

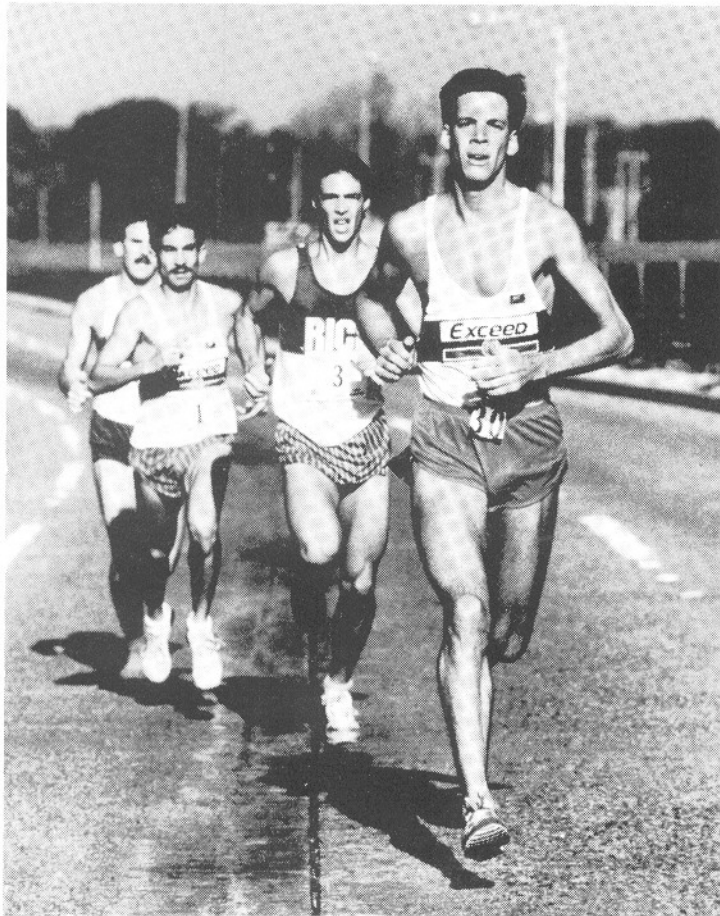


MEASUREMENT NEWS 

August

1986

Issue #18



MEASUREMENT NEWS

#18-AUGUST, 1986

Editor: Pete Riegel - 3354 Kirkham Road - Columbus, OH 43221
614-451-5617 (home, not after 10 PM EST)
614-424-4009 (work, 7 to 4:30 ex 11-12:30)
telex 245454 Battelle, Columbus Ohio

Publisher: Kevin Lucas - 9802 Forum Park, Suite 3333
Houston, TX 77036 713-771-5615

Send editorial contributions to Pete. Contact Kevin for matters relating to printing, subscriptions, mailing and advertising.

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Measurement News (MN) is the newsletter of the Road Running Technical Committee (RRTC) of The Athletics Congress (TAC). MN is our way to talk to one another, so that we all know what's going on.

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

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

Nice, clean typed stuff is most welcome, but send what you can.

NEW VICE CHAIRMAN FOR THE WEST

I am happy to officially announce the appointment of Bob Baumel to the office of Vice Chairman (West) of the Road Running Technical Committee. Most of you know of Bob through his comprehensive writings on various measurement topics. Paul Christensen, former VCW, wanted to pass on the office. He intends to remain active as a regional certifier.

NEW CERTIFIER FOR WASHINGTON & IDAHO

After several years of yeoman service Tom Duranti has had enough of certifying. He recommended Michael Renner as his replacement. Mike will undergo a grace period while he learns the ropes, and then will join the rest of us as a regional certifier. Profound thanks to Tom for his longtime service in the Washington area. Tom was also one of those who measured the 1984 Olympic Marathon course in LA.

FAST CERTIFIER

Congratulations to Gordon Dugan, 52, who on May 24 won the Bud Light Hawaiian Ultra 50 Mile with a 7:06:10. For more about Gordon, see letter from Tom Ferguson elsewhere in this issue.

PHOTOS SOUGHT

MN can now handle photos. Send in your favorites and see them appear in the pages of MN!

LETTERS TO PETE

921 Bath
Ann Arbor, MI
48103

Dear Peter,

The new format for MN is great! I don't always know what to make of the contents of MN, but it always does make me think.

I've spoken with Wayne Nicoll on the phone-to straighten out some questions and differences. Communicating through the mail wasn't getting the job done. It was a fruitful conversation and I feel we both are on more common ground than before. At this point, I'd say you picked the right person to replace yourself.

As per attracting and spending monies from TAC; enough money to set up cal courses around every state. Pay some engineers to go out and measure the courses for us. Also, money to pay for a clinic or for part of a larger clinic covering finer points of certification. Have TAC pay for airfare to national convention for all RRTC members. (I'd like to go to these meetings, but can never afford to.)

TAC owes road racing a very big favor in light of the fact that it generates large sums of money for its coffers. TAC owes it to road race interests to plow some of its savings/holdings back into support services.

Poor Mr Brindle in Marshall, MI. He spent a lot of time contacting everybody but myself about his non-certified course. He would've saved himself a lot of time if he'd talked to me first. Another fellow measured the courses before race day, and I've recently sent the certs to Wayne.

A couple years ago, we had another group that thought they were certified, but weren't. They had a cert signed by [redacted] who it turns out, wasn't really in a position to sign the certs. The race group has yet to try for 're-certification'.

If all goes as hoped, I'll be running the Bark One marathon in November. I coach a college cross-country team and my season should be over by then, unless somebody qualifies for the national meet.

6/20

Regards,

Dan Brannen
3533 Stevens Road
Wallington, NJ 07057

July 15

Pete,

I received the copy of MN with my ultra measurement suggestions. It will be interesting to see if there is any response. On the subject of ultra measurements: About a month ago Jean-Paul Praet of Belgium ran 6:03:51 in the Belgian 100 Km (9 others under 7:00). This would be a new world best (road AND track) for 100 Km. A few months earlier I had written to Lennart Julin in Sweden asking if he would get involved in certification and validation of European ultra courses for the IAU. Now Praet has made this a pressing issue--but I never got a response from Julin. Do you have enough European contacts to be able to suggest someone who might be willing to take charge of certifying and validating ultras in Europe (only the major ones with record-caliber times for now)? If you could put me in touch with someone, I would take the responsibility of securing funding for the validation of the Belgian course (either through the race director or through one of his sponsors--or through Praet's sponsor). There really is a need for this development within the IAU, but I don't know where to turn after failing with Julin.

Thanks for listening.

Best,

Dan Brannen

VALIDATOR SOUGHT

The above letter from Dan Brannen spells out a need. The 100 km (road) distance is an orphan in international circles. No official "body" recognizes road records at 100 km, yet it is a commonly-raced ultra distance, especially in Europe. No validation mechanism exists to check the course. Can we find a way? Does some reader, somewhere, have an idea how it might be done?

The Marathon distance, thanks to AIMS, is pretty well covered, since AIMS marathons are validated before the race. But there are other marathons that don't belong to AIMS, and it is possible that an open record could be set at one of them. What about 10k? 15k? They are internationally recognized distances also, and if a WR was to occur outside the US what mechanism would be used to verify that the course was OK?

In the case of this Belgian course, I think the first thing would be to approach the organizers and attempt to obtain whatever measurement information they have, and go from there. Will anybody take on this effort? I suggest using Dan Brannen as a contact, since he's an internationally recognized name in ultrarunning circles.

Bernard Conway,
67 Southwood Cres.,
London, Ontario,
N6J 1S8
July 1/86

Gabriel B. Duquay,
2903 Pierre-Tetreault,
Montreal, Quebec.
H1L 4Z6

Dear Gaby,

I was very surprised to see my name in the June '86 Measurement News concerning certification of the Masters Games Marathon. This course was certified in Ontario by the O.T.F.A. as you indicated not by the C.T.F.A. I noticed in your letter to Pete Riegel that one of the reasons that this course has not received C.T.F.A. certification was that the course was only measured twice. When I wrote to Sharon Clayton of the C.T.F.A. she indicated that the information concerning course measurement procedures for C.T.F.A. certification are still being reviewed and re-drafted. The chairman of the Technical Sub-Committee for Run Canada is John Craig. These documents were in his hands as of Feb. 25/86 and I assumed that the method of measurement for C.T.F.A. certification would be the same as T.A.C. and the O.T.F.A. at least in the number of measurements of the race course. I therefore used the more stringent pre and post-calibration measurements (six not four) of the O.T.F.A. and followed the T.A.C. forms for the other sections of measurement since I believed them to be at least as stringent as O.T.F.A. I shall of course measure any race that should receive C.T.F.A. certification three times now that I know that is the requirement. Is there a pamphlet or booklet explaining the method of measuring a race course for C.T.F.A. certification? I have found the O.T.F.A. pamphlet useful (although my copy is certainly outdated) and the T.A.C. booklet a Godsent.

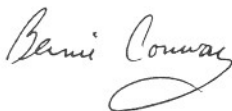
I certainly am not attempting to use Pete Riegel or the T.A.C. to put pressure on you or the C.T.F.A. to certify any of my courses that I sent to the C.T.F.A. I am however wondering why I was not sent a letter indicating why my courses were unacceptable for C.T.F.A. certification. I have been told to send all information for C.T.F.A. certification directly to Sharon Clayton of the C.T.F.A. office. Is this paperwork then being sent along to you or not? The reason I have not bothered with following up C.T.F.A. certification is that I was never paid for measuring the Master's Games Marathon even though it involved three trips to Toronto. I wrote to a local member of Parliament and then answered letters from several others as my case was handed over from one individual to another. As far as I know I am still in Limbo and may never receive my fee. I stated this in my last letter to Pete Riegel after he indicated to me his receipt of my certification data.

I was very interested to read that you "cannot certify a course knowing that the measurer who measured the course came 20 meters short on the 10 kilometer course we laid out, OR not knowing how the measurer measures." This statement may lead Pete or anyone who reads the letter to Pete in the June '86 Measurement News with the mistaken interpretation that I was the person who was 20 meters short in measuring a course. This of course is not the case as I was not at the National Clinic in Ottawa. I was invited to this Clinic by John Craig but was told that a lack of funds prevented me being the 3rd member (if my memory serves me well) from Ontario. As for not knowing how

accurately I measure I would invite you or anyone else to check any one of my courses for accuracy. I have enclosed a list of courses I have measured for certification. If you have another National Clinic or come to Ontario to put on a Provincial Clinic please let me know and I will make every attempt to attend. In the meantime does your statement mean that even if I were to measure a course three times that I or anyone else you have not checked for accuracy in measurement would not receive C.T.F.A. certification of their courses? I have been told by Sharon Clayton that I have been granted Level III Road Course Measurer status and that my name has been put forward along with six others in Canada for Level IV. If the C.T.F.A. grants this I find it difficult to understand your statement that I am a measurer not yet qualified. I believe that a measurer is assumed to be qualified until his/her courses prove to be in error otherwise the number of people qualified to measure C.T.F.A. courses is probably going to remain very small which will hamper C.T.F.A. certification.

Please let me know your thoughts on these topics.

yours truly,
Bernie Conway



Pete Riegel,
3354 Kirkham Road,
Columbus, Ohio,
43221

Dear Pete,

Enclosed is a copy of the letter I sent Gabriel Duquay in response to a letter I saw in the June '86 Measurement News. I have also enclosed a list of courses I have measured for certification.

I would like to thank you for your help in getting the Master's Games Marathon Course Certified. Even though this course may never be used again I found it very educational in both the difficulties of measuring a long race as well as some of the problems involved in measuring in a very busy city. Most of my measurements previously have been for local races in towns or small cities. Your advise as to map making was also appreciated. I hope you also realize that I enjoy racing on accurate courses and also enjoy making sure these courses are accurate. I am proud of my all my courses that I have had certified and have made several trips back to make sure that the kilometer or mile markers were accurately placed by the race director or whoever he/she appoints. There is usually no problem with the total length of the course but the intermediate distances sometimes get lost if the person in charge of this job doesn't realize the importance of pacing to a runner. It may be worth the effort of other measurers to go back to these races the day they are being run and check if the markers are being placed at the correct positions. Besides a description of where the km or mile markers are I also hammer a concrete nail with a washer into the road (if paved) and mark the distance with paint.

I would also like to stress the importance of measuring each km of metric races and each mile of non-metric races at the same time as the course is being measured. It is maddening to go to a certified course and find out the intermediate distances are not accurate, perhaps being measured roughly by the use of a car odometer.

I was very impressed with the new look of Measurement News. Kevin Lucas has done a super job in making a very important magazine for measurers into a professional looking magazine for measurers.

yours truly,
Bernie Conway

PRUNING THE LIST OF COURSES

By now all RRTC folks should have gotten a copy of the new Certified Courses book. You'll notice that it's a lot fatter than last year's, thanks to the work of all of us and the other measurers. This creeping fatness has got to stop somewhere. The question is, how do we do it? Is there a way we can keep the list full of currently certified and used courses, and get rid of the deadwood?

I've scratched my head on this for a long time, but I can't seem to come up with an answer that is satisfactory. Some options could be:

- 1) Keep on adding to the present list, dropping no courses. If we do this the book will soon be gigantic and costly.
- 2) Get all the certifiers to write to all the people who have measured in their area, and determine what's currently used and what isn't. I would not be willing to do this each year. Would you?
- 3) Publish an annual list of courses, and have each book include courses certified for that year only. This would mean that somebody might have to read half a dozen different books to find a course.
- 4) Put a three-year time limit on course listing, from the year of measurement. In other words, the 1987 book would carry courses measured in 1984, 1985, and 1986 only. Anybody wishing to have an older course listed would have to send a copy of his cert in to the list keeper and request that the course get a three-year extension. This would probably anger some people whose courses lost their listings, because we know that word would not get around in time. Unlisted courses would still retain their certification, but they would be unlisted in the latest edition of the book. I'm not totally happy with this option either.

Does anybody have a way to solve this problem that will allow list-keeping to be done without requiring the writing of a million letters?

FORMAT OF THE NEW COURSE LIST

The size of the Certified Course Book could be considerably reduced if the format was changed so that the info for each course was confined to one line of text, such as:

OHIO

5 kilometers

Berea	"NBAG 5k"	OH-86040-PR	15 Apr 86	mb Norman Grier
Dayton	"Run for Life"	OH-86042-PR	13 Apr 86	mb Felix LeBlanc
*Columbus	"Barffest"	OH-86979-PR	30 Feb 86	mb Pete Riegel

* denotes point-to-point course

Some may feel the loss of elevation info keenly. I don't, because I know that much of the elevation information I get is no more than a guess.

Separation of start and finish is covered in the asterisk denoting a point-to-point course. The "map" information is redundant, since virtually every course has a map on the cert.

Identification of the measurer is important for ego reasons. It's a large part of our reward for this work. In a way it makes us co-authors of the course book.

People needing deeper information than what is contained in the new format can still obtain it. The certs are on file, and the info is available for anyone who cares.

Do you have an opinion on this?

LITIGATION AGAINST MEASURERS?

Suppose a measurer lays out a course. A runner sets a WR on it, and is supposed to get a million bucks from his shoe company. The validation measurement finds the course short. The record is disallowed. The athlete gets upset and takes the measurer to court.

This is not farfetched or absurd. A volunteer measurer is not as liable, it seems to me, as a paid one, but the potential is there. So far the only thing I have been able to do about this is ignore it and hope it doesn't become a problem for me as a measurer.

Of course, the degree of difference between the nominal distance and the validation would come into it. If the 10k course validated out to 9500 meters there would be little doubt that the measurer screwed up. If it came out to 9998 it would be a different story.

Few of us measurers would care to take out insurance against being sued for a short course. Are we burying our heads in the sand? Should we think we have a problem? If we have a problem, does anybody have a solution?

Could the thing be put on a "best effort" basis, in which it is legally assumed that each person associated with the race has done his best, and that's all that's required? Are we to be subject to lawsuits for simple mistakes? I suppose we are - after all, it seems the papers are full of examples of people being legally harassed for trivial things.

One solution, of course, is to refuse to measure. I don't find this attractive, even though it's safe. Is this a problem at all?

A DIRTY TRICK?

I went to Brazil in May to measure the Sao Paulo and Rio courses, at Allan Steinfeld's request for AIMS. The Brazilian measurer, Gabriel Monteiro, was a Marine officer, a big, strong guy who rode his bicycle like a juggernaut. Slow, steady, absolutely straight. We had discussed how to measure courses, and we both knew we would be having a contest with one another to see who could get the shorter course. After seeing him ride I knew I'd have to concentrate very hard to best him.

Sao Paulo went to me by a trifling amount - I beat Gabriel by 7 meters - but he had ridden in the lead, which clued me in to the turns. So we agreed that in Rio I would take the lead to give him a shot at "winning". The Rio course has many long-radius turns in it, in which it can take 200 meters to a kilometer to turn 90 degrees. I reasoned that the pavement would be rougher right next to the curb, so I rode about a meter out from the curb, staying out of the gutter. I figured that over a long 90 degree turn the extra distance might be offset by the fact that I'd have a smoother riding surface. Gabriel, however, stayed in the gutter right up next to the curb. On short-radius turns I rode right close to the curb as I should. In spite of the fact that I rode a longer course, the numbers do not show it. The path where I rode was smoother, so Gabriel, in spite of definitely superior riding, was unable to gain a numerical advantage.

I explained it to him later, mentioning Bob Baumel's work on smooth vs rough surfaces.

In the second half of the measurement, he once again led, since the course got involved and I had no idea where to go. The data for the second half is clouded, since there were barriers used, and he knew where they were while I just measured SPR - naturally getting a shorter distance. We threw out my second-half ride.

It is reassuring to get yet another indication that US measurers do not enjoy a monopoly on good technique, and that measurement standards are increasingly settling in to a common mold.

PRE-CAL
2:30 AM
5-23-86
18°C

POST-CAL
7 AM
5-23-86
19°C

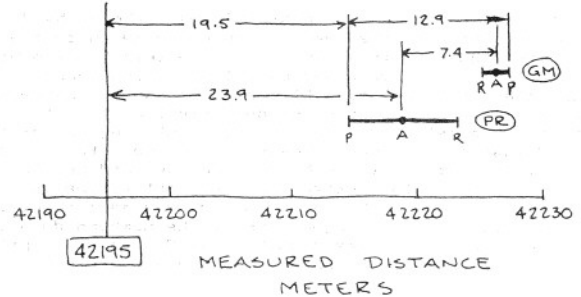
PETE RIEGEL

GABRIEL MONTERO

9634 }
9634 } 9633.5
9634 }
9632 }
 } 9632.5
 } (1 KM)

9597 }
9597 } 9597.25
9594 }
9601 } 9597.5
 } (1 KM)

POINT	PETE RIEGEL			GABRIEL MONTERO		
	RAW	ELAPSED COUNTS	METERS	RAW	ELAPSED COUNTS	METERS
START	12300	0	0	706000	0	0
5 K	60062	47762	4958	753574	47574	4957
10 K	(1) 08275	95975	9964	801607	95607	9962
18 K	85522	173222	17983	878578	172578	17982
23 K	(2) 33657	221357	22980	926550	220550	22980
28 K	91859	269559	27984	974588	268588	27985
33 K	(3) 30062	317762	32989	(1) 022622	316622	32990
38 K	78178	365878	37984	070592	364592	37988
MAR. 42.195K	(4) 18973	406673	42219	(1) 111267	405267	42226



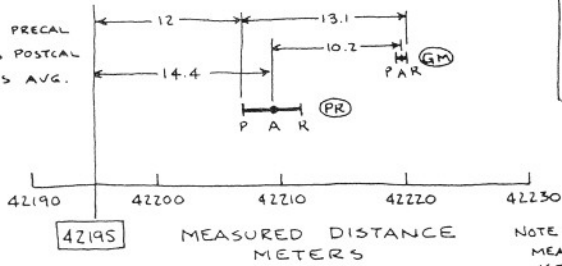
P = USES PRECAL
R = USES RECAL
A = USES AVG.

MARATONA DE SÃO PAULO
- MEASUREMENT DATA -

MARATONA DO RIO
- MEASUREMENT DATA -

POINT	RAW COUNTS	ELAPSED METERS		RAW COUNTS	ELAPSED METERS	
		COUNTS	METERS		COUNTS	METERS
PRE-CAL 5-27-86 2:00 AM 23°C	9593 9591 } 9590.875 9590 9589.5	9590.19 (1 km)		9595 9603 9593 } 9593.75 9594 9593	9593.63 (1 km)	
POST-CAL 6 AM 24°C	9590 9590 } 9589.5 9589.5 9588.5			9594 } 9593.5 9594 9593 9593		
NEW START	73770	0	0	205670		
OLD START	74373.5	603.5	62.9	206272	602	62.7
10 K	(1) 70362	96592	10072 10072	302287	96617	10071
15 K	(2) 18335	144565	15074	350288	144618	15074
19 K	56710	182940	19076	388688	183018	19077
21.1K (21.08 KM)	76178	202408	21106	408176	202506	21108
27 K	(3) 32741	258971	27004	464790	259120	27010
34 K	99917	326147	34008	532032	326362	34019 (8201 M)
MAR. 42.195K	(4) 78511	404741	42204	610713	405043	42220

P = USES PRECAL
R = USES POSTCAL
A = USES AVG.



TAC/USA SAYS:
ADD 30 M
AIMS SAYS:
ADD 28 M

NOTE: GM'S 8201 M MEASUREMENT WAS USED IN BOTH CALCULATIONS OF THE 34K-TO-FINISH.



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WAYNE B. NICOLL
3535 Gleneagles Drive
Augusta, Georgia 30907
(404) 860-0712

June 18, 1986

Peter S. Riegel
3354 Kirkham Road
Columbus, Ohio 43221

Dear Pete,

This is a response to your proposed article in the upcoming Measurement News on "Hiring Measurers and Finish Line People".

Dealing with a Course Measurer - (suggestions)

- 2) Is the measurement a design of a new course, redesign of an existing course, or simply an accurate measurement of an existing course?

Is there any requirement for an alternate route or alternate markings on the same course?

- 7) (or possibly this is a part of your #1) Is there a calibration course available? Has it been certified for use previously? What documentation is available on the cal course?

Dealing with a Finish Line Operator - Many of the same business communication concepts apply as are stated in the introductory paragraphs to "Dealing with a Course Measurer". Here are some suggested guidelines:

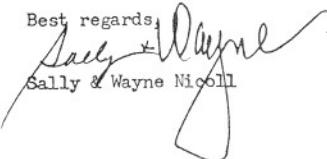
- 1) Get on paper what is being provided and for what cost. What is the payment arrangement?
- 2) Ask for references and check them out.
- 3) If use of a computer is involved, take special pains to determine the capabilities. What are the plans for computer back-up should there be a system failure?
- 4) What back-up timing systems are to be employed and by whom?
- 5) Does the Finish Line Operator provide the timing and scoring (if applicable) results to meet TAC Records requirements?

- 6) Be certain the following details are clearly communicated in your agreement - they are essential to proper equipment & staff planning.
- (a) How many races are to be timed, the length of the race(s), and expected number of participants
 - (b) How the races are to be scheduled, consecutively or simultaneously.
 - (c) Time of the race - day or night (if latter, lighting arrangements).
 - (d) Location of the start & finish areas and their distance relative to each other.
 - (e) Number of finish chutes desired, system of identifying runners to be utilized -cards, pull tags, etc. Who provides which materials.
 - (f) Number of volunteers requested from the race staff.
 - (g) Time allowance to produce results for awards if this is a part of the agreement. What is the awards breakdown per race?
 - (h) Time allowance to produce complete results if this is a part of the agreement.

In summary, determine what your race needs in the way of finish line assistance, then shop widely for the service best suited to your needs and within your budget allowance. Since travel will be figured in the costs, it would be wise to check first within the geographic area of the race course.

We hope this is helpful in putting together a handout sheet on Finish Line Operators. It covers the key areas where we have found from experience there needs to be a clear understanding between the race director and the finish line company.

Best regards,


Sally & Wayne Nicoll

28 June 1986

Peter S. Riegel
TAC RRTC
3354 Kirkham Road
Columbus, Ohio 43221

Dear Pete,

Thank you for your letter of 9 June and the return of my small contribution for MN - I wish you had retained it as it was my token for all the expenses incurred by you over the past year. Those of us "out in the field," have appreciated your personal efforts in continually getting the "message" out to us, and we are happy that MN will continue to roll off the presses.

In answer to two of your questions, yes we have received the 1986 edition of the Certified Course Listings; and, yes, we will support the purging the courses which have been unused for two - three years. Gordon and I have discussed this for over a year, and we both would like to see a policy allowing us to eliminate the non-used courses. We have a few out here that would be immediately eligible.

Since starting this letter, the mail arrived and I have just received MN #17. I was quite surprised to read your account of a certification fraud - amazing what some folks will do! And, this leads me to an issue which you may have already thought about. The question is "proprietary rights" for a course certification. A little background:

Recently I was asked to advise an individual on how to certify a course. After going over the manual with the person, I had this feeling he was trying to find a way to ask me the question: "If I measure this course for a race I am going to sponsor (the person has a business which runners use), will the course be "mine" for exclusive use?" As best I could in responding to the hint, I stated that a RRTC certified course is in effect a public document. Once it is in the files, anyone may ask to use it if they wish to run a race over the same course. This "fencing" discussion ended there, but in talking this over with Gordon we considered the possibility our files are not necessarily public. What we considered was the person measuring the course could believe he had exclusive right to his work, either for himself or the sponsor. And, in a society which has become litigation minded, we could foresee John Doe going in to court arguing his work was "stolen" by Walter Xray.

-1-

This is not a problem - yet! But, we have seen some strange cases going to court here. Like the married couple who split after a few years of marriage, and who both went to court over who painted a series of pictures first. The ex wife sued the former husband for libel, and the ex-husband the wife for "stealing" his style. This frivolous suit took over three weeks in a Federal court only to see the libel portion thrown out, and the "stealing" aspect settled in favor of the defendant. So I could foresee a course measurer (and his sponsor) preventing either Gordon or I from giving out the data for a race course to another party. As with many other cities, we are finding increasingly difficult to find different road courses for races. The City of Honolulu has placed restrictions on certain streets to the point where use of the same course is almost mandatory. All this may be an academic type exercise, but how many times have we witnessed those becoming major "hoo-hoo's?" Perhaps a simple statement in the Certificate to the effect anyone may hold a race on the course without prior approval of the original measurer/sponsor would prevent any possible "legal action." Which reminds me of an incident when I was still a member of the Honolulu Marathon Association. When we first introduced the "husband and wife team" award, it was quite plain to those who checked the form off for that division, it meant legal husband and wife. But, you can guess what happened - the "husband and wife" that had the best combined times were not legally married. As this was known (not to use in the Association), we were challenged by the legally married couple who came in second. We upheld the challenge only to be threatened with a law suit by the original winners - we had invaded their privacy etc, etc. As I recall, our legal counsel said to let the "unmarried married" couple have the award on the basis that people recognized that life style, and it was no big thing. Besides we were making what amounted to a moral judgement, and who were we to do that? The lawyer's term was "de facto marriage, not de jure," and the Courts can and will recognize the "de facto" business (like adverse possession). So, after all that, there simply may be no way to put a statement on the Certificate that would be upheld in a court of law!

Gordon joins with me in wishing you a pleasant summer back there with time off for a little relaxation. But, we know you will be busy off running one of those races up in Canada again! Gordon goes off to run the Western States 100 next week, aiming for his 4th buckle for his 4th grandchild! Then, he says, he'll hang up his ultra-long distance shoes and stick to marathons. As for me, I will try to get five or six miles in every day or so, and run an occasional 10 or 15 KM.

Warmest Alohas,

Tom & Gordon

4191 Halupa Street
Honolulu, HI 96818



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at all age levels.*

WAYNE B. NICOLL
3535 Glencagles Drive
Augusta, Georgia 30907
(404) 860-0712

June 18, 1986

Measurement News
Peter S. Riegel, Editor
3354 Kirkham Road
Columbus, Ohio 43221

Dear Editor Pete,

Recently I read a pronouncement of yours in which you indicated that it is the course that is certified, not the race. I have been puzzling over that concept for a long time. At two consecutive RRCA National Conventions I have been confronted with this question, "If I have a TAC Certified Course that I prepared what can I do to prevent another group from using my course and advertising they are TAC-Certified?"

Here is a very mild example. The Soybean Shuffle 10K, a fall event in Louisville, GA is held on a certified race course. The Chamber of Commerce paid the costs of bringing in an expert measurer to properly measure the course for certification. In the spring of this year another group organized a Bicentennial 10K run in the same town and advertised their course as TAC Certified. They made no attempt to let me know, as their regional certifier, that they were going to do this. The Bicentennial Run 10K is not listed in the Book of Certified Courses. In this case there did not appear to be any conflict or heartburn between the organizers of the two events. However, I have heard several horror stories of conflict in larger cities over the rights to a certain certified course.

It would appear to me that the certificate for the course is the property of the group that measured, or arranged for the measurement of the course. Or is it? As another club president in the same city, could I call the RRCA regional and request a copy of the certificate which will give me the vital details on start, finish, turnarounds, etc. and the course code number? What would happen when I submitted the results to NRDC? Would they accept the results because they were given a valid course identification code number? An unlisted event should not, in my opinion, be accepted.

I feel there needs to be an RRCA policy on the use of a certified course by another race. The race director of the new race should have to apply to the regional for addition of his footrace event to the course properly listed in the Book of Certified Courses. When approved and submitted to NRDC, the new race would be added and the race would become certified and eligible for records. Such an application should indicate whether there was any conflict with the original race and would give the regional the race contact and other details he would want to have on file. The same procedure could be used to keep alive the dozens of certified courses that may become abandoned by their sponsors, for example, the one hundred or more Stroh's Run For Liberty courses. The

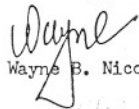
application could consist of the following -

- (1) Name, address, telephone number for contact for the organization requesting to use a currently listed certified race course.
- (2) Provision of a copy of the course certificate from the previous race.
- (3) Answer to the following: Is this request for the use of a certified course that is currently utilized by another organization in your area? yes _____ no _____
If yes, is there any conflict in the planned date of use by your group and the current hosts? yes _____ no _____ (if yes, explain)
- (4) Is this the assumption of responsibility for a certified course that is no longer in use? yes _____ no _____ (if yes, give details)

If approved, the regional would issue an additional certificate to the applying group and forward a copy to NRDC. In the absence of any policy at present, when I have been asked to add an additional event name to a course I have obtained a letter from the original sponsor requesting the addition of a second name to the course listing and then notified NRDC. These instances, however, have not involved a conflict.

Your comments and suggestions are solicited.

Sincerely,


Wayne B. Nicoll

Also from WN, in
another letter →

Taking a cue from the certified course list, I believe you should do the following to certify a split:

- 1) Measure to the split on at least two measurements.
- 2) Record the exact location just as you would the finish line.
- 3) Determine the elevation at the split.
- 4) Calculate the straight line distance from the start to the split.

I am forwarding the certificate on for recording at NRDC but I am blocking out the term "certified split" on your list of key points. If you have an opportunity to gather the split data, send it on and I will re-copy the certificate with the certified splits shown and change it at NRDC.

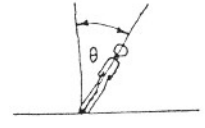
An "Oldie but Goodie" from Bob Letson, which he sent me several years ago. Work like this is one reason BL occupies a place of high regard.

WHAT IS THE RADIUS ACTUALLY RUN?

Q1. WHAT TYPES OF RADII ARE ACTUALLY RUN BY PEOPLE DURING TURNS AT DIFFERENT SPEEDS?

A1. THE RELATIONSHIP (BETWEEN VELOCITY, RADIUS, AND ANGLE OF LEAN INTO A TURN) IS PRESENTED IN THE FOLLOWING FORMULA (FROM "MECHANICS, HEAT AND SOUND," FRANCIS WESTON SEARS, © 1950, PAGE 187):

$$\tan \theta = \frac{v^2}{Rg}$$



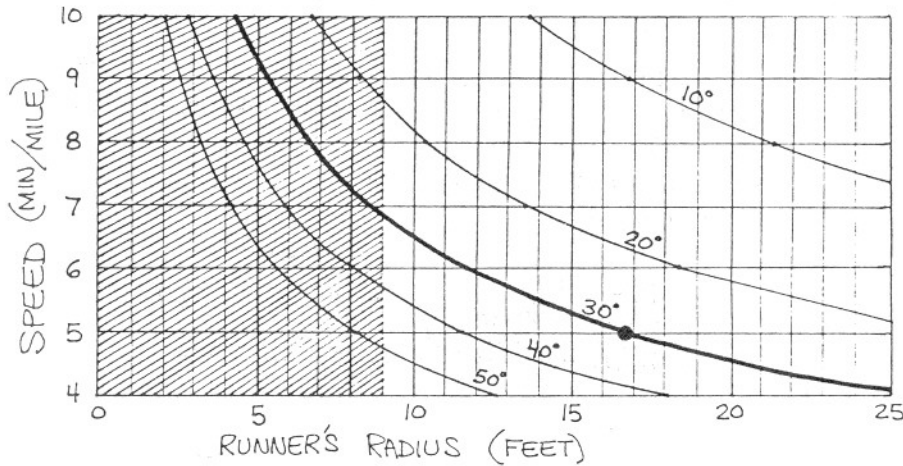
where v = feet/second (velocity)
 R = radius (feet)
 g = 32 feet/sec² (gravitational acceleration)

IN A LETTER DATED 3-20-73 DAVID A. SENECHALLE PROPOSED THAT $\theta = 30^\circ$ FOR A PRACTICAL MAXIMUM, AND THAT $v = 5$ MINUTES/MILE BE A STANDARD FOR COMPUTING A STANDARD MINIMUM RADIUS FOR CERTIFICATION. If this is accepted, $R = 16.8$ feet.

Other values for R depend on θ and v , as follows:

		θ = ANGLE OF LEAN					
		10°	20°	30°	40°	50°	R (feet)
MINUTES/MILE	4	85.78'	41.56'	26.20'	18.03	12.69	
	5	54.90	26.60	16.77	11.54	8.12	
	6	38.12	18.47	11.64	8.01	5.64	
	7	28.01	13.57	8.55	5.89	4.14	
	8	21.44	10.39	6.55	4.51	3.17	
	9	16.94	8.21	5.17	3.56	2.51	
	10	13.72	6.65	4.19	2.88	2.03	

RADIUS ACTUALLY RUN



The shaded area represents radii that experience difficulty measuring with a bicycle (rear wheel touches curb when front wheel measures 12 inches from curb).

IF WE ASSUME (30° @ 5 MIN/MILE)* IS STANDARD, THEN R = 16.8 FEET, WHICH CAN BE COMFORTABLY MEASURED VIA BICYCLE.

In fact, bicycles can measure radii as short as 9 feet (8 ft. for the curb) without hitting the curb.

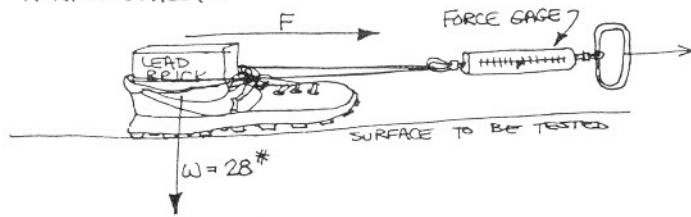
IF 10 FEET IS THE MINIMUM RADIUS, the 5 min/mile runner could negotiate a 45° lean on rough pavement without slowing down. This could also be measured via bicycle without hitting the curb. However, the risk of slipping is high.

* Dr. David A. Senechal's recommendation, 3-20-73

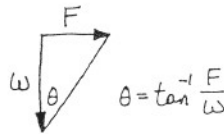
How ABOUT FRICTION?

Q2. WHAT EFFECT DOES THE COEFFICIENT OF FRICTION HAVE ON RADIUS?

A2. TO ANSWER THIS, I TESTED THE COEFFICIENT OF FRICTION AS FOLLOWS: I WEIGHED A LEAD BRICK, THEN PLACED IT ON A RUNNING SHOE (NIKE WAFFLE SOLE) AND MEASURED THE FORCE REQUIRED TO PULL IT HORIZONTALLY:



- $F = 16\text{ lbs}$ — WAXED FLOOR
- 18 lbs — CONCRETE
- 30 lbs — ROUGH ASPHALT



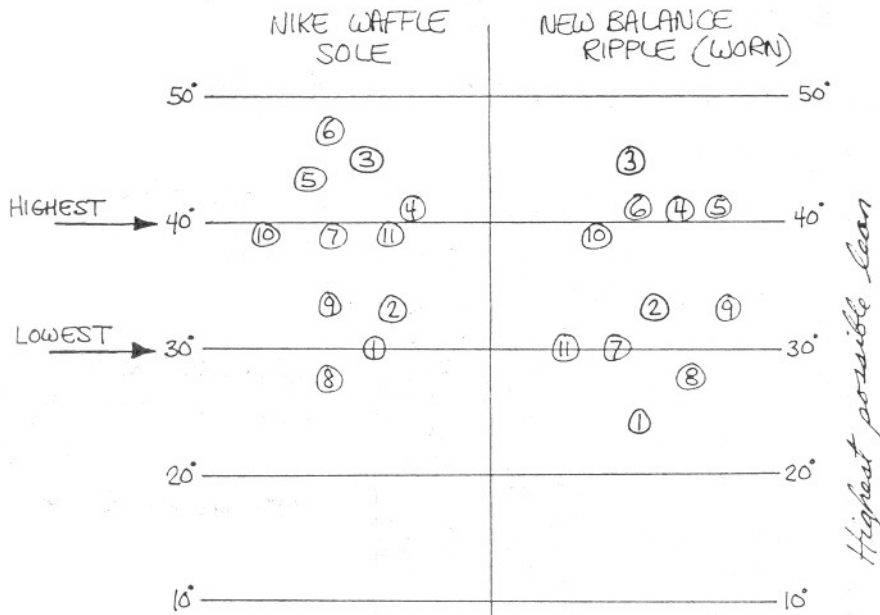
The coefficient of friction limits the amount of lean (θ) permitted for the running surface, as follows:

	θ (maximum lean)
WAXED FLOOR	31°
CONCRETE	34°
ROUGH ASPHALT	48°

So next day I decided to make a more thorough study, and tested eleven different surfaces, with two different shoes (New Balance ripple sole (worn), and Nike waffle sole). The results are on the next page.

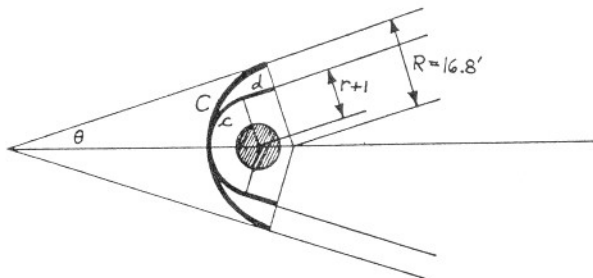
FORCE (LBS) REQUIRED TO MOVE SHOE + 27" HORIZONTALLY

	SURFACE	NIKE WAFFLE SOLE	NEW BALANCE RIPPLE (WORN)	
①	WAXED FLOOR (BATH)	16* = 30°	12 24°	①
②	CONCRETE (PATIO) DRY	18* = 33°	18 33°	②
③	CONCRETE (SW) DAMP	28* = 45°	28 45°	③
④	ASPHALT (ALLEY) + DIRT	23* = 40°	24 41°	④
⑤	ASPHALT (STREET) DAMP	26* = 43°	24 41°	⑤
⑥	GRASS (DAMP)	30* = 47°	24 41°	⑥
⑦	DIRT (DAMP)	22* = 39°	16 30°	⑦
⑧	CONCRETE + SAND	14* = 27°	14 27°	⑧
⑨	ASPHALT + SAND	18* = 33°	12 33°	⑨
⑩	GRAVEL (1")	22* = 39°	22 39°	⑩
⑪	ASPHALT + LEAVES TWIGS	22* = 39°	16 30°	⑪



The Safest lean is less than 25°.
 → a safe risk lean is 30°.
 a lean on the wild side, with great risk of slipping, is 40°.
 Most maximum leans are between 30° - 41° → R=11'
 → R=16.77'

How MUCH FURTHER IS $R=16.8'$ THAN 12" FROM CURB?
 (if $R=10.0'$)



$$C = \text{LENGTH of } 16.8' \text{ ARC} = \frac{2\pi R(180-2\theta)}{360} = \frac{\pi R}{90}(90-\theta) = \pi R\left(1-\frac{\theta}{90}\right)$$

$$c = \text{LENGTH of } (r+1) \text{ ARC} = \frac{2\pi(r+1)(180-2\theta)}{360} = \pi(r+1)\left(1-\frac{\theta}{90}\right)$$

$$d = \text{LENGTH from END of } (r+1) \text{ ARC to END of } 16.8' \text{ ARC}$$

$$= (R-r-1) \cos \theta$$

$$\Delta = \text{TOTAL DIFFERENCE BETWEEN } 16.8' \text{ ROUTE AND } (r+1) \text{ ROUTE}$$

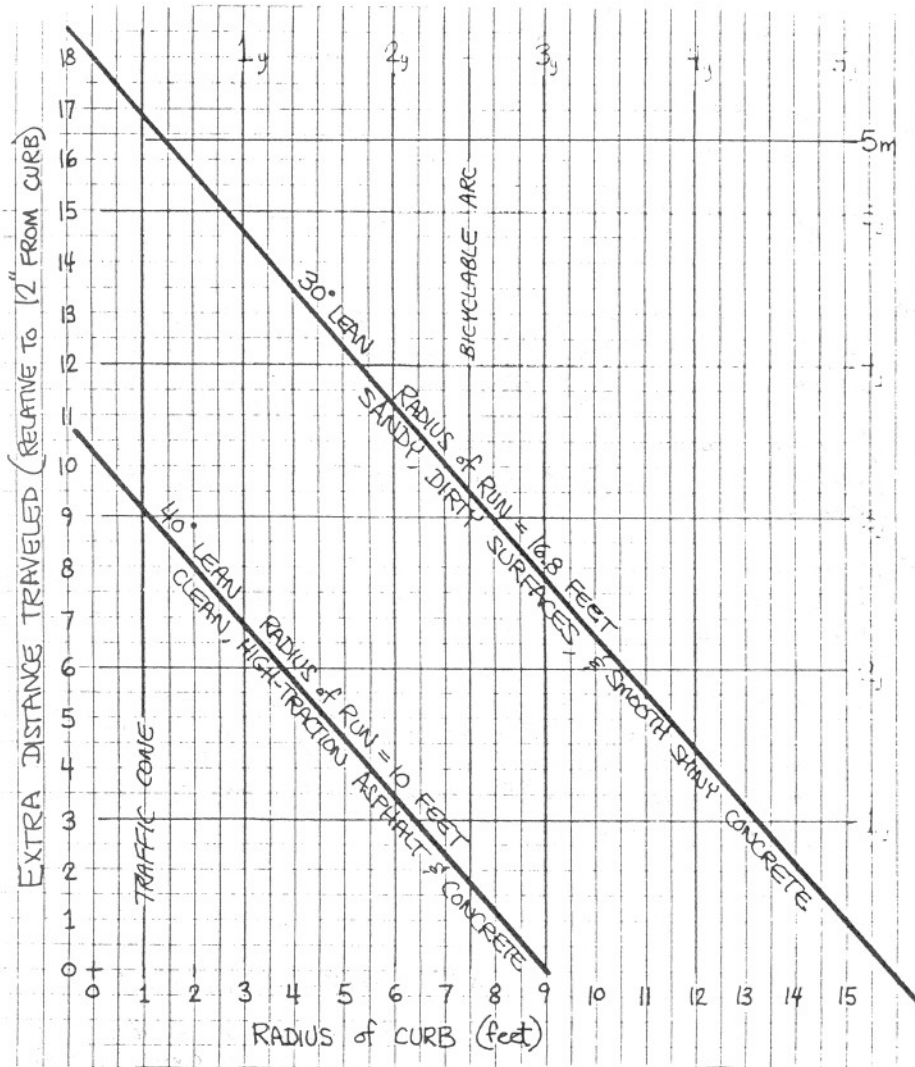
$$= C - c - 2d = \pi(R-r-1)\left(1-\frac{\theta}{90}\right) - 2(R-r-1) \cos \theta, \text{ where } R=16.8'$$

r (feet)	180° TURN $\theta=0$	90° TURN $\theta=45^\circ$	45° TURN $\theta=67.5^\circ$
1	16.90	2.32	.30
2	15.75	2.16	.28
3	14.61	2.00	.26
4	13.47	1.85	.24
5	12.33	1.69	.22
6	11.19	1.53	.20
7	10.05	1.38	.18
8	8.90	1.22	.16
9	7.76	1.06	.14
10	6.62	.91	.12
11	5.48	.75	.10
12	4.34	.60	.08
13	3.20	.44	.06
14	2.05	.28	.04
15	1.02	.14	.02

The greatest difference is for 180° turns (16.9').

90° turns are less than 2.3'.


45° turns are less than .3'.



EXTRA DISTANCE for 180° TURN

extra distance for 90° turn = (.137) (extra dist for 180° turn)
 " " " 45° " = (.128) (" " " 90° ")

CONCLUSION

- ① The greatest lean  without slipping on most surfaces = 30°
- ② The greatest lean without slipping on good firm surfaces = 41°
- ③ If we are to design race courses that do not impede (require slowdown) the fastest runners (i.e., 5 min/mile), the minimum radius for turns should be 10 feet. 41° lean
- ④ If we are to design race courses that may slow down the fastest runners, but not those 6 min/mile, the minimum radius should be 8 feet.
- ⑤ If we are to design race courses that do not impede the fastest runners on almost all surfaces, the minimum radius should be 17 feet. 30° lean
- ⑥ However, to be a true perfectionist, the exact radius depends on the surface at each turn. The measurer could conduct an experiment to determine the coefficient of friction at each turn, then compute the appropriate radius.

MY VOTE: ⑥ is best

if surface is good, 41° lean can be used (10' radius)

if surface is sandy or slippery, 30° is best (17' radius)

LOCATIONS OF POINTS - AVOID CONFUSING TERMS

When specifying the location of a point, be sure to include both a distance and a direction from the landmark you choose. If the landmark is a big one, be sure you tie down the exact point you have measured from.

BAD ... "Start is located 5 feet from driveway at 27 Elm St"

BETTER "Start is located 5 ft N of N edge of driveway at 27 Elm St"

FALSE ADVERTISING

Kevin Lucas, Wayne Nicoll and Basil Honikman are on the warpath against falsely-advertised courses. You've probably seen it yourself. Your local or state or even national running publication has an ad for a race, and it's advertised as Certified when it isn't. The above three have been writing to the race directors and asking them to try to get their courses really certified before race time. Most of the directors don't intend to deceive - they just think if they took their best shot at measuring the course it's therefore accurate, and is therefore Certified. Drop a few folks a line if you see this sort of thing going on in your area.

Lots of races are run on uncertified courses. This doesn't bother me a bit, as long as they don't advertise them as certified. Certification should remain a choice, not something we dictate.

TWO TINY EXPERIMENTS

After reading Bob Baumele's treatise on rough vs smooth surfaces I went out to the street in front of my house and rode up and down the block a couple of times. Distance was unmeasured but was the same. I rode twice in the gutter and twice on the smooth road. My normal constant is 15235 counts per mile. I got:

Smooth Road.....6346, 6349 counts
In the rough gutter....6356, 6360 counts

This would tend to confirm Baumele's conclusions that you'll get more counts on a rough surface than on a smooth surface, for the same distance.

I also tried a comparison on a steep hill to see the difference between uphill and downhill riding. I was surprised to get no significant difference.

Uphill.....2927, 2928.5 counts
Downhill.....2928.5, 2925.5 counts

The hill was steep, and I just hung on and coasted in the downhill direction. On the uphill I put it in a low gear and ground my way up the hill. I am certain that I rode with less wobble in the downhill direction. Theory would predict more counts in the downhill direction, because the wheel is more heavily loaded. But this must have been offset by the greater wobble on the uphill.

THE 1986 TAC CONVENTION

It's in Tampa this year, at the Hyatt Regency. Convention fee = \$45 if you do it by October 15. Hotel room is \$70 single, \$80 double. Write to TAC - PO Box 120 - Indianapolis, IN 46225 and request registration forms and schedule. Or call (317) 638-9155.

RRTC executive Committee is scheduled to meet Wednesday, December 3, 9-12 AM. General RRTC meeting is scheduled for Friday, December 5, 7-10 PM. In between we should have some good late-night conversations in somebody's room.

The \$25 you are authorized to charge as a reviewing fee is more than required to cover your bare expenses of reviewing. Use the difference to fund your own trip to Tampa.

Delta Airlines has a good deal. See the excerpt below from a recent notice from TAC.

It's not too early to start thinking about the convention. See you there!

Delta Airlines has filed special directional fares for TAC Convention attendees who fly Delta round-trip to and from Tampa; these special fares will allow a 5% savings off any Delta published round-trip fare within the Continental U.S. -- including all promotional and deeply discounted Super-saver fares -- providing all rules and conditions of these airfares are met.

For those not qualifying for published discounts, a 30% discount will be offered on Delta's domestic system for travel to and from the Convention; this discount will be based on Delta's full day coach rates -- and seven days' advance ticketing will be required.

In either case, reservations must be placed by calling Delta's toll-free number -- 1-800-241-6760; this office is staffed seven days a week from 8:30 a.m. to 8:00 p.m. (Eastern Daylight Time). **IMPORTANT: L-0011 is the reference number** that must be communicated to the Delta reservations agent in order to identify to the TAC discount offers.



East Tennessee State University
School of Applied Science and Technology

Department of Technology • Box 19060A • Johnson City, Tennessee 37614-0002 • (615) 929-4234, 4310

May 15, 1986

Mr. Pete Riegel
3354 Kirkham Road
Columbus, Ohio 43221

Dear Pete:

I just took time to read some back issues of MN, and have been inspired to make some comments. There is much more I could say, but lack of time, lack of newsletter space, and reluctance to become involved in the "battle of the egos" dialogue which course measurement discussions have seemingly become dictates to me that I proceed with restraint. Hopefully, the following comments and suggestions will be helpful and not unnecessarily raise blood pressure of the readers.

In the February, 1986 issue, you printed a chart of temperature corrections. As long as one is considering making corrections for systematic errors, it must (or should) be realized that a tape's length is a function of manufacturing precision and tension, as well as temperature. It is not appropriate to correct for one variable without also considering the others. The average 100 ft. steel tape stretches approximately 0.01 foot for each 15 lbs. tension. It also changes in length approximately 0.01 foot for each 15°F change in temperature. Tapes must be calibrated at controlled and measured tension and temperature by comparing the tape's length with an accurate 100 ft. base line. A tape is not necessarily exactly 100 feet long at 68°F, 12 lbs. tension (a popular misconception). Therefore, to be complete, corrections should be considered for "calibration length" as well as temperature and tension. The tension correction can be avoided by using the same tension in calibration as in actual field layout.

Regarding all of the above corrections, they are relatively unimportant in terms of achieving accuracy for the final course measurements. For your Example 2 yielding an error of nearly one foot per kilometer, this is small, considering the mile has been redefined by an added 5.3 ft. anyway.

In the last few years, the National Geodetic Survey has established base lines for calibrating electronic distance equipment (EDM). There are now over 250 such lines in the U.S. (see enclosed). The typical full length is 1400 meters (straight line) with shorter segments between the end points, down to 150 meters. The accuracy is in the order of tenths of millimeters. Generally, there is also a line (2 markers) for calibrating 100-foot steel tapes, set in conjunction with the EDM system. Even with no such taping BL, one can tape the 150 meter segment and get a good calibration for a 100-ft steel tape at field temperature and tension. The long EDM BL could, in many cases (depending on rolling surface between markers), be all that a course measurer needs for calibration of his wheel counter. If the road surface is suitable to ride, it is a ready-made cal-course. If unsuitable, the distances might be transferred to adjacent hard road surfaces by simple offsets or triangulation. With one to twenty such BL's already set per state, course measurers may save the drudgery of taping cal-courses. You can be sure that none of us can tape a cal-course with the accuracy of EDM BL's. I suggest you write to NGS and tell them your interest, and ask for a map or list giving locations of BL's.

I have written an HP41 program for race course calibration and layout. It is enclosed, along with explanation. Note that I used 5280 feet per mile. That's what I still use for maximum accuracy in my "free lance" measurement work. To satisfy the whims of the certification gurus, I use 5285.28 feet per mile and swallow my professional pride. Modifications for the HP11C or 15C can be made. I have a shorter HP41 program for anyone who doesn't lay out metric distances along the course.

I feel that much of the struggle of learning how to measure and resolving differences in opinion might be lessened if measurers fully accept the nature of measurement itself. Once a surveyor or measurer comes to grips with concepts such as error, tolerance, precision, accuracy, and how errors propagate or accumulate, then life is much easier for everyone involved as we learn to accept inexactness and discrepancies as inevitable and can then move into the more mature approach of controlling errors and deciding how much discrepancy (plus or minus) is to be tolerated. From many years of practice and teaching, my professional opinion is that a theoretical knowledge of the world of measurement is more important toward achieving accuracy than is applying arbitrary "correction factors," repeating measurements two or more times, dictating exact procedures, adding layers of remeasurement ("validation", etc.), blind experimentation, and statistical analysis of raw data containing unknown errors, ("number crunching").

Measurement becomes sort of a philosophy after a while, the basic philosophical aspect being that the "truth" exists but cannot be found. In our search for it, we don't need to get too excited or frustrated when it eludes us, and we learn in surveying to relax and attempt practical accuracies for each situation, but never expect exactness. Much of my life's work has been trying to instill this philosophical basis of measurement in students and surveyors.

During the last several years, I have taught seminars to practicing surveyors and surveying technicians all over the U.S. The introductory portion of these seminars (4 to 6 hours) would be appropriate for course measurers. If anyone would want to attend the first day of one of these seminars, perhaps a special rate could be worked out with the sponsors. They follow my book Surveying Measurements and Their Analysis.

I'll be in Ohio June 1 for the Newark Triathlon, should you care to come over and cheer me on. Training here in East Tennessee is all hills. The old body rebels.

I hope the information herein will be helpful.

Sincerely,



R. B. Buckner, Professor

/j1

enclosure

LICKING COUNTY HEART-A-THON NEWARK, OHIO 10 KILOMETERS



Course was measured along shortest route, staying on pavement. Measured for certification by BEN BUCKNER, April 20, 1985.

START is on Main St., in line with the east edge of the Sparta Restaurant bldg., said building edge being the west side of the north-south alley running midway between and parallel with 3rd and 4th Streets.

FINISH is on 3rd St., just south of Church St., being a line 9.5 feet south of the north face of the building on the southwest corner.

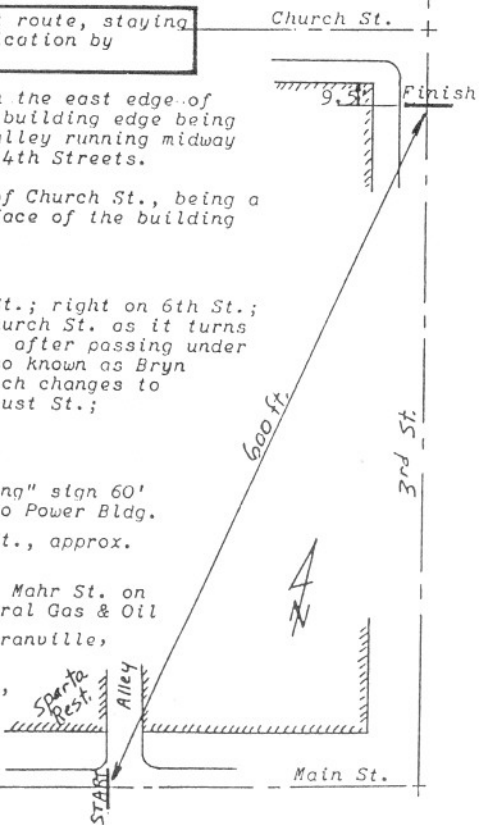
THE ROUTE

From START, go west on Main St.; right on 6th St.; left on Church St.; continue on Church St. as it turns right under the freeway, then left after passing under the freeway; right on Swansea (also known as Bryn Mawr); right on Gronville Rd. (which changes to Granville St.), half-left onto Locust St.; right on 3rd St. to FINISH.

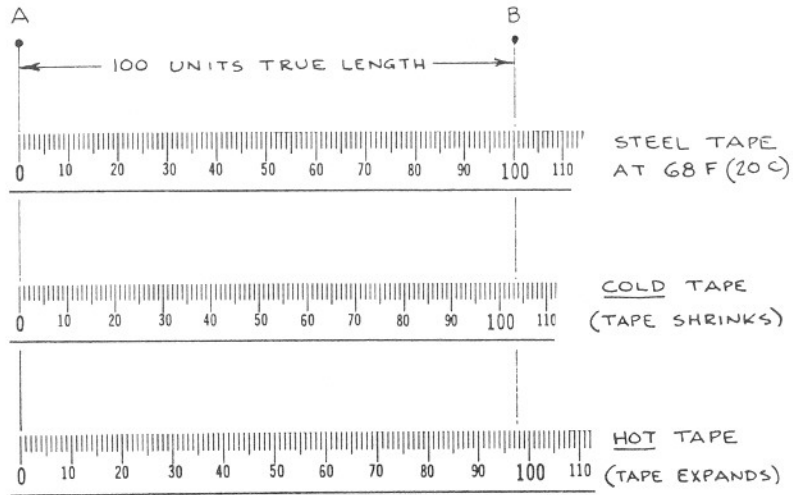
MILE POINTS

- 1 on Church St. next to "No Parking" sign 60' east of a drive east of old Ohio Power Bldg.
- 2 sidewalk entering 1014 Church St., approx. 40 feet west of 29th St.
- 3 130 ft. east of centerline Bryn Mahr St. on Granville Rd., across from Natural Gas & Oil
- 4 pole west of entrance to 1001 Granville, across from Baptist Church.
- 5 driveway entering 457 Granville, 2 houses west of King Ave.
- 6 on Locust, east of "Eatery"

TAC Certified Course
OH 85001 BU



THIS MAP DOES NOT SHOW THE MEASURED LINE ON THE ROAD-BUT, IT'S A VERY CLEAR PRESENTATION OF THE COURSE. MAYBE THERE'S MORE THAN ONE WAY TO DRAW A MAP.



TEMPERATURE CORRECTIONS

The above diagram shows why we perform the temperature correction when we use a steel tape. It's exaggerated, but you get the idea.

OLYMPIC TRIALS MEASUREMENT FESTIVAL

David Katz is in charge of the measurement of the New Jersey Waterfront Marathon. It will be used as the course for the Men's Olympic Marathon Trials next year. David suggests that the measurement of the course might be made the occasion for a gathering of the clan, and a big stay-up-all-night-and-talk party. Sounds like a good idea to me. David will keep us posted.