anyone with a basic third grade education could figure out metric pacing if they were told five minutes before the gun was fired that the splits would be called in km's and not miles. Of course, anyone who is mentally lazy or bigoted might have an additional problem. The latter seems to be the case more often than not. At first we heard a few bigoted comments that very soon disappeared. After a few races it became second nature and most of those who were opposed have come to me and admitted that they were wrong and that they now appreciate the metric splits. They are certainly at no mental disadvantage as you mentioned in your reply to Michael Franke (page 24 last issue). Just the opposite has happened here in Oklahoma.

The same mentality objected to the standard metric distances in 1970. Why not run miles? After all this is America. However, everyone quickly accepted the metric distances and certainly no one ever complains about a metric distance. Fact is, if we changed the 5 km to 3 miles, the 8 km to five miles, the 10 km to six miles and so on you would have the same mentality voicing the same objections.

From experience, I can say unequivocally that it makes absolutely no difference if you train in miles, km's or in time or if you drive in miles think in miles or whatever, when it comes to pacing it is a simple matter of math. The evenly spaced km's which come up more often have proved beyond any doubt that it is easier and more practical. Last year we went to a 5 km race in Arkansas which called three separate mile splits and, of course, had that little bit left over. It seemed very awkward to go back to the old system.

Lets face it, we are partly on the metric system and partly on the English system. No one objects to grams and kilograms in food and medicinal terms or to millimeters when referring to cameras, weapons and so forth. Road racing is an international sport on the metric system. There is no reason to wait until the country goes totally metric to start using metric splits. If the measurers, certifiers and race directors don't take the bull by the horns, then who will.

Very sincerely,

A handwritten signature in cursive script that reads 'Joe'.

Joe McDaniel
USATF LDR Committee
P. O. Box 2008
Tulsa, OK 74101

cc: Bob Baumel, Glen Lafarlette

29

We Enjoy You

A Close Look at the Equally Spaced Progression of the 1993 Tulsa Run Leaders 1994 Offers a New Perspective for Pacing

For the first time in 16 years the Tulsa Run course was marked every 1000 meters. You may have noticed that these km's were marked in pairs only a few steps apart. In other words, the 1 and 14 km were together as were the 2 and 13, the 3 & 12 and so on. This facilitates the calling of splits such as the 5 & 10 km. In fact, by moving the finish line back about 9 meters each of these points would be in the exact spot and the turnaround would be halfway. In other words, there could be one, two-sided clock for the 5 and the 10 km split. This would make the 14 separate km's easier to call than the 8 miles and the mile to go, etc.!

The equally spaced metric pacing allows great flexibility for comparison. In addition, runners know where they are at all times since the splits come up evenly spaced 14 times during the event. This is not true with the uneven and awkward mile splits which are too far apart and do not allow runners to adjust their pace as often.

Glen's Road Race Service timed the leaders at each 1000 m and at the halfway point. The results are interesting:

km	Time Per km	Cum. Time at each km
1	2:58	2:58
2	2:51	5:49
3	2:52	8:41
4	2:55	11:36
5	2:55	14:31
6	2:58	17:29
7	2:50	20:19
Halfway		21:48
8	3:00	23:19
9	3:02	26:21
10	3:09	29:30
11	3:03	32:33
12	3:06	35:39
13	3:00	38:39
14	3:06	41:45
15	2:52	44:37

km	Time Per 5 km at each 5 km	Cum. Time
5	14:31	14:31
10	14:59	29:30
15	15:07	44:37

km	Time Per 3 km at each 3 km	Cum. Time
3	8:41	8:41
6	8:48	17:29
9	8:52	26:21
12	9:18	35:39
15	8:58	44:37

The fastest km was number seven which was 2:50 and the slowest was number 10 which was 3:09...a difference of 19 seconds. The race pace was 2:58 per km compared to the 1992 pace of 2:53.. a loss of five seconds per km.

After the turnaround it became a tactical race with the leaders waiting for someone to make a move. It did not happen until the last km, probably due to the cold and the wind. According to GRRS, the leaders did not follow the tangent from km 11 to km 13 which resulted in a two or three second loss.

The fastest km for most runners should be number two based on the altitude, terrain and calm conditions. However, this is also one of the more congested and does not allow for a fast pace in the pack. The fastest km may be number six or seven which is a straight and level shot down Riverside Drive. Again, the wind is a big factor in determining which part of the course is the fastest. There is no doubt that km fourteen is the slowest for everyone with conditions being the same.

Editors Note: This was our 16th race out of 16 and one of the slowest. However, it was one of the most fun as the metric pacing allowed a new perspective. Five minutes per km or 75 minutes (compared to 4 minutes and an hour 10 years ago) was our goal. The first km was 5:06 (it took 19 seconds to get to the start line) and the next four were under 5 minutes. By the halfway point a 22 second cushion had been built. However, this dwindled away the next 4 km. At 10 km the cushion was only four seconds. At 12 km the time was one hour or exactly on pace. The next three km's were much harder....almost 5:15 each and a race time of 1:15:44.

The Tulsa Run Committee has taken a giant step forward. In 1994 the course will be totally metric and splits will be called at each km and halfway. The course will be adjusted to make the turnaround exactly halfway and the splits in exact pairs. The Tulsa Run should be congratulated for having the foresight to make this move.

The Oklahoma Runner encourages you to make the best of this year's event. Make it fun with evenly spaced metric pacing. It makes no difference how you train or how fast you run or walk, you can benefit from the equally spaced splits. Figure your estimated finish time or your target time within reason and divide by 15 to get your pace per km. Forget about miles and conversion to miles. Why not obtain a copy of Bob Baumel's article, "Pacing the Tulsa Run?" This will enhance your ability to take advantage of every step of the Tulsa Run in 1994. If you need a copy, call us at (918) 581-8306. ●Joe McDaniel

**Oklahoma
RUNNER**



Joe McDaniel - PO Box 2008 - Tulsa, OK 74101

Dear Joe,

September 25, 1995

Thanks for the letter and article concerning metric splits. I will put both of them in next MN.

I agree with you that the switch to metric would not require anyone to hire a mathematician in order to cope. Still, people are comfortable with the status quo, and race directors are highly sensitive to complaints from the runners, and will do whatever they can to avoid them.

I usually inquire, when I am doing a measurement, whether the race director would like to have metric splits, and try to nudge them in that direction. I have yet to find anyone who is willing to do it. They don't mind if I want to lay down the kilometers as well as the miles, but tell me not to bother, as they won't use them. They believe their runners want miles.

I believe the consumers should have a choice, and the consumers are ordinary US runners. The race directors will do as they think the runners desire. The measurers will give the race directors the courses they want. And the certifiers will certify what is sent to them by the measurers.

Road racing is international, that's true. But in the USA, the fraction of foreign runners is tiny, and the desires of most of the field should predominate. Those desires may be prompted by ignorance, prejudice, or any number of other bad reasons, but they are still what the runners want.

In Oklahoma the metric system has been given a big boost by Bob Baumel, who has long been a zealot on the subject. It's been buttressed by your support in **Oklahoma Runner**. It's a big help to have a running publication assist in the promotion. Most states don't yet have such metric support. **Track & Field News** has made a tentative step toward metricity, by listing marks in both units, but freely admit that they are afraid to go all metric, as they fear loss of readership from fans who have spent their lives digesting Imperial units.

Aside from a desire for neatness and logic, I can see no overwhelming reason why it would benefit US runners to have **either** system in place. As long as splits are regular, and understood by the runners, the runners get what they need. Although my personal preference is for an instant switch to the metric system, I think an attempt to do it by decree would lead to heated arguments. I don't mind an argument, but I prefer one I can win with solid reasons rather than by decree.

I think any attempt to force a change at this time would be extremely unpopular. The way to go, I think, is to try to convert the US one race at a time. The Tulsa Run is a pioneer here, and I hope the metric concept will grow.

Best regards,

A handwritten signature in cursive script, appearing to read 'Peter'.

31

PLEASE REPLY TO: PETER S. RIEGEL, CHAIR, ROAD RUNNING TECHNICAL COUNCIL
3354 KIRKHAM ROAD, COLUMBUS, OHIO 43221-1368
HOME PHONE 614/451/5617, FAX 614/451/5610

ULTRAMEASURERS by Andy Milroy

Following an IAU initiative and with the support of the IAAF two successful Course Measuring Seminars took place early in 1995. One at Minsk and the other at Moscow-both were under the direction of IAU Council Member, Harry Arndt.

After the IAAF Course Measuring Seminar in Moscow, Konstantin Santalov became one of only three qualified Jones counter course measurers in Russia. Santalov, twice winner of the 100km World Challenge, was following an ancient and well established tradition.

Ultrarunners have frequently been at the forefront in establishing and developing course measurement, perhaps because of the extreme distances and time taken. What could be more soul destroying than running for six hours or more, only to discover that your performance is invalidated by faulty measurement.

The first ultra performer to have an interest in measuring was Philonides, son of Zoites from Crete. The bematistes of Alexander the Great (a bematistes was one who measured by paces) Philonides was famous for an ultra run from Sicyon to Elis, some 218kms possibly in 24 hours. c.330 BC.

Arthur Newton, perhaps the father of modern ultrarunning, was always punctilious about the measurement of his 'record' courses. On at least one occasion, he deliberately ran further to ensure the course wouldn't be short. He was also the first person to measure the Comrades course which he did in the 1920s using a surveyors wheel.

John Jewell, the man who introduced the use of the calibrated bicycle to the measurement of road running races and did much to publicise and develop its use, both in the United Kingdom and Internationally, was also an ultrarunner, running the London to Brighton from 1951 to 1955.

The organisation of the London to Brighton race was one of the prime reasons for the establishment of the Road Runners Club, which also did much to revive and develop track ultrarunning particularly from the 1950s onwards. Another area which the RRC developed was the training of course measurers and the setting up of a national network of such measurers. This network was later consolidated into the current British Athletic Federation measurement scheme.

Ted Corbitt who set numerous American ultra records, ran in the London to Brighton race several times in the 1960s, and became interested in the use of the calibrated bicycle for course measurement. He was to pioneer its use in the United States, and was founder member of the US Road Running Technical Committee. Another ultrarunner, Ken Young, founded the National

Running Data Center in the United States and did much to develop a coherent system of national road records, building on Corbitt's original work. Young held the national 40 mile track record. Peter Reigel, yet another ultrarunner, is the current Chairman of the US Road Running Technical Council.

It is significant that there are two IAAF Grade A measurers on the IAU Executive- Harry Arndt and Dan Brannen- and it is perhaps unsurprising that two of the four IAAF Measurement Area Administrators have strong ultra connections. Peter Reigel, as I have said is an ultrarunner and race director and Jean Francois Delasalle (FRA) has had very strong connections with the Amiens 100km over the years and has been President of UMF (Ultra Marathon France). Thus the ultra measurement connection has a long and distinguished tradition stretching back into the distant past.

This is just a brief sketch of the impact ultrarunners have had on the development of accurate road course measurement with no claim to be comprehensive. There are many other figures, some ultrarunners, some not, who have also contributed to the development of the measurement discipline.

BRIAN SMITH'S TRIANGLE PUZZLE

Jean-Francois Delasalle was first with the correct solution. His answer: $BC = \sqrt{124} + 2\sqrt{31}$
Others achieving the correct answer were **Alan Jones, Pete Riegel, Dave Yaeger** and **Bob Baumel**, whose solution follows on subsequent pages.

People criticize the mail service. I took the last MN to my mailing service on Wednesday, August 30, for application of correct postage and transmission to the Post Office. I received JFD's fax answer on Tuesday September 5, from France. I also got a call from **Dave Oja** in New York the same day, concerning the last MN. I think this represents pretty good mail service. My opinion about mail complaints is that most of them stem from near-illegible addressing.



USA Track & Field

Road Running Technical Council
Bob Baumel, OK, SD Certifier

129 Warwick Road
Ponca City, OK 74601
405-765-0050 (home)
405-767-5792 (work)

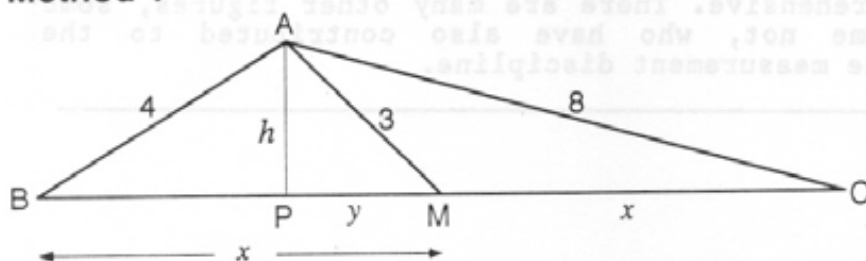
1995-09-10

Pete Riegel – 3354 Kirkham Road – Columbus, OH 43221-1368

Dear Pete,

Here is my solution to Brian's puzzle in Sept '95 MN. Actually, when Brian wrote there are "at least two" solutions, I originally misinterpreted this to mean there are at least *two distinct numerical values* that solve the problem (i.e., the equations are quadratic or higher order, having at least two physically meaningful solutions). However, all I could find was the single value $2\sqrt{31} = 11.135529$. (The only other value that solves the equations is the negative of this number, which doesn't make sense physically.) Then, I realized that Brian meant there were two solution *methods*. Therefore, I present two methods below (By the way, all of my diagrams in the following are nearly true scale):

Method 1



This is a brute-force method where we use the Pythagorean Theorem directly. We let $x = \text{Length}(BM) = \text{Length}(MC)$. Drop a perpendicular from point A to line BC, intersecting at point P. Let $h = \text{Length}(AP)$ and $y = \text{Length}(PM)$. Then:

$$\text{From triangle APB: } h^2 + (x - y)^2 = 16 . \quad (1)$$

$$\text{From triangle APM: } h^2 + y^2 = 9 . \quad (2)$$

$$\text{From triangle APC: } h^2 + (x + y)^2 = 64 . \quad (3)$$

Subtract Equation (1) from Equation (3) and simplify. This gives:

$$xy = 12 . \quad (4)$$

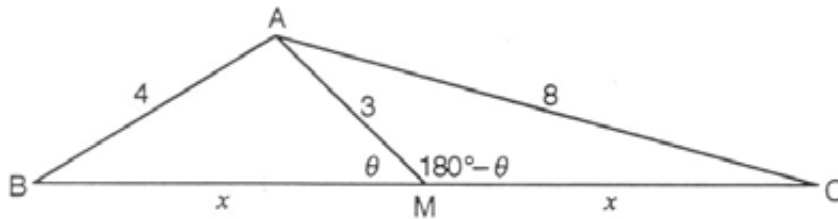
Next, subtract Equation (2) from Equation (1). Simplifying and combining the result with Equation (4), we get

$$x^2 = 2xy + 7 = 31 , \quad (5)$$

so the result is

$$\text{Length}(BC) = 2x = 2\sqrt{31} . \quad (6)$$

Method 2



This time we use the Law of Cosines. As before, let $x = \text{Length}(BM) = \text{Length}(MC)$. We define the angle $\theta = \angle AMB$, which implies $\angle AMC = 180^\circ - \theta$. The Law of Cosines gives:

$$\text{From triangle } AMB, \quad x^2 + 9 - 6x \cos \theta = 16. \quad (7)$$

$$\text{From triangle } AMC, \quad x^2 + 9 - 6x \cos(180^\circ - \theta) = 64. \quad (8)$$

We know from trigonometry that

$$\cos(180^\circ - \theta) = -\cos \theta. \quad (9)$$

Substitution of Equation (9) in Equation (8) yields

$$x^2 + 9 + 6x \cos \theta = 64. \quad (10)$$

Finally, addition of Equations (7) and (10) yields (after simplifying):

$$x^2 = 31, \quad (11)$$

so we get the same answer as in Method 1.

Method 3

In Method 1 we used two auxiliary variables (y and h). In Method 2 we used only one auxiliary variable (θ). Here is a possible method using **no** auxiliary variables: The area of a triangle with sides a , b and c is given by the formula:

$$\text{Area}(a, b, c) = \sqrt{s(s-a)(s-b)(s-c)} \quad (12)$$

where

$$s = \frac{1}{2}(a + b + c). \quad (13)$$

In our case, we have

$$\text{Area}(x, 3, 4) + \text{Area}(x, 3, 8) = \text{Area}(2x, 4, 8). \quad (14)$$

Presumably, these equations can be solved for the same value of x as obtained in Methods 1 and 2, but I haven't had the energy to follow through on this.

Best regards,

Bob



USA Track & Field

Road Running Technical Council
Bob Baumel, OK, SD Certifier

129 Warwick Road
Ponca City, OK 74601
405-765-0050 (home)
405-767-5792 (work)

1995-10-04

Pete Riegel – 3354 Kirkham Rd – Columbus OH 43221-1368
Basil Honikman – 5522 Camino Cerralvo – Santa Barbara CA 93111

Subject: Info for World Wide Web

For some time, I've thought that we (both RRTC and RRIC) ought to have a presence on the World Wide Web. Working on the principle that it's easier to ask for forgiveness than permission, I've taken action that **may** achieve such a presence in the near term, although the site is probably not ideal, and eventually, we'd want to move our stuff to a USATF Web site when it becomes available.

My idea was, for now, to see if we could add material to an existing Web site, specifically "The Running Page" operated by Dennis Rears (address: <http://sunsite.unc.edu/drears/running/running.html>). To this end, I sent Mr. Rears an email containing material that I would like to see posted. I sent this email on Saturday, Sept 30. (At present, I have not yet received any response, although perhaps I'll receive one before this letter reaches you.) The contents of the email I sent to Mr. Rears are in the text file on the enclosed floppy disk.

Within this email, I tried to make it clear that posting any of our material on "The Running Page" would be a temporary arrangement, as I assumed that USATF would eventually have its own Web site. (I mentioned that the idea of a USATF Web site would be a good topic to raise at our upcoming Convention.) Actually, two days after I sent this email to Mr. Rears, I received my copy of Aug/Sept *On the Roads* from RRIC, containing the article "Running on the Internet," which indicated that RRCA and USATF are *already* developing Internet systems (which probably means WWW sites). Thus, a USATF Web site is probably closer to reality than I assumed when sending this email to Dennis Rears.

There is no assurance that the enclosed material will ever be posted on "The Running Page." Perhaps Mr. Rears will post a small amount of it. Or maybe he'll be so overwhelmed by the volume of material I sent that he'll ignore it entirely. In either case, it probably wasn't wasted effort, because USATF will soon have its own Web site, and the enclosed can be considered a start at preparing material for our committees to post on such a site. (Of course, it's also possible that we're duplicating our efforts. Could it be that the two of you both already knew about the intended USATF Web site, and both of you have already been preparing material?)

Anyway, let me summarize the material that I sent Mr. Rears (which you can read in its entirety from the file on the enclosed floppy disk). I provided lots of descriptive material about RRTC and RRIC, including the meaning of course certification and how to obtain it, record-keeping and reporting of race results, publications and products (as listed on the inside back page of *Measurement News*), and descriptions of our Newsletters (*MN* and *On the Roads*). I included the lists of Regional Certifiers and State Record Keepers (although I don't have the *complete* list of State Record Keepers; I have only the subset of State Record

Keepers who are authorized to receive race results directly from races). I also included several listings of certified courses (although I didn't include the *complete* domestic course list, which would have made the email *much* longer).

Perhaps it's a little scary to think that by putting the list of Certifiers on the Internet, we'd be posting our names, addresses & phone numbers in a location where *anyone* can see them. Actually, I think we have little to worry about, because the Internet is a very big place, so only people who are truly interested in this sort of thing are likely to access our site. For example, the militia member who logs onto the Internet to learn how to make fertilizer bombs is probably *not* going to find his way to our site.

In my descriptive material on RRTC, I plagiarized freely from material Pete has prepared in various places, such as his annual reports in USATF Convention programs. For RRIC, I had less to go by, so I improvised more, and my material may not be very close to what RRIC would have written themselves. In any case, both of you are free to change this material as you like.

Within the enclosed email, I also speculated on how other information might be provided. For example, software such as my Measurement Calculation program can be made available online (through a Web page) so users can download it directly. Lists of certified courses can be provided this same way. (Note that with the transmission speeds now available to many users, a download of 1.2 megabytes is not unreasonable these days.) Still another possibility might be to provide an online "search engine," so that instead of having to download the complete course list, a user could search for a desired course online. I don't know how to build such a search engine, but I know that they exist.

There's no doubt that we're entering a new age of electronic communications, and we'll have to keep up. My enclosed email represents a start at compiling material to make available online. Please read it and let me know what you think.

By the way, in response to the request in Sept *MN* to provide Internet email addresses: I can be reached at about half a dozen email addresses, including several at work and several on America Online. But for anything related to running, the obvious address to list for me is *bob42195@aol.com* (where the "aol.com" portion of the address indicates that it relies on the services of America Online).

Best regards,

Bob

E-MAIL ADDRESSES

If you would like your e-mail address here, let the editor know. This list will be expanded, and will appear in each issue of *Measurement News*. Typography of addresses is exactly as it appears in what was sent to the Editor.

Bob Baumel (OK Certifier, RRTC Secretary)
Bernie Conway (Canadian IAAF "A" Measurer)
Tom Ferguson (HI Certifier)

bob42195@aol.com
BERNCON@VILLAGE.CA
JKXY28A@Prodigy.Com