

MEASUREMENT NEWS



#9 - January 1985

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Measurement News (MN) is distributed to all members of the Road Running Technical Committee of TAC, all regional certifiers, and all final signatories. Also some miscellaneous others.

MN is supposed to serve the RRTC as a way for us to talk with one another, so that we all get some idea of what's going on. It also serves to provide guidance from the RRTC Vice-Chairmen to the regional certifiers and final signatories.

All opinions and grievances are solicited. They will be aired here. All will have a chance to discuss what we are doing. Write if you've got an opinion on something, or a new measurement technique you'd like to share.

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It's been almost a year since the last MN appeared. After its initial publication our major problems got well-aired, and because there later seemed to be nothing earth-shaking to report (and because of personal laziness) I quit putting it out. Now there's a reason to bring it back.

At the last TAC meeting Paul Christensen and I got elected Vice-chairmen (West and East) of the Road Running Technical Committee. This means we are the mouth of the funnel through which all certifications flow on their way to NRDC. If the process is to be done well everybody in the certification game must know what's going on.

I have consulted with Paul concerning the policies in MN, and he is in general agreement with what's said (see page 2). Therefore, MN may now be considered official RRTC dope for the whole US.

FROM
PAU

What is our product, and how is it produced? Our product is clear documentation of courses we consider to meet current measurement standards. It is produced by measurement and the drawing of clear maps that show what was measured. When we are finished measuring, and the measurement information has been checked, the map alone stands to show what has been certified.

In addition to the map, we prepare certificates that summarize the basic characteristics of the course and its measurement. These certificates help NRDC document the existence of the course in NRDC News and in their annual course book.

The certificates and maps are the only records that exist to show the result of a course measurement. They should be first-rate. Nobody, not even a final signatory, is exempt from the responsibility to produce acceptable course documentation.

Final signatories need not submit their actual measurement data when they send their signed certificates to us. However, their maps must meet the same standards as everybody else's. A certificate alone is insufficient to document a course.

Regional certifiers are supposed to send along their measurement information to us or their final signatory, whether they did it themselves or whether it is the product of another measurer. They should send nothing unless they have checked it carefully and believe it is up to par. After we have gotten confidence in the competence of certain measurers we may ask them to discontinue sending measurement information. This will be done individually.

I agree with Pete Riegel in the renewed Measurement News. Lots of us prefer our own certificate form, but that can be lived with. As of 01/01/85 all courses must be at least the advertised distance. We must be patient teachers as much as anything. With the short course allowance at zero, sloppy and incomplete work should be looked at with a doubly critical eye.

One of the major pursuits will be to locate and help establish committees in Associations where none now exist. Now that we have twenty plus signatories, I think the emphasis should be at the local level.

The new course measurement booklet will be out soon, so let's all be prompt in spreading this valuable message.

Former Vice Chairman Tom Benjamin recently suggested a video cassette be made by he and other Bay area measurers Tom Knight, Carl Wisser and others. Contained within would show how to use an EDM, steel taping a calibration course, other course measuring techniques, etc. Unless anyone has any objections, I am going to pursue getting funding for the production costs. Tom Benjamin tells me duplicates could be made for very little.

Lastly, I'd like to take this opportunity to thank Tom Benjamin for the perseveringly good job he did as the original RRTC Vice Chairman West. My work will be a lot easier because of the groundwork he laid during 1984.

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BRAVO!
WONDERFUL
IDEA! *Pete*

COMPLAINT DEPARTMENT

This publication will be pleased to air all grievances with how we are doing things. It may be we are being overly picky in some cases. If you don't like something, let the Editor (Pete) know and your gripe will be aired in MN. It may be you are not alone in your frustration. If we bring our discontents out in the open we can make the process better, so write. Change may come.

PASS THE WORK ALONG

This is the heart of the system. Paul and I will be flooded with mail. You will want timely service from us. The only way you can get it is to send us stuff that does not take a lot of our time. Here's how it works:

1) Final signatories should prepare and sign two copies of each certification. The certificate and map should be on the same piece of paper. Make sure the map is a good one. The name and address of the race director should appear somewhere on the paper. NRDC needs this. We will file one certificate/map and send the other to NRDC. If you wish to send certificates to NRDC as a backup, go ahead. It does no harm. But remember your final product is still required to meet certification requirements. Good map, good certificate. We will send back unsatisfactory stuff to you, possibly delaying acceptance by NRDC of your material. Hopefully this will not happen often, since final signatories know full well what's required.

2) Regional certifiers should send at least three copies of already-prepared certificate/map papers, signed by themselves. The certificate should have room for me or Paul to sign as well. We will sign, file one, send one to NRDC, and send you back the rest. In addition to certificate/maps, regionals should also send along the measurement information for us to check. Also send a stamped, self-addressed envelope that is big enough (and has enough postage) for us to return the measurement information and the signed certificates to them.

If all goes well, all Paul and I will have to do is read what we get, sign our names, and stuff envelopes. No addressing, no xeroxing. If you think we are asking too much, please remember we, like you, have our own regions to take care of as well as the VC jobs, and we cannot cope unless everybody cooperates.

We currently have no budget from TAC, so must pass the costs back to you. If you find it burdensome, charge your measurers accordingly. But please don't stick us with excessive postage and time demands.

Everybody must send their courses to us. If you operate as a separate entity Paul and I will not know what is going on, and the efficiency of the system will suffer. The work of RRTC is cooperative, and we should all be pulling together.

The biggest present snag is maps. People do not get a big kick out of drawing them. It's understandable. I have gotten maps that are illegible copies of town maps with the route overdrawn sloppily so it can't be read. These are useless. Don't send these things. Take the time to do it well enough so every part of the route is clear to a stranger. Put the location of critical points (start, finish, turnaround) on the map. One color only - make sure it copies well. Most of you already know what a map should be like. Give us a break and send us good stuff, so we don't have to waste time writing you letters to tell you what's wrong.

A map should be good enough so we could exactly locate the start, finish, and turnaround, and determine the entire race route even if the marks vanished from the pavement. Special exceptions may be made for long, complicated courses, but most courses can be put on one piece of 8 1/2 x 11 paper.

If a measurer sends you a pile of junk, don't send it to us. Send it back to him until he has it right. Especially on maps. There's no reason why you should have to draw maps, except for the courses you measure. If somebody draws them for you, accept no less than an adequate job.

CERTIFICATES

Certificates seem to have evolved into a one-sheet, two-sided assemblage of papers. The latest version features certificate and map on the front side and Application for Certification on the back. This requires the use of a reducing xerox machine. We propose to simplify, as follows:

The certificate and map must appear on the same sheet of paper. Both may be on the front, or they may be front/back. The application is not needed, since its salient information has already been transferred to the certificate itself. The sole item from the application that does not currently appear on the certificate is the name/address of the race contact. This should be added to the certificate, otherwise the measurer will be considered to be the race contact, and many do not wish to assume this job.

Of course, if you prefer the old style, go ahead and use it. It does no harm, except for reducing the legibility of the map slightly. Since the new way is easier, many may wish to use it. I intend to do so myself.

MONEY

The RRTC serves anybody who wishes to measure a course. It is not strictly for TAC races. How you finance your operation is more or less up to you. If you expect funding from your local association, be prepared to have them ask you to cooperate. If you run your operation as I have done, you charge the measurers enough so you don't seriously lose money. In 1985, in my region, I will charge \$10 for paperwork review. \$5 of this I will keep to

cover my own expenses. \$5 I send to NRDC because I believe their work is valuable and they deserve it.

I do not feel empowered to ask everybody to send NRDC \$5 for each course, but I hope you will follow suit. You must know the state of their finances, and this is a way to tax the race directors and the runners to give NRDC some of the support they need.

SUPPORT
NRDC!
THEY
HOLD
EVERYTHING
TOGETHER!

When I actually measure a course myself I charge whatever I think I can get, and I keep the money for my personal use. If the race is fat I'll charge a fat fee. If they're small, I charge less. I measure some local ones free. I consider this not part of my job as a regional certifier, since I always give them the option (and send instructions and forms) so they can do it themselves.

I do not believe that being a regional certifier, or a final signatory, gives one the right to be the only measurer in the region. It is not a license to keep others out. People who write or call for help should always be given the option, and the instructions, so they can do it themselves. If you think otherwise, please rethink. Your first responsibility is to review course measurements. If you wish to measure as well (most of us do) that's fine. But educate and encourage others. If you're involved in a race business of some kind, go ahead and make all the money you can, but remember that your first RRIC responsibility is cheap, timely service to anybody who needs help.

IS EVERYBODY HAPPY?

Perhaps you think I have come on too strong. I have done so because it took me years to learn exactly what it was I was supposed to be doing, and I didn't like being in the dark. MN is intended to keep you from feeling in the dark. Perhaps you share my views, perhaps not. The mechanism exists for you to complain. Write if you have a problem. You will get an answer.

I believe my job involves leading, and I have a duty to do exactly that. I have an obligation to listen as well, but for the system to work well it is important that somebody be in charge and act like it. So I'm acting like it. I don't want to be a dictator. I want all of you to be as free as possible to do things your own way. The only restrictions I wish to impose are those that concern our final product - the certificate and map. If you think I'm headed in the wrong direction let me know. But don't just complain. Propose alternative courses of action. The goal is acceptable product with least output of work by all of us.

Here endeth the "official" part of MN. The rest will be chitchat, opinion, and miscellaneous measurement info.

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SHORTEST POSSIBLE ROUTE REVISITED

I don't care what the race director says. When I measure I always measure the shortest route that can be taken and still stay within the legal bounds. Generally between the curbs or on the pavement. I'll consider a median divider to count as a curb, but I avoid cones like the plague. Making sure the race director gets them right on race day is something I'm not prepared to do, so I fix it so no matter what he does the course won't be short.

Even the Olympic marathon had problems with cone placement, and only the vigilance of the folks in the lead car (15 minutes ahead or so) got things right. In retrospect, I think it would have made more sense to measure that course along the shortest route, and not worry that some of the turns were sharper than a 5 minute miler could run. If we had done that the course might have been 10 or 20 meters longer. I don't think this would have been a disaster.

I totally lack faith that race directors are capable of getting those cones right, and the fuss later, when a record has been set, scares me. So I just make it less possible for them to screw up by always measuring the shortest route. When is the last time you heard of a racer being disqualified for any but a blatant course cut? NOBODY disqualifies a racer for shaving corners, even if they have been told to stay to the right.

"INACCURACY" OF OUR MEASUREMENT PROCEDURE

Several certifiers and measurers have expressed unhappiness with our course layout procedure. They generally feel that between the 0.1 percent and the larger constant the courses are now way too long, and thus inaccurate.

I prefer to think of our certification measurements as a layout procedure rather than a measurement. It does not establish the length of the course as accurately as measuring the nominal distance and using the average constant. But it is not supposed to. It does produce "safe" (not short) courses that are not seriously oversize, and it provides insurance against a better measurer coming in and finding a couple of meters you missed. When I tell critics of our measurement system it's a layout procedure it seems to calm them. Many are not aware of the possibility (small) of a remeasurement being done. And all agree having one's course shot down would be a humiliating experience.

VALIDATIONS

If you are called upon to do a validation, exactly what are you supposed to do? Nothing has been written on this in much detail, so I'll just say what I have been doing. Maybe some others of you will share your ideas on this.

I make arrangements to meet the race director, and original measurer, if possible. I try to get original certification info,

and course map, if it exists. If there's videotape, I try to be sure they're willing to show it to me. I check the calibration course with my bicycle. Because my tires are solid, I have a pretty good idea of how long the course ought to be if it's right. I know I can hit it within 2 feet or so. If the calibration course checks out OK, I accept that it's accurate. Sometimes the calibration course may be an antique curvy course - then I have them find a straight street somewhere and I measure a new one (and tell them not to use the old one any more!).

If the original race marks still remain on the pavement I ride from one end to the other. I try to have another rider come along. It keeps me sharp and on my toes, and makes my measurement more credible. I've never had to measure a course that did not have marks present. If they weren't present, I'd make the race director show me he knew how to place them. If all he did was eyeball, I'd be suspicious. I'd try to match up the marks with the certification info, if it's available.

I do no calculating until I am done measuring, and have decided I have ridden competently. I would not even calculate unless I had a sense I had ridden well. Not perfect, but well. If I thought I had failed to do a good job of riding the SPR I would ride the bad parts over again. After recalibrating I would use the average constant as the proper one, and calculate measured length based on my ride. The ride of the other rider would not be official, even if shorter.

If the course came up short by a very small amount I would examine my data to see whether any justification existed to use a different constant. Perhaps temperature interpolation might be appropriate, or some other technique, if justified. I will bend over backwards to keep from unjustly disqualifying a course, but I won't bend the data.

If the race director wanted a second measurement, I might be willing to do it if time permitted, but if I had to spend another day or two, I'd demand money. After all, there is a limit to the time I am willing to volunteer. But the second ride would probably show a shorter course than the first, since I would have learned the route on my first ride. I'd tell the director this.

Then I go home and write up a brief report for Ken, telling him how long I found the course to be. I include copies of my notes and calculations for anybody who cares to check.

The day is coming when we will find ourselves checking each other's courses. We've been doing things with the extra 0.1 percent for two years now, and inevitably some records will be set on modern courses. Chicago Marathon was one, and it passed. The AMJA ultra was another, and it passed.

By the way - both these courses checked out at least 0.1 percent oversize, yet world records were set on them. The Short Course Prevention Factor has not made record-setting impossible.

When a validator comes out to check one of my courses I will try to sweat quietly and regard it as a learning experience.

NEW MARKING PAINT

Bob Pevril sent me a brochure of some traffic paint that comes in spray cans and looks pretty good. Neither he nor I have yet tried it. It has a special top that lets you hold the can upside down, and spray straight down. As you know, this is tough to do with regular spray cans. It's called Trig-a-Cap paint and is available from:

Fox Valley Systems - 640 Industrial Drive - Cary, IL 60013-1948

In IL, call "JOY" collect at 312-639-5744

Elsewhere call toll-free 800-323-4770

The paint costs \$26 per case of 12, and they claim their cans outlast others by almost 5 to 1, presumably because you waste less paint because you can get close to what you're spraying. I've been meaning to try it. If you try, let me know how it comes out.

MEASURING WITH A CATEYE

People have offered the opinion that a Cateye, or similar electronic odometer, ought to be able to measure a course with accuracy. The greatest drawback of these is that their "least count" is generally either 0.01 mile (53 ft) or 0.01 km (10 m), while the "least count" of a Jones counter is about 4 inches. The precision of a Cateye is thus much worse than a Jones counter.

I decided to do an experiment to see whether I could use my Cateye to do measurements precise enough for road course measurement, as follows:

I went to my calibration course (length 2988.79 feet), and rolled the bike until the Cateye just passed a new number, locked the wheel, and recorded the count. I noted exactly where the sensor wheel was in relation to the pickup. I set the bike on the mark and rode to the other end of the course. Then, when I got there, I stopped and rolled the bike beyond the end mark until a new number turned over. I made a crayon mark and measured how far it was from the end of the calibration course. Then I did this again in the opposite direction.

Then I did two more similar runs, except I used the reset button to set the odometer to zero at the start of each run.

The "course" I chose to measure was one out-back of the calibration course. I reset to zero at the start, locked the wheel at the turnaround, and at the end rode past the mark until

the counter turned over a new number, made a crayon mark, and measured the distance past the end of the cal course. Here are the numbers:

Calibration 1 - start at 0.52 mi indicated. Finish at 1.10. Distance covered = cal course + 4.64 feet.

Calibration 2 - start at 1.11 mi. Finish at 1.69 mi. Distance covered = cal course + 15.33 ft.

Calibration 3 - start at 0. End at 0.58. Distance covered = cal course + 16.70 ft.

Calibration 4 - start at 0. End at 0.58. Distance covered = cal course + 17.06 feet

Measurement - start at 0. Locked at turnaround. Finished at 1.16 mi, at a point 34.15 ft beyond the end of the cal course.

My riding constant, by Jones counter, was 15220 counts per mile.

Results are summarized below. I can't explain the odd results for the first calibration run, except I was rolling the bike very slowly, and perhaps the magnetic pickup was affected in some way by the slow speed. Or, since I had never tried this before, I was perhaps careless in some way.

12-30-84
46°
4 PM

CATEYE MEASUREMENT

1 "COUNT" = 1 MI (INDICATED)

<u>CAUBRATIONS</u>	<u>COUNTS</u>	<u>DIST (FT)</u>	
1	.58	2993.43	} NON-RESET
2	.58	3004.12	
3	.58	3005.49	} RESET - AV = 3005.62
4	.58	3005.85	

AVG. "RESET" CONSTANT = $\frac{3005.62}{.58} = 5182.1 \text{ FT/COUNT}$

CATEYE MEASURED COURSE LENGTH = 1.16 COUNTS = 6011.24 FT

ACTUAL COURSE LENGTH = 6011.73 FT

ERROR = 0.08 M/KM

I WOULD HATE TO HAVE TO REVIEW THE DATA FROM A COURSE MEASURED LIKE THIS!

I am convinced from the experiment it is possible to do a precise job of course measurement with a Cateye and a tape. But I would never attempt to use one "officially" because I do not trust the thing to behave as reliably as the Jones counter. In addition, electronic odometers record forward distance even when rolling backwards, while a Jones counter subtracts distance.

If extreme care is used, I think you can make it work, but I would want to see some sort of backup or check developed to assure things went right. As far as I can see, the experiment is interesting, but does not give us a tool that is the equal of the Jones counter. And, the taping must be done with care or mistakes are sure to result.

LATE FLASH - January 10, ~~1984~~ 1985 ← DUMB

Ken Young called today and said that the following code will be just fine. It's what Paul and I have asked for, and is a lot like Ken's original. Here is my code:

OH 85017 PR

"OH" means the course is in Ohio

"85" means I certified it in 1985

"017" means it's the 17th course I've certified in 1985. My list of the courses I certify is kept consecutively - not by state - so I just give each course the next number. If you wish, you can keep your numbers consecutive within each state. Doesn't matter.

"PR" is Pete Riegel's initials

Got it? When you send certificates for signature or distribution to NRDC please use the above code.

MORE ABOUT MAPS

Here's a brief checklist for maps:

- 1) Does the map clearly show the route? Is every street identified?
- 2) Are all deviations from the SPR (such as "right side only on Oak St") shown clearly on the map, and all cones required to direct such deviations referenced to landmarks?
- 3) Are the locations of start, finish and turnaround shown on the map?

If the answers to the above aren't yes, don't send us the certification. Get the map right first. Either do it yourself or make the measurer do it.

As long as the one piece of paper contains the certification form and all the information needed to define the course, we are willing to put up with some sloppiness. You can reduce the size of maps and supplementary sketches to get everything on one piece of paper, if it seems impossible to cram everything onto one 8 1/2 x 11 sheet.

If the map doesn't show the measured path on the roads, it will be assumed that the SPR was everywhere followed. If this wasn't the case, make sure the map shows what was measured.

Look at your product with a critical eye. Assume that a stranger will assume nothing and needs the map to find the course and follow it exactly. Is it adequate?

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PERSONAL FOOTNOTE FROM PETE

I'm going to the Nanisivik - Arctic Bay area of Baffin Island this summer for a race and mini-vacation. If anybody out there has any info to pass on about the area I'd sure appreciate it. I've got maps aplenty, but I'm curious. Any personal advice is welcome.