

To: Everybody listed as a Regional Representative in NRDC News, plus everybody who rode bikes on the Olympic marathon measurement.

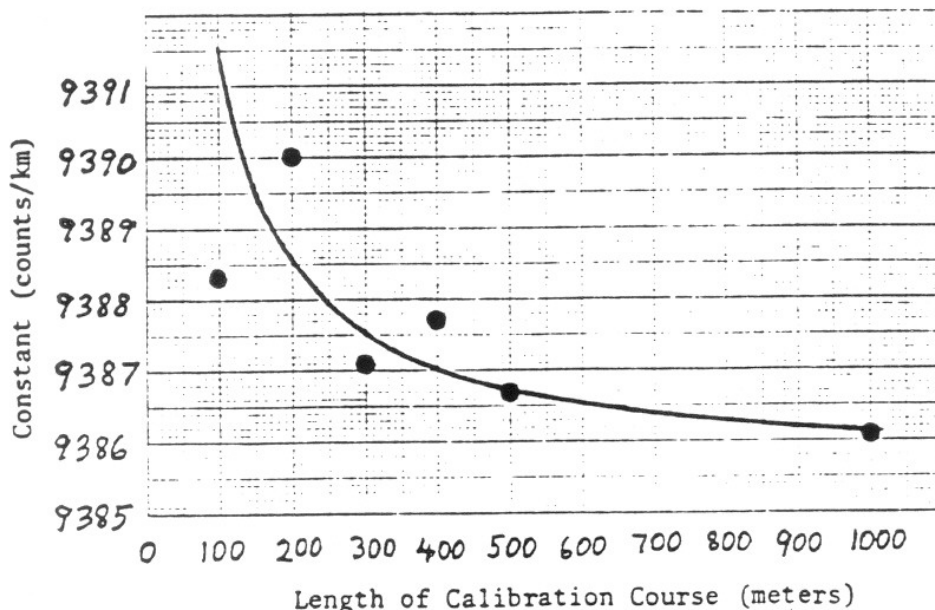
* * * * *

For those of you who haven't gotten a copy of MN before, it's a purely personal and unofficial attempt by Pete Riegel to improve communication between members of the course-measuring community, and to share some things we've learned. Nothing in MN is official poop. It's all a mixture of fact, opinion and ideas contributed by the recipients.

* * * * *

Short Baselines

Bob Baumel sent an 11 page writeup of "An Experiment to Test Short Calibration Courses". It was a competent and scholarly piece of work, extremely well-done. I would reproduce it in its entirety if I wasn't so cheap with xeroxing and postage, but instead will ask that you see below:



The above graph shows the result of Bob's work. His work is in substantial agreement with that of Bob Letson, whose "Short Baselines" experiment was the first I've seen that attempted to justify shorter baselines using real data.

Tom Knight also did an experiment, and his results correlate well with those of Letson and Baumel.

Accordingly, I think that the time has come to permit shorter baselines. The work done to date shows that the difference is both small and tending to elongate courses slightly, so there is no danger of our getting into a short-course problem. In the hilly areas of Ohio, Indiana, and Kentucky it is often a problem to find half a mile of straight road. I'd like to tell my people that 300 meters, or 1000 feet, is OK for a calibration course.

In order to save argument, I propose that we follow Baumel's guidelines in this matter, which follow;

Summary of Recommendations

1. Measurers should be allowed to use shorter calibration courses than are now allowed. Decreasing the length of the baseline tends to slightly increase the "constant" obtained by a cyclist, and thereby increases the length of measured race courses.
2. 300 meters would be a nice value for the minimum acceptable course length. It's short enough that it might provide some benefit in helping prevent short race courses. But it's long enough that it won't unfairly increase the chance of finding race courses short when doing validation re-measurements.
3. Do 6 rides (on each calibration occasion) if the calibration course is shorter than 500 meters. Do 4 rides (on each occasion) for courses of 500 m and up. In either case, the number of post-measurement re-calibrations should match the pre-measurement calibrations.
4. Bob Letson's wheel freezing method is a nice way of insuring adequate counter resolution, but is not necessary. It's enough to carefully reset the counter (to a whole number) before each ride, and then carefully read the counter (to the nearest half-count) after each ride. But we will have to be much more vigilant in ensuring that measurers are sufficiently careful in using the counter.

Bob Baumel

April 16, 1983

I don't know the precise mechanism for the change, but I hope that Ted Corbitt will tell NRDC News that 300 meter calibration courses are now OK, so that Ken and Jennifer can put out the good news. The rejoicing will reverberate unto the heavens. I will continue using half-miles until the change is official.

Olympic Marathon Measurement

At the invitation of John Brennand, thirteen measurers from around the US came to LA on April 23 & 24 to measure the course of the 1984 Olympic marathon. The opportunity was a magnet whose attraction we could not resist.

John, who is the technical liaison between TAC and LAOOC, had already done the layout and planning of the course. All we had to do was to spend Saturday driving the course and making last-minute small decisions, and then spend Sunday riding our bikes over the course, to gather the data.

As an appendix to this MN, I include a short writeup of the job that I did for people who don't know much about measuring.

I hoped for a miracle, and it happened. Of the 22.1 miles of the course that were ridden by all 13 measurers, the following data were generated. The calculations are my own, and I invite correction by others who also worked out the stuff from the copies of the data sheets that John Brennand sent to all of the measurers.

Names of measurers

Bob Baumel, Pete Riegel, Bob Letson, Tom Duranti, Tom Benjamin, Carl Wisser, Pete Shandera, Tom Knight, Jim Delaney, Paul Christensen, Will Rasmussen, Dave Katz, Ron Scardera. Also Allan Steinfeld and John Brennand as data-takers, with a large crew of support people and helpers. The doughnuts, coffee, and junk food were mightily appreciated.

Measurement data (for distance ridden by all 13):

Average measured distance (using present method of precal and postcal, and not applying the 1.001, yet:

Avg = 22.10923 miles
SD = .0039791 (.180 parts per thousand)
Range: 22.10275 to 22.11984 (4.08 ft per mile!)

Parts of the course (6 stretches) were measured by EDM as enroute checks. On these stretches:

Total length as measured by EDM = 15352.82 feet

Length as measured by bike:

Avg = 15348.86
SD = 2.41523 (.157 parts per thousand)
error, based on average = 1.35 feet per mile

The reason all of us didn't measure all of the distance was that we had to split up to measure some alternate routes in the middle for course adjustments, and also get some dope for the upcoming Avon Marathon, which uses much of the Olympic

course. As a result Dave Katz and Jim Delaney were the only two to cover the entire Olympic course. Interpretations of the data are certain to be many, but from what I've seen so far, the measurement has shown that our method is usable, accurate, and reasonable. All of the arguing that is bound to ensue will be over a few feet this way or that. All of the measurements were in substantial agreement.

Of the thirteen measurements, the phenomenal agreement within 0.07 percent shows that if any pair of measurers had done the job, no other pair of measurers could have shown that the course was short.

Tom Knight said that it would turn out very close, but I couldn't believe it. He was right, and I'm delighted. If this measurement had had a wide spread with thirteen supposed measurement hotshots, then we'd have big problems convincing people that our measurement process is workable.

But it worked! Hooray!

Plaudits to the winners of the "longest course" club. The following had the shortest measurements on the following stretches:

- 13 measurers covering 22.1 miles: Will Rasmussen
- 8 measurers covering 1.86 miles: Bob Letson
- 3 measurers covering 1.83 miles: Pete Shenders

Mr. Consistency, Paul Christensen, had the median ride on both the 22.1 and 1.86 mile stretches.

INTERUM NEWS RELEASE:

Yes, folks, the results are in but the winner has not yet been decided. Will it be the East or West that conquers? Who is the best of all...the shrewd, sneaky, indomitable Bay Area Tom? or the mysterious, worldly, omnipresent New England Cat? We've all waited with anticipation for over one year now to see who wins the most coveted honor bestowed by the national and international fraternity of race course measurers: the rarely bestowed award for excellence in achieving national and international standards for creating the longest possible race course, known otherwise as the "shortest measurer" award.

Of course we all know who deserves this title the most. His stature is without question the most fitting. But the real test is in the data we all by know have received. Only time will tell the outcome. Then, when all doubt has been cast aside, the deserving champion will be recognized and duely honored in our halls of fame.

released by OOPS press

Bob Letson forwarded this news release. Let's hear those alibis, measurers!

May 8, 1983 - Just got back from Wartrace, Tennessee, from running in the "Strolling Jim" 40 mile run (41.2 by auto). Had an enjoyable run, finishing 23 out of 55 finishers (62 starters). Went out slow and ate people up in the second half. Anyway, if experience is any guide, I'm going to finish up this edition of MN very fast, because I'll be feeling very shot down for a while.

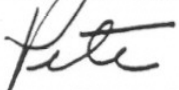
There are bound to be echoes and counter-opinions on the Olympic measurement that will take a while to settle out, so rather than wait, I'm sending this out.

Everybody who rode a bike on the measurement, plus Brennan and Steinfeld, will find a snapshot of the bunch of us in the Coliseum at the conclusion of the measurement. Keep them. If you want an enlargement, I'll put in an order for them on June 1. If I have your check by then, I'll have one made for you.

Prices: 8x10 \$ 6⁰⁰
 9½ x 14 \$ 12⁰⁰ (prices include postage)

I hope that everybody gets this before the TAC meeting and that those who attend will go to bat for allowing shorter calibration courses.

Best to All,



Pete Riegel

P. S. I got this from Tom Knight, and I think it nicely expresses a healthy philosophy of measurement:

"I measure every race I run and (with rare exception) I run every race (course) I measure. Also, I reveal the results of my measurements to everyone: Race Director, all runners, race sponsor, Ken Young, Ted Corbitt etc. - no secrets, no lies, no coverups. This has made a lot of runners happy, as they can find out if PR's etc mean anything. Also, by being totally open about everything, anyone can look at my data and criticize etc."

PPS - After I send out the photos, I'll be happy to loan out the negative to anyone - First come, first served, and send the negative back ASAP. Others may be waiting.

Measurement of the 1984 Olympic Marathon Course

Los Angeles, April 23 and 24, 1983

When I was invited to participate in the course measurement, my first thought was "Can I get my bike there in one piece?". Course measurement is done using a bicycle equipped with a special revolution counter on the front wheel. It is calibrated over a known accurate distance, and then used to measure the greater distance of the race course itself.

TWA assured me that they did indeed take bikes routinely as baggage. I figured that it might get broken or mislaid, but went ahead and checked it as baggage anyway, retaining my counters and tools in my hand luggage, thinking that I could still rent a bike if something went wrong. Nothing did, and the bike got through to LA (and back to Columbus) in good shape.

Saturday was spent in study of the course, general reconnaissance, and the placement of temporary marking points. In addition to two official before/after 1 kilometer calibration courses, six additional calibration stretches had been incorporated along the route. They varied in length from 1/4 to 1/2 mile, and were measured electronically. The ends were marked with plain brass rods drilled and epoxied into the pavement.

Each corner and stretch of road was studied in detail. Because the measurers must follow the shortest legal route that a runner might take, it was necessary to try to fix in our minds, as well as we could, just what we would encounter on our measurement rides on the following day. Saturday's work took about 11 hours, and we were quite all quite tired from the day of intense concentration. Nonetheless, discussion of the job continued through dinner until after midnight.

Sunday morning, we rose early (5:30) so as to be at the pre-measurement calibration course by 7 AM. To our dismay, it was 50⁰ and raining. We rode the 5 miles to the calibration course, and each measurer did his four rides over the measured kilometer. Then we rode to the starting point at Santa Monica City College, and left at 8 AM on the official measurement odyssey. The rain stopped by 9 and the day cleared up.

A recording crew took the initial reading of each measuring bike as it stopped on the mark. After crossing the mark, the bike was rolled forward to make room for the following bike until all had crossed the mark and been recorded. Once all data had been taken, the recording crew hopped into a van and took off for the next point, and the measurers began riding, each following his own interpretation of the shortest route. On this point, there was general agreement - we often found ourselves in single file.

The measurement along the shortest route would have been impossible without the protective envelope provided by seven "black and whites" provided by CHP and LAPD. They provided a blanket of protection for the cyclists by blocking intersections and moving offending motorists out of our path. The Marina Freeway was completely closed off while we rode the 2-1/2 mile stretch, with the police exhorting us "Pick it up! Minimum speed 40!".

When we reached the Coliseum, where the Olympic marathon will finish, there was a mammoth picture-taking session, and then we rode off to do our final calibration run (2 rides on a 1 kilometer course). The measurement had taken 5 hours - about 3 more than the winning runner will take.

The measurement went extremely well. None of the 13 measurers had a flat tire or mechanical malfunction and each covered about 40 miles during the day. The data sheets will be copied and sent to each of us measurers to analyze and compare notes. I expect that the 13 measurers will agree within a span of about 50 to 80 feet over the 26 miles actually measured. It was a highly satisfying experience.


Pete Riegel