

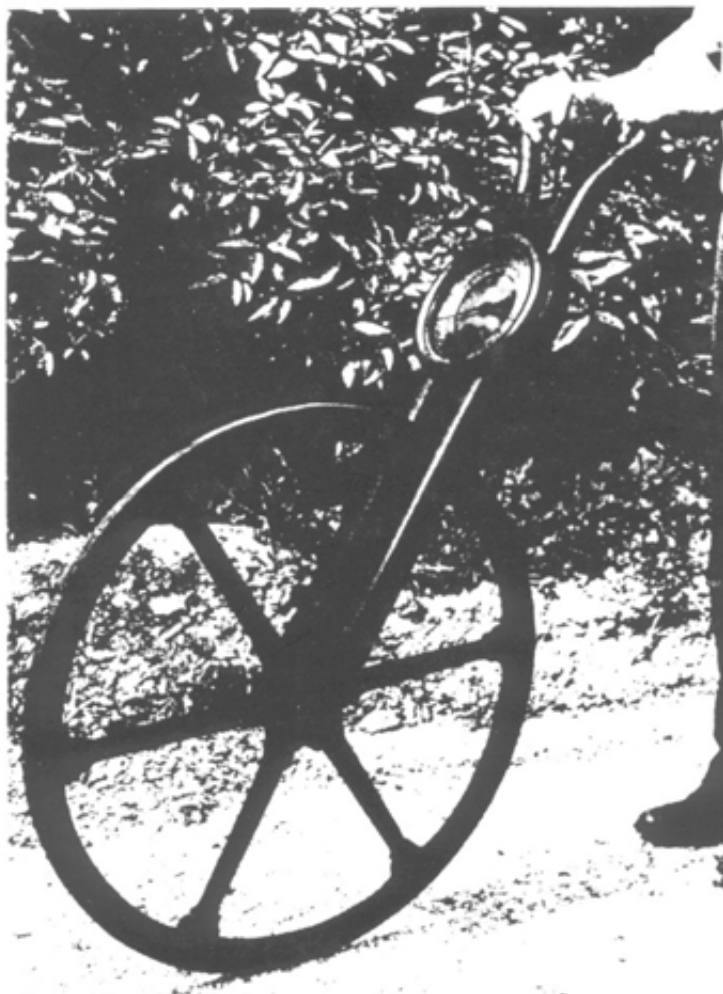
MEASUREMENT NEWS



March

1989

Issue #34



This 'Way Wiser' probably dates from around 1770. It was almost certainly used by roadmakers of the period for measuring the distances between milestones. (Pedestrians invariably used such milestones as the start and finish points for their contests.)

The surveyor's wheel was made by the well known scientific instrument makers, Watkins and Smith of London. The wheel itself has an iron rim, with a circumference of 2.53 metres/8'3 3/4" - this measurement has almost certainly been reduced by wear from that originally intended by the makers. The dial of the wheel works like a clock. The 'minute hand' records the yards and poles covered (a pole being 5 1/2 yards), one circuit of the dial being 220 yards (one furlong). The 'hour hand' measures the distance covered in miles and furlongs; it takes 12 miles for this 'hand' to make one circuit of the dial.

As late as the 1960's such a measuring wheel was being used by a British club to measure road race courses, after being suitably calibrated.

- Above text and photo reproduced from The Long Distance Record Book (second edition), by Andy Milroy. (Photo courtesy of Devizes Museum)

MEASUREMENT NEWS

#34 - March 1989

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NEW APPOINTMENTS

John Sissala has joined RRTC as Certifier for Maryland. Welcome, John.

THE NEW TAC MEASUREMENT BOOK

Course Measurement Procedures has been given some minor revision, and is now in the process of being reprinted. At the outset of the revision I had to decide whether to do it from the ground up, or to stick with what we have. I elected only to change what was wrong, including some bad illustrations, add a section on short calibration courses, and have it reprinted.

No changes to the basic procedures were made. The forms are virtually the same. Ken Young took inputs - often differing - from many people to put it together, and the book reflects his knowledge and experience as a professional educator, as well as his considerable expertise in the sport. It would not be wise to tamper too much with the work he did, since the main thread would have been lost. This, at least, is the attitude I took in revising the work. As it stands the book does a good job. People buy it, measure, and submit pretty good paperwork. Courses are passing validation well. I don't think this requires change. Look for the new book to be almost identical to the old one.

LARGER CONSTANT OR AVERAGE CONSTANT ?

I am in the process of writing a from-the-ground-up measurement book for AIMS. Their procedures are virtually identical to our own, except for the proper constant to use. An AIMS decision will have to be made as to whether to use the average constant or the larger constant. Opinion is divided on the subject. Some feel that 1.001 SCPF is enough, and that it's not necessary to use the additional bit that comes with use of the larger constant. Others point out that when wide calibration variation exists, the true constant might be anywhere in between (or even outside the range), and variation could well eat up most of the SCPF. Either way the effect is small and will have no major effect on the lengths of race courses. AIMS procedure to date is divided, with some using average and some the larger. So far my draft uses the larger constant, consistent with our procedure.

If AIMS does adopt the average, we may follow, if it can be done in a way that does not harm our system. On the other hand, there seems little reason to change a system that works well. We are used to things as they have been for the last four years, and there seems little reason to change.

MN would like to hear any opinions on the subject. In addition, readers who would like to participate in reviewing the draft should write to me and I'll send the latest version to you.

LET'S GET PEOPLE TO USE THE CERTIFICATION CODE !

Below is a little text. Please copy it and put it on certificates you issue, directly beneath the certification code. We have been contacted by Runner's World for assistance in determining which races are certified. Because of course name changes, this is hard to do with accuracy. Instead, we suggested that the certification code should appear in the text about the race. If the reader sees the code, he knows the race is certified. If he sees no code, the race may not be certified.

If use of the code becomes widespread it should eliminate much of the present confusion in runners' minds.

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

NEWS FROM ENGLAND

Gaby Duguay, former Canadian measurer now living in Wales, sent copies of recent correspondence with Mike Tomlins, who is the British AAA Course Measurement Coordinator. Gaby wrote to Mike:

* * * * *

"I am enclosing a list of road races held in Wales which appeared in your AAA fixtures list 1988, but are not measured. You might want to send John Jewell a copy as some of them claim to be RRC standard, but Dave Dodwell doesn't believe they are measured.

Dave tells me road races in Wales are only measured once to be certified. Is it the same in England? Scotland? Ireland?

Do you let 'not measured' courses appear in your AAA fixture list as they do in Wales? If you do, how does the reader differentiate between two races which are graded AAA, where there is no mention if the race is certified or not?

I have ten TAC Road Race and Finish Line Manuals. Would you like one? Do you know who'd be interested?"

* * * * *

Mike's reply will be found on the next page. Looks like the British are working on some of the same problems as we are, with uncertified courses that are advertised as certified.



Founded 1880

Amateur Athletic Association

Incorporated in 1948 as a company limited by guarantee. Registered in London No. 457408 V.A.T. No. 232 1733 00

Patron: HER MAJESTY THE QUEEN

President: A. G. McALLISTER



General Secretary:
M. A. FARRELL

From: MIKE TOMLINS
56 SQUIRES LANE
FINCHLEY
LONDON N3 2AP
TEL: (01) 349 0234

Honorary Treasurer:
J. Lister F. C. A.

7th December 1988.

Dear Gaby,

Thank you for your letter of 22nd November. I will, indeed, pass a copy of your list to John Jewell for his information. I assume Dave Dodwell already has a copy, although I'll pass one onto him just in case.

I'll deal with your various queries in order:

1. Under the AAA Measurement Scheme, road race courses need only one measurement by an approved measurer to be certified (and thereby receive a Certificate of Course Accuracy), such certification remaining valid until the course changes - in some Areas Race Organisers are required to formally confirm each year that the course remains the same. The AAA scheme embraces England and Wales, and as far as I know there is not a similar scheme in either Scotland or Ireland. Having said that only one measurement is required, if there are problems establishing the distance, eg if the course is either short or over on the first ride, necessitating an adjustment either adding or taking out a section or sections of the course, the measurer will almost certainly wish to undertake a further ride of the amended course from start to finish in order to satisfy himself fully with regard to accuracy.
2. Only measured courses appear in the RRC List, but any event is, at the moment, allowed to advertise in the AAA Fixture List - even those who don't operate under the AAA permit scheme. I, personally, don't agree with this, and think the AAA List should be confined to events that obtain an AAA permit.
3. The only way, at present, the reader can know for sure that the course has been properly measured is either 1) go for events in the AAA list marked 'RRC' or 2) check with the appropriate Midland, Northern, Southern or Welsh Course Measurement Secretary. Things will change for the better on this point shortly, Gaby, because as from 1.1.1989 all Area and County Road Championships must be measured in the approved manner, and from 1.1.90, we are hoping that the AAA Road Running Committee will direct that all road races operating under the AAA permit scheme must be properly measured - in other words, if they are not properly measured, they won't get a permit. If this is approved, any event listed as 'AAA' in the annual fixture list will be properly measured.

Yes, I do now receive a copy of Pete Riegel's Measurement News, and I'm grateful to you for initiating this. With regard to the TAC Road Race Finish Line Management Manuals, I'm sure both the RRC and the AAA Road Running Committee would find it useful to hold a copy, and if you would care to send two to me in due course, I'll make sure they reach an appropriate official of each body.

Yours sincerely,

Mike Tomlins,
AAA Course Measurement Co-Ordinator

ASSOCIATION OF INTERNATIONAL
MARATHONS AND ROAD RACES

Technical Committee
Peter S. Riegel, Course Registrar

3354 Kirkham Road
Columbus, OH 43221 USA
614-451-5617 (home)
614-424-4009 (office)
telex 245454 Battelle

January 24, 1989

Gabriel B. Duguay - 16 Rock Drive - Gelli, Pentre -
Mid Glam, South Wales - Great Britain CF41 7NX

Dear Gaby,

Thank you for the news from UK. It's good to see you spreading the word.

One measurement of a course is probably good enough to get the course right, if the measurer knows what he is doing. It's pretty common, however, for a measurer to do a bit better on the second go-around, and ride a straighter line.

There seems no great pressure in Britain for people to worry about their measurements. Until a formal records system exists, and expert people are sent to check courses, there should be no problem. Even if a course is a little bit short, it has no great effect on times.

When people start to check the courses, the fireworks will start. There will be all sorts of arguments trying to excuse away why certain courses come out short. There will be cries of injustice, and over-tight standards. The old concept of "measure where the runners will run" is still alive, even though the shortest possible route is the proper one to measure. Where the runners will run is a guess - the shortest route is not. People do complain about this when courses are found short. They know the standard, but complain when it is applied to them.

If the courses were laid out to a tough standard to begin with, this could be avoided.

Our system presumes that the person who is sent to check the course is expert. The original measurer's competence is not assumed, even if he is an expert. Thus, if I lay down a course, and Wayne Nicoll checks it later, it is his measurement that is accepted as the final word. We see no injustice with this procedure in the US. We know that if we measure right, and apply the SCPF, our courses are safe.

I have a sense that things are better in Britain than in any country outside the US. The one thing needed to bring them up to a first-class standard is to get teeth into the rules, and check a couple of courses each year. This will fast pass the word that the standard means what it says. But until there is a formal system of records this will probably not happen. An important record gives a lovely reason to check a course.

Thanks again for writing. I'll boil down what you sent for next MN.



8 January 1989

TO: Pete Riegel, Chairman, RRTC
FROM: Dan Brannen
cc: Measurement News, TACSTATS, Road Race Management, TAC
Rules Committee, Ken Young, Bob Langenbach, Norm Green,
Wayne Nicoll, Bob Baumel
RE: Downhill Courses: proposed legislation at TAC convention

Pete, much to your dismay, and probably a majority of those copied above, I am going to prolong the downhill rule debate. I've gotten too much positive feedback to fold my tent now. And I still think that many people involved have not fully understood the real issue. Your summary of the issue on page 29 of the January 1989 Measurement News is a restatement of your position at the convention. It does not do justice to my argument in favor of establishing an acceptable drop limit for point-to-point records. I'll try again, this time from the logical beginning:

The logical beginning is the TAC Records Book (actually a small section at the back of the Rule Book), which in my opinion is currently demeaned to joke level by the inclusion of ludicrous marks set on extremely downhill courses. The standard response to this charge is that no, everybody knows that the loop course records are the real ones, and that the point-to-point records are clearly understood to be "second class" records. My return response, then, is: why bother to list "second class" records which are essentially meaningless in such an austere document? They devalue it. What's the point?

The next logical step is to review the decisions of the TAC Rules committee at the 1986 convention in Tampa. At that convention that committee voted to recommend to the Congress a rules change proposed by Ken Young which was identical to the one which I proposed in 1988, except that Ken had put the cutoff for allowable point-to-point records at 2m/km (Hence--and this is a critical point--my 1988 proposal was a softer version of one which had been approved by the Rules committee two years previously). The Boston Marathon lobby then threatened to fight the 1986 rule proposal on the convention floor at the final congress, and so the Rules committee, in what was probably a politically sensible move, withdrew it. It was not defeated for any technical or philosophical reason. It was defeated, pure and simple, by politics.

My 1988 re-proposal of Ken Young's 1986 proposal with the limit now set at 3.5m/km was purely a pragmatic move to eliminate the one thing which had foiled the rule in 1986, i.e., the Boston Marathon lobby. The figure of 3.5m/km was admittedly a concession to Boston in order to drop the political screen so the common sense might be seen. I had no vested interest in preserving Boston's records. My only interest was to do something about the undermining of the TAC record book. If you can't eliminate the ludicrous, you can perhaps at least lessen it.

The next important event occurred at the 1988 convention, where the Rules Committee let it be known that they would place a high value on the RRTC's recommendation on the re-proposed downhill limit rule. At the first session of the RRTC you as chairman took the lead with the position that the issue was a philosophical one, not a technical one, and hence an RRTC recommendation would be inappropriate.

The fourth step was the following evening's RRTC meeting, which was attended by two individuals who had not been at the previous night's meeting. They were Ken Young and Norm Green. Ken reviewed all of his downhill research for the committee, and Norm delivered an impassioned speech which showed that some world class runners do share my concern about the troublesome relationship between the TAC records book and ridiculousness. Basil Honikman then summarized by pointing out that the real issue is not really "loop vs. point-to-point," but rather "what constitutes aid?" Ken Young had most of us convinced that he could statistically show the limit of acceptable downhill aid. The real cruncher is wind, the advantage of which research continues to show is essentially unquantifiable in road running. The consensus of the committee that night was that another year of statistical analysis would be of value in making a recommendation to the rules committee, and that the RRTC could in fact have legitimate technical input on the issue. Norm Brand then took back to the Rules Committee an RRTC recommendation to table the proposed rule change until the 1989 convention. This was accepted by the Rules Committee and by the Congress. We will be at it again next year.

Your point is well taken that the adoption of the rule change would result in three types of marks instead of the current two. My response is that this is necessary in the interests of fairness. You say that we are currently "adequately covered" by the current system which equates "point-to-point" with "aided," resulting in "lesser quality, non-credible performances." You say further that "we have an established and well-accepted system, and changing it will cause a disruption."

The latter excuse has been used throughout human history to perpetuate injustice, as it is here. The system is not well accepted. I don't like it, Norm Green doesn't like it, Ken Young doesn't like it--and we're not the only ones. Of course there will be a disruption. Both the organizing committee and the record-setters of the St. George Marathon are upset at the prospect of losing their records. Whether the St. George Marathon marks belong in the TAC record book in any way, shape or form--well, I'd like to take a poll of all the recipients of this letter on that question. As for injustice, the victims of it in this case are the organizing committees and the runners of the point-to-point races which have a net climb or are flat. To equate "point-to-point" with "aided" is a gross oversimplification which does not "adequately cover" the records situation. Would a record run on the reverse St. George Marathon course be a "lesser quality, non-credible performance?" According to the current situation, it would be. Yes, that's a ridiculous example, but there are other unaided (in some cases, hindered), mildly uphill or flat performances which the status quo currently lumps "equally" in the same bin as parachute drops down a mountain.

The real solution? I believe that the RRTC, through the efforts of its in-house experts, can come up with a downhill figure beyond which no course would be eligible for records of any kind. This figure is probably somewhere around 1m/km, which would (and should) mean that not only Fontana Days and St. George, but Boston and even the Cascade Run-Off would be ineligible for records. And I think that is very fair, considering what "records" are supposed to be. Yes, there will still be "media" records on these courses, and that's fine. When you want to know what the real records are, you look in the TAC record book.

This leaves us with the problem of wind on flat or uphill point-to-point courses. We know we can't measure it, but does that mean that we have to throw the baby out the window? I don't think so. To see wind as an insurmountable problem here is like missing the forest for the trees. A number of people have charged that under my proposed scenario the fabled 25mph tailwind performances of the Mardi Gras marathon would have to be ratifiable as records. Nonsense. The ratification of records is ultimately a matter of the judgment of the records committee. For any performances so obviously aided by wind, it would be easy to obtain a weather report on the direction and speed of the prevailing winds, and the records committee would be perfectly within its rights in rejecting a point-to-point record which was obviously wind-aided. They don't need the quantification of a written rule to do so.

The only real problem situation would be a case such as the New York Marathon with a prevailing wind from the south. It would be a tough call whether performances under those conditions would have been wind-aided. But really, how often would record runs in such situations come up? If you reviewed all TACSTATS and NRDC performance statistics, I bet you'd find that this potential problem situation is the proverbial red herring. Certainly it is no more frequent than long-jump performances with the maximum allowable wind at altitude (e.g., Bob Beamon's still-standing world record). It's unfortunate that Beamon's mark is on the books, but it just shows that the system isn't perfect. It's not nearly as unfortunate as the Fontana and St. George marks being on the books. The road record book under the above scenario would be no worse than the track & field record book with Beamon's mark in it. I'll take that imperfect situation any day. It's a helluva lot better than the far more imperfect situation we've got now.

Dear Dan,

You make a lot of good points in your letter. I have no overwhelming disagreement with any of your points. However, the fundamental issue is whether RRTC is in the business of proposing changes that must be implemented by other committees of TAC. My view as chairman is that we are not an activist committee. We are in the sole business of providing technology to support the sport.

Bob Baumel has done some figuring, and so has Ken Young. Their look at the situation presently indicates that 1 m/km of drop is equivalent to adding about 2 to 4 meters of extra length per km of course length. A runner doing a 30 minute 10k is moving at about 5.5 m/sec. Here's how the "aid" breaks down assuming these estimates are correct:

Drop, m/km	Drop in 10 km	Equivalent Distance, m	Equivalent Time, sec
1	10	20-40	4-7
2	20	40-80	7-15
3.5	35	70-140	13-25

This is the sort of thing RRTC can do. RRTC cannot say whether a 12 second advantage over a flat course is "fair" unless the term is quantified. Some would argue that any aid is intolerable. Others would take a more lenient line. I'll be surprised if anyone can come up with a dividing line that is not, in the final analysis, arbitrary.

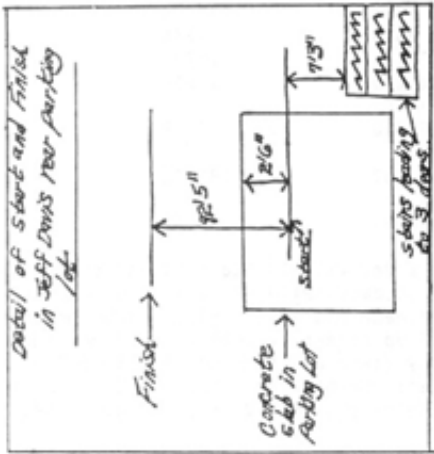
In your letter you propose that RRTC can come up with "a downhill figure beyond which no course would be eligible for records of any kind." I disagree. We can come up with an estimate of time advantage for each degree of slope. We cannot come up with whether any particular amount of aid is too much or too little. That is a value judgment and not soluble by purely technical means. It must be decided by the participants in the sport through the TAC political process. Degree of aid may be anything the participants decide it ought to be. Bear in mind that restrictions on drop have the effect of disqualifying some race courses, and that road running inherently will have less uniformity than track. Drawing a "fair" line is not a clear-cut process.

The best way to run your proposal through is to convince the LDR committees that present procedures are inadequate, and get them to turn the screws on the Records Committee. If it is the runners who suffer injustice, then the runners should initiate change. It is them you have to convince, since they are the ones who will gain whatever justice a change would make, and suffer whatever undesirable consequences might arise from that change.

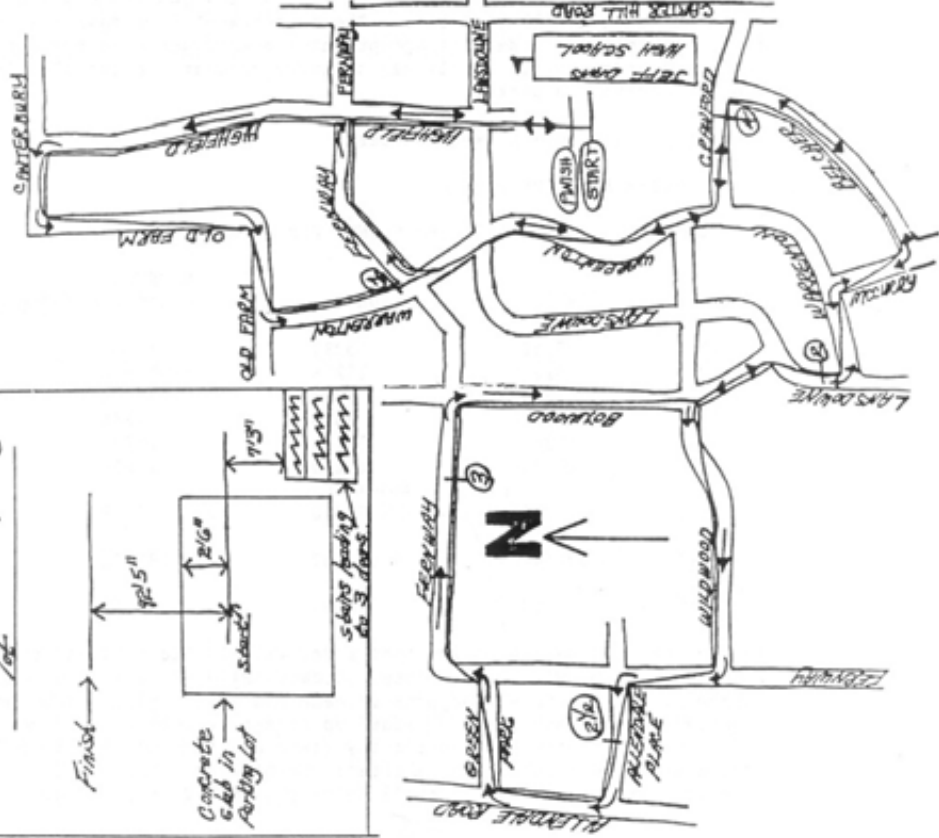
Jack Moran has gotten interested in this question, and I have sent him a course list disk. He intends to do some research into the effect of drop on finish times. TACSTATS has also expressed an interest in research of this sort. Perhaps airing the issue in MN will bring out relevant information.

Working through the LDR committees makes more sense than trying to impose your standards, however sensible they seem to you, on them from above. You may think your improvement makes sense. Do they? I have no idea, but with their support you will have more clout than you do now.

TORTOISE AND HARE 5 MILE MONTGOMERY, AL



MAP OF
THE MONTH
AL 84001 JD



- START: 224'± south of the north end of the school.
- 1 MILE: 6'± south of the southern edge of a water main cover at the intersection of Warrenton & Ferris.
- 2 MILE: 1'± north of the northern edge of the front walkway of the house across from 3520 Lansdowne.
- 2 1/2 MILE: 23'± east from the center line of a water meter cover at 2227 Allendale Place.
- 3 MILE: 16'± east of the eastern edge of a storm drain cover on the south side of the street across from 2407 Ferris.
- 4 MILE: 13'± east from the eastern edge of the front walkway to 2824 Crawford.
- FINISH: 92'± north of the start line.

Measured for certification by Bob Harrison
Montgomery, AL 22 January 1989 Phone 205-284-5214
Calibrated on a 1000' calibration course
Map not to scale
Race Contact: George Nelson, Phone 205-756-8481

THE ATHLETICS CONGRESS
OF THE USA

Road Running Technical Committee
Peter S. Riegel, Chairman

3354 Kirkham Road
Columbus, OH 43221
614-451-5617 (home)
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January 28, 1989

Bob Harrison - 3216 Herbert Dr - Montgomery, AL 36116

Dear Bob,

I enjoyed your letter, especially the story about the blowhard with the measuring wheel. If you want to let out his air, ask him how he knows how accurate his wheel is. Bet he never calibrated it. Wheels get smaller as they wear down, and measured distances become greater over the same true distance. The second reason he gets higher values with his wheel is that he probably does not roll the SPR.

If you calibrated his wheel and used it properly you would get about the same distance you got with your bike. The measurement book says wheels are not OK. This was a mistake. We will accept wheel measurements if there is calibration and proper procedure. Wheels can be quite accurate, especially in tight, winding courses in parks.

I looked at your measurement numbers:

TORTOISE AND HARE 5 MILE

CONSTANT = 15287.67 COUNTS PER MILE

	RIDE 1	RIDE 2	SHORTER SPLIT (Bold Type)
FINISH			
4M	15288	15297	15288
3M	15288	15296	15288
2.5M	7644	7638	7638
2M	7644	7640	7640
1M	15288	15296	15288
START	15288	15273	15273
TOTAL	76440	76440	76415
MILES	5.000107	5.000107	4.998471
DIFF. FT	+0.57	+0.57	-8.07

No real miracle here. On two good rides with little calibration change you can expect to be within 10 counts. Occasionally one will get perfect overall agreement, but it rarely happens on each and every split. Your positive and negative disagreements simply added up to zero. Look at what happens if we add up the best ride you had for any given split (best ride in bold). Your course would come out 8 feet shorter! Nothing to worry about - SCPF takes care of this adequately. I still think you should be proud of a good ride.

fete

MAP OF THE MONTH BY RANDOM DRAW

Each issue we see one of the best maps that came in during the last two months. It's called "Map of the Month" and I include it to serve as an example of how things ought to be, and to recognize good work. I wish I could include all the good ones.

There's another side, though. We get some pretty poor stuff, too. Most of the maps that are absolutely terrible get sent back for rework, but we still get some maps that make us wince.

In the interest of motivating us to do our best, I'm going to start including a "Random Map of the Month" in MN. However, I'm looking for a way to pick it that will be reasonably fair and random - I don't want to pick on anybody. The selection system may depend on something that is publicly published elsewhere, say the financial page from the Columbus Dispatch on a certain date. The criterion for the pick will be published, and the map that results from that pick will appear in MN.

If you have a suggestion for a good way to make a fair pick, send it to me. If I don't get a good suggestion, I'll work out my own. Should we use all the maps we get, or just those that were measured by RRTC people?

Most of my own maps are not of "Map of the Month" caliber, but I'm not ashamed of them. This random draw will put our average quality out for all to see. If you're not comfortable with having others see your maps, the message is clear. Make maps that you would not mind others seeing as examples of your work. You may see your work on display, without editorial comment.

Is this a good idea, or a bad one?

It should be interesting to see the variety we get.

From Ultrarunning Magazine, March, 1989.

Chatter

Gary Cantrell gives an excellent account of the racing scene at the Pensacola 48 Hour Run in this issue, but we'd like to point out the tremendous behind-the-scenes performance by a man who wasn't even at the race, but who contributed greatly to its success. Stephen Derenzo, of California, has written a program for use on the Apple Macintosh computer that greatly simplifies the onerous job of record-keeping for track races.

During the race the lap-counters only have to press a key on the keyboard to instantly record the runner's last lap. The program keeps track of the lap number, the time taken for that lap, and the distance run up to that point. The computer can also print a summary sheet showing the status of the entire field at any time (such as would be used to update the leader's board every hour).

Derenzo's program allows the lap-recorder to correct any error instantly, and it also prevents (to some degree) crediting a runner with a lap that would be impossible to run, e.g., a sub-4-minute mile pace.

The very good news about the program is that it is free, and Stephen updates it as he gets more feedback from race directors. While it's a wonderful program, there's still a lot of work involved with any track race, especially multi-day events; you'll have to take precautions for uninterruptable power-supplies, a back-up system (both manual and perhaps another computer), and you'll still have to find volunteers willing to be trained and who can concentrate well for two to four hours stints. However, this program, called "Computer-Based System for Lap Counting at Track Races," will make the job much easier. Write to Stephen Derenzo, 2550 Arroyo Avenue, Pinole, CA 94564. Include a self-addressed, stamped envelope if you're just asking for info, or some money to pay for a couple of disks, if you plan to ask for the program.

Fred, Peter, and Stan

TACTIMES / Minnesota

5429 Wooddale Ave.
Edina, MN 55424
February 8, 1989

Pete Riegel

Dear Pete:

According to the March 1988 *Measurement News*, for \$5 you will send me two 5 1/4-inch diskettes with the whole course list. If the offer is still open, please do so; enclosed is my \$5. I'd prefer a straight ASCII format; I'm just going to dump them over to a Macintosh, which is where I've got all my software.

I want to try to determine exactly which of the "aided" records have been set on point-to-point courses with no significant loss of altitude. I am disturbed that point-to-point marks, which used to have almost-equal status with loop marks (one was listed on the line below the other, rather than in a separate section of the record book), are now discredited by being lumped with performances achieved on courses like St. George's and Fontana, and want to find if the data support a change to allow all marks on courses with less than a 0.1% drop (say), *regardless of start-to-finish distance*, and to list all other performances separately. Thanks very much.

Sincerely yours,



Jack Moran

NOTE ON THIS MONTH'S COVER

Andy Milroy's masterful Long Distance Record Book is 99 pages of statistics and arcane information about the history of the long-distance sport, from 10 to 2000 miles. It begins with a 12 page historical overview and goes on with enough information to fill the heart of any numbers freak or sports trivia buff. Your Editor's favorite performance from the book is found in a footnote to the 1000 mile distance:

"This match was similar to the famous one of Captain Robert Barclay Allardice who covered 1000 miles in 1000 hours starting on 1.6.1809. Such matches were not straightforward matches against time, but in Barclay's case to cover one mile each hour for 1000 hours." Think about 42 days of 45 minute naps.

The book may be obtained from Don Bonser, 76 Benhill Wood Road, Sutton, Surrey, England SM1 3SJ. Send an international money order for £5.

THE ATHLETICS CONGRESS
OF THE USA

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February 15, 1989

Jack Moran - 5429 Wooddale Ave - Edina, MN 55424

Dear Jack,

Here are the disks. They have all the courses carried on the current list, with a separate list of those courses that are being dropped until someone sends in a map. The latter list will be in next MN. You'll note that all our older courses do not have drop and separation listed. NRDC did not list drop and separation, instead carrying the elevation information itself. If that info is needed a cert-by-cert search is necessary, or use the last of the published NRDC lists to get the elevation info.

I was going to try to do what you are doing, except that I was going to look at the "loop" courses. What I hoped to find was that the records did not mostly occur on courses that were near the legal drop of 2 m/km. If they don't, there seems little reason to suppose there's a major effect of drop, at least in the loop courses as we presently define them. I have done nothing so far - it is a back-burner effort.

Your work is very appropriate. Without data to show an effect, all the screaming and yelling folks may do means nothing.

Some people disliked that I did not have RRTC support Dan's proposal. I don't see it as our function. The proper approach, it seems to me, is to have the runners themselves exert pressure to change the way records are kept. RRTC has avoided trying to tell other committees how to do their business, and I hope we can stay that way. There is never going to be a clearly-defined line, unless the line is drawn at zero, and I don't think folks will believe that's a good idea. Too restrictive on course design.

My personal feeling is that 2 m/km is not too bad a number as it stands, and I'd even open up the separation to 50 percent. But that's only personal opinion. I'm willing to endure ~~some~~ unfairness. After all, this is road running, not track. The LDR Committees and TACSTATS must decide what they think is fair. Then RRTC can come up with numbers to show the approximate effect of a change.

Any course with a drop is aided. Technology will never find an answer to "how much is too much." Best we can do is equate some drop to some time difference, at least approximately.

If you come up with something, send it on in to MN. We'd love to have it.

Best regards,



Measure

Up



January, 1989 Vol 2, No 1

It's '89 and with it comes a new volume of *Measure Up*. Let's catch up from our October issue.

The TAC convention was held in Phoenix November 29-December 3 and included two sessions of the Road Running Technical Committee. This happens every year and is a great opportunity for measurers and certifiers to talk. And talk we did. Some of the issues covered, in no particular order:

✓ When is a course considered certified? Provided the paperwork is in order, it's still the date of the postmark, but the paperwork must go out before race day.

✓ A revised edition of the *Course Measurement Procedures* is in progress and should be ready for publication this spring. A section regarding the new shorter calibration courses is to be included. More later.

✓ Does road running need officials? Track and field and race walking have had them for years. Now it's being proposed for the roadies. The current status is that RRTC will provide an advisory group to TAC's Officials Committee. This one will take a while, so don't look for a platoon of blue blazers to show up at your next finish line.

✓ Fast times are not limited to Ridgemoor High. Downhill courses and tailwinds have also been known to produce a few. Currently the max drop for records on a loop course is 2 meters/kilometer. This includes 95% of all certified courses. A proposal to add a second category of "aided" courses with drops over 2 m/km to 3.5m/km got shot down. This is bound to be a hot topic in the future with a good possibility the 2 m/km limit will be tightened up somewhat.

✓ It's not all tech talk at conventions. There's a lighter side too. A measuring contest was held to find

out who really was the best measurer. No Jones counters or surveyors wheels or yard sticks allowed - just let your feet do the job. A 200' calibration course was provided so you could establish your stride. Then you measured a figure 8 course that had been laid out on the civic plaza near the hotel. The estimates were submitted to the judges and the winner was - Mary Anne McBrayer! Her estimate of 2283.97' was the closest to the official distance of 2280.875'. A handsome ceramic basket was the reward for her expertise.

A Flat!- you hope it doesn't happen, on the front tire anyway. All the work you've done is wiped out and it's back to square one - fix the flat, recalibrate and remeasure. So what are your options?

- Thorn resistant butyl tubes: The road side of the tube is 2mm thicker than the rim side. Won't prevent flats but gives you a little better chance.

- Solid tires just like on a child's tricycle: Definitely won't go flat, but boy are they hard! Difficult to find too.

- Some new products are coming on the market: VTI Chemical Inc in Irvine, CA has developed a polyurethane insert that replaces the usual inner tube. There is no air to leak and it's said to give a comfortable ride. They will be used on wheelchairs and both Raleigh and Schwinn are said to be interested. Should be available early this year.

- Cyclo Mfg. Co of Denver makes an insert that's used in place of an inner tube. Those that have tried them say they're hard.

- One of the most promising developments comes to us from the blimp people - Goodyear. It's called perma foam, a synthetic foam rubber compound that's used to inflate industrial tires. The foam cures to form a flex-

E. T. (Tom) McBrayer, Texas State Certifier
7733 Moline
Houston, Texas 77087
(713) 649-6832

ible core and, voila! - comfortable and no flats. The U.S. Army is interested and Mike Wickiser, the Indiana certifier, is too. In fact, he's already testing his. We'll get a full report later but meanwhile, check out your friendly Goodyear dealer - industrial division.

Who's Doing What Across the State

✓ Clent Mericle, Corpus Christi, is rapidly gaining the reputation of a traveling man. He measured the Edinburg All America City 10K in November, the Calhoun County Classic (Port Lavaca) in December, then ran a 2:31 at the Houston-Tenneco Marathon January 15th. Incidentally, Clent won that race in '75 with a 2:35 effort.

✓ Because of some last minute construction, the Cowtown Marathon needed to be recertified and race director Jim Gilliland was unable to locate a local measurer over the holidays. So the call went out to Glen Lafarlette and his wife Coneil of Tulsa. These Oklahoma whizzes whizzed to the rescue on the weekend before Christmas. They reviewed the route and laid out a calibration course on Saturday; then made the two rides on Sunday and were back in Tulsa that night. Nothing but high praise for the Fort Worth police escort and Jim's knowledgeable assistance. Next time help is needed you'll know who to call.

✓ Beaumont is still on the map. We had not heard from Barry Boecher for months, but he is alive and well with a new Assistant Principal's job. He just measured the Brer Rabbit 5K in Silsbee; they've been doing that one for 8 years on Easter Saturday and finally got around to having it certified.

Complaint Department

How often have you heard this? "It was a great course but that first mile was way off. No way I ran a () minute mile." You, the poor old measurer gets the blame. Maybe you didn't measure correctly but other possibilities do exist.

- The marker was put in the wrong location.
- The timer started the watch early (or late).
- The runner ran the course differently from the way you measured.

I've got a standing offer to any complainer who is willing to back up his (her) convictions. Pick a public surveyor from the Yellow Pages and ask him/her to measure the mile the way you did. If it's not within RRTC standards, I pay. If it is, the complainer pays.

That usually stops the griping right there.

Equipment Check List

Besides your bike and Jones counter, what do you take along when you measure? Here are some items that I have found helpful.

* Three-pocket T-shirt: The touring bikers like this one since they can stow all sorts of things in the three elasticized pockets across the back. I carry my notebook, ID and a small calculator. Buy the short sleeve 100% cotton (oversized) and wear it over a long sleeve turtleneck in cold weather. With an oversized shirt you can even comfortably wear an insulated shirt under the long sleeved turtle neck.

* Water bottle holder: Most of the newer bikes have lugs brazed on the down tube for mounting a water bottle cage. That cage is the right size to hold your spray paint can.

* Upside down paint can: do like the surveyors and the utility workers do. The upside down spray cans are available at surveyors' supply shops and it does make life easier. You can get either marking (It fades rapidly.) or striping (long lasting) paint.

* Card holder: You need those split numbers right up front where you can read them. I like to use a handle bar mounting bracket to hold a 3 x 5" card.

Night riding:

* Cateye headlamp: It uses two "C" batteries and rotates so you can shine it on your counter.

* Belt beacon light: It flashes 60 times per minute on a 9-volt battery and can be either worn on your belt or mounted on the bike.

* Reflective vest: Get the one with the long tail if your bike has dropped handle bars.

* Flash light: Those lightweight "mini lites" can be placed on a cord and worn around your neck.

Try your local bike shop for most of the above. If not, Performance Bicycle Shop in Chapel Hill, NC publishes a catalog that is brimming with bike paraphanelia. It might become your favorite wish book.

The hallowed Jones counter is still the accepted method of measuring. If you need an extra or need to replace yours, call \$30.00 to Jones Device; New York City Road Runners Club, East 89th Street; NY, NY 10128-0602

Peter Riegel
3354 Kirkham Road
Columbus, OH 43221
U S A

Stockholm, 21 January 1989

Dear Pete,

As you probably already know I am not a "road running fanatic" but rather a general "track and field fanatic" and I spend most of my time on matters concerning the arena part of our sport. Therefore I enjoyed reading your article "Variation of times in the 100 meter dash" in the January issue of MN. In your letter of Jan 16 (many thanks for that!) you also referred to the dissertation writing "It is a lot worse than our problems with a few meters in a road race course. The track people would rather not know this I suspect."

As one of the "track people" I feel compelled to make some comments - especially as the final results of the calculations are false! But before "proving" that statement I think it is necessary to be philosophical for a while.

- * Track and field (and road!) is a sport where the idea of objective high-precision judgment of the performances is fundamental. The ambition is and has always been to minimize the room for "opinions" by the judges.
 - * To achieve what we want the rules - both concerning arena/equipment and the competition itself - are very detailed. This is a price you have to pay and the rules are also constantly modified to meet inventions of different kinds. Some inventions are accepted (e g all-weather tracks, flop technique in high jump) while others are rejected (e g tungsten hammer, rotational technique in javelin throw).
 - * An analysis of the nature of the rules shows that the vast majority are pure "definitions". I e they outline what the people building arenas and manufacturing equipment as well as the officials carrying out competitions have to adhere to if they want to be "accepted".
 - * As said those rules are definitions written down to achieve standardized conditions for all athletes all over the world. Of course you can have your own type of running/jumping/throwing in your back-yard but when you come to a real track meet the definitions are followed. This is necessary not only to make records meaningful but also - and most importantly - to make international competitions fair. You should be able to practice at home reassured that it will be e g the same distance between the hurdles at the Olympics.
 - * Most of the definitions are "one-sided": A throwing implement should weigh at least ..., a runner should cover at least ..., a high jumper should just pass over the bar (the margin is of no importance), a long jump is measured from a board you are not allowed to over-step, any measurement should be rounded off to the next "worse" unit, etc. The underlying unwritten rule is "always be on the safe side".
- Combined with the ambition to avoid very unfavourable conditions (who wants to throw an implement which is 1 kg heavier than necessary?) for the athletes the "one-sidedness" in reality creates the desired very "narrow" sport without having to make the definitions "two-sided".
- * However detailed rules there are conditions that can't be controlled as long as we carry out our competitions in the real outdoor world. Of course I mean the weather factors. E g we all know the enormous effects of extreme temperature and/or humidity on performances in long distance running.

- * The reason so little is said in the rules about the weather is of course that it is "impossible" for the meet organisers to enforce weather rules. But it should also be realized that "weather rules" are not needed for the primary objective of the rules: equal conditions for all participants in the same competition.

Records however fascinating are of secondary nature compared to the head-to-head competition. E.g. the Olympic champion in a running event is the person reaching the finish-line first and if the timing breaks down that changes nothing for the competition. Of course it is sad if a record is lost by a timing malfunction but it doesn't make a re-run necessary like a misplaced hurdle would.

And if the weather conditions are very bad (or very good) they are still basically the same for all participants in the competition. That some athletes "stand" heat better than others is just a part of the "talent" that is demanded to be successful - it doesn't change the fairness of the competition as long as all athletes are exposed to the same heat!

- * The only weather factor the rules are concerned with is the wind in the sprints and horizontal jumps. This wind-rule which was introduced half a century ago is a "record rule", i.e. it has nothing to do with the competition as such. It is the only rule of that nature and as such it inevitably creates logical conflicts:

If long jumper A does 8.95 with +2.1 and B 8.94 with +2.0 it will be jumper A who wins the competition and jumper B who gets the world record! How could you be a world record holder - which should be identical to having done the greatest performance ever - if the performance wasn't good enough to even win the competition?!

- * If the wind rule can cause such contradictions it could be argued that it should be abolished. The risk for anarchy is small as there are other events - especially the pole vault, the discus throw and to some extent the javelin throw - where the wind effect is as large but where there are no wind rules.

It should also be noted that the current method - as well as all conceivable future methods - never will give us a correct and complete "description" of the wind experienced by the athletes. No matter the construction of the wind-gauges and the number of wind-gauges used we won't succeed! One reason is that the wind is not even the same in different lanes in the same race due to the architecture of the arena. (In other words: There is no "true" wind.) Another reason is that the physique and the running technique of the athletes influences the size of the advantage/disadvantage that different wind-conditions constitute. (In other words: Runners are different.)

- * This brings us to the question of what a record "really is". The spontaneous answer is "the greatest performance ever". But as we live - and carry out our competitions - in the real world and not inside a laboratory we have to accept that the un-controllable conditions (the weather) always will be a factor. The consequence of that is that "the best measured mark" is not necessarily identical to "the greatest effort/performance".

Just remember when we had Lopes 2:07:12 in Rotterdam and Jones 2:07:13 in Chicago. It is stupid to say that one of those two marks was "greater" than the other. (And perhaps the "Greatest" still was Lopes 2:09 in the warm weather and on the considerably tougher course of the 1984 OG!) But what we could say was that Lopes 2:07:12 was the best time on a correct course and therefore the "record".

It is - and will always be - futile to put more into the concept of records than that it means "the best measured marks achieved in competitions carried out in full accordance with the rules". More often than not this pragmatic definition will co-incide with the idealistic idea of "the greatest achievement ever" but it will not happen all the time. Such is life.

- * The on-the-surface exact marks of our sport give the impression that they tell "the truth, the whole truth and nothing but the truth". I.e. if performance A is numerically better than performance B it is an always correct description of the relative merit athletically. However this is a misconception. And even "worse": all attempts to "theorising" away the problems with scientific calculations will be without success. There are things we have to put up with even if we dislike them!
- * When the automatic timing procedure eliminated the totally unreliable method of hand-timing we finally got to know how fast the sprinters really ran. Times accurate to 1/100 (in theory, in reality it has been proved over and over again that the people evaluating the photo-finish pictures often are incompetent and/or careless which make times published incorrect although the equipment was working) became the standard and then the wind effect started attracting much more attention than previously. Could the times be adjusted down to "zero conditions"? As said above that is impossible as we never can determine the "true" wind.
- * But if we could, there is a fundamental question to be answered first and that is what we should mean by "zero conditions". For some reason everybody seem to think that the only choice is zero wind. But is it really? Let us make an unprejudiced analysis!

The wind could vary from minus infinity to plus infinity. This could be compared to the length of a running course or the weight of a throwing implement. There our rules - as said above - have put in one-sided limits (e.g. a marathon should be not shorter than 42,195 m and a hammer should weigh not less than 7.26 kg) to define the "zero conditions".

The rules are not especially concerned with those running longer (like the joggers starting at the rear of a major marathon field) or throwing heavier things. Of course those people are at disadvantage compared to those who manage to get "zero conditions" but that is the way it has to be. (It would be impossible to let everyone in New York City Marathon start in the front line.)

Now going back to the wind there is nothing that says that "zero conditions" have to be nil wind. Still it is a one-sided limit and still those running in -2.0 mps will be at disadvantage compared to those running in 0.0 mps. Just as those 0.0 mps-runners are at disadvantage now to those +2.0 mps-runners.

I.e. no matter where we put our one-sided wind-limit we will have the problem that some will be lucky (being right at the limit), some will be "over-lucky" (above the limit) and some will be "under-lucky" (well beyond the limit).

Now where should the limit for "zero conditions" be put in this case? The current rule puts it at +2.0 mps, would it be better to have 0.0 mps? There is nothing - except our prejudiced way of thinking - that makes the "magical" 0.0-limit better. In fact it would be very stupid to have such a limit because it would make at least 50% - in reality perhaps 85% (because the orientation of the arenas have been chosen with the predominant wind-direction kept in mind) - of all races "illegal". In my opinion the current limit +2.0 mps is a good compromise which makes normal summer conditions acceptable and which excludes only marks when the wind is "feelable" to everyone involved.

Now after all this philosophising I should get back to your analysis in MN. There you wrote "Thus I presume that the method does a reasonable job of describing the reality". Unfortunately I have to disappoint you. No matter how good the method is in theory the results of the calculations are far away from describing "the reality".

Your calculations say that a 10.00 in 0.0 mps is equal to a 9.71 with +2.0 mps. This is a gross exaggeration of the wind effect and the best proof is that - despite the fact that there are and have been several athletes with proven ability to run races like 10.00/0.0 - nobody has ever under any kind of conditions run faster than 9.78!

That 9.78 by the way was run in +5.2 mps at the US Olympic Trials this past summer by Carl Lewis. Using your calculations "backwards" that time should probably be considered to be equal to something like 10.20-10.30 (or even slower) with nil wind. Such a time (without wind) is far from exceptional - it could perhaps get you into the semis at meets like the Trials or the Olympics - but in reality it gave Carl a clear win in the finals of the Trials. A race where it is impossible to win with anything less than a 10.00/0.0-effort.

The exact effect of the wind in the sprints is impossible to determine but using statistical experience instead of theoretical calculations I would say that a +2.0 mps normally means an improvement of 0.10-0.15 of the time compared to what it would have been with the same effort in windless conditions. The effect of altitude is also exaggerated in your calculations. Remember that Jim Hines in 1968 ran 10.03 in a semi at the AAU Championships on a clay track at sea level and 9.95 to win the Olympic final on a synthetic track at 2000+ m altitude. The wind was 0.8 and 0.3 respectively.

What this discrepancy between theoretical calculations and the reality shows is that a running human being is a much more complex phenomenon than "an object that is accelerated across a distance". The nature of this phenomenon is such that the "uncalculated" factors are of a magnitude not less than that of the calculated factors.

In your article you say - reflecting on the results of your calculations - "Why does the track sport accept such an enormous effect?"

As my conclusion I would answer like this: The effects are not at all as "enormous" as calculated. Also there is no logical reason to change the current definition of "zero conditions" as the problems would be just the same wherever the limit is put! Records are - and could never be anything else than - the best marks measured, because there will never be a way or a reason to compensate for unfavourable conditions!

As always a much too long letter. But that is the way it goes when you - under the restrictions of written communication - are discussing matters with a philosophical aspect!

Sincerely,



A. Lennart Julin
Gästrikvegatan 14
S-113 34 STOCKHOLM
SWEDEN

Dear Lennart,

(exerpts from a longer letter)

My 100 meter analysis is fairly sound, I believe, but it depends on an accurate knowledge of the wind drag of a human being. I used 6 square feet. I later found a reference that preferred 4.7 or so. This would drop the 2 m/sec wind effect to about 0.2 seconds. I have no evidence that 4.7 is a better number than 6. Baumel concurs that 4.7 looks a bit shaky.

I used a mechanical analog so that I could see the effect of varying the things that happen during the course of a run. The effect of a high starting force is quite large. This is not surprising, for the runner never again gets such a good chance to accelerate as when he is planted in the starting blocks. Few runners achieve a fast time without a strong jump out of the blocks.

One reason I think my analog is reasonable is that it fits the intermediate-time data pretty well, indicating that the basic model is a pretty good fit. Not perfect. Some assert that peak speed is really reached by 70 m or so, and then there is a bit of a slowdown. I don't know whether this is universal, but even if it is, the curve still fits the points pretty well. It may not be perfect, but I know of no better simple analog.

Your "proof" that my number was wrong was an informal observation of times run in different conditions by the same athlete. The number you came up with was 0.1 to 0.15 seconds. I consider your "proof" as fairly weak. I think 0.1 to 0.15 is low, but let's not quibble, since we will never know exactly.

Let's assume that the 0.1 is correct. For the same sort of "aid" effect applied to a 10 km race, that would be about like changing the course length by 100 meters. By our standards this would be poor measurement indeed. Also, most people would agree that 100 meters in a 10k is a definite aid or hardship, depending on whether the course is long or short.

The reason I wrote the 100 meter analysis was to try to show anxious road runners that things are not so bad in the road records. I do not think the track people should do anything about wind, and I do not favor trying to fine-tune road courses to achieve some dubious "justice."

Some people feel that if you play with numbers enough you will arrive at a perfect world of running. I just want them to realize that things are not so bad. Some runners will have good luck, no matter what the rules say. I don't favor trying to get things perfect, unless it can be done without getting things too complicated to understand.

I get the impression you may feel the same way. It is interesting to note that we and Helge Ibert measured the Rotterdam course on which Lopes ran 2:07:12, and got it about 30 meters oversize. David Katz measured the Jones Chicago course, and found it about 65 meters oversize. This would mean Jones' 2:07:13 was actually a faster run, if one believes the numbers represent absolute truth.

I very much like your definition of a record as being the "best time on a correct course."

Runners don't own records until the course is measured again

By TOM MEADE
Journal-Bulletin Sports Writer

Last fall, the Norwood 5K Women's Road Race in Warwick was the country's only 5-kilometer road event exclusively for women. When Charlene "Charlie" Halverstat was first to cross the finish line on Maple Street, she set a national record, a benchmark.

Almost.
Before The Athletics Congress (TAC), the national race-sanctioning organization, would declare Halverstat's 16:04 time the record against which future women's 5K races would be measured, the TAC had to measure the course itself — inch by inch.

Wayne Nicoli, a TAC race validator from Augusta, Ga., first saw the course in the form of several pages of calculations submitted by Ray Nelson, who is a Rhode Island resident who sets and measures about 25 New England race courses each year, including the Norwood 5K race.

With Nicoli's approval, the TAC certified the course. After the race was run, the Norwood committee sent Nicoli a videotape with information on the timing procedures. Three months later he was in Warwick with a odd assortment of tools to validate the course, making sure Halverstat did run a full five kilometers.

Even a thermometer

Wearing a carpenter's leather apron filled with a hammer, spikes, spray paint, notebooks, a calculator and a tape measure, Nicoli met Nelson on the finish line. The thermometer on Nicoli's folding bicycle said the air was 41 degrees, a fact the validator needed to know so he could compensate for the cold's contraction of his metal tape-measure.

He hammered two spikes into the road's surface at the finish line. Using the tape measure, he marked a line 1,000 feet long, nailing two more spikes into the asphalt. He and Nelson would use the distance to calibrate the counters on their bicycle wheels.

Nicoli's bike tires are fitted with special plastic inner-tubes which resist the expansion and contraction of temperature changes. Using regular rubber tubes, a course setter who calibrated his counter on a cool morning would arrive at a different measurement later in the day, when the air is warmer and his bicycle tires slightly larger.

"The difference might be only six feet per mile, but when you're taking about measuring a marathon (26.2 miles), it becomes a significant amount of footage," Nicoli said.

He and Nelson rode the 1,000-foot stretch four times, calibrating and recalibrating their counters before they rode the race course itself.

When Nelson first measured the Norwood route, he anticipated the women running a tight race by taking advantage of tangents on turns. As it turned out, Halverstat and the race's other leaders took the corners wide, thus running a longer course than Nelson had set.

When the TAC validator came to the course, he rode it as Nelson had originally measured it. They looked liked bicycle racers in slow motion, with one cyclist's front tire on the other's back tire. Both rode the same line so they could compare their measurements later.

"If you had three experienced people measuring the same road race course, their findings would probably come within a meter of one another," Nicoli claimed.

When he set the Norwood course last summer, Nelson added a standard .001 margin for measuring error (five meters for a five-kilometer course). When he and Nicoli remeasured it recently, the distance was on the money.

Halverstat's record is not official until Nicoli submits his findings to the TAC's validations chairwoman — his wife, Sally — who then takes the measurements to the TAC's road racing technical committee for approval. That done, Charlie Halverstat's name will enter the record book as the country's fastest runner in a 5-kilometer road race for women only.

If the race is run again on the same course, and it appears as though another runner has set a new record, Wayne Nicoli could validate the results simply by watching a videotape of the event to be certain it followed the route he measured.

Unfortunately, the race may not be run again. According to race promoter Meredith Nelson, sponsor Norwood Chevrolet recently was sold, and the new owners may not continue the race.

ALMOST OFFICIAL



MEASURED MILES: Wayne Nicoli (left) a member of The Athletics Congress (TAC) was in Warwick recently to measure the course of the Norwood 5K Road Race. In 1987, Charlene Halverstat set a new record for a women's only 5K race. But the record was not official until Nicoli measured the course. Looking on as Nicoli, an Atlanta resident, checks the calibrator on his bike are Warwick resident Ray Nelson, who originally measured the course and race promoter Meredith Nelson. *Warwick Beacon photo by Henry Mathews.*

COURSES DELETED FROM ACTIVE LIST

In this issue of MN you will find a list of 642 courses that have been deleted from the active list. They were deleted because records show that they do not have maps filed with the certificates. The courses were not individually checked, so there may be some mistakes. These courses were identified by examination of the final NRDC list, which had a notation showing whether a map was on file. If the course notation showed no map, the course was deleted.

All the courses are old, and presumably inactive. If you have an interest in having a certain course put back on the active list, please send a certificate (with map) for the course directly to Joan Riegel and ask that it be put back on the list. No charge for this.

The reason for the above is housekeeping. When people ask for certificates, it's important that they get a course map. A certificate without a map is useless, since no information appears as to exactly what is certified.

The courses are not actually decertified, but it makes little sense to carry these courses on the list if their routes are unable to be identified. People have this year to send in those maps. Unless there is a storm of protest, these courses will be decertified as of December 31, 1989. This will give the matter a chance to be discussed at the TAC Convention.

TAPING ON A WINDY DAY - PUZZLE WINNERS

There were to be two winners for this puzzle - one for the solution using trial and error, and one for the answer that didn't need it. Bob Baumel was first to get them both. Hot on the heels of his answer were Dave Yaeger and Wyatt Love. Wyatt is a math student of Lynn Cannon at Pleasant Valley HS in Chico, CA. Justin Kuo got it right, and so did Bob Edwards, who, like Baumel, found a way that didn't involve iteration. Clain Jones worked out the basic equation, but lost interest when he saw it required an iterative solution. Dad Alan Jones then ground out the non-iterative answer.

THIS MONTH'S PUZZLE

Readers have chided me for making puzzles so tough that hardly anybody can solve them. I beg and plead but nobody will send in a nice simple one. Thus the readership must struggle and calculate, often to no avail. It is a hard life. Therefore in a spirit of conciliation I offer up this mind-teaser:

Name an existing course, or a sketch a new course, that has a separation greater than 100 percent.

First answer wins, as usual. Have fun, and no complaints!

FINISH LINES	
TIME	PLACE
2:59:59	389

Finish Line Sub-Committee
 Alan Jones, Chairman
 3717 Wildwood Drive
 Endwell, NY 13870
 (607) 754-2339
 March 1989

RACE-DAY REGISTRATION

The use of computers for handling results has allowed us to handle the large fields which occur in many races today. As I've stated often in this space, computers also help even with the small races. However, there is one problem that we still haven't mastered and that is races that have a large number of race-day registrants. I know. I know. All we have to do is forbid them. Make everyone register a week or two ahead. However, we used to allow any number of raceday registrations before computers. We would take the runner's application, write the competition number on it, and hand him his number. All the paperwork was done later and a color-coded system was used to pull out the age-group awards. As we know, many of the races didn't even have a problem with the later paper work. They just didn't do it! Doesn't it bother you to have to say, or at least imply, "Since we are scoring this race by computer, you'll have to have your entry in two weeks before the race." Wait a minute! I thought computers were supposed to make things better for everyone.

There are some solutions. One is to have many computers for entering data. I have found that a good data-entry person can enter about 100 registrations per hour. So if you expect 600 people to show up on raceday and you have two hours to get the data into the computer, you'll need three computers. (This number is probably not conservative enough since the 100 per hour assumes that everything goes smoothly and you can read everyone's handwriting.) Another solution is to charge \$5.00 for pre-registrations and \$25.00 for post-registrations. However, that bothers me, too. Often I don't know if I'm really

going to feel like running until the day of the race. Or, a previous conflict might disappear.

Stephen Lake wrote to me recently with a suggestion for solving the post-registration crush. He suggests that TAC cards have a magnetic stripe with the runner's name, age, sex, etc. He further suggests that only those with a TAC card can register on race day or, alternatively, those with a TAC card have a \$1.00 reduction on the entry fee. In this way the card would pay for itself after a few races. However, there are problems. For one, I don't know how much information one can get on a magnetic stripe. I assume your credit card has only the 16 or so digits. Also, you really would need the date-of-birth. What about the large percentage of people who move every year? What would it take at the TAC associations to set this up? Many people obtain their card from a local representative. Would this person need mag-card writing equipment or would the runner be issued a temporary card with the permanent one coming from the association?

There is something coming along that might solve this problem for us and this is the smart card. It is projected that in a few years most people will be carrying a smart card which knows your bank balance, your health history, etc. If standards are established, we could run the card through our reader and voila! "instant registration"! However, there are obvious problems. Could we convince the runner that we are reading only the name, address, date-of-birth and not the bank account and medical history?

How about some futuristic suggestions from some Measurement News readers?

Was His Conscience Bothering Him?

When Clain raised the price of the Jones Counter from \$12.00 to \$14.00 in 1979, he received a lot of orders with a \$12.00 check. After all, this is the price mentioned in Jim Fixx' book. Being a nice guy, Clain would mail the customer a counter and ask for the extra \$2.00. Most sent it. Some didn't. A few days ago Clain received a check for \$5.00 from a guy who bought a counter from him about nine years ago. He explained that he owed Clain \$2.00 and the extra \$3.00 was for interest.

Brad Malamud's Race Directors Book

Brad Malamud of Los Angeles has sent me a copy of his book **How to Direct and Produce a Road Race**. It has quite a wealth of information. It doesn't look like he's missed anything. He covers bathrooms, sponsors, police, volunteers, etc., etc. I think the price is about \$30.00. Brad can be reached at P.O. Box 49913, 11661 Goshen Ave. #202, Los Angeles, CA 90049 (213) 826-3335.

Alan Jones Eats Crow

I have often stated that I did not believe in interpolated results since I think everyone should be timed individually. Although I can hardly criticize the Cascade Runoff for interpolating for times of their 50,000 finishers. Jack Moran pointed out that interpolated results are better than none if you have a real breakdown. My main concern is that people would interpolate and then send the results to TACSTATS and would "forget" to mention that each runner was not individually timed. However, one of the specific questions on the TACSTATS form is whether each runner was individually timed. Well, to make a long story short, my program can now interpolate although, I hasten to add, I never plan to use it personally. The next time you see a header on my column about me eating crow will be the time I use interpolation on one of my races.

TACSTATS TIME GUIDELINES

The May/December 1988 issue of **TACTIMES** has time guidelines for male and female runners for all commonly run distances and ages 5-years and up. The distances are 5 km, 8 km, 10 km, 12 km, 15 km, 20 km, 25 km, 30 km, 10 M, 20 M, Half Marathon, Marathon. Starting this spring, I plan to put an asterisk next to each runner who runs a time under a standard. I think this is a nice way to recognize those runners back in the pack who might be running a very good time for his/her age. These times are not easy to beat. For example, a male 40-44 must run 5 km in 16:30 and a female must run 5 km in 20:00 to be recognized.

Don't Let this Happen to You

Was I embarrassed! Our local newspaper has begun selecting the runners of the year -- both open and age-group. Our best open runner is Tom Carter who is 36 years old. The reporter did some checking and found that Tom had run under the current 36-year record for 5 km (15:00) but was not listed. In checking with me I was able to confirm that three races were on non-certified courses, one I was unsure of, and one was in a race that I had scored but had never gotten around to sending in the results! Please don't let this happen. Get those results into Basil and Linda. (They have them now for my race.)

Solution(s) to "TAPING ON A WINDY DAY"

by Bob Baumel

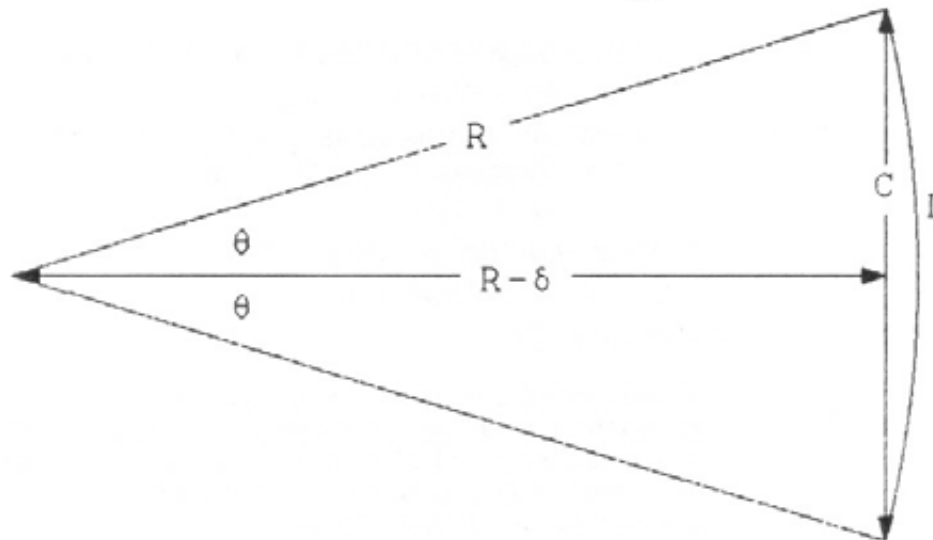
Pete noted that this problem can be solved by both "trial and error" and "another way." I will present solutions of both types. (Since I am shooting for both prizes, I assume it's acceptable if I use more than one page.) By "trial and error," I assume Pete means an iterative numerical technique. Actually for this problem (in contrast to previous problems in the series), you *must* use an iterative technique to solve the exact equations, as these equations do not have a closed-form solution. Thus, one of my solutions will use iteration based on the "exact" equations. My other solution will proceed by deriving a simple *approximate* formula that is really accurate enough for all practical situations. This approximate formula is

$$\text{Shortness per Tape Length} = 8\delta^2 / (3L) \quad (1)$$

where δ is the sideways deflection of the tape, and L is the tape length. In our case, $\delta = 1$ m, and $L = 100$ m, so the shortness per tape length works out to 2.666667 cm, and the shortness in the whole kilometer is 26.66667 cm.

In defense of this approximate formula (equation 1), I must point out that even though Pete said the tape is blown into a *circular* arc, this isn't exactly correct. Mathematically, instead of treating the arcs as circular, we can also treat them as portions of parabolas or portions of catenaries (the shape of a freely hanging tape suspended from its endpoints). These three calculations all result in slightly different "exact" answers, but they all yield the same *approximate* formula (equation 1).

I now derive the exact equations for the case of circular arcs. In this diagram, δ is the deflection, R is the radius, θ is the half-angle, L is the arc length (or tape length), and C is the "corrected" tape length (chord length, or straight-line distance between endpoints).



From this diagram, we derive the following relationships, where the angle θ must be in *radians* for equation (3) to hold:

$$C = 2R \sin \theta \quad (2)$$

$$\theta = L / (2R) \quad (3)$$

$$R - \delta = R \cos \theta \quad (4)$$

Elimination of R between equations (2) and (3) yields the equation:

$$C = L(\sin \theta) / \theta \quad (5)$$

Also, elimination of R between equations (3) and (4) yields the result:

$$1 - \cos \theta = 2\delta / L$$

which can be manipulated with trig identities to give:

$$\sin^2(\theta/2) = \delta\theta / L \quad (6)$$

In principle, the problem is now solved: First solve equation (6) for θ given the known quantities δ and L ; then plug the solution for θ into equation (5). Unfortunately, equation (6) cannot be solved analytically. To obtain a numerical solution, I rewrite equation (6) in the form:

$$\theta = 2 \arcsin[\delta\theta / \{L \sin(\theta/2)\}]$$

which converges rapidly when iterated. Several iterations of this equation (starting from $\theta=0$) yield the following (recalling that θ is in radians):

0.04000266625253244

0.04000533393275953

0.04000533428859018

0.04000533428863765

0.04000533428863766

0.04000533428863766

Note: this answer of roughly 0.04 rad is equivalent to about 2.292 degrees. From this answer, we compute a corrected tape length $C = 99.97332835486$ m, which is short by 2.667165 cm. Compared with this "exact" result, the prediction of the approximate formula (equation 1) was off by about 1 part in 5000 regarding the shortness per tape length, or only 1 part in 20 million for the actual measured distance!

To derive equation (1), we first expand equation (5) in an infinite series:

$$C = L(1 - \theta^2/6 + \dots) \quad (7)$$

When δ/L is small, the angle θ will also be small, so we may use the approximate relation $\sin x \approx x$ in equation (6), yielding the result:

$$\theta \approx 4\delta/L \quad (8)$$

Substitution of equation (8) in equation (7) then yields:

$$C \approx L - 8\delta^2/(3L) + \dots$$

which is equivalent to equation (1).

This approximation is closely related to the "sag correction" formula which appears in all surveying textbooks. A tape of weight $W (=Mg$ where M is mass and g is gravitational acceleration) of length L pulled with force F , suspended only from its endpoints (hanging freely in the middle) will sag approximately by the amount (in a *vertical* plane):

$$\delta = WL/(8F)$$

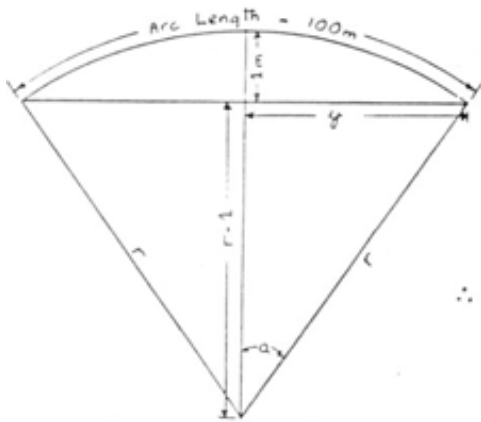
which, plugged into equation (1), yields the standard formula:

$$\text{Shortness per tape length (from sag)} = W^2L/(24F^2)$$

MN - JANUARY 1989
WINDY DAY PUZZLE

Search
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E

	B	C	D	E	F	G
	RADIUS m	COS a	(r-1)/r	DIFF (C-D)	y m	LENGTH m (20+F)
	1249.8330	0.999199	0.999199	-1.906E-10	49.98665	999.7331
	1249.8331	0.999199	0.999199	-1.266E-10	49.98666	999.7332
	1249.8332	0.999199	0.999199	-6.257E-11	49.98666	999.7332
r =	1249.8333	0.999199	0.999199	1.431E-12	49.98666	999.7332
	1249.8334	0.999199	0.999199	6.543E-11	49.98666	999.7333
	1249.8335	0.999199	0.999199	1.294E-10	49.98666	999.7333
	1249.8336	0.999199	0.999199	1.934E-10	49.98667	999.7334
	1249.8337	0.999199	0.999199	2.574E-10	49.98667	999.7334
	1249.8338	0.999199	0.999199	3.214E-10	49.98667	999.7334
	1249.8339	0.999199	0.999199	3.854E-10	49.98667	999.7335
	1249.8340	0.999199	0.999199	4.494E-10	49.98667	999.7335



$$\begin{aligned} \text{Angle } a &= \frac{\text{arc length}/2}{\text{Circumference}} \times 2\pi \text{ radians} \\ &= \frac{100/2}{2\pi r} \times 2\pi \text{ radians} \\ &= \frac{50}{r} \text{ radians} \end{aligned}$$

$$\cos a = \frac{r-1}{r}$$

$$\therefore \cos \frac{50}{r} = \frac{r-1}{r} \Rightarrow \text{Solve for "r"}$$

$$y^2 = r^2 - (r-1)^2 \Rightarrow y = (2r-1)^{1/2}$$

$$\therefore \text{Course Length} = 20(2r-1)^{1/2}$$

Dave Yaeger
January 10, 1989

The RUNDOWN

Wayne B. Nicoll, technical correspondent
3535 Gleneagles Drive, Augusta, GA 30907



The race to validate a record

When I opened the January 1989 issue of *Running Journal* to pages 26 and 27, I was struck by the realization that we had blown it. In November '88 we had one of America's finest women runners come to Raleigh, win a major road race event and smash one of the most prestigious road records, the U.S. Women's Open 10K. She returned to Raleigh two weeks later and won the TAC/USA National Cross-country Championships. Somehow a few lines buried in the middle of the *Journal* seems woefully inadequate for Lynn Jennings, an '88 Olympian from New Hampshire who had such a remarkable set of performances in our backyard.

Women's Open U.S. records are kept at most of the standard distances and are broken into two categories by the type of course — *unaided* (sometimes referred to as loop records) and *aided* (usually called point-to-point records). "Unaided" refers to those records set on courses that meet a fairness criteria by not having excessive elevation drop from start to finish or

that do not have a possible advantage from a tail wind.

"Aided" refers to those records set on a course with excessive elevation drop and have a potential wind advantage. Aided performances are recorded by TACSTATS, the national road record keeping center, but little value is placed on them and we do not spend our validation funds to verify aided course records. We get excited, however, when an American man or woman breaks the open record on an unaided course, such as Lynn Jennings did on the 1988 Old Reliable 10K course.

My wife, Sally, holds a key position on the Road Running Technical Committee (RRTC), that of Validations Chairman. In this volunteer job she is responsible for selecting and dispatching an RRTC measurement expert (who is designated a validator for this purpose) to the race site to examine the facts surrounding the setting of the record.

The task requires a lot of coordination with

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TACSTATS to insure that all documentation is in order prior to the dispatch of the validator. U.S. records set during the calendar year are verified whenever possible during the same year. If the validation shows the conduct of the race was in order, the record is ratified at the TAC/USA convention in December.

Thanks to *Running Stats*, a weekly results magazine published by Paul Christman in Boulder, CO, Sally learned of the pending record and determined that if we moved quickly, we might be able to verify the record and see it ratified at the convention in Phoenix, which was only two weeks away. The records center agreed to hold off final publication of the records to be submitted at the convention until after the results of the Old Reliable validation was known.

Sally had no problem finding a validator. She looked across her desk at me and said, "You're it and I'm going with you." We admit to having a little extra motivation since we are both New Hampshire natives. A flurry of phone calls ensued and we arranged with Butch Robertson, the race director, to re-measure the 10K course on the evening of Nov. 21. We drove up, met Butch about 4 p.m., toured the course and reviewed a videotape of the race.

It is standard procedure for the validator to request to see any photos and videotapes that might assist him in verifying that the record claimant actually ran the path that was certified. Sally and Butch discussed the finish line timing procedures and reviewed the requirements in the records application. In the early evening, I laid a 1,000-foot calibration course several blocks from the start/finish area.

At 11:30 p.m., I met A.C. Linnerud, the

course measurer and North Carolina certifier, and we calibrated our bikes. We rode to the start and met Butch and Sally. They protected us with a vehicle as we rode around the course. By 1 a.m. we were finished and re-calibrated. We moved to our motel room where we calculated the measurement results.

My official ride found the course to measure 10,008 meters. The figures revealed that the two riders (A.C. and I) were less than two feet apart in our recorded distances. A.C. breathed a sigh of relief since it was the first time he personally had been checked by another measurer. Later he and Butch admitted that at 4 a.m. on the previous morning, they had conducted their own re-measurement! I sympathized over their concern since my measurement of the 1987 Red Lobster 10K was subject to the same scrutiny when Liz Lynch McColgan set a world best and Lynn Jennings set her previous U.S. Open 10K record.

We returned home, prepared the validation report and notified TACSTATS. Butch was so pleased he made arrangements to attend the convention in Phoenix so he could see the record go through the ratification process. We officials set a record of sorts by having managed to gain approval of a record performance so soon after the event.

Not only did Butch witness the ratification of Lynn Jennings' record, but he made a successful bid presentation to the Men's Long Distance Running Committee, which netted him the 1989 TAC/USA Men's National 10K Road Race Championship! It was a class operation all the way.

the Michigan Runner.

THE LAST CHANCE PUBLISHING COMPANY

P. O. Box 707 • Ypsilanti, Michigan 48197 • (313) 485-2025

921 Bath
Ann Arbor, MI
48103

Dear Pete,

Enclosed find the 'new' Bobby Crim 10 mile cert letter with a map on the back. I've stuck with the old cert letter, for the sake of nostalgia. Note that I've put the cert number next to city/state and on the map. I forgot to put separation and drop. For your computer: Sep 10%, Drop 0.

It looks like I'll have to put about 15 maps on the back of 1982-84 cert letters. Should take about a month to 6 weeks.

I've sent a copy of the Crim letter to Crim director, Lois Craig, and to Sally Nicoll. Some records were set and Sally needs the map for validation purposes.

Regarding the RRTC TAC meetings: Really now, just when is a course certified? Nothing in the RRTC Meeting minutes spells out in plain English when a course is to be considered certified. The last two sentences under Agenda Item 7: 'The date of post-mark currently determines when a certificate is valid. It is imperative that certificates go out before the race,' don't nail down when a course is to be considered certified.

Perhaps you were trying to say, 'A course is considered certified when a regional certifier post-marks the letter of certification to the vice-chairman BEFORE the race.' There is little room for interpretation here.

Regarding the discussion about certs without maps: I quote, "It was decided that the courses would remain certified but would not be published in the next complete listing." Yet, on pg 3 of the Jan 89 MN it says, "All courses that do not have maps included with the certificates will be removed from the list over the next few months."

Please, what is that discrepancy all about?

And, I'm not entirely satisfied with the outcome of the discussion regarding unequal distances that runners of different sexes may run at the finish. It's one thing to conclude that the course measurer and race director should discuss how the finish will look on race day, and another to STATE that measurers are required to ask race directors how the finish will appear.

It's not fair to runners in general, and potential record-setters in particular, that finish lines may be unequal for one or the other sex.

I just talked with Ralph Dewey about the police escort document you wrote me about. I sent Ralph a copy of your letter. He is going to be sending me his thoughts soon. I'll look them over and add any comments I feel are appropriate. Then I'll send the info along to you.

Well, I've got some thoughts on other issues but I'll take them on another time.

1/12/89

Best,



Scott Hubbard

THE ATHLETICS CONGRESS
OF THE USA

Road Running Technical Committee
Peter S. Riegel, Chairman

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614-451-5617 (home)
614-424-4009 (office)
telex 245454 Battelle

January 18, 1989

Scott Hubbard - 921 Bath - Ann Arbor, MI 48103

Dear Scott,

Thanks for Bobby Crim. We'll put it back onto the active list. There are over 600 courses so affected, so I am hoping that not too many will reappear. As for the business about courses remaining certified but not being on the list any more, this was said just to keep a lot of people from feeling that they have been unduly put upon. Taking a certified course off the list, so that we can have maps for all certs requested, is one thing. Actually decertifying the courses is another. Back when we changed the measurement standard there was a lot of ill-feeling about all those courses being decertified. I wanted to avoid unpleasantness, so I figured that taking them off the list, with the option to get back on when a map was sent, was the best way to go.

When is a course certified? Maybe we are fussing over this more than the situation warrants. If the date of postmark from the measurer precedes the race, the course is considered to have been officially OK from a records point of view. I don't think we should change this, since to do so would make last-minute measurements impossible. And they do happen, even on some of the big races.

The other dates should follow the measurement date as soon as possible, in the interest of making information available to those who ask. Our information pipeline takes time to process the data. I received race results from a race at which a women's AR had been set, and had no record of it being certified. Turned out the certifier had been sitting on the cert longer than he should have. A letter took care of the problem. Another certifier, who is awfully busy, occasionally doesn't get his certs filled out before the race. He pointed out that sometimes people call at the last minute, and it is simply not possible to get all the paperwork done before the race. He said if he had to have things in the mail by race day it would force him to say no to people who needed last-minute measurements. It doesn't happen a lot, but sometimes he gets backed up. He is so good at his job it would be foolish to try to bind him tight in bureaucracy.

I think we have to be tolerant in cases like these. Sure, it can cause some misunderstandings and inconvenience, but as long as it is not a chronic condition we can live with it. Sometimes people get behind in the work.

Until the situation gets a lot worse I am inclined to stick with the date of postmark, for non-FS's. It has worked OK for many years, so why change? With Final Signatories, of course, we simply accept their word as to the date of the courses they measure. We could tighten it, I suppose, but I'd rather allow people to be human than impose inconvenient bureaucratic restrictions.

We occasionally forgive lapses, so why make a rule against something we are prepared to forgive in most cases? If an FS becomes a chronic problem, it is time to think about a replacement, after fair warning is given.

Unequal distances was not seen as a major problem at the convention. We could state that measurers are required to consult with race directors about this. Should we put a question on the certification application form? It's one more thing to ask on a form that is already too filled up with questions. Suppose the starts were unequal? I suspect that happens a lot, especially on multi-start-lines like NYC, Chicago and London. When courses join a few miles down the road it's inevitable that the course lengths will be different by a couple of meters, even when we do our best. The overwhelming majority of courses have simple starts and finishes.

2 or 3 meters is a lot if you see it as being suddenly applied after the last turn is rounded, and it's 50 meters to the finish. But applied across the entire race it is nothing. I can't imagine that anybody would feel seriously handicapped at having to start 3 meters behind someone else in a 10k. It's only later, after the watches have stopped and a record is missed by a second, that it becomes a "problem".

This is another example of a problem that has been with us for a long time, and one which I do not think will ever be solved. That is, timing is more accurate than course measurement. Near-misses on records seem to cry out for justice. Believe me, if I could figure out a way to make things better I would work at it. Right now the only thing I can hope for is that people will someday accept that measurement and timing are not perfect and learn to live with it.

Bob Letson once proposed that pending records be examined very closely, and adjustments be made to times according to how validations turn out. There is some merit in this, although there would still be room for argument, as when two validators come up with two numbers that aren't the same, and the watches disagree. There would still remain cases where records get missed by small amounts.

I think competitors have to accept small inaccuracy as part of the game. We really can't do a whole lot better than we are already doing. We might achieve marginal improvement by being very, very picky, but I am not sure the improvement is worth the price. Can we really get courses much better simply by asking people to check yes or no on a few more questions on the application?

One does not really know the effect of unequal finish lines until the validation is done. As I recall, Wayne validated a course a few years ago in which the women's course came out OK by a tiny bit because they had extra distance to run, while the men's course failed. Fortunately it was a women's record that was involved.

I am looking forward to Dewey's thoughts on police escorts. Dope from the experts is always welcome.

Best regards,



POLICE ESCORTS

Ralph Dewey is a law-enforcement officer in Michigan, as well as a course measurer. I asked him, via Scott Hubbard, to put down some of his thoughts on getting the most out of a police escort. He replied:

Dear Scott,

I received your letter, along with Pete's. I would be more than willing to do anything to help. However, I'm not sure my writing a letter to other law enforcement officers will accomplish what Pete is talking about. It doesn't take a mental genius to follow a bike-rider with your over-head flashers on.

The need, as I see it, is communication. First, the measurer has to tell the police department what he is doing and why. The measurer has to communicate what SPR is and why we have to measure SPR. Obviously, the measurer has contacted someone in administration for the escort. He should explain to the administration that we will need to drive against traffic at times. He should ask the administrator to write a memo to the assigned officer stating that.

The measurer should also spend time with the assigned officer advising him what SPR is, and why we measure SPR. He should ask the officer for input based on his experience.

They should select a day and time when there is not much traffic, such as early Sunday morning.

Another thing the measurer can do is look for friends on the police department. Most of the large departments have runners/ running clubs. Contact the Police Community Relations Unit. Have them put you in contact with one of the runners. Having this friend on the inside can work wonders.

Some measurers may have a problem clearly explaining what SPR is. Maybe a form for measurers to give the police department could be made up. This form would include a definition of SPR and why we measure that way. In that definition, explain that we will be driving against traffic at times.

We should state that for our safety we would like a cruiser to follow as close as possible with the over-head flashers and four-ways activated. When there are two cruisers involved, one can lead and one follow. The lead vehicle should drive SPR and continuously check rear-view mirror for the measurer.

I think that this letter, attempting to contact a runner on the department, and backing from the administration will solve the problem. This letter could also be used as the memo to the assigned officer.

There is always a chance that the measurer is going to run into a "red-neck" and get the run-around. No matter what kind of letter/form we have, in that case it won't help.

Best regards,
Ralph Dewey

Peter Riegel
3354 Kirkham Road
Columbus, OH 43221
U S A

Stockholm, 4 January 1989

Dear Pete,

I read your "30 cm from curb at Seoul" in the November issue of MN with interest. As I had the privilege to attend an IAAF/AIMS seminar on course measurement in Seoul in late 1986 - when the Olympic course already was laid out, marked with the blue line and measured! - I would like to make some comments on the Seoul-measurement and on your proposals. (You did write "Opinions solicited!" ...)

According to their extensive (224 pages) printed report the official Seoul measurement followed these principles:

- * Defining "formally" the SPR as 30 cm from curb or road edge or edge of drainage and 61 cm from walls.
- * Painting a line (blue) following this definition.
- * Measuring the length of the painted line.

During our discussions at the seminar I argued that this technical and pseudo-scientific approach is both unnecessary and incorrect. The true definition of the SPR is just that, i e "Shortest Possible Route" that a runner could follow. Period.

Arbitrary "theoretical" definitions like "30 or 61 (why not 60 or 62?) from" serve no practical purpose. On the contrary they ignite confusion. It is quite easy to envisage configurations in reality where the runners without any hazards could follow a shorter route than such a formal definition would create. Then what we call the SPR would be different from (- longer than) the "true" SPR. Quite a nice contradiction: Something shorter than the "shortest possible"!

When we got out on the streets it was obvious that this was just the situation in Seoul with their type of curbs combined with a concrete apron. I can assure everyone that there was no problem riding even an unfamiliar bike (without reliable brakes!) on the concrete next to the vertical part of the curb although the surface wasn't quite as smooth as that of the asphalt. The "crack" was no problem for a runner and a very small one - even in the dark - for a bike-rider.

During the measurement session of the seminar I did my measurement like I always do, i e following the shortest possible route I would "dare". That meant that on all bends, both sharp 90 degrees turns and long sweeping ones, I (and the other experienced measurers) rode notably inside the painted blue line. I got some remarks as some participants said I was supposed to measure the length of the blue line.

I didn't agree. My attitude was - and still is - that measurements should be according to the rules and not according to some kind of theoretical "interpretation" of the rules. If it was possible for me to ride my bike on the concrete it was obvious that any sensible runner would follow a similar path.

The result was that - while the measurements on the straight portion of the 10 km section of the course (that we road in both directions) agreed well with the official measurements - there were small but notable discrepancies on the more or less curved portions. Discrepancies that might add up to something like 20 m or even more for the whole race.

No mention - in the printed report or otherwise - was made of whether there would be plastic cones or barriers on the road during the race to make it physically impossible to run inside the blue line. As we all could see there was nothing like that at the Olympics. They even had the spectators behind a rope another metre or so from the curb which meant that there was absolutely nothing to stop the runners from getting as close to the "true" curb as they wanted.

Which they did. The TV coverage confirmed that this was not just a theoretical possibility. Between 23 and 24 kilometres e g you could see several runners (including Nakayama) in the leading group running clearly inside the blue line on a long sweeping turn. (And at 18.4 kilometers one runner even cut a corner by - despite the high curbs - running across the sidewalk!)

All this proves the danger of trying to do "technical" interpretations of the SPR. One reason the SPR was brought into the rules was that the old definition "one metre from the verge of the road" created ambiguity because - depending on the nature of the course - it was possible for a runner to run considerably shorter than the measured line on some ("meandering") courses while this was impossible on other ("straight") courses.

If we - as you proposed - would start to make special rules with arbitrary displacement figures also for drain gratings or telephone poles we will just create even more problems because this type of formal approach will be misinterpreted. There are e g numerous types of drain gratings all over the world. Gratings used in our country create no disturbances for the runners who just ignore them. How do you in the rules distinguish those gratings from the "unrunnable" ones?


The SPRR ("Shortest possible runnable route") mentioned is in fact identical to the SPR which is defined in the IAAF rules as "the shortest possible route that a competitor could follow within the section of the road permitted for use in the race". If a route isn't "runnable" it is not a route that "a competitor could follow".

Personally I favor a pragmatic approach to the measurement procedure where the measurer uses his experience and intelligence when deciding what line to measure. Riding a bike not too fast (not faster than the running speed) is quite similar to running so if you can ride your bike a "parsimonious" route you could be sure that runners will take the same.

As we know that all runners always strive to run as short as possible on the course available to them it is necessary to have the "true" SPR as our only guideline. Of course it is not possible to measure this "idealistic" line perfectly but if we are doing our best ("thinking" like a prudent runner) and then adding on a SCPF we have reason to feel reassured that no runner - without leaving the course - could run a shorter distance than that prescribed. And that is what it is all about.

It is not enough to measure well - we also have to measure the right thing! The right thing in this case is nothing but the true SPR as determined by reality!

Sincerely,



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DEVIL TAKE THE HINDMOST RUN

In keeping with RRTC's grave responsibility to present the newest developments in race technology, the following is offered for the race director wishing to serve the needs of the serious competitors in the sport:

For this event you need a track, or a fairly short road loop. Even a big parking lot will do, with a cone at each corner.

The multitudes assemble. You decide how far the winner will run. If the track is 400 meters or 1/4 mile, I'd suggest 12 laps. The people are divided into age groups with 13 people in each. Just begin with the youngest and count up by age until you have 13 people. They all start at once, but here's the kicker: The last person on each lap is out of the race. You can see what this will do to the pace. The last person will sprint like mad to keep from dying on that lap. This will force everybody into going faster than they would like for even pacing. The race will become a grueling struggle as people muster up that kick each lap to keep from being last. Sole survivor wins.

The first lap will be a screamer - as fast as the slowest person can run 400 meters. The next lap will be fast too. By this point everybody will be getting pretty huffed. The rest of the race will be awful, since everybody will have gone out too fast.

An alternative would be to restart the race each lap, thus wiping out the gain the lead runner might have accumulated, and making the thing a series of repeat intervals. Restart would occur as soon as the last runner crosses the line. Lots of ways to make it interesting.

Sadistic? You bet! Fun to watch? Certainly. If enough people show up there will be fun both as spectators and as participants. Since the race is short and fast there will be time for half a dozen or more races.

This kind of race is logistically easy, since you don't need water stations or lots of volunteers. It could even be tried on one of your club's Sunday runs to see how it works out.

It's a lot more fun if the people are fairly evenly matched, but that scramble as they approach the cutoff point is bound to be exciting. A footrace where people see the whole thing, rather than just the start and finish.

I've never heard of one of these actually being put on. It's just something I thought of, and probably not first. It's hardly the sort of event favored by the elite, but it sounds like a lot of road-running fun to me.

Does this tweak your sense of mischief?

Pete