MEASUREMENT NEWS

March 1991 Issue #46

Here we see Joan Riegel, RRTC's Course Registrar, getting started on the new file drawer for the 1991 certificates. The file cabinets contain over 8000 course documents, each of which represents a lot of work by us. Read all about Joan inside.

MEASUREMENT NEWS

#46 - March 1991

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SPREAD THE WORD

In this issue you'll see some of the ways several certifiers are letting people know about certification in their area. Amy Morss in New York, Tom McBrayer in Texas, Pete Riegel in Ohio and Jay Wight in Illinois all took slightly different ways to advertise their wares and let people know what they are doing.

Running publications are hungry for good material, especially the smaller local and state publications. If you have the time, why not send your local running magazine or club newsletter a summary, from time to time, of how things are going in your state? Odds are they will publish it.

LAST MONTH'S PUZZLE

The easiest puzzle in MN history retired undefeated, after being exposed for two successive issues to the best that our genius readers could come up with. The valuable t-shirt remains unclaimed. In case readers may have forgotten the puzzle, it is reproduced below:

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

The puzzle appeared plain as day on page 2 of the November issue. Only one response was received, from Bernie Conway, who inquired whether I had forgotten to include the puzzle. Nobody else noticed the seeming omission.

THIS MONTH'S PUZZLE

Each certifier has his own unique set of initials. Any course with JW after the number is Jay Wight's. No other certifier uses JW as his ID. There's an exception to the rule. This month's puzzle: Which certifier does not have a unique set of initials? This does not refer to DP (Dave Poppers) and DLP (Don Potter). The match on the non-unique initials is exact.

Oklahoma
RUNNER

February 20, 1991

Mr. Pete Riegel
Measurement News
3354 Kirkham Road
Columbus, OH 43221

Dear Pete,

For years Alan Jones, in his Finish Line column in *Measurement News*, has been lecturing about the importance of select timing in order to prevent bib numbers and times from getting out of synch. Therefore, I was surprised to find Donald Mitchell and Philip Meyfarth taking him to task for not mentioning select timing in his recent articles in *Measurement News* and *TACTimes*. Alan's articles were in response to the question of whether it is proper to use a computer's internal timer as a primary timing system. Some people were under the impresssion that TACSTATS would not accept race results timed by computer. Alan pointed out how to properly do such timing.

He obviously did not address the question of guaranteeing that a given time belongs to a given finisher because this was NOT the question being raised. That question has been handled in the TAC book Road Race and Finish Line Management and, as mentioned, in many of Alan's columns.

Sincerely,

Joe

Joe McDaniel

We're running in Columbus for the marathon if everything works out -

P.O. Box 2008 Tulsa, OK 74101 (918) 581-8306

1-800-TAC-CERT

"Do you run?" I'll answer NO and soon find myself working whenever I go to races. I've poured water, taken select times, worked the chutes, etc. A 6'2" runner once collapsed on top of me. Fortunately, it was in February, and I was well padded with heavy clothes. Doubly fortunate -- it was one of our good friends, so it wasn't too embarrassing lying under an unconscious hulk.

I've been a fan of running since 1973. I've watched Pete and his friends benefit both mentally and physically from their noontime runs. When Pete ran his first marathon in Athens, Ohio, it was 1-1/2 miles too long. We didn't know much about course measurement then, but we do now!

I've volunteered my services to RRTC as the course registrar since 1988, keeping the course list up to date and filing the 8000+ certificates. Each one has its own personality -- broad pens, fine pens -- neat block letters, slanted script. My favorite part is the map. Here measurers have a chance to be creative while documenting fire hydrants, light poles, and manhole covers. Some of the maps are works of art; some remain a mystery.

My life outside RRTC has been exciting and unpredictable. Our sons, Stuart (27) and Tom (25) have always had a working mother of sorts. Maybe "involved" is a better word. As a way to meet people when we first moved to Columbus, I began teaching creative crafts in the adult education system. Later I had my own TV show, Fun With Crafts, on our local PBS station. When quiltmaking became popular in 1975, I was asked to put together a quiltmaking series -- so I quickly learned to quilt from the few books then available, as well as from the ladies who quilted at the local churches. Our funding for this program never materialized, but I taught quiltmaking and needlepoint in the adult education program for the next 10 years. Both the library and the municipal building commissioned one of my quilts -- and I thought I'd teach needlework forever. Two injured knees (one requiring surgery, one on hold) interrupted my teaching career just as I was booked to teach at a national seminar in Philadelphia. During the long, slow recovery, the Embroiderers' Guild of America began offering correspondence courses, so I wrote a quiltmaking primer and taught by correpondence for a few years.

For fun, Pete and I would throw my crutches into the back of the station wagon along with his bicycle and take off on measuring trips. As time went on and I got stronger, I was able to stand around and help at all the races he would measure/run. For the first time, I began to pay attention to what road racing was all about. Long car trips afford a chance to ask a lot of questions and share a lot of goals.

I attended my first TAC convention in Tampa in 1986, where I had the pleasure of meeting many of you. In Hawaii in '87, Pete introduced me to some of the international measurers who were attending an AIMS meeting coinciding with our TAC convention. Everyone seemed so dedicated and involved. I began thinking I should really be contributing to the cause, so I organized the boxes of certificates that had been sitting in our basement. Soon I found myself with the job of course registrar. It seemed logical to keep the certificates in our home.

By now our kids were grown and away at school. Teaching in the evenings lost its appeal. One of my needlepoint students, a VP at a local hospital, suggested I work part time in the newly established Elizabeth Blackwell Center. I set up their library, organizing and cataloging about 500 books -- and was introduced to my first computer. I stayed on for a few years, helping with classes, answering the hot line, and enjoying the feeling of contributing to a worthy cause. Not having a nursing background, I knew there was a limit to the level of my involvement.

On days away from the hospital, I volunteered some time at the Columbus Marathon office. The two months before the marathon were really hectic, with everyone working to capacity towards a single goal. It reminded me of my days at J. Walter Thompson, where I wrote radio commercials before Pete and I were married. I seem to thrive under deadline-oriented pressures.

In April of '90 the Columbus Marathon office was restructured, and I was offered the job of race administrator. Working with race director Doug Thurston is fun. Out of our tiny office we handle all the details of the race. It's been exciting to watch the race take form from beginning to end. I function as the volunteer liaison, secure the city permits, work with the hotel, book and oversee the expo -- etc. Doug good naturedly puts up with all my advice about posters, medals, merchandise and printed materials, none of which are officially in my job description.

As you know, Columbus is the site of the men's National Championships in '90 and '91 -- and the Olympic Trials in '92. Mark your calendar for April 18, 1992. If anyone out there has any tips for us regarding the Trials (I know many of you worked on past similar events) -- please write to me. I'll be grateful for any ideas you can offer. (I'm already lobbying for a big Trials measurement.)

So -- how did I end up on the cover of Measurement News? Pete ran out of cover photos, and the deadline is upon us. PLEASE, all you measurers and certifiers out there -- send us a photo and a story about your work. The measuring community wants to know what you're doing and how you got started. Measurement News is Pete's baby. I don't nurture any of it (I hardly understand some of it.) I'm proud of the work you have all done to make course measurement more uniform and courses more equitable.

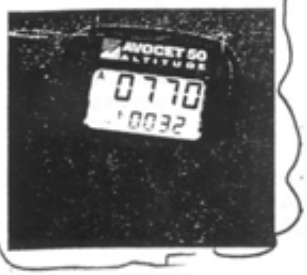
RRTC has enriched my life. I know each of you feels the same way. I treasure the fun and the friendships I've made, and I'm glad I can help spread the measurement theory. Meanwhile, I look forward to receiving all your certificates. WRITE to me if I can help you in any way. 1-800-TAC-CERT isn't a working number just yet.

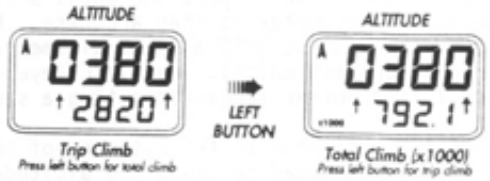
Joan Riegel

"PERFORMANCE" MAIL ORDER - 1-800-727-2453
(FAX) 1-800-727-3291

The Sky's the Limit

A. Avocet 50 with Altimeter
If your ride has its ups and downs this cyclocomputer is for you. In addition to speed, distance and timing functions (cadence optional) you can now see how far you've climbed. The Avocet 50's unique precision altimeter tells you current elevation in feet or meters as well as the trip and total distance climbed, from 999 ft. below to 20,000 ft. above sea level. There are 10 functions in all, housed in an attractive lightweight package. The model 50 includes mounting hardware, and is compatible with all existing model 20 and 30 hardware. Weight (w/hardware): 60 g. Made in U.S.A.
40-2682 Avocet 50 computer $89.95
40-2681 Cadence Accessory $9.95





Trip Climb
Press left button for total climb

Total Climb (x1000)
Press left button for trip climb

ALTITUDE (A) shows altitude above and below sea level in 10 foot or 4 meter increments in the upper numbers.

Trip Climb/Descent shows altitude gain or loss up to 19,990 feet or meters in 10 foot or 4 meter increments in the lower numbers. The arrow to the left of the display indicates whether climb or descent is being accumulated. (Note: Right arrow indicates average speed.) Choose climb or descent in the setup sequence. Reset by pressing both buttons.

Total Climb/Descent (x1000). Each .1 is 100 feet or meters of accumulated elevation; each whole increment is 1000 feet or meters. Accumulates total climb or descent up to 1,999,900 feet or meters. Does not reset unless batteries are removed. Accumulates total and trip climb only when the bicycle is moving.

ALTIMETER 50 SPECIFICATIONS

Dimensions: $2^1/_8$" X $2^1/_4$" X $^3/_8$"
Weight: $1^1/_4$ oz
Display: Dual; UPPER NUMBERS $^3/_{16}$" high, lower numbers $^3/_{16}$" high
Operational Temperature Range: 0° F to 150°F
Wheel Sizes: Calibration for wheels from 9.6" diameter to 41.7" diameter in .04" increments
Data:
Altitude display updated every second when wheel is turning or when a button has been pressed within the last hour, every ten seconds otherwise
Speed display updated every second
Water Resistance: Waterproof
Batteries:
Two 1.5 v, 1.5–2 year life.
Use Avocet Altimeter 50 batteries or these equivalents– Ray-O-Vac RW44, Duracell D386, Panasonic SR43W, Eveready 386

Altitude Functions:
CURRENT ALTITUDE: -990 ft to +19,990 ft in 10 ft increments, adjustable for barometric change
Trip Climb/Descent: To 19,990 ft in 10 ft increments (accumulated only while wheel is turning)
Total Climb/Descent: To 1,999,900 ft in 100 ft increments (accumulated only while wheel is turning)
Speed Functions:
CURRENT SPEED: To 128 MPH in .5 MPH increments
Average Speed: To 128 MPH in .1 MPH increments (calculated only while wheel is turning; averages up to 290 hrs without resetting)
Maximum Speed: To 128 MPH in .5 MPH increments
Cadence: 15 to 240 crank RPM (requires kit)
Distance Functions:
TRIP DISTANCE: To 1,999.9 mi in .1 mi increments
Total Distance: To 19,999 in 1 mi increments
Time Functions:
STOPWATCH: Elapsed time to 1:59:59
Clock: 12 hour

PETE,
YOU MAY HAVE ALREADY SEEN THIS. I BOUGHT ONE TO USE FOR COURSE "PROFILES". I TAKE A MICRO-CASSETTE RECORDER & RECORD DIST. & ELEV. & THEN DO PROFILE. IT'S MUCH EASIER THAN USING A TOPO MAP. I THINK IT WOULD TAKE EXTREME TEMP. CHANGES TO EFFECT.

RICK MELANSON

MY LOCAL BIKE SHOP HAS THESE IN STOCK.
I'M GETTING ONE TOO.

Pete

AVOCET ALTIMETER - PRELIMINARY EXPERIENCE

As soon as I got Rick Melanson's information, I bought one of these odometers at my local bike shop. As I became familiar with its operation I discovered that it has a distance calibration built into it, which excited me. You calibrate your bike, figure the wheel's circumference, and punch in the number. The odometer is then accurate. However, the odometer can be read only to the nearest 1/10 mile or kilometer (it can be calibrated for either metric or English units). My old Cateye odometer reads to the nearest 1/100, which I find better for anticipating a stop.

I took the altimeter to the basement of the building where I work, and then to the roof. It seemed to track the altitude change reasonably well, although it took 1 to 2 minutes to reach a satisfactory equilibrium. The unit reads in either 10 foot or 4 meter increments, no finer than that. I drove it back and forth to work (15 minute drive), and its performance was somewhat inaccurate, since the weather was changing, and the atmospheric pressure with it.

I observed the indicated altitude changing by several hundred feet as the unit sat on a table in my home, as the weather changed. This should not have surprised me, but somehow it did. Over the course of several hours the indicated altitude varied over a few hundred feet, while the instrument sat unmoved. I wondered how good my elevation data would be if spread across a day's measuring.

After pondering for a while I returned the unit to the store. I sort of hated to give it up, because it is a fine little device, well-made. However, I already had a better odometer, and I judged that if elevations were important I'd use a topo map.

I think this would be a very handy device for getting a vital piece of information - relative elevation of start and finish. If the thing is transported back and forth fast enough between those two points, the difference can be accurately established, subject, of course, to the limitations of the readout. It's not good enough to split hairs, though.

The limitations of the device are not due to the design of this particular altimeter. All altimeters are essentially barometers, and they actually measure ambient air pressure, which is then converted into altitude.

You may enjoy this instrument - I did - but it didn't suit my purposes. If driven around a course without much delay I'd guess it would produce a decent course profile. Guido Bros Escort Service, a Connecticut measuring team, uses an altimeter for this, and they were satisfied with what they got.

Understanding Aidedness—The Effect of Drop

by Bob Baumel, Road Running Technical Committee

The purpose of this essay is to clarify previous work by RRTC members on aided courses and to dispel some misconceptions regarding that work. I will set out what I believe is a useful definition of an aided course. I will explain how a course can be "tough" even though it is aided. And I will discuss the optimal pacing strategy for taking advantage of an aided course (or any other hilly course for that matter).

When is a Course Aided?

A course is aided if it requires **less energy to run** than a flat course of the same distance. This doesn't guarantee that any particular runner will run it faster, or even that the *average* times will be faster. It does offer a distinct advantage to any runner who is smart enough to pace the course properly.

Suppose, for example, that marathon X requires 99% as much energy to run as a flat marathon. Then a runner who maintains the *same rate of energy consumption as on the flat course* will inevitably cover marathon X in about 99% as much time as the flat course.

In reality, many runners receive less than the maximum benefit because they *don't* pace themselves optimally; i.e., when running up and down hills, they don't parcel out their energy at the same even rate as on a flat course. (More on this later.) But with just a little practice, runners can easily master the optimal pacing strategy and take full advantage of aided courses.

What do we mean by "Effective Length"?

I said that a course is aided if it takes less energy to run than a flat course. Energy cost can be measured in physical units such as joules, calories, etc. But it can be simpler to speak in terms of "effective length", which is just a shorthand way of stating the course's energy requirement *relative to the energy cost of a flat course.*

For example, I have written that the effective length of the Boston Marathon course is about 500 meters short of the marathon distance. What this means is that running Boston requires the *same amount of energy* as a flat course roughly 500 m shorter than a marathon. (Which *may or may not* translate into an equivalent time saving, depending on how runners pace the course.)

How Do We Know the Energy Cost of Running a Course?

The energy cost of running at any speed or incline is known from laboratory treadmill experiments. It has been argued that our results apply only to short races because they depend on laboratory tests involving short durations of running. Actually, when you realize that we used laboratory data **only** to tell us the energy cost of inclined running, it should become clear that our results were **not** limited by the duration of the experiments. I should point out also that these experiments were not "performance tests" in any sense.

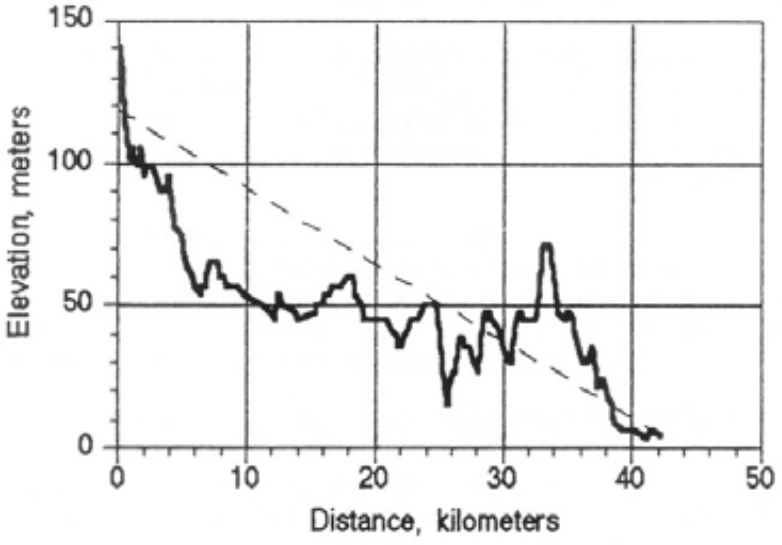
Let me explain. In an experiment to measure the energy cost of running, it is necessary only for the exercise to last long enough to attain an aerobic steady-state. Beyond that point, the result does not change with duration of the experiment. Also, the athlete should not be pushed near his limits in this type of experiment. If he does approach his limits, it results in anaerobic metabolism which reduces the accuracy of the energy cost measurement!

Once we know the energy cost of running any uphill or downhill grade, we can calculate the total energy requirement of any course with a known topographic profile by just adding up the energy needed for each individual level or sloping segment. This calculation is equally valid for courses of any length because the energy cost of running at a given speed and incline does not vary with time during a race (even though the runner's ability to *produce* energy may change).

And once we know the course's total energy cost, the rest of our argument follows by inexorable logic, and is equally valid for races of any length: If the total energy cost of the course is less than that of a flat course, and if a runner can maintain the same rate of energy consumption as on the flat course, then he will inevitably cover this course faster than the flat course.

Can an "Aided" Course Also be a "Tough" Course?

In the debates at the 1990 Convention, some runners said Boston is a "tough" course while others said it's an *easy* course. While these feelings are highly subjective, the definitions I've presented here permit a somewhat more objective treatment. I said that a course is aided if it takes less energy to run than a flat course. And this represents a *potential* time saving if the runner paces it smart enough.



Given this framework, one can easily imagine two courses that are equally aided (i.e. have equal energy requirements), but which differ in how smart the runner's pacing needs to be in order to realize that aid. The above graph displays the actual profile of the Boston Marathon course and also shows

(with a dashed line) the profile of a hypothetical uniformly sloping course that would be equally aided:

The Boston course has a NET drop of 136 meters, although this is actually the result of 176 m of climb and 312 m of descent (with some of the individual uphills and downhills being fairly steep). The uniformly sloping course has a drop of 113 m, which occurs uniformly and gently throughout the course. Boston has an *average* downhill grade of 3.2 meters per kilometer, while the uniformly sloping course descends 2.7 meters in *every* kilometer.

Both of these courses have the same energy requirement, equivalent to an "effective shortness" of about 500 m. But it's fair to say that Boston is the "tougher" of the two because you need to be far more careful about your pacing strategy to take advantage of Boston's aid. The uniformly sloping course allows runners to benefit with basically no strategy at all because constant energy consumption is identical to constant *speed* in that case.

Let's Get Quantitative: How do Hills Affect Energy Cost?

Our data indicate that every meter of climb increases the energy cost by roughly the same amount as adding four meters to the course. In the same way, each meter of drop *decreases* the energy cost as much as *shortening* the course by four meters.

Another way to say this is that if you want to maintain a constant rate of energy consumption, then when you run up a 1% grade, you should run about 4% slower than on the level. And when you run *down* a 1% grade, you should run 4% *faster* than on the level. Similarly, when you run up (down) a 2% grade, you should run about 8% slower (faster) than on the level. And so on.

If the above figures were exactly correct, then the effective shortening due to one meter of drop would exactly balance the effective lengthening due to one meter of climb. Do the downhills *really* give you back everything that you lose on the uphills? Of course not. Nature would never be that kind! Nevertheless, the downhills do give back a *surprisingly large percentage* of the extra energy consumed on the uphills.

The precise degree of non-cancellation depends on the steepness of the hills. For example, if you have equal uphills and downhills with a 1% grade, our calculations indicate that the downhills return about 97% of the extra energy used on the uphills. On 2% grades, the downhills give back 94%. Even on 5% grades (roughly the slope of Heartbreak Hill), the descent still returns about 85% of the cost of the ascent.

These results help us understand why even though the Boston course climbs 176 m and drops 312 m, its total energy cost is nearly the same as one might predict knowing *only* the course's net drop of 136 m. (As indicated earlier, Boston actually has the same total energy requirement as a uniformly sloping course that drops 113 m.)

The moral is that, in general, equal uphills and downhills *nearly* cancel out in terms of energy cost. What this means is that runners hurt themselves

on hilly courses mainly because of poor pacing—not because there's a high net energy cost.

(By the way, wind is rather different from slope in this regard. If you spend roughly equal time with and against the wind, you'll probably lose far more energy heading into the wind than you regain when it's at your back. Mathematically speaking, the difference is that the wind effect is much more *non-linear* than the slope effect.)

Let's Hear More About the Optimal Pacing Strategy:

Experience shows that on *flat* courses, the best performances tend to be very nearly evenly paced. Naturally, this even pace will differ for races of different lengths (You don't run as fast in a marathon as in a 5 km race), but within a single race, the pace is nearly constant.

If the course is *not* flat then, considering the importance of energy metabolism in determining distance running success, the correct generalization of the flat even-pacing strategy is to maintain a *constant rate of energy consumption* (not constant speed).

This idea is not new, as it has been expounded by many coaches and exercise physiologists. For example, Owen Anderson recently advocated such a strategy in his article in January 1991 *Runner's World*.

To parcel out your energy at an even rate, you must slow down on uphills and speed up on downhills. For example, when running up a 5% grade (roughly the slope of Heartbreak Hill), you should run about 20% slower than on the level. And on a 5% downgrade, you should go about 20% faster than on the level.

Almost every runner does naturally slow down on uphills and speed up on downhills *to some extent*. But **not enough** to maintain a constant rate of energy consumption. The result is to increase energy consumption on the uphills and decrease it on the downhills. And this uneven energy consumption inevitably hurts performance.

For example, Owen Anderson wrote in his Jan 91 *Runner's World* article that by charging uphills too aggressively, runners build up lactic acid that significantly slows them down for the remainder of the race.

Why Don't Most Runners Follow the Optimal Pacing Strategy?

There are many reasons why most runners don't slow down enough on uphills, or speed up enough on downhills, to maintain constant energy consumption. One possibility is that once the runner settles into a certain rhythm, it produces an "inertia" to maintain *speed*, which works against the speed changes needed to maintain constant energy consumption.

Another possibility, referring specifically to uphills, is that the runner may view uphill running as painful and unpleasant, and therefore tries to get it over with as quickly as possible (so he runs it too fast). Or the runner might just be too "macho" to slow enough on the uphills.

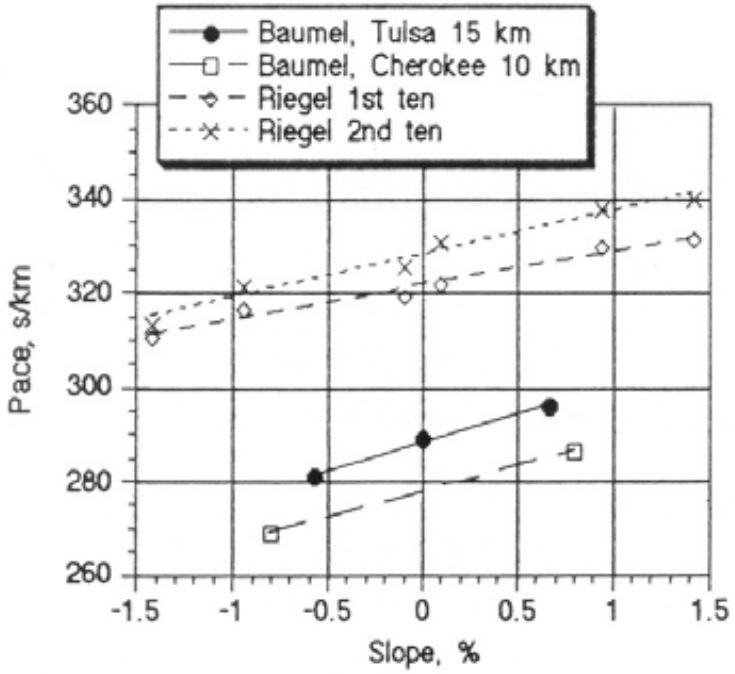
Referring to downhills, the runner may (consciously or unconsciously) use downhill segments to get some rest, or may be afraid of going too fast and getting 'out of control.' Owen Anderson's Jan 91 *Runner's World* article discussed a recent study of runners on hilly courses. This study found that although the runners increased their speed by 12% on downhill stretches, they *decreased* their rate of oxygen consumption (and thus their overall exercise intensity) by 10% on these stretches.

The optimal strategy on downhills is to run fearlessly and let gravity pull you along, while also continuing to exert your own energy just as hard as on the level sections.

Returning to the uphills, perhaps the major reason why most runners don't slow down enough is *fear* that they will lose precious time that won't be regained later. Using the optimal strategy requires confidence that it *really is* the optimal strategy. You must slow down more than may seem 'natural' on the uphills, confident that you'll run fast enough on the downhills to gain back (nearly all of) the time lost on the uphills. If you are running alongside a competitor as you enter an uphill stretch, you must be prepared to let the other runner pull away, confident that you'll pass him back later.

Do Any Runners Actually Use the Optimal Pacing Strategy?

Considering that constant energy consumption pacing has often been recommended, I'm sure there are runners who use it, including some at the elite level. (And the number is bound to increase as the strategy is publicized.) Right now, my best example (clearly non-elite) illustrating use of the optimal strategy comes from my own running:



This graph displays data from my races in the 1989 Tulsa Run 15 km and 1990 Cherokee Strip 10 km (a local hilly race in Ponca City), and also some

data collected by Pete Riegel. Pete's data were not collected in races, but were instead obtained during his noontime training runs.

The variables plotted are 'Pace' in seconds per kilometer, and 'Slope' in percent. (Just to be sure you have no illusions about the speed of these performances, I should point out that 300 seconds per kilometer is the same as five minutes per kilometer, or about eight minutes per mile.)

The data from my two races come from my times at the 5 km splits; i.e., each plotted point represents an average over a 5 km interval. That's why there are only three data points from the Tulsa Run 15 km and only two data points from the Cherokee Strip 10 km.

Pete's data are from splits recorded every mile during a six-mile run (actually he runs eight miles, but disregards the first and last miles). Pete has been doing these runs since the beginning of 1991, and already has 25-30 of them at this time (but so far, he's sent me the raw data from only the first 20 runs). What I have plotted are the average of his first 10 runs, and the average of his second 10 runs.

How can we tell if these performances were obtained with the optimal strategy? I said earlier that if you want to keep your energy consumption constant, then for every increase in slope of 1%, you should slow down about 4%. This suggests that we check the plotted data by figuring the percentage slowdown that occurs with each 1% slope increase. I will refer to this quantity as the "slowdown ratio".

The slowdown ratio was 4.18 in my Tulsa Run data, and was 3.89 in my Cherokee Strip data. In Pete's first 10 runs it was 2.26, while it was 2.83 in his second 10 runs.

As both of my races indicate slowdown ratios very close to 4, it seems likely that I came close to the optimal constant energy consumption strategy on both occasions. I must point out that the Tulsa Run has an early downhill and late uphill, while the Cherokee Strip course has the opposite pattern. Thus, I maintained the same uphill-to-downhill speed ratio in both cases, even though the order of uphill and downhill was reversed.

Pete apparently didn't come as close to constant-energy-consumption pacing, which isn't surprising since he recorded *training runs*. (I regard the optimal pacing strategy as a tool for *races*, and often depart from it in my training runs.) The increase in Pete's ratio between his first and second sets of 10 runs suggests that he may be getting more skilled at constant energy pacing.

Actually, if Pete's data indicate the way runners typically run (*without* any optimal pacing strategy), it suggests that an average runner might typically get about 2/3 of the benefit from an aided course that we compute by energy cost. This is consistent with statistical results that Ken Young obtained in 1984 by comparing times in the St. George and Fiesta Bowl Marathons.

In any case, I am convinced that constant-energy-consumption pacing is entirely practical, and allows you to obtain the entire potential benefit from an aided coursed (or indeed, to run as fast as possible on *any* hilly course.)

The Mudslinger

my word

by Tom Derderian

At the TAC National Convention in Seattle just after Thanksgiving, I roved from meeting to meeting, slinging a story of mud. I slung mud to make fun of the silly idea of world's records instead of world best times on road race courses and to illustrate that road racing needs only the level of precision that measures course distance exactly. I got laughs in the meetings. That was good. I wanted to draw the attention of members of the Long Distance Running Committee to get them to vote away the rule that says the Boston Marathon cannot count for a world's record. The rest of the New England delegation haunted the hallways and other meetings tidily arguing the same and many additional points.

I said that if we tend to make roads like tracks and account for slope and wind velocity, then we might have to consider technical factors in cross-country courses. I said that we may need a technical committee to establish a standard for the viscosity of mud, the ratios for silt, sand, clay and other organics to the percentage of water, as well as codify the size, composition and quantity of stones, the diameter of tree roots and the type of grass on cross-country courses to get them up to world-record standards, too. Just how much shoe-sucking muck and how much wet, slippery Kentucky bluegrass should be required to standardize cross-country courses?

But seriously folks, the sport of running is just fine, as it has been with no world's records in cross-country, lists of best times on the roads and only world records on certified tracks.

But last year's TAC convention passed a rule for world record standards that would throw out world records set at the Boston and New York City marathons. This year the men's Long Distance Running Committee voted on a proposal to reject rule 185. The rule held, but by a tiny margin.

That tiny margin and the emotional debate including my mud slinging convinced some prominent members of the committee to vote for a compromise. They overwhelmingly passed a motion to form a subcommittee to come up with a rule that will please most of the people most of the time. That rule will be presented at next year's TAC convention.

The great compromise might go something like this: Whereas TAC began in 1980 and the Boston Marathon began in 1897, rules about world'-record certification do not apply to any races founded before TAC's founding. Those race courses were designed in good faith and without intention of giving an advantage to a runner seeking a world's record. All new races must meet the new standards of slope and loop so no nefarious race sponsor can design a course to get an easy record. All race courses must be accurately measured to the standards of TAC's road race technical committee. Then maybe the mudslinger could hang it up to dry.

INTERNATIONAL MUCK RATING SYSTEM

O* S MD** IOH*

CROSS COUNTRY M.R.S. FACTORS*

*Key: O=Optimal, S=Sloppy, MD=Major Drag, IOH=In Over Your Head
Formula: Your PB + (MRS factor (from table) x Average temperature on day of race)

"Downhill Rule" Takes An Upward Turn

A new chapter was added to the never-ending saga of rule 185.5, better known as the "downhill rule," which states that, for American record purposes, maximum allowable marathon course drop is 1 meter per mile. An uproar ensued after the announcement of the decision last year, because Boston measures a drop of more than 3 meters per mile (For a closer look at the issue, see the March/April 1990 NER). A contingent from the Boston Athletic Association headed by Guy Morse was in Seattle lobbying to include Boston in the acceptable group based on the fact that marathons are different animals than regular road courses, thereby negating any alleged benefits from the net drop. The Long Distance Running (LDR) committees heard all sides and tabled the decision until next year, although it appears the BAA's proposal will be accepted. If so, the American men's record will officially be 2:08:52, set by Alberto Salazar in Boston in 1982.

THE ATHLETICS CONGRESS
OF THE USA

3354 Kirkham Road
Columbus, OH 43221

Road Running Technical Committee
Peter S. Riegel, Chairman

614-451-5617 (home)
614-424-4009 (office)
FAX 614-424-5263

February 19, 1991

Tom Derderian - New England Runner - 237 Main St - Waltham, MA 02154

Dear Tom,

It was depressing to read "The Mudslinger" in New England Runner. It's an effective demagogic technique to deflect issues of fact with humor. What is puzzling to me is that some of the people involved in the merrymaking seem to have no real agenda except to see how much hell they can raise, and the main issues are forgotten in the brouhaha.

If the goal of these people is to win one for Boston, it may be an effective tactic. The goal of all athletes and fans ought to be, however, to win for the whole sport, not one home-town race.

"My mind's made up - don't confuse me with facts." That's the message we hear from those who oppose the rule. The heart wants Boston to be just like the others, but the head knows it just ain't so.

The track & field folks have had a lot of fun with records across the years. Every so often you'll see a new tabulation of progression of records at some distance or other, and speculation as to where things are going. Without some decent standard, which they have, this would not be possible.

Now we have a standard that makes decent road records possible, and we are engaged in a dispute as to whether it is worth while. The effect of downhill, even Boston's downhill, has been demonstrated beyond rational argument. That is no longer the question.

The remaining question is whether we should sacrifice credibility so as to include influential and famous downhill courses within the records structure. Do we want a credible road running records setup, or a watered-down, meaningless "let's pretend" set of records? There's no doubt that people like to read about records. Running magazines are full of statistics. There's no harm in writers offering their opinion on the "best" marathon ever run, nor of them lauding the achievements of any runner at all. We enjoy reading about these things.

However, as time goes by, today's elite runners will be replaced by new ones, and a progression of records will result, which will provide fun for all. If we are to compare the present with the past, we want valid numbers, and the rule we have provides that validity.

Records are all about truth. Downhill performances distort truth, and don't reflect a true picture of an athlete's ability.

Shame on you for your special-interest pleading. The sport deserves better.

Pete

A ROUGH EXPERIMENT IN HILL RUNNING

I was given a Casio watch for Christmas by the Course Registrar, who rightly thought it would suit my fancy for playing with numbers. It has a 30-split memory, and I was going to use it for keeping track of my splits in races. However, I soon discovered a new use for it.

I have run the same training course at noontimes for the last 18 years. I'd guess I've run it over 2000 times. I even measured and certified it (OH 89031 PR) a few years ago. Last year, when we were doing work involving course profiles, I took the time to make an accurate profile of the course.

Armed with an accurate course, known elevations, and a way to keep track of splits, I thought I'd do a personal investigation of how much I am affected by hills. Almost every weekday this year I ran the course, not peeking at my watch as I did so, but pushing the button at each mile. I recorded the data each day, hoping to see a picture develop that would give me some insight.

The course is out-back, so I have a picture of the same hills run in opposite directions during the same run. The middle two miles is fairly flat, and I used this as a baseline time for each run. That is, I figured that the pace at mid-course reflected the pace I would run the whole thing if the hills were not there.

Because I was not equipped with a personal energy meter, I simply ran as I felt each day. I'd have a certain perceived level of effort established after a mile or so, and maintain it for the rest of the run. Just as I do when racing, but slower.

I modified my Sunday 12 miler to include a shot at the test course run in reverse - that is, on Sundays I ran downhill first, then uphill. The Sunday runs are very slow, since it's cold out, and early morning, and I am barely awake when I do them. Nevertheless, there does not seem to be a great difference no matter which way I run the course.

I did not use the data from mile 1 and mile 8 because mile 1 is always my warmup, done slower than the general pace. Mile 8 was discarded because it's the same as mile 1, and I wanted a symmetrical picture of the course. As I run it, it has no net drop, and the baseline miles are run symmetrically within the rest of the run.

I crunched the numbers in many ways before reaching the following conclusions:

1) Hills don't seem to affect me very much, overall. I lose a bit more on the uphills than I regain on the downhills, but the variability is such that I can't say for sure exactly how much. The difference is small, though - on the average, the presence of the hills on my noontime runs costs me only 3 seconds over the whole run.

2) The time I lose or gain is consistent with a previous estimate of the effect of hills done by Ken Young, after pairwise comparisons of finish times at two marathons of different slopes. Ken found that 1 m/km of slope conferred a 0.265 percent speed advantage. For me the number comes out to 0.3 to date. That is, for me, 1 meter of drop is about equal to 3 meters of course shortening, and vice-versa. Treadmill studies of runners at constant energy output yield: 1 m/km drop = about 4 m/km shortness. Evidently I, and

the runners Ken studied, aren't good judges of our own energy levels, or we'd have run the uphills slower and the downhills faster.

3) I attempted to estimate a second-order effect, but could not justify any statement about it based on my data. There's too much scatter to it.

4) Maybe I should have discarded miles 2 and 6 as well, since I don't seem to be fully warmed up after one mile. It takes me almost 2 miles to really get rolling.

5) I tried to see whether any of the effects were speed-related, but I could not find any significant relationship between the speed of my run and the effect of the hills.

6) How fast could I run Boston? On the average, if I consider that I'm now capable of 3:30 on a flat course, I'd be capable of just under 3:28 at Boston. Since my personal bests are long gone, I have no intention of doing Boston again, especially since I've not qualified. A single race would prove nothing in any case.

I believe I race as I do my noontime runs - that is, I use my pace sense and perceived effort to get me through the course without running out of gas. I think my test results would be about the same if the data was gained in races, but will never know for sure.

I'm a slow runner. A faster runner than me might get different results. Still, I've gained some insight into how I run, and have succeeded in quantifying it, which is a whole lot better than just guessing. As a result of the exercise I know (not think) that I get a boost from running downhill, that I am slowed when running uphill, and that the presence of hills in a course with no overall elevation change doesn't make a lot of difference to me. My PR marathon times were run on a course with some real mountains (about 800 feet total climb), but little overall drop. I ran the race 5 times before learning enough about the course to run it well.

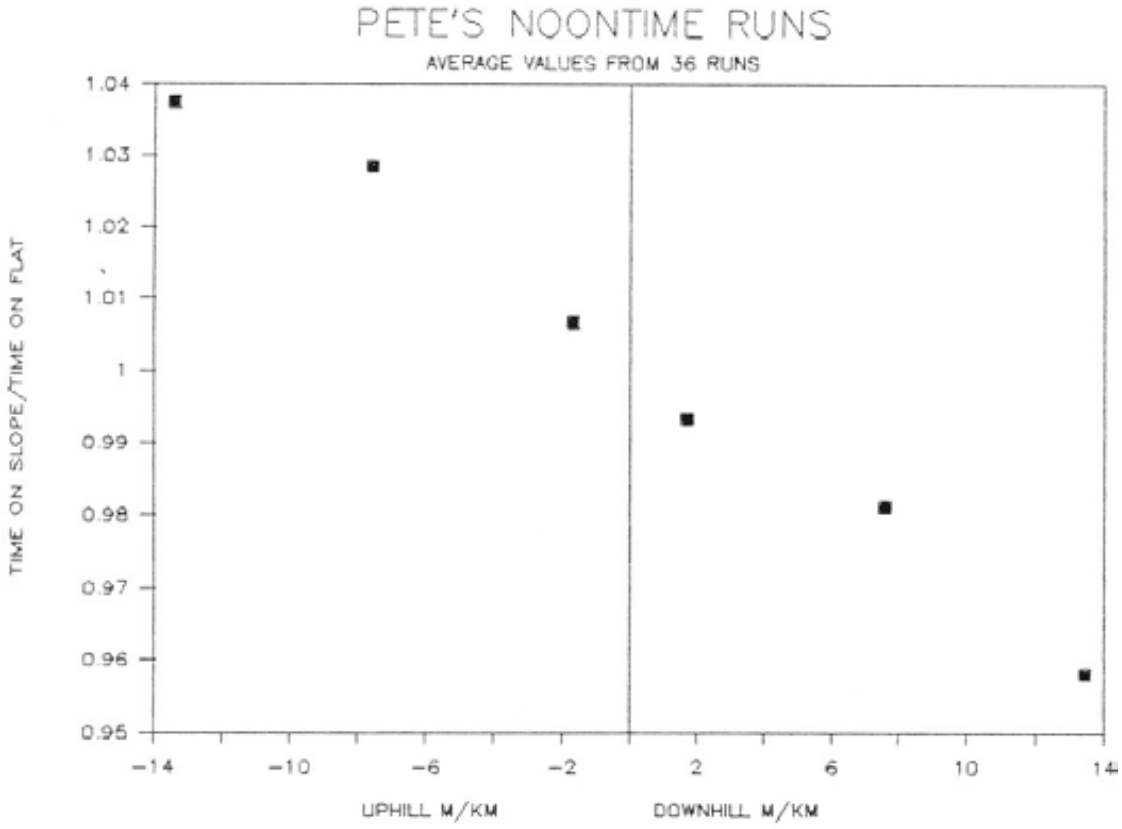
As a result of this exercise I now believe even more in the results of the analysis that went into our investigations of the effects of hills. The data are a long way from perfect, but they are right in the same ballpark as those we've been working with. Since I'll be on the road at noon for the foreseeable future, I will continue to collect data, but I doubt the results will change much. After 36 runs things have pretty much stabilized.

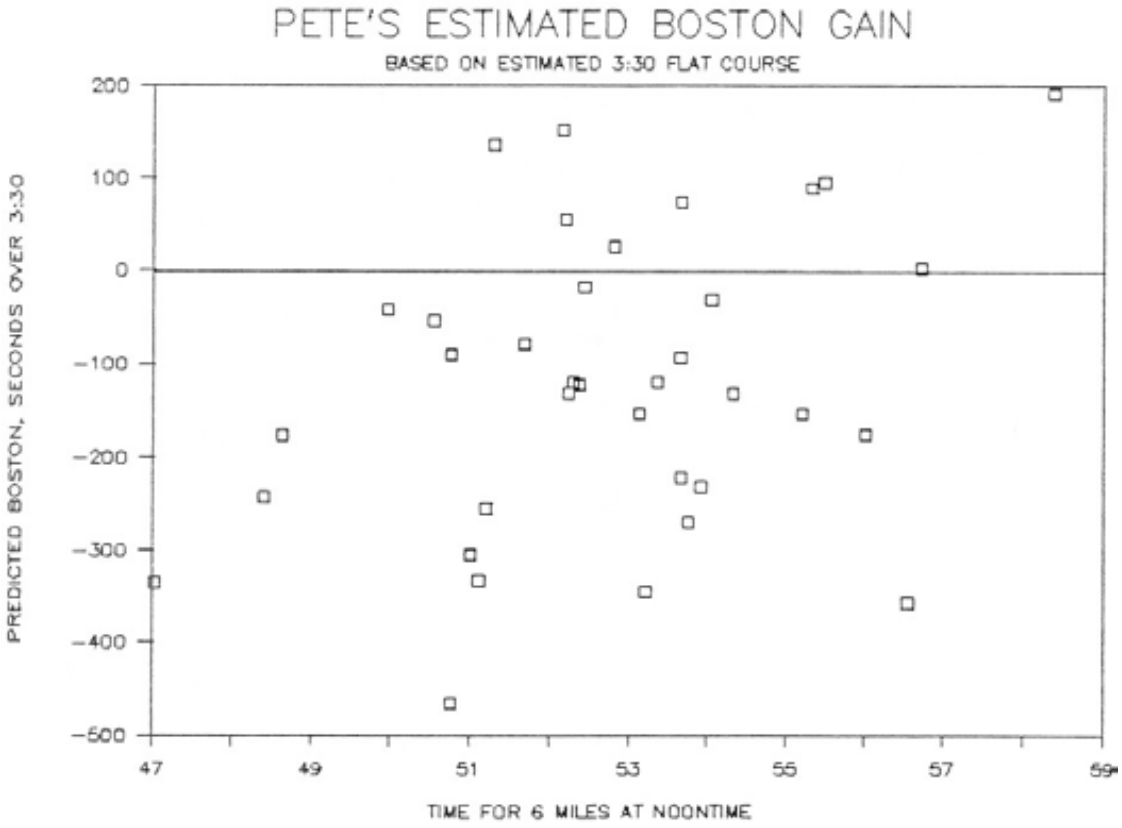
My results so far agree with Bob Baumel's excellent article "Understanding Aidedness - The Effect of Drop" which you see in this issue.

Maybe you're skeptical. If you are, do it yourself! All you need is a course with a flat section for self-calibration, and some hills, accurately measured and with the elevations known. An out-back is probably best, for symmetry. No peeking at your watch, either! Go get your data and see what you come up with. I'd like to see it if you do. If you plan to do it, and have any questions, get in touch.

An ounce of knowledge is worth a pound of feelings and guesswork. Find out for yourself.

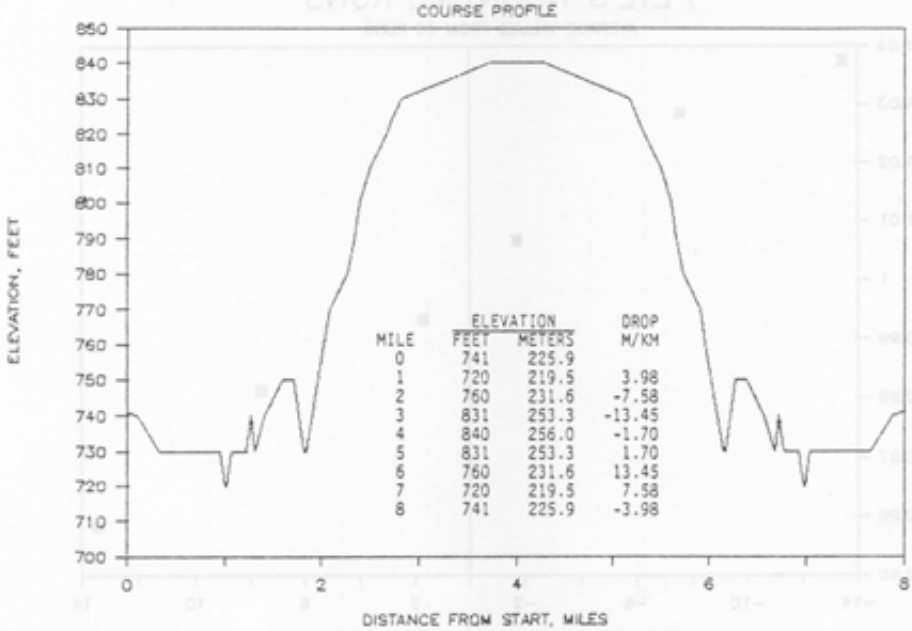
Pete


PETE'S NOONTIME RUNS
AVERAGE VALUES FROM 36 RUNS
TIME ON SLOPE/TIME ON FLAT
1.04
1.03
1.02
1.01
1
0.99
0.98
0.97
0.96
0.95
-14
-10
-6
-2
2
6
10
14
UPHILL M/KM
DOWNHILL M/KM

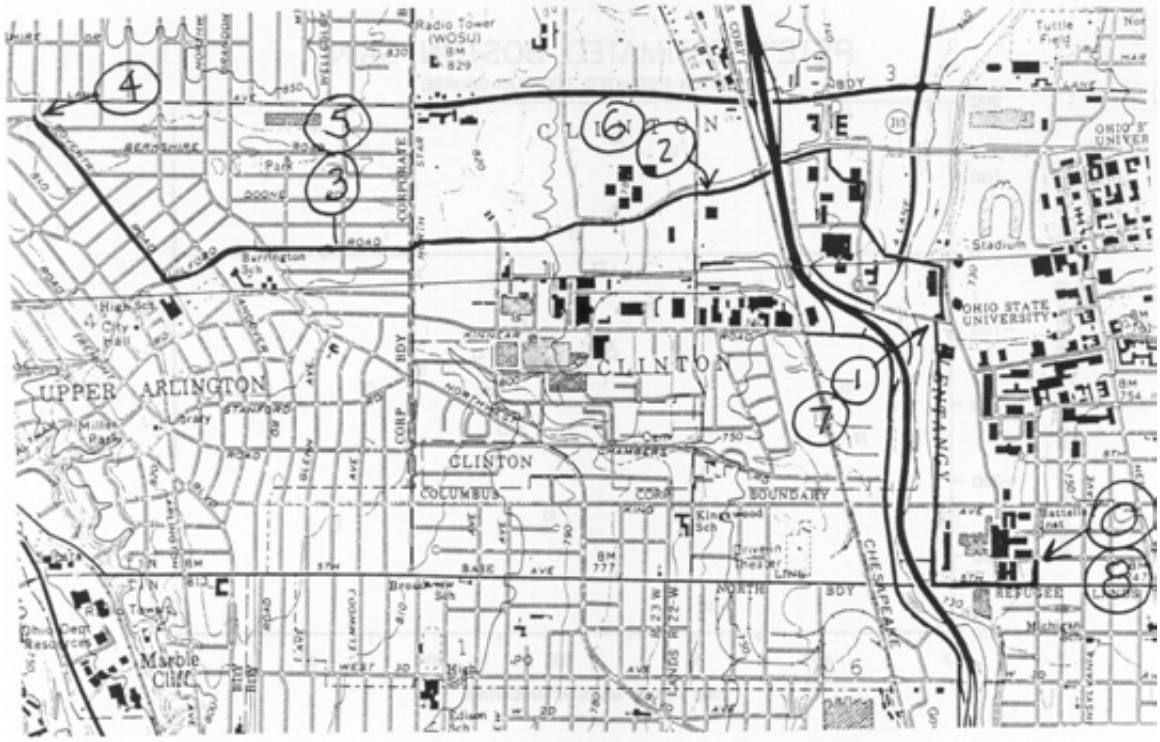

PETE'S ESTIMATED BOSTON GAIN
BASED ON ESTIMATED 3:30 FLAT COURSE
PREDICTED BOSTON, SECONDS OVER 3:30
200
100
0
-100
-200
-300
-400
-500
47
49
51
53
55
57
59
TIME FOR 6 MILES AT NOONTIME

BATTELLE 4 MILE OUT–BACK

COURSE PROFILE



MILE	ELEVATION FEET	ELEVATION METERS	DROP M/KM
0	741	225.9	
1	720	219.5	3.98
2	760	231.6	-7.58
3	831	253.3	-13.45
4	840	256.0	-1.70
5	831	253.3	1.70
6	760	231.6	13.45
7	720	219.5	7.58
8	741	225.9	-3.98



OBSERVED TIMES FOR ALL MILES

Date	MILE 1	2	3	4	5	6	7	8	Average
0102	08:34	08:41	08:31	08:30	08:25	08:14	08:25	08:25	08:28
0103	08:58	09:10	09:05	08:43	08:28	08:18	08:28	08:18	08:41
0106 *		09:02	09:05	09:03	09:05	08:45	08:55		08:59
0107	08:46	08:40	08:42	08:33	08:23	08:27	08:33	08:31	08:34
0108	08:31	08:20	08:27	08:12	08:00	07:38	07:47	07:46	08:05
0109	08:55	09:05	09:03	08:37	08:29	08:20	08:35	08:32	08:42
0110	08:36	08:39	08:41	08:24	08:24	08:09	08:16	08:10	08:24
0111	08:36	09:09	09:06	08:46	08:59	08:46	08:54	08:51	08:53
0113 *		08:51	09:11	08:56	08:52	08:37	08:41		08:51
0114	08:50	08:50	08:57	08:37	08:31	08:01	08:16	08:29	08:33
0115	07:43	07:59	08:02	08:02	07:49	07:28	07:42	07:49	07:49
0116	09:00	09:07	09:10	08:59	09:00	08:33	08:51	08:48	08:56
0117	09:17	09:13	09:16	09:01	08:56	08:44	08:53	08:47	09:00
0118	08:57	09:11	09:16	09:01	08:45	08:31	08:38	08:44	08:52
0120 *		09:20	09:35	09:19	09:07	08:48	09:03		09:12
0121	09:12	09:24	09:41	09:15	09:03	08:56	09:10	09:05	09:13
0122	08:50	09:00	09:11	09:00	09:06	08:39	08:49	09:10	08:58
0123	08:45	08:53	08:57	08:23	08:05	07:44	07:56	07:58	08:20
0124	08:43	09:04	09:10	08:47	08:35	08:14	08:24	08:24	08:40
0125	09:06	09:13	09:02	08:59	08:55	08:22	08:42	08:48	08:53
0127 *	09:20	09:37	09:52	09:28	09:19	09:04	09:23	09:31	09:26
0128	09:11	09:28	09:38	09:10	09:04	08:53	09:06	09:07	09:12
0129	08:54	08:55	08:56	08:39	08:46	08:31	08:39	09:02	08:47
0130	09:01	08:56	08:59	08:50	08:36	08:25	08:31	08:35	08:44
0131	08:43	08:56	09:01	08:41	08:25	07:43	08:00	08:03	08:26
0204	08:42	08:55	09:05	08:43	08:47	08:33	08:45	08:53	08:47
0205	08:47	08:54	08:34	08:37	08:34	08:04	08:24	08:30	08:33
0206	08:53	08:55	08:49	08:38	08:29	08:03	08:07	08:02	08:29
0207	08:53	08:41	08:55	08:40	08:34	08:23	08:28	08:40	08:39
0211	09:21	09:52	10:12	09:39	09:29	09:17	09:54	09:58	09:42
0212	09:23	09:33	09:42	09:21	09:22	08:56	09:06	09:17	09:20
0213	09:07	09:15	09:19	09:06	09:02	08:44	08:54	09:05	09:04
0214	09:20	09:36	09:41	09:35	09:29	08:55	09:17	09:25	09:24
0215	09:10	09:34	09:40	09:08	08:36	08:21	08:20	07:58	08:50
0218	08:51	08:52	09:00	08:45	08:44	08:27	08:34	08:18	08:41
0219	08:09	08:23	08:35	08:14	07:57	07:32	07:57	07:45	08:04
AVERAGES	08:52	09:02	09:06	08:50	08:43	08:25	08:37	08:37	08:47
HIGH	09:23	09:52	10:12	09:39	09:29	09:17	09:54	09:58	09:42
LOW	07:43	07:59	08:02	08:02	07:49	07:28	07:42	07:45	07:49
STD DEV	00:20	00:22	00:26	00:22	00:24	00:25	00:27	00:31	00:23
NUMBER	33	36	36	36	36	36	36	33	36

* = Run on Sunday, downhill first, then uphill.

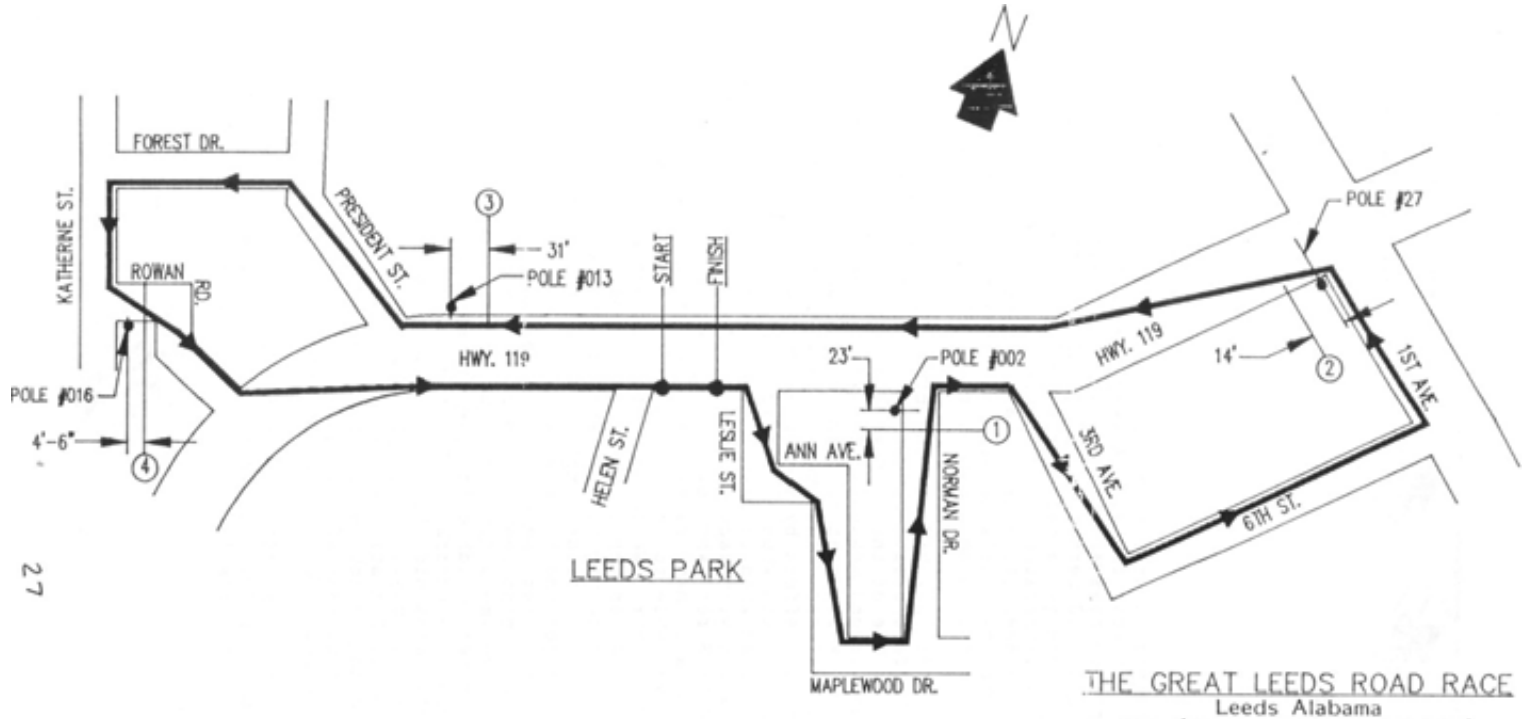
Note: Miles 1 and 8 were not included in further analysis, but are shown here.

SECONDS GAINED (+) OR LOST (-) ON MID-COURSE PACE

(Mid-course pace is the average pace on miles 4 and 5, the flat part of the course.)

		Uphill			Downhill			
	m/km	-7.6	-13.4	-1.7	1.7	13.4	7.6	Total
	mile	2	3	4	5	6	7	Seconds
Date								Gained/lost
0102		-13.5	-3.5	-2.5	2.5	13.5	2.5	-1
0103		-34.5	-29.5	-7.5	7.5	17.5	7.5	-39
0106	*	2	-1	1	-1	19	9	29
0107		-12	-14	-5	5	1	-5	-30
0108		-14	-21	-6	6	28	19	12
0109		-32	-30	-4	4	13	-2	-51
0110		-15	-17	0	0	15	8	-9
0111		-16.5	-13.5	6.5	-6.5	6.5	-1.5	-25
0113	*	3	-17	-2	2	17	13	16
0114		-16	-23	-3	3	33	18	12
0115		-3.5	-6.5	-6.5	6.5	27.5	13.5	31
0116		-7.5	-10.5	0.5	-0.5	26.5	8.5	17
0117		-14.5	-17.5	-2.5	2.5	14.5	5.5	-12
0118		-18	-23	-8	8	22	15	-4
0120	*	-7	-22	-6	6	25	10	6
0121		-15	-32	-6	6	13	-1	-35
0122		3	-8	3	-3	24	14	33
0123		-39	-43	-9	9	30	18	-34
0124		-23	-29	-6	6	27	17	-8
0125		-16	-5	-2	2	35	15	29
0127	*	-13.5	-28.5	-4.5	4.5	19.5	0.5	-22
0128		-21	-31	-3	3	14	1	-37
0129		-12.5	-13.5	3.5	-3.5	11.5	3.5	-11
0130		-13	-16	-7	7	18	12	1
0131		-23	-28	-8	8	50	33	32
0204		-10	-20	2	-2	12	0	-18
0205		-18.5	1.5	-1.5	1.5	31.5	11.5	26
0206		-21.5	-15.5	-4.5	4.5	30.5	26.5	20
0207		-4	-18	-3	3	14	9	1
0211		-18	-38	-5	5	17	-20	-59
0212		-11.5	-20.5	0.5	-0.5	25.5	15.5	9
0213		-11	-15	-2	2	20	10	4
0214		-4	-9	-3	3	37	15	39
0215		-42	-48	-16	16	31	32	-27
0218		-7.5	-15.5	-0.5	0.5	17.5	10.5	5
0219		-17.5	-29.5	-8.5	8.5	33.5	8.5	-5
AVERAGES		-14.931	-19.736	-3.486	3.486	21.958	9.792	-2.917
HIGH		3.0	1.5	6.5	16.0	50.0	33.0	39.0
LOW		-42.0	-48.0	-16.0	-6.5	1.0	-20.0	-59.0
STD DEV		10.257	11.191	4.182	4.182	9.661	10.027	25.225
NUMBER		36	36	36	36	36	36	36

Example: On January 14, I lost 23 seconds ascending the hill from mile 2 to mile 3. Coming back down the same hill, I regained 33 seconds. On the average, on that same hill, I lost 19.7 seconds ascending and regained 21.9 seconds on the descent. Even on the relatively flat mid-portion of the course, I lose a few seconds ascending the 9 foot (2.7 m) "hill" and regain it on the way back down.



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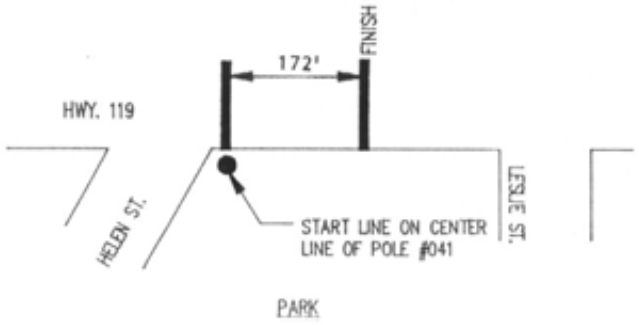


MAP OF THE MONTH - COMPUTER DRAWN!

THE GREAT LEEDS ROAD RACE
Leeds Alabama
8 KM (MAP NOT TO SCALE)
CALIBRATED ON AL86001JDCC

MEASURED BY:
RICK MELANSON 1/26/91
1235 PARLIAMENT LN.
BIRMINGHAM, AL. 35216
(205)979-1731

RACE DIRECTOR:
MARK HALES
P.O. BOX 1057
LEEDS, AL. 35094
(205)699-3572

The Athletics Congress of the USA

The Governing Body for Athletics in the United States including Track and Field, Long Distance Running and Race Walking for men and women and boys and girls at all age levels.

Amy Morss
4131 Bussey Rd.
Syracuse NY 13215
(315) 492-2486

2/7/91

Greetings old measurers and new!!

I've been meaning to get this 'winter slump' newsletter out for some time, but, so far, this winter has been busy for me. Anyway, here it finally is:

1990 was a decent year for courses around the state. It was my first full year as the certifier and I issued 30 certs. Here is the breakdown of courses: 2 cal courses (don't forget you can get a cert for these), 9-5k's, 1-3.5m, 1-4m, 2-8k's, 2-5m's, 8-10k's, 1-20k, 1-½marathon, and 3 marathons--shows us where the interest lies. This year we had some old courses issued certs for the first time or get re-certified cause of changes. It's never a bad idea to push race directors to measure the courses that have been around for a while--I may have a few of those this year.

As for measurers: we had a few new kids on the block: John Felix being the most prolific located in the Buffalo area. He had the most courses measured with 4, and the Buffalo area is still one of the most active. He's helped to lessen the load of Don Mitchell who's been around measuring for years. An enthusiastic pair of measurers, Grandits & Greeley, were great to talk to because of the excitement they felt about the measuring business. And, yes, guys we'll try to have a seminar this summer! We also had a heroic effort by Warren Harrell of Buffalo--he stepped in and measured a course within a week when a frantic race director realized he was advertising his course as certified when it wasn't! Thanks Warren--that makes us all look good! This happens a lot with race directors and thanks to the tireless efforts of Jim Brown, our TACSTATS rep (who, by the way, was the winner of my little contest following the Ohio seminar), many races that claim certification get measured. His help has been invaluable to me because he's so familiar with races around the state. Thanks, again, Jim. We can all help Jim out by keeping a close eye on our local races. If you see an app that you are suspect about, call the race director or me and get to the bottom of it. And then go out and measure it!! Sometimes races change or the race director simply doesn't know what certification means--it's our job to help them get the facts straight.

A few more measurer's note: I met one of the new measurers at a race this year when Doug Kibby heard my name mentioned at the registration table. Thanks for the heel things Doug! Ask me sometime about what Doug sent me along with his measurement papers--a first for me! Goodbye to Dave Oja as a measurer...he's swamped with race director jobs, the Central NY Running show and twins (not necessarily in that order!) --we'll miss him, but luckily I get to work with him in other capacities, and who knows, maybe Terry McConnell and I can get him out there measuring a few more times!! I'm still enjoying my phone calls from Ross Moore, a measurer who's only done one course, but someone that I became friends with over the phone! One of the pluses of this job. It was great to work with George Tillson in Ohio--we were both awed by the 'big boys', but he proved NY is a competent state.

Requests, suggestions and info for '91: One of the biggest problems I saw this year was paperwork coming to me days before a race was due to go on. I realize this isn't always the measurer's fault--NY's crazy weather and slow race

directors help, but for my sake (and the race's if there's a record pending), get those race directors to do things early if you can. Bug them in the winter if you have to so you can pop out on the bike when the snows melt...

I receive a very professional newsletter from Tom McBrayer in Texas (a certifier I met in Ohio). He makes some good suggestions and has some good info I'll pass along: Remember that your map is one of the most important parts of your paperwork and should therefore be made with TLC. A race director, validator or a fellow measurer should be able to reproduce your work from that map. Be neat, write carefully and include start/finish/turnaround diagrams, restricted areas, splits, and north arrows. Please send me the map on 8½" x 11" paper even if you have to shrink it down--saves me hassles with the xerox folks. Check your math, and only send me 1 copy of everything. The fee will remain $25 for a course, ($40 for 2 courses sharing paperwork), $10 for a cal course. If you have a course that is being remeasured and you only have to change a little part of it, sometimes the fee is negotiable if I don't have to go through the full paperwork.

Do you all know about solid tires? Helps to cut down on flats. There are a few places to get them--let me know if you're interested. Also, you may have heard that the Jones counter was almost a goner, but a new supplier has been found and we can still purchase them. For you new guys: I recommend subscribing to 'Measurement News'--a very informative newsletter put out by our fearless leader Pete Riegel--send $15 to Pete, 3354 Kirkham Rd., Columbus, OH 43221. Keep up to date on the continuing 'Boston saga'...

An interesting note: NY state had 3 of the 12 most uphill marathons reported in the Sept/Oct 90 issue of TACTIMES! They were: Wineglass (I was suppose to run that one this year, but pulled up lame right before--just as well??), Buffalo-Niagara Fls Int'l, and Finger Lakes--any of you run these??

Let me hear form you guys--you're welcome to add to this newsletter at any time. Keep pushing those measurements and thanks for all the good work you do. Let's make 1991 even better! If any of you are out of the measuring business, let me know so I can keep my files up to date (I'm sending out 32 of these this time!). Oh-one more thing-does anyone know who measures in the Pougkeepsie area, or anyone that would be interested in doing so? It's a quiet area and I'd like to get a contact. Talk to y'all this summer.

Petersen Gets AR

Boston promoters haven't given up their fight against the tough new standards, but American Records in the marathon now must meet TAC's loop and downhill rules (*T&FN*, March).

As a result, a fast time isn't necessarily the same thing as an AR, as TAC has approved Pat Petersen's 2:10:04 from the '89 London race as the U.S. men's standard.

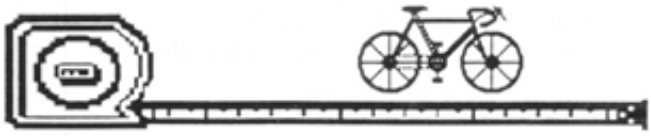
That mark—just No. 14 among all-time U.S. performances—is the only one that withstands the acid test of the new rules. All the faster times but one were set at Boston, New York or Duluth. Each of those three courses falls into the point-to-point and/or downhill category.

The exception is Alberto Salazar's 2:09:21 from Fukuoka '83. Unfortunately, construction along that course made it impossible for certifiers to validate the length of the route.

The "Boston rule," which excludes the aided courses from record consideration, still raises hackles in the road community, on both sides of the issue. The matter was slated for discussion at last fall's TAC Convention, but delegates instead created a special committee to study the question.

The fact that the IAAF has adopted essentially the same rules as its criteria for World Records may well render opposition to the tougher rules a moot point.

Measure Up



February 1991 Volume 4, No. 1

TAC TIME

The 1990 TAC Convention was bigger, better and busier than ever since there was one less day to conduct business.

Some highlights of interest to you:

✓ TAC Rule 185.5 was on center stage as the BAA (Boston Athletic Association) launched a full-bore assault. They really do want the Boston Marathon course to be record quality. Their motions to 1) drop the wind factor (no tail wind) and 2) exempt the marathon distance from the requirements of rule 185.5 were tabled and a committee was established to work on a compromise. Needless to say, emotions ran high.

✓ The most active, enthusiastic and progressive committees were once again the Men's LDR and Women's LDR. With outstanding leadership, they are doing things like national championship runs with prize money, emerging elite programs, and Women's LDR has a "feeder" program which helps send local association champions to a national championship.

✓ The '92 Olympic Trials were awarded to New Orleans (June/July).

✓ TAC officials at road races: it's coming, but v-e-r-y slowly.

THE LIST

Thanks to **Joan Riegel**, TAC/RRTC course registrar, we've got a complete listing of all the certified courses in Texas — all 485 of them.

They are listed alphabetically by course name under each location in order of increasing distance. That may sound confusing, but you'll figure it out. If you would like a copy (11 pages) send me a $3.00 check and I'll get one to you — first-class.

A copy of the certificate of any of these courses is avaliable from Joan for $2.00 each (includes the map).

MAP MAKER, MAP MAKER

All of your work measuring a course boils down to a map. The information a race director needs should be right there on a single sheet: the start, the finish, the correct route including any restrictions. Sure you know how it's supposed to be — you just did it. But will your map pass the ultimate litmus test, the one where you hand the map to a stranger a year later? Can (s)he find the start/finish after all your marks have faded or the street has been repaved?

Here's some of the rough spots I've noticed.

✓ Longhand verbage is not good. Print it, or type.

✓ Those certified points (start, finish, turn-arounds) need taped distances from permanent landmarks. A blow-up detail may be necessary.

✓ Leave a clear half-inch margin on all sides. Remember the reproduction process "swells" the image.

✓ Draw your map in sharp black on plain white paper for added clarity and emphasis. Some ball points skip. I like the Papermate "Metal Roller." Try different pen widths, too.

✓ Send me the original; I'll return it. Always keep a copy for your files, just in case the original is lost in the mail, etc.

✓ It's true: practice does help.

✓ Are the runners restricted in any way? Note restrictions where appropriate.

✓ Check list. Did you remember?
- Splits, both English and metric as required (at least

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

every 5km on metric distance).
- Street names if essential to the course.
- Detail for start, finish, turn-around if necesary.
- Indicate North.
- Legend: name, date, NTS, SPR, etc.

SPOTLIGHT ON DALLAS MEASURER ANDY BEACH

Careful now, that is a play on words. Around Dallas everybody says, "Life's a Beach." **Andy Beach**, that is.

This transplanted Virginian hit Dallas in 1982 when he went to work for Texas Instruments. An electrical engineer from Virginia Tech, Andy spends most of his working hours on military computers.

Andy has been running since 1983 in just about everything Dallas has to offer, including White Rock. He set his marathon PR (3:19) at NY last November.

Andy has also been biking in a big way. On only 19 miles of training, he tackled the 1988 Hotter-n-Hell 100. Remember that one? 108 degrees F and 30 mph winds. Andy promises he won't try anything that dumb on a bicycle again. But can he do the Jackson 5-0 on Saturday and the Houston-Tenneco the next day? Well, those aren't bike races, so stay tuned.

NO HALF MEASURE HERE

Any trend watchers out there? You've no doubt noticed that 5km's have passed 10s in popularity. We're seeing more and more multi-distance events, relays and kid k's. But look out! Here comes the half. The half marathon, that is.

We've got an active list available to us, from White Rock to Run-Tex, the newest one in Austin. Mainstays include the Nacogdoches Redman, Moe's Better Half (San Marcos), Walden in Humble, Steamboat Mesa (Abilene) and The Half (Corpus Christi). The Huntsville Half, a popular fall event with Houston runners, has never been certified.

"Half marathon" has a certain ring to it that might account for its popularity surge. We only have one 20km and one 25km, but eight active halfs.

WHAT TO DO

That ageless whiz from Dallas, **Francie Larrieu Smith,** won the Chicago Rogaine 5km in 15:05, was awarded $3,500 and set a world's best in the process. Or did she? Yeah, that 15:05 was better than **Lynn William's** 15:19:03 set in 1989 at the Carlsbad 5000 (GA). But — and this is a big but — the Carlsbad course is a loop, the Rogaine is not. To be a "record-quality" course, the start/finish must be closer than 30 percent of the total race distance. For a 5km, that's 1500 meters. The Rogaine S/F was separated by 1700 meters, or 34 percent. Even though the drop requirement (1 m/km max) was met, the tailwind would prevent any records being set. Most people involved accepted that. The reason for Rule 185.5 became apparent.

So what was the big issue? Just this: the role of the measurer in course selection. Should you, the measurer, measure the course as specified by the race director without making him or her aware of the ins and outs of Rule 185.5? The consensus of experienced certifiers is that regardless of the race director's attitude of "It's only a fun run," or "We'd never have a record down here," it is the measurer's responsibility to inform the race director of the complications that may arise with a course that is not record quality.

P.S. Even though Francie's 15:05 won't be recognized, Rogaine will still present her with the promised $25,000. Good run!

STILL IN BUSINESS

We can breathe a little easier. The Jones Counter we have come to love will not die. **Pete Riegel** has located a new supplier for the vital gear drive that was in short supply. The New York Road Runners will continue to assemble the counter and make it available to anyone with 40 bucks.

Footnote: The Jones Counter II which was tested last summer seemed to work well under road conditions. The concern was the poor quality of the parts. It was fabricated from a K-mart bike speedometer. The nice feature was you could mount the counter portion on your handle bars and avoid eye strain!

Our thanks to **Randy Ohman** of San Antonio for also locating a supplier for the gear drive. We're keeping the name on file, Randy, just in case.

WHO'S DOING WHAT ACROSS THE STATES

✓ **John Ferguson** (Austin) ran a 1:16:24 at the Run-Tex half marathon, good for 31st overall. There was no chance of John losing the way since he measured the course with the help of **Moe Johnson** (San Marcos). Let's also give credit to **Vivian Ferguson** who rode shotgun for the two measurers — a vital job on those busy Austin streets.

✓ There is some fun at the TAC Convention, the measuring contest put on by the RRTC. You calibrate your walking pace on a 50 meter cal course, then "measure" a previously determined course. Submit your measured distance and wait for the results. **Tom McBrayer** missed the 660.6 m loop by six meters. **Mary Anne McBrayer** was off by 11 meters. (Note: Mary Anne's four-year record leads the pack with a -0.10 percent error.)

✓ The Big Country Wind Runners (Abilene) are thriving under the leadership of **Howard Pope**. This Road Runners Club offers a full slate of events including the marathon and a 12-hour run/relay. And have you heard of the 55km? No, we're not talking a new speed limit, that's Howard's new distance course on I-20. Howard has measured all these courses and most are certified.

✓ With the TAC Convention in New Orleans this year, the New Orleans Track Club will be in charge of the National Masters 8km held in conjunction with the convention. **Chuck George** will head up the measurement team. The next 18 months leading up to the '92 trials will be busy for the N.O. Bunch.

THE FINAL ANSWER

We've had a lot of high hopes over the years. Everyone seemed to have the answer to flat front tires while measuring. Usually the "answer" involved tires that were too heavy, too hard or too something. Now we've got "Capair." A solid tire previously made in England as "Suretrak," it's now available in the states.

In a special introductory offer for measurers only, the Capair tire will be avaiable until Feb. 22 for $21 plus $6 postage. All reports indicate Capair might be a good "answer." Interested? Give me a call for additonal details.

FROM CARL JOHNSON:

COURSE DESCRIPTION

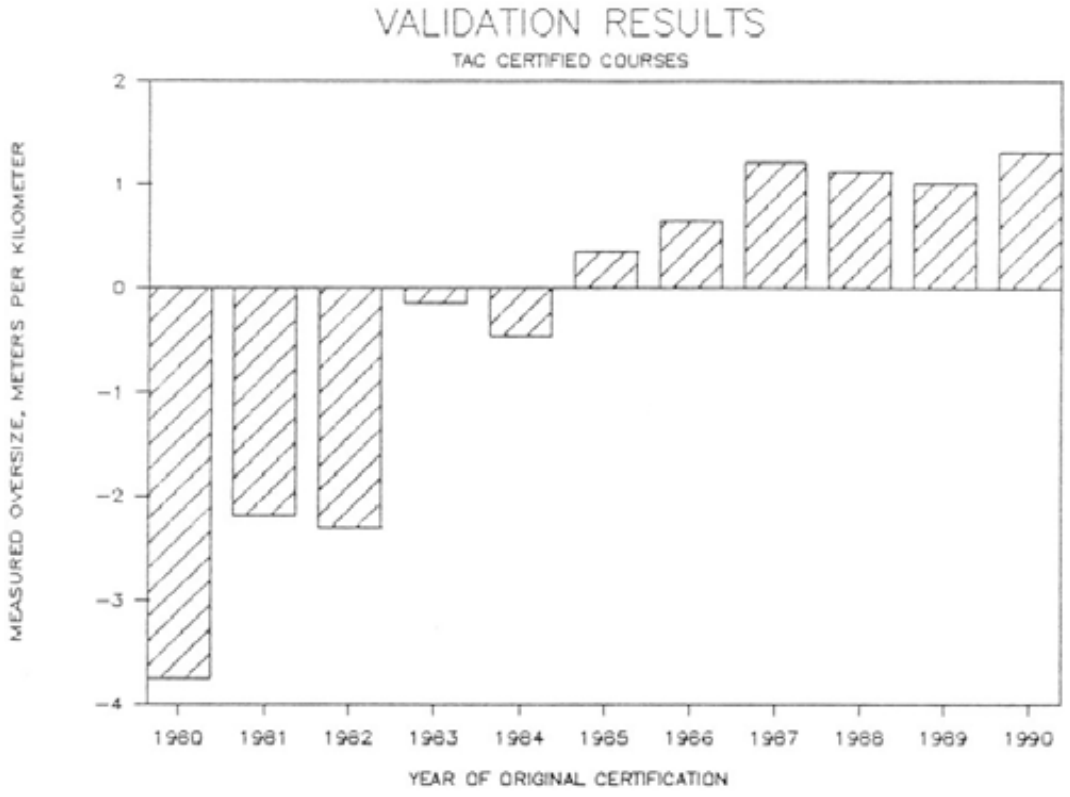
The course is 5000 meters and is RRTC/TAC certified (Certification #NC -90002-ACL). It can be described as flat and fast, but if we described it that way, we'd be lying. So let's call it "rolling." On heck, let's be honest – it's "hilly." But if you want to run a flat 5K, go do 12 plus laps on the track. We prefer to describe this course as "more suitable for sledding" than the most other area 5K routes.

VALIDATIONS CONTINUE TO SHOW HEALTHY TREND

Here's the annual update of validation results. Courses continue to check out OK, with about a 90 percent survival rate. Back in the early 1980's, when the 0.1 percent Short Course Prevention Factor (SCPF) was mandated, we had a hunch that it would be sufficient to do the job, but we knew that full knowledge would have to wait until we had collected enough validations to be sure.

It looks like our estimate was correct. It's regrettable that any courses should have failed, but to approach 100 percent we'd have to at least double the SCPF, and this would add enough distance to be unpalatable.

We are still waiting for an expertly-measured (by a Final Signatory) course to fail.

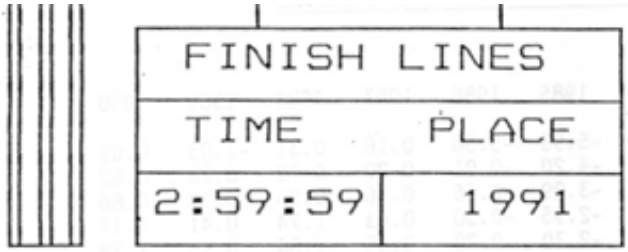


VALIDATION RESULTS - MEASURED M/KM OVERSIZE

Year of Original Certification

1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990
-8.25	-3.51	-8.75	-7.70	-9.25	-5.93	-5.56	0.16	0.31	-1.03	0.01
-6.66	-3.07	-8.60	-6.00	-5.93	-4.20	-0.91	0.20	0.79	-0.25	0.62
-1.08	-2.58	-7.50	-5.66	-5.18	-3.29	-0.56	0.36	0.95	0.39	0.86
1.00	-1.95	-4.30	-1.90	-5.18	-2.95	-0.30	0.43	1.74	0.41	1.17
	-1.60	-1.60	-1.78	-1.50	-2.70	0.28	0.49	1.84	0.56	1.28
	-0.40	-1.40	-1.17	-1.20	-1.08	0.50	0.50		0.62	1.30
		-1.14	-0.84	-0.90	-0.07	0.50	0.56		1.18	1.45
		-1.02	-0.69	-0.75	0.07	0.53	0.82		1.35	1.65
		-0.45	-0.63	-0.64	0.27	0.63	0.92		1.90	3.41
		-0.20	0.22	0.20	0.27	0.66	0.94		1.91	
		-0.20	0.31	0.33	0.50	0.66	1.00		4.09	
		-0.20	0.70	0.43	0.70	0.74	1.10			
		-0.13	1.00	0.43	0.75	0.75	1.28			
		-0.05	1.11	0.45	0.87	0.78	2.40			
		1.00	1.16	0.50	0.88	0.85	3.47			
			1.46	0.62	1.00	1.00	3.77			
			1.47	0.64	1.03	1.00				
			1.60	0.70	1.08	1.00				
			1.92	0.74	1.09	1.06				
			2.55	0.76	1.13	1.09				
			3.44	0.88	1.14	1.40				
			6.33	0.99	1.15	1.52				
				1.00	1.35	1.71				
				1.09	1.52	1.77				
				1.29	1.75	1.99				
				1.42	2.10	2.00				
				1.43	2.37	2.55				
				1.60	3.96					
				1.68	5.58					

1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990
Average oversize, m/km										
-3.75	-2.19	-2.30	-0.14	-0.46	0.36	0.65	1.15	1.13	1.01	1.31
Fraction measuring at least nominal distance										
1/4	0/6	1/15	13/22	20/29	22/29	23/27	16/16	5/5	9/11	9/9
Percent measuring at least nominal distance										
25	0	7	59	69	76	85	100	100	82	100



Alan Jones, Chairman
RRTC Finish Line
Sub-Committee
3717 Wildwood Drive
Endwell, NY 13870
(607) 754-2339
March 1991

RACE DAY REGISTRATIONS

One of the biggest headaches in managing a road race is the large number of race day registrations. I have heard of races which have over 1000 runners registering on race day. If computers are being used to produce results, the amount of clerical work to get these people into the computer database is enormous. There have been many approaches to solve this problem. Some are:

1. Don't allow race day registrations.

2. Don't give shirts to those who sign up on race day.

3. Charge a much larger entry fee.

4. Don't include race day registrants in results.

The one I like the least is, "Since we are processing the results by computer, we must have all entries by two weeks before race day." I feel that computers should help solve problems -- not be part of the problem.

Possible ways to handle large numbers of post-registrations are:

1. Have several computers and merge the database using diskettes or have the computers on a local area net (LAN).

2. Develop a database of runners from earlier runnings of the event or from other races in the area. Then one only has to check to see if the person is already in the database and, if so, enter the competition number after checking to see if runner's address has changed. However, I have found that a fast keyboard person can enter a name about as fast as a name can be searched for. This is not because the search is slow -- it can be a fraction of a second. It is because the act of seaching breaks the rhythm of just typing names.

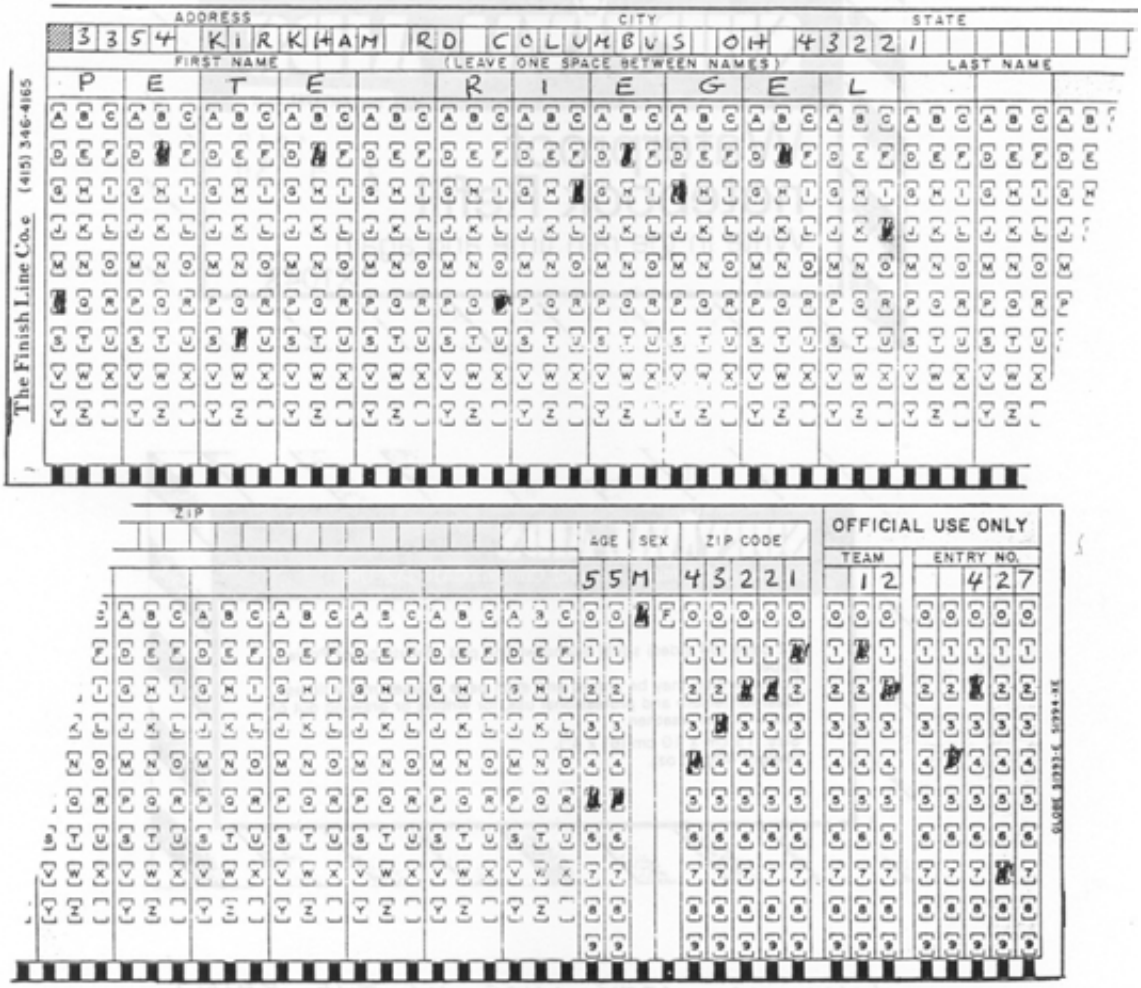
3. Only enter the information needed for the award ceremony -- name, age, sex, town, state. Enter street address later.

Race Central in Los Angeles has been using a "mark-sense" card system for several years. (A mark-sense card is the system you used to take standardized tests in school where you made a mark with a no. 2 pencil between two lines.) With this system the race day registrant writes his or her name, address, etc. along the top of the card. Then just the name, age, sex, and ZIP is indicated by marking with a pencil. The registration staff adds the bib number and the card is read by a machine attached to the serial port of a computer.

I have recently had a chance to test such a reader from:

Chatsworth Data Corporation
20710 Lassen Street
Chatsworth, CA 91311
(818) 341-9200

They have a variety of readers. The one I have is the OMR-1000 which sells for $1095. The cards I used were designed by Paul Oerth of California. The card is quite long because each letter in the name takes three columns on the card. Below is a copy of the Oerth card (cut in two):

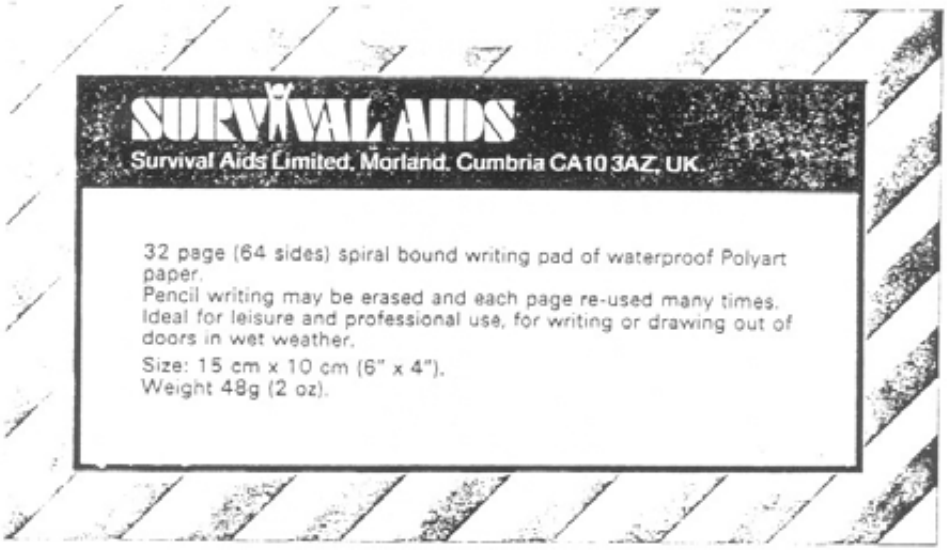


These cards are available from Paul for $60 per 1000 plus shipping. He can be reached at:

Paul Oerth
2455 Union St. #412
San Francisco, CA
(415) 346-4165

The computer software used should have the ability to look up the ZIP code and enter the city and state which is all the race director needs for the award ceremony.

I would be interesting to hear from people with experience using such a system or who have other methods to help with race day registrations.



THIS IS VERY NICE IN THE RAIN!
IF YOU WANT ONE, SEND $5.00 TO PETE RIEGEL BY APRIL 5. I'LL BE GOING TO LONDON AND WILL BUY A BATCH FOR ALL WHO WANT THEM.

Pete

Carol L. Urish-McLatchie
8618 Birdwood Road
Houston, Texas 77074

HOUSTON, TX 770
10 JAN
1991
PM

America the Beautiful USA 15

PETER S. RIEGEL
3354 KIRKHAM RD
COLUMBUS, OH 43221

Jan 10/91

Dear Pete,

Thank you for all the issues of "measurement News". I have enjoyed reading them all (that doesn't mean I understood it all). It's a heck of a publication and a great avenue for exchange of ideas.

I know I am athlete rep. to the RRTC, and would like to help as much as I can. I do have a hectic convention like a lot of others, but call if you need help from an athlete perspective. THANKS! Happy New Year! Carol

THE ATHLETICS CONGRESS
OF THE USA

3354 Kirkham Road
Columbus, OH 43221

Road Running Technical Committee
Peter S. Riegel, Chairman

614-451-5617 (home)
614-424-4009 (office)
FAX 614-424-5263

January 15, 1991

Carol L. Urish-McLatchie - 8618 Birdwood Rd - Houston, TX 77074

Dear Carol,

Thanks for your card. Yours is the first communication I've had from an athlete rep, and it's welcome. I appreciate your offer to help.

Our work is concerned with both the practical and the philosophical. Many of the RRTC folks are technical people, who are adept at crunching numbers and drawing conclusions. The philosophy comes in when it's time to apply the results of the computations.

We're strictly an advisory committee, and it's our job to provide advice on technical matters, and to run the course measurement and certification system. On the latter we're doing very well. On the former, you're probably familiar with our major current problem. It's that pesky Rule 185.5.

The reasons behind it are technically solid but we are frustrated because it is difficult to convince the Men's and Women's LDR membership that the rule is beneficial. The Boston Marathon has been effective in lobbying at the Convention. The problem for us in RRTC is that we have been continuously studying the effect of downhill and wind for almost three years now, and I mean studying. My file on it is over three inches thick. I, and others, have written hundreds of pages on it, and looked at it a score of different ways.

Then the convention comes, and the matter is put into the hands of people who have not really studied the matter beforehand, and act as much from the heart as from the head. Irrelevant and emotional arguments are brought to bear, and there is never time to effectively refute them, because the people listening to them are not technical people. There seems to be a perception that RRTC somehow wishes to destroy the Boston and New York Marathons.

Instead, what we wish to do is to support TACSTATS as we supported NRDC. They know what it takes for a record to be believable, and we don't think the sport is well-served by calling downhill and windy runs records. If this is done an athlete is compared to an unrealistically tough standard. An athlete good enough to have a shot at a record will have to go to a downhill course to get it, because that's where the records will wind up if 185.5 is gutted.

How can you help? Simply by trying, every time you get a chance, to explain to people that a sport is best if its records are fair, and 185.5 provides that fairness. Sure, it's not perfect, and it does exclude Boston. We can't help that. But we have included over 90 percent of the sport in a reasonably simple rule. It defines a standard course, and says records must be set on a standard course.

Do your best. Also, as an athlete rep, you can bring to our attention any technical matters that may concern you or your peers, and we'll give them a shot. Let me know if I can help.

Best regards,

Pete

SHORTS AND SINGLETS

CERTIFICATION PROGRESS IN OHIO

A steady gain in TAC certified courses continues in the Buckeye State, with 372 courses--measured by 47 different measurers--certified as of Jan.1. The last seven years have seen a steady production of about 50 courses per year, with no current signs of changing.

Year	*No. of Courses*
1982	1
1983	39
1984	52
1985	46
1986	52
1987	54
1988	64
1989	64
1990	55 (as of December 1)

Having many measurers operating in a state is a sign of health, because the work is well spread out. This assures anyone needing measurement skills of timely service. In some states virtually all the measuring is done by a single person. This is O.K. as long as that person in not overloaded, but if that person should become unavailable there remains no cadre of competent people to do the job.

The Road Running Technical Committe (RRTC) of TAC takes the view that it is healthier for measurement to be done on the grass-roots level, and all race directors are encouraged to seek out local talent who are willing to learn the procedure. It's not hard to do, and all one needs to know is spelled out in the publication *Course Measurement Procedures.* The booklet costs $4 and available from: **TAC/USA, Book Order Dept., P.O. Box 120, Indianapolis, IN 46206.**

People in Ohio needing certification information should contact: **Pete Riegel, 3354 Kirkham Rd., Columbus, OH 43221, 614-451-5617 (home, not after 10 p.m.),614-424-4009 (work, 7 a.m. to 4:30 p.m., except 11 a.m. to 12:30 p.m.).**

Also available from Riegel is *Measurement News,* a bimonthly publication dealing with course measurement. Six issues costs $15, postage paid. *--Pete Riegel*

Moneghetti record will not be ratified

STEVE MONEGHETTI's world best of 1:00:34 for the half-marathon, set at the Diet Coke Great North Run 10 days ago, will never be ratified as a world record under proposed IAAF road race rules discussed at the IAAF council meeting held in Athens earlier this month.

The new rules to introduce IAAF-approved road race world records have criteria which limit drops in elevation - thus eliminating courses with more than one metre drop per kilometre. They also limit the distance allowable between the course start and finish to 50 per cent of the race distance, therefore making any times recorded at point-to-point courses such as the Great North Run, the London, Boston and New York Marathons ineligible for world record purposes.

As well as being point-to-point, the Great North Run course also drops on average 1.446m per km, outside the IAAF's rules tolerance.

Until now, the IAAF has resisted the introduction of "world record" status to road race performances because of the difficulties of getting agreement on the tolerance standards for various courses. AIMS, the international marathon and road race organisers' association has, however, pushed for such recognition, while American road race statisticians have operated a dual system for point-to-point and loop course world bests.

"As far as we are concerned we were within the rules when the race was run, so it's the record. I don't think we'll be changing the course because of this, but I would be interested to know when these rules are being implemented," Great North Run Race director, John Caine, said.

Records will in fact be introduced retroactivly by the IAAF. "Times already run will obviously be considered if the course falls within the new rules," an IAAF spokesman said.

"But it's important to remember that at the moment there are no records on the road, the IAAF only recognise world road bests and the only world best we recognise at the moment is the marathon."

WAITING ON TIME: Steve Moneghetti and his coach, Chris Wardlaw, must wait for IAAF approval of his world best

To further complicate the situation, on the same weekend as the Great North Run, the Philadelphia Distance Run also claimed a half-marathon world record for its winner, Dionicio Ceron, of Mexico, who finished in a time 12sec slower than Moneghetti's, and even slower than the world best set by Mike Musyoki at the 1986 Great North Run.

Undaunted, the Americans declared Ceron's time the world best, using only marks recorded in the USA as a guide. The Athletics Congress (TAC) has its own set of strict rules regarding road racing and at present does not recognise even IAAF-ratified courses. The Philadelphia course, which is a loop course, well within the new IAAF rules, could therefore become the inaugural world record under the new IAAF rulings.

"What's important to remember is that there have been recommendations before from the IAAF and that's what they have been, just recommendations," Max Coleby, the Great North Run course director, said."As it stands we don't fall within these rules, but nor does Boston and possibly the London Marathon. Perhaps the best way to get around point to point courses is to have a wind gauge. After all, they have one for 10-second races, why not one for an hour or so!"

The IAAF proposals also cover world records at 15km, 20km, 25km, 30km, marathon, 100km and road relay (with Ekiden-style stages of 5km, 10km, 5km, 10km, 5km, 7.195km). Distances such as 10km and 10 miles will not be recognised for record purposes because the road and cross-country committee did not want to detract from track racing or to introduce an imperial distance, run infrequently on the continent, so it was not even considered.

From 1992, the IAAF's series of events will have a half-marathon world championship and, following the success of the Ekiden relay exported from Japan to New York in recent years, a road relay world championship, for teams of six, running a total of 42.195km, the classic 26-mile 385 yards of the marathon.

Backley and Murray honoured

STEVE BACKLEY and Yvonne Murray have been voted British athletes of the year by the British Athletics Writers' Association.

Backley, who twice broke the javelin world record before taking the European title, and was beaten for only the second time all season, by training partner Mick Hill in his last competition of the summer at Sheffield 10 days ago, becomes the first man to retain the BAWA title since Ian Stewart won the vote in 1969 and 1970. John Regis was second in the poll, just ahead of Kriss Akabusi.

The vote for Murray, (pictured, right) winner of the European

3,000 metres, was unanimous, and she becomes the fifth woman to be nominated more than once, following Fatima Whitbread, Tessa Sanderson, Kathy Cook (nee Smallwood) and Lillian Board. Both Murray and Backley won the poll in 1989, also, and it is the first time that the award winners have both retained their titles. Backley was also junior athlete of 1988.

This year's junior athletes are Jason Livingston and Diane Smith, individual winners of silver and gold medals, respectively, at the World Junior Championships in Plovdiv last month. The prizewinners will be presented with their awards at the BAWA annual dinner in London on 17th November.

KRISS AKABUSI, featured on the cover of this issue, has won a Times/Minet supreme award worth £5,000 to help him train for the 1992 Olympics.

WING COMMANDER David Coward raised almost £6,000 for the Head and Neck Unit at the Royal Marsden Hospital as a result of his 3:14:00 run at the London Marathon this April. The money will be used to buy equipment used to check changes in vocal chords in an effort to stop throat cancer, which Coward has suffered from.

FROM PAUL HODGSON

QUOTE

"The man from Mongolia has promised Manchester his cross." **David Miller** in *The Times*, on the eve of the IOC decision on the venue for the 1996 Olympics.

"How long can we go round the world showing pictures of a cabbage patch and a sewerage field and expect to be awarded the Olympics?" **Manchester official** in Tokyo.

"It is a decision in favour of hard, uncontrolled commercialism" **Christos Kourtis**, a member of the Athens delegation, reacting angrily to the choice of Atlanta as hosts.

"It's a question of people's pride, of whether London still wants to occupy the place it has done all through history" **Alan Pascoe** supporting plans for a bid to host the 2000 Olympics in London.

"I believe widespread random testing is beginning to bite" **Frank Dick**, BAAB Director of Coaching, at the launch of the anti-drugs video "Stay Clean!"

UNQUOTE

26th Sept 90

4419 Thornbark Court
Hoffman Estates, Illinois 60195

January 19, 1991

Mr. Ray Vandersteen
Executive Director
Illinois TAC
111 West Butterfield Road
Elmhurst, Illinois 60126

Dear Ray,

What follows us a summary and analysis of course measurement and certification activity in the state of Illinois during 1990. In all, 66 courses were certified, the largest number in the three years I have served as certifier. Of the 66 courses, I issued the certificates for 65. Nebraska certifier Karl Ungurean measured and certified the other course. Karl id a resident of Davenport, Iowa and the course in question was a 5K in Moline. In addition, documentation for one other course was submitted but was returned to the measurer for more work and has not yet been resubmitted.

27 of the 66 courses were in the city of Chicago. Another 29 were located in various suburban communities. The remainder of the state accounted for the other 10. After Chicago, the next most prolific communities were Libertyville and DeKalb, each with four courses.

Thirty of the courses were at the 5K courses, confirming a trend toward shorter events. Fifteen of the courses were the still-popular 10K distance, and another five were either 5 miles or 8 kilometers. Three one-mile courses were certified in 1990, along with two marathons, half-marathons, and 15Ks. The other eight courses ranged from a 1000 meter calibration course to a 20K.

One interesting statistic is that at least 17 of the courses were replacement courses; that is courses remeasured for one reason or another. Another four courses were measured twice during the year. While not all of these were within the Chicago city limits, it appears that many were in response to what appears to be a reduced level of cooperation from municipal governments in the conduct of running events.

Ten different measurers were active in Illinois during 1990. Jim Knoedel was the most prolific measurer, with 21 courses submitted and approved. I measured 17 and Chuck Hinde 16. The only other individual to measure more than two courses was Rich Peterson, whose four submissions were also approved. I measured the year's first course on January 7 and it appears that Chuck Hinde measured the last on November 29.

There was also validation activity in Illinois during the year. I validated the Park Ridge Charity Classic 5K in early June and while the marks established in the event were accepted, my finding that the course was less than 2 meters short led to a clarification of RRTC procedures concerning revisions to courses based on validation results. Mike Wickiser validated the Highland Park Hospital 10K racewalk in early October and records established in the April event were accepted. The Park Forest Scenic 10 course, validated in 1989, was the site of additional records in 1990 and those were accepted based on the previous year's validation and the race director's and my affidavits that the course had not changed. Records are also pending from the 1990 Shamrock Shuffle but that course has not yet been validated.

The certification process received significant attention in late October when Francie Larrieu-Smith set what appeared to be a world road best for 5000 meters at the Rogaine 5K in Chicago. The record will most likely not be accepted due to the excessive separation between the start and finish points which resulted in the runners being significantly aided by a tailwind for the majority of the course. While TAC rule 185.5 had received previous attention because it makes the Boston Marathon course ineligible for world best performances, the Rogaine 5K marked the first time that a record performance could not be considered as a result of the rule. It served as a lesson to course measurers and race directors to consider drop and separation factors when planning future courses on which elite athletes might perform.

Illinois gained an IAAF- approved course measurer when I attended and completed an International Measurement Seminar in Columbus, Ohio in June. Illinois Runner published my article advocating course measurement and certification in its October issue. Chuck Hinde also gained RRTC attention with his innovative 500' cable designed to make calibration courses easier to set up. Chuck's method continues to receive study but initial RRTC reaction has been positive.

While hectic at times, 1990 was definitely successful, as the attached 1990 cousre list will attest. 1991 plans include continued advocacy of the certification process, hopefully with articles in publications with more general distribution. I look forward to working with you, your staff, and the Illinois measurers in 1991

Respectfully submitted,

Jay W. Wight
Regional Certifier
RRTC/TAC

cc: Wayne Nicoll

Take It— Then Ride It— Anywhere

AP Photo

DAVID G. MONTAGUE of the Montague Corp. of Cambridge, Mass., poses with a folded Montague BiFrame all-terrain bicycle developed by David's father, Harry Montague. The BiFrame is of a conventional adult size bicycle that folds down to a compact size of three feet by three feet by one foot. The bicycle sells for about $480 and is promoted as the take-anywhere, easy-to-store bike.

Pete -
I am going to look into this.
I like the mountain bike - it could be carried
by car to measurements (get a nice metal case for it)
and would fit better in our automobiles.

Wayne

'Styrocop' enforces foam ban

By William C. Crum
Associated Press

PORTLAND, Ore. — Like a patrolman on the beat, Lee Barrett strides into a Chinese restaurant, flashes his ID card and has a look around. "StyroCop" is on the trail of illicit carryout containers.

The city has received a complaint that the restaurant is putting its egg rolls and fried rice into boxes that violate Portland's year-old ban on polystyrene foam fast-food containers.

Barrett, 44, a longtime environmental activist, is the ban's enforcer. A local television reporter dubbed him StyroCop, and he has become something of a celebrity.

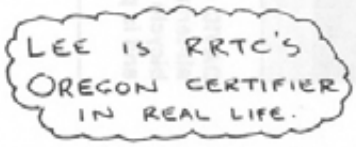
But while he is easily Portland's most visible environmentalist, Barrett is reluctant to take credit for leading the city into the "green decade."

"What I do is a fly speck as far as recycling is concerned," he said.

Barrett moved to Portland from New York in 1972, a year after the Oregon Legislature passed the nation's first "bottle bill," which imposes a 5-cent deposit on beverage

AP photo

Lee Barrett stands amid stacks of polystyrene foam cups.



Advocates pushing stricter recycling rules say the plastic is not biodegradable but simply breaks into small pieces. Some birds eat the pieces of plastic and die.

Businesses cited by Barrett face fines of $250 for a first offense and $500 for each subsequent offense.

"The bill was Barrett's first real exposure to recycling.

"Except for a dim, dim memory of saving tin cans during the Korean War, there was no recycling consciousness at all," he said.

"As a recycler, our creed has always been: 'Reduce, reuse, recycle.' Recycling is the last thing to do before you throw it away."

Lee Barrett
environmental officer

Within a few years, Barrett was on the board of Portland Recycling Team Inc., a can and bottle depot. By 1978, he was general manager. When Portland advertised for a contractor to enforce the plastic foam ban, he applied.

Barrett believes Americans must go beyond recycling by rejecting products that are overpackaged and becoming accustomed to using things again and again.

"As a recycler, our creed has always been: 'Reduce, reuse, recycle,'" he said. "Recycling is the last thing to do before you throw it away."

Opponents of the ban argue that environmentalists should work with the industry to make polystyrene recyclable. Otherwise, they say, restaurants will substitute paper, which will wind up in landfills.

The Portland law does not restrict containers made of paper or plastic not blown into foam. Those have been the alternatives used by fast-food restaurants, the only industry affected by the Portland law. Few have been willing to switch to glassware and dishes.

Neither a police officer nor a health inspector, Barrett only responds to complaints received by the city. He hasn't written many tickets, but he says the law is a start and that it has raised public awareness.

Back at the Chinese restaurant, Barrett spots a stack of carryout containers in the kitchen and holds one up.

"That's 100 percent polystyrene," he said. "Zero percent air." It's legal. Barrett asks to see a storeroom downstairs, where he finds more of the same.

He is satisfied but glad he pressed his inspection.

"I need a fair amount of evidence that they have complied," he said. "You can't believe everything that you see."

The Columbus Dispatch
Wednesday
JANUARY 2, 1991

67 Southwood Cres.,
London, Ontario,
N6J 1S8,
Feb. 1/91

Pete Riegel,
3354 Kirkham Rd.,
Columbus, Ohio,
43221

Dear Pete,

Measurement of courses is usually non-existant at this time of year in Ontario, Canada. However I was asked to measure what I consider to be a unique course. A friend of mine who is a good Master's runner is also a speed skater. He asked me to measure a speed skating oval which was laid out in a local ice-skating rink. The previous year they had set some records which had not been allowed because they had no proof the distance these people skated was accurate. "Would you measure the oval and check our accuracy" I was asked? I had never measured on an ice-skating rink and I don't believe many others have either.

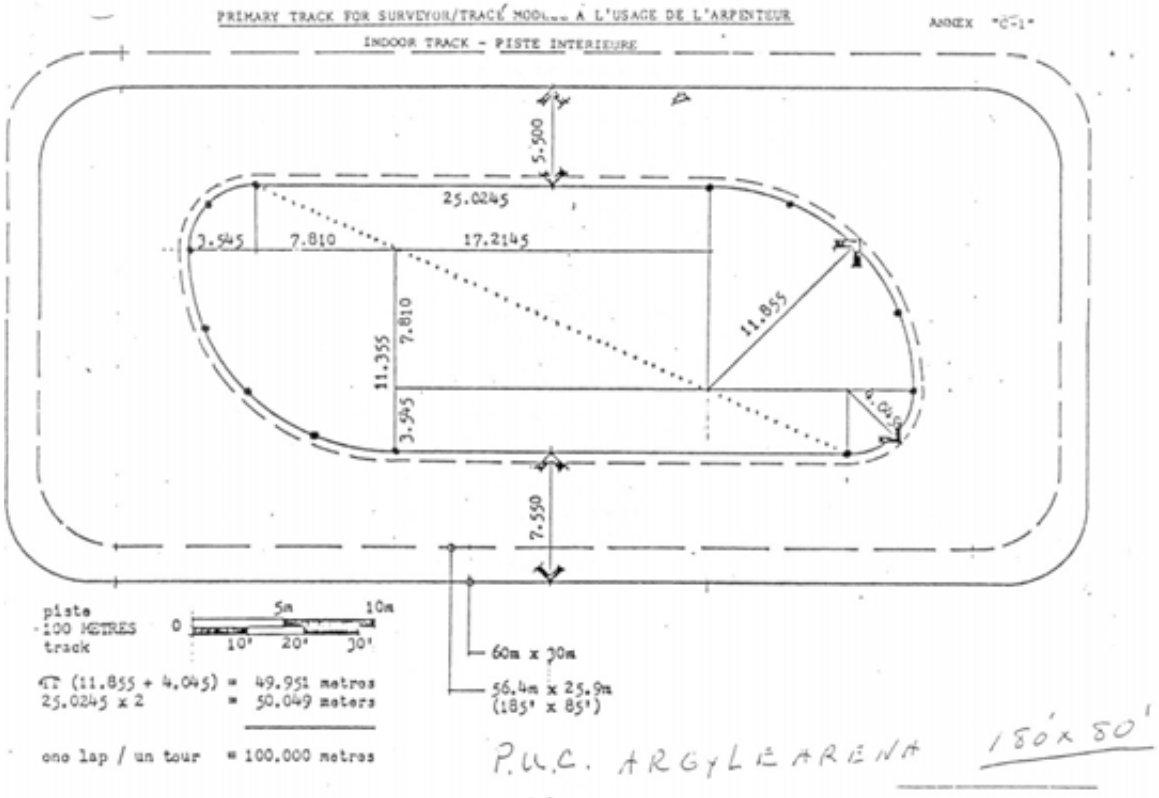
There was no data I could draw upon about the method for measuring a speed-skating oval so I followed the steps I would have done for a road race or measuring a running track (another experience I have been denied). When turning corners for a road race course I usually eyeball it and usually try to be less than 30 cm but a track or an oval is almost all turn. How to keep within or at the 30 cm? I turned to the key looser's friend, a coat hanger. How many times have you locked your keys in the car? I attached the one end of the wire to my bike's fork, made a right angled bend out 30 cm and then another right angle downwards to almost meet the ice. Eureka, I could now measure 30 cm from the edge of the marks embedded in the ice (see diagram). I did my precalibration and then measured the oval but found it to be short of the 100 m by 1.37 m. I suggested that they move the marks out at least another 20 to 25 cm to make up this distance.

The next week I was contacted by my friend, Bruce, and told that they had contacted the C.T.F.A. and found out that the distance to be measured was 50 cm from the inside of the oval. Probably because of the size of the blades used in skating. Those things are long. I remeasured the oval using my coat hanger rebent to 50 cm and found the course to be 10 cm short of the 100 m. This was equal to the 0.1% SPR I added on as I would hve used in a road race. There may not be an SPR in speed skating or when measuring a track but I believe there should be so I used it. If this were a validation the course would have passed since the SPR would not have been used and the distance would have been exactly 100.00 m. I suggested that when the race was held that the plungers that are placed on the ice be placed directly over the centre of the marks laid out rather than just behind the spots on the inside of the curve. This would add at least the extra 10 cm of distance to the oval. The plungers are more easily seen than the painted spots (on the floor below the ice) by the skater plus if he/she cuts inside the course the skater would move the plunger resulting in a disqualification.

I just read part of the January 1991 MN about walking the calibration course and the track. I wish I had read that before measuring the oval on the ice rink. Boy did I look weird trying to ride around on the ice. Actually I supported my weight on one pedal and lightly pushed my way around the ice with the other. I was concerned about slippage but my 3 rides one night were 924, 926, and 925 which were consistent enough that I don't think there was any slippage. Also if there was slippage the counts would be less and the distance measured would appear to be short so that a greater distance would have to be added and the course would end up longer, not shorter, than the 100 m. One thing I can say about measuring is that I don't believe it will ever get boring.

yours truly,

Bernie Conway



THE ATHLETICS CONGRESS
OF THE USA

3354 Kirkham Road
Columbus, OH 43221

Road Running Technical Committee
Peter S. Riegel, Chairman

614-451-5617 (home)
614-424-4009 (office)
FAX 614-424-5263

February 12, 1991

Bernard Conway - 67 Southwood Cres - London, ONT CANADA N6J 1S8

Dear Bernie,

I much enjoyed your account of measuring the speed-skating oval. Here are some comments and observations:

1) If it isn't a road course, it's best to measure using average constant without any 1.001 SCPF. In other words, if you are asked to check a length, just try to find out the actual length, and not worry about what it ought to be. If there is a difference, you and the organizers can decide for yourselves whether it's close enough to be OK.

2) You didn't need your bent wire. All you have to do is measure right on the inner line, and find its length. Then add a factor for the offset, and you have the length of the path. The offset has the effect of adding the circumference of a circle with a radius equal to the offset. In other words, for a 50 cm offset, you'd add (0.50x2)x3.1416 to the length of the inner line. If you'd done this you could have saved yourself the second ride and a day of your time.

3) Your two measurements agreed fantastically. Allowing for another 20 cm of offset on your first measurement, I get 99.88 metres for the length based on your first measurement. Your second measurement was 99.89. In my calculations, using your data, I used the shortest ride you got on each circuit of the oval. I'd be inclined to say that the oval was measured with reasonable accuracy. Whoever laid it out did a good job. And the placement of the plungers as you suggested would easily add the desired 10 cm.

4) Another way to check it, even more accurate, would be to steel-tape the layout distances used, but probably the reference points they used were no longer in existence.

5) Since you calibrated on 898.72 m, I guess you did not do it on the ice itself. Also, your riding posture during calibration was different from that when you measured, thus loading the wheel differently. It would be better if you had calibrated on the longest straightaway you could find on the ice, since ice is different from pavement. As you mentioned, walking the bike certainly would have been less chancy than trying to ride it on such a tight and slippery surface.

I'll put your letter in MN. You certainly broke some new ground in course measurement!

Best regards,

Pete

Dear Pete,

Thank you very much for your letter of Dec 12 and the copy of "MNews" issue 45.

Good news that a Capair solid tires are now available. I'm very interested in. I will introduce this problem on the nearest assembly of Polish Cross-Country and Road Races Commission. I intend at last to pay all expenses - a big for my pocket - because those tires are very useful as you told. I think PZLA/ Polish Athletic Federation should pay for a Capair solid tire, of course if you can realize our order. I will inform you about it before Feb 22 I hope.

As for the Boston Marathon course:

1. I have no doubt that the Boston course should not be considered as a course "for records" - due to the criteria of 1 m/km of drop and 30 % of separation.
2. Why the organizer is not going to change the course ? Only tradition ?
3. The IAAF draft rules/"MNews" issue 44 page 5/ are the same as USA - 1 m/km of drop and 30 % of separation. The AIMS criteria/AIMS Yearbook 1991/1/page 11/ on the other hand are only general: the course must not be less than the distance stipulated and must have been measured by an AIMS/IAAF approved measurer. It is not logical for me.
4. The criteria should not be changed due to probably 5 % of total courses' number which not correspond to above rules.
5. The Boston course is heavy to run, because after 25th km there is a big hill. As all know, marathon practical begins since 30th or 35th km.
6. I propose a complementary critera concerning to 1 m/km of drop and 30 % of separation, although only around 5 % of courses' number are not considered as a courses "for records".

Those complementary criteria are:

a/ The total net drop on the whole distance may be more than 1 m/km, if the net climb existed on the last 30 % of the distance is more than 50 % of the total net drop.

b/ The separation may be more than 30 %, if the run's direction against wind occurs minimum on 30 % of the distance but on the second part of the course.

The first point is simply but second not. Those complementary criteria are not useful for the current Boston course.

All enumerations I put on the enclosure.

During my experience in racing I have found out that hills and headwind on the second part of the distance are very heavy to fighting. Examples:

I ran Brno/Tch marathon/0 drop and separation/ - with a big hill on each 5 km loop - in a time of only 3:15 !

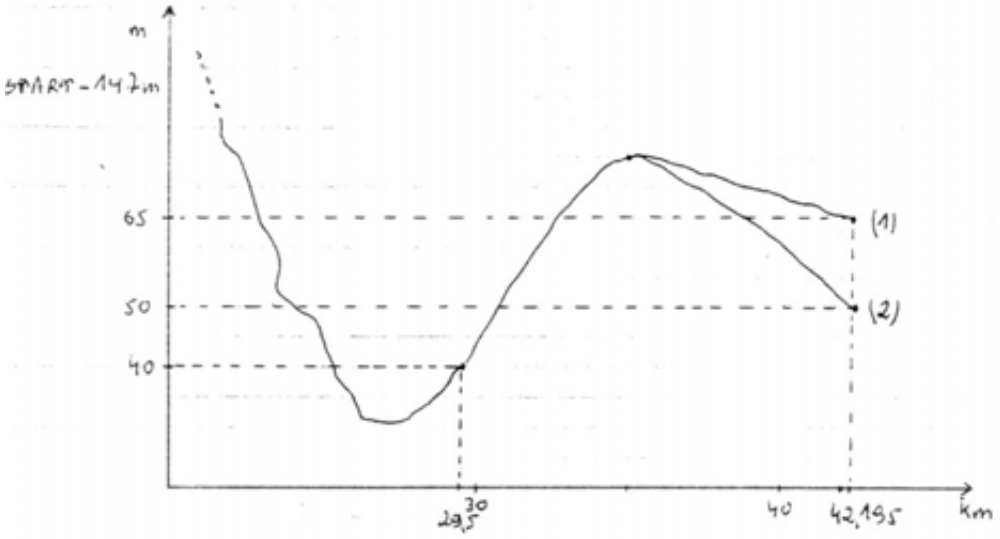
Last year I ran Martin/Tch and Brest/URS marathons /drop and separation around 0/ - where was a tail wind between the start and 27th km and a head wind after a 27th km - with only 2:58 and 2:57 too

Best wishes

Białystok/Poland,Jan 17,1991

TADEUSZ DZIEKOŃSKI
ul. Chrobrego 4 m. 8
(skrytka pocztowa 14)
15-057 Białystok
POLAND

COURSE PROFILE (A PART)



1ST COURSE

TOTAL NET DROP: 147 - 65 = 82 : 42,2 = 1,94 m/km

29,5 - 42,2 NET CLIMB: 40 - 65 = 25 : 12,7 = 1,97 m/km Q

MORE THAN 0,97 (1,94 : 2)

2ND COURSE

TOTAL NET DROP: 147 - 50 = 97 : 42,2 = 2,30 m/km

29,5 - 42,2 NET CLIMB: 40 - 50 = 10 : 12,7 = 0,78 m/km NQ

LESS THAN 1,15 (2,30 : 2)

Q - QUALIFY
NQ - NOT QUALIFY

THE ATHLETICS CONGRESS
OF THE USA

3354 Kirkham Road
Columbus, OH 43221

Road Running Technical Committee
Peter S. Riegel, Chairman

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FAX 614-424-5263

February 5, 1991

Tadeusz Dziekonski - ul. Chrobrego 4 m. 8 - 15-057 Bialystok - POLAND

Dear Tadeusz,

I hope that I will hear from you by February 22 about the Capair tire. I especially need to know the size of the rim. You will probably have to buy a rim for each tire. They do not fit all rims. You may order a 26 inch or a 27 inch tire. I suspect you have a small wheel, judging from the value of your calibration constant. In your last letter you reported a constant of about 10170, which is an effective circumference of 1.97 m. This corresponds to an effective diameter of 24.6 inches. Capair makes tires only for 26 and 27 inch rims. You must decide what size rim and tire can fit within the fork of your bicycle, and let me know what you want.

Do not expect miracles from these tires. They do have calibration changes. The big advantage is that they do not go flat. That is why I like mine so much. I hate to worry about a flat tire while I am riding at km 38 on a marathon measurement.

As for your discussion of the Boston course:

1) There are people in the US who think with their hearts instead of their heads, and they are fighting to have the "Boston rule" overturned. I do not think they will succeed. The new IAAF rule will be the same as ours (1 m/km, 30 percent), so Boston will never be the site of a world record.

2) The organizer does not wish to change the course because it has been a traditional route for almost 100 years. I would not wish them to change it either. I believe there is still great distinction in winning Boston, and records are of less importance there.

3) Since AIMS is governed by itself, I think they are perfectly proper to make their own rules. I would like it better if they adopted the new standard, but I would not force them to do it. Time will cause the change. All this is new, and it takes time to make progress. Note that AIMS is not a governing body of any country, so their records carry no official weight.

4) Boston may be hard to run, but it is not the course that makes it hard. It is runners' poor pace judgment. If the runners will slow down on the uphill, they will not be tired at the top. Then they can run fast on the last 10 km, which is all downhill. If the runner is in a pack, he may not wish to slow down, since the others will get ahead of him. But this is his choice, and the course does not force the runner to run it unwisely. Hills do not hurt a runner if he runs them with his head as well as his feet.

5) Your complimentary criteria is interesting, but it makes a complicated rule from a simple one. I think our rule will survive, without the need for added criteria. It will only confuse people if we make things more complicated.

My personal bests in the marathon are a pair of 2:59's. I ran them on the course at Athens, Ohio, in 1977 and 1981. That course is out-back, with two giant hills (each run twice) from 20 to 30 km - about 240 metres of climbing. It took me 5 years to learn how to run the course. I have run Athens 11 times now, as well as 25 other marathon courses. My best on a flat course is 3:04. By slowing on the uphills I did not burn myself out, and was able to speed up on the downhills.

A windy day will always slow you down. There is nothing one can do about wind, except to be cheerful in the knowledge that it is blowing on everybody. I remember one year at Athens where I was running with a friend, and I wanted to beat him. At Athens it is usual to have a tailwind for the first half, then a headwind on the way back. At 22 km the headwind came, very strong. I was glad, because I am not large, but he is over 2 metres tall. I knew the wind was hurting him more than me, and I did manage to beat him, thanks to the wind. But my time was slow.

I am doing a personal experiment. I run 8 miles each day at noon, on an out-back course. It is uphill going out, downhill coming back. The middle two miles are flat. I use those miles for "calibration." I have measured the mile points, and I know their elevations. I have been recording my splits at each mile for a month now.

I find that I gain an advantage of 0.27 percent in speed for each 1 m/km of downhill, and lose about the same on uphills. In other words, each metre of drop has the effect of apparently shortening the course by 2.7 metres. Overall, the hills seem to have a small effect, but not much. You will read about it in next Measurement News.

If I consider myself a 3:30 flat-course marathoner, I could run Boston in 3:28 if I ran it wisely, and could obtain the running room needed to take advantage of the early downhills. Since most middle-of-the-pack people do not have this opportunity, few will set personal bests at Boston. Only the elite have the opportunity to take advantage of what the course offers. The rest are stuck in the big pack of runners.

I believe people find Boston hard because they are unwilling to slow down and let the others go ahead. They are afraid they will lose. So they keep pushing, and when they "hit the wall" they blame the course, when they should blame themselves. Any runner who hits the wall has run unwisely. Anyone who blames the course does not accept responsibility for his actions.

Best regards,

Pete

VALIDATION REPORT

HAVANA MARATHON AND HALF MARATHON

17 NOVEMBER 1990

I traveled to Havana,Cuba on 17 November 1990. I met with Mr. Miguel Calleiro, Mr. Alberto Juantorena, Mr. Pila Hernandez and other members of the Marathon Committee.

I examined the recorded data for the race course and calibration course. The calibration course was 1000 meters in length and was laid out with a steel tape. The course was located on a main road in front of the Federation Sports Complex and was on the marathon course. The endpoints were marked with nails and paint. I performed a check measurement by laying out a 100 meter segment with a steel tape starting at one endpoint. I then obtained a count for this 100 meter segment and for the 1000 meter total course and compared the two. I found substantial agreement.

I then proceeded with my calibration and validation measurement. The course consists of a single loop which is run once for the half marathon and twice for the marathon. It is 100% on asphalt city streets. An alternate route had been laid out for the segment from KM7 through KM16. The primary route was along a seawall which, under certain conditions, was inundated by ocean waves creating a hazardous situation. The alternative route allowed the race to proceed away from the ocean if such conditions were present on race-day. The entire route was available to runners except for the primary portion of KM7-16. Here, it was explained to me, the runners were to use the outside lane (nearest to the ocean) in the direction of automobile traffic. When I asked about this I was told that the runners would be instructed, the lane would be coned and monitors would be present to police the situation. On the basis of the foregoing information I proceeded to measure the course.

I found that the primary course and the course using the alternative segment were at least the stated distance. The loop was not however the required distance when the short course prevention factor was included. I requested Mr. Hernandez to add distance to the course prior to the next event to bring the actual length to 21118.59 meters.

During the event on the morning of 18 November I rode in the lead vehicle. The race was conducted on the course as validated and it used the primary section between KM7 and 16. The cones to restrict the runners to the outside lane in the section along the ocean were not in place. Ocean water was present on the street in a few areas along this section which apparently creasted a slippery condition. The lead runner (who was ultimately the winner of the half marathon) was observed running tangents using the entire width of the street. As a result he ran this section much shorter than it was measured. I pointed this out to Mr. Calleiro and advised him that restricting the course in this area was an absolute necessity.

Please forward certificate and copies of validation report directly to Mr. Calleiro with copy to me.

Douglas L. Loeffler
November 27, 1990

Validation Measurement using the Calibrated Bicycle Method (Jones Counter)

Race: HAVANA MARATHON & HALF MARATHON ; HAVANA, CUBA

Start: AV. PRIMELLES ; HAVANA, CUBA

Finish: AV. PRIMELLES ; HAVANA, CUBA

Local Measurer: ING JOSE R. LOPEZ ; DR. H. PILA HERNÁNDEZ

Calibration Course: SANTA CATALINA ; HAVANA, CUBA Length(m): 1000

Ride	Pre-Cal.: 1st Count	17 Nov 2:47p 2nd Count	26°C Digits	Post-Cal.: 1st Count	17 Nov 5:40p 2nd Count	24.5°C Digits
1	00000	09402	9402	65000	74402	9402
2	19100	28499	9399	84000	93402	9402
3	38100	47502	9402	03000	12401	9401
4	57200	66602	9402	22000	31402	9402

Average: 9401.5

Counts/km: 9401.5

Constant for the Day: 9401.5

Split Point	Recorded Digits	Elapsed Digits	Increment Distance	Cumulative Distance	Comments
Start	73200	–	–	–	
5K	20234	47034	5.002818	5.002818	
10K	67252	47018	5.001116	10.00393	
15K	14259	47007	4.999946	15.00387	
Finish	71605	57346	6.099664	21.103534	ROUNDING ERROR
Total	198405	198405	21.103547	21.103547	

Comments:

1. ALL CALIBRATION RIDES IN SAME DIRECTION DUE TO HEAVY TRAFFIC
2. RESULT OF VALIDATION MEASUREMENT EXCEEDS MIN. LENGTH BY 6.047 M.
3. VALIDATED LENGTH IS SHORT OF LAYOUT LENGTH BY 15.0505 M.
4. VALIDATION MEASUREMENT OF ALTERNATIVE ROUTE BETWEEN 7KM and 16KM :

7K	80000	–	–	–
10K	08264	28264	3.006328	3.006328
16K	64847	56583	6.018507	9.024836
TOTAL	84847	84847	9.024836	9.024836

The attached course maps and descriptions are part of this certification.

Signed: _____ Date: 28 Nov 1990

RECORRIDO DEL MARATON DE LA HABANA

LEYENDA

- ARRANCADA Y META MARATON Y MEDIA MARATON
- ARRANCADA C. POPULAR 5 KM.
- RUTA 21 Y 42 Km.
- .... RUTA 5 Km.
- (X) SEÑALIZACION KM.

NOTA: A los corredores de la carrera que en MALECON, CALLE 23 y AVE. 26 se mantengan por la extrema derecha, que no cruzar. En ello puede implicar la descalificación en la carrera.

ROUGH TRANSLATION:
RIGHT-SIDE-ONLY ON MALECON, 23rd ST, AV. 26.
Pete