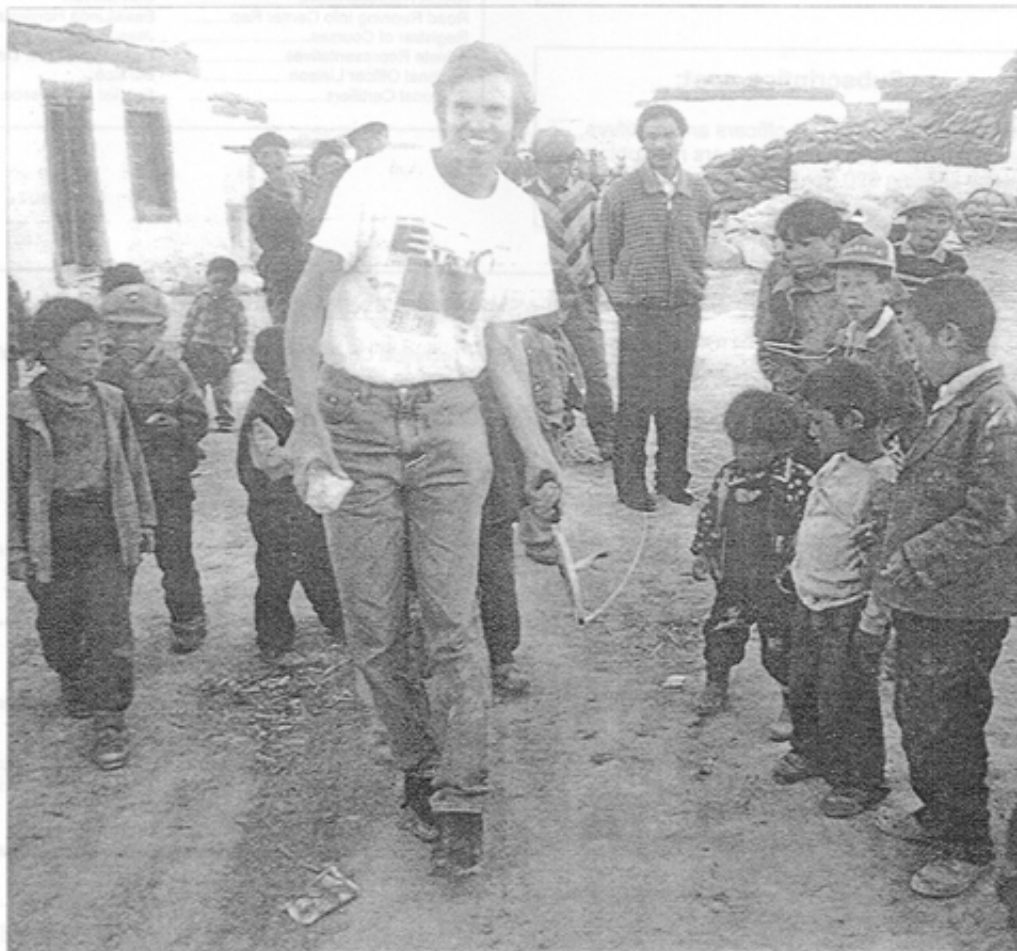


Measurement News



January 1999 Issue #93



Hugh Jones measuring the Tibet Skymarathon. He writes "I enclose a slide of me taping the final 122.6 m between the prayer wheels and the finish line. The bloke in the blue top, standing on the tape, was my official assistance but - as evidenced by the slide - there were many eager village children ready to hand. These kids could be very helpful, as they were in doing the cal course." See article within.

MEASUREMENT NEWS

#93 - January 1999

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WOMEN AND WOMEN-ONLY

Last year was a fast one for the women. Two noteworthy (and controversial!) runs were by Tegla Loroupe. Her Rotterdam Marathon (2:20:47), in which she was reportedly paced and fed by men, and given verbal assistance by the race director from the lead vehicle. She also ran 20 km on the track, in which she was accompanied by a pacesetter unable to keep her pace, and who jogged each few laps, resuming the pacemaking when Tegla once again caught her. Amazingly, this latter run was recognized by IAAF as a valid world record. And the Rotterdam run is generally recognized by the media as the new "world record."

At the recent Asian Games Naoko Takahashi ran an amazing marathon (2:21:47) in tropic heat, achieving a new world best for a women-only race, and winning by 13 minutes! This undeniably fine run has also been seized as the new "world record" for women-only races - this in spite of the fact that the course is point-to-point with a reported strong tailwind for the last 30 km. Also, the elevation drop of the course is presently unknown.

Recognition of efforts like these as "records" does a disservice to the sport, as it raises the bar too high. Only about 10 percent of the world's marathon courses are aided by drop or separation, and few races permit blatant assistance. Are future record-seekers now required to recruit pacemakers and seek out venues that are aided? This reduces the number of available venues, and will ultimately reduce the frequency with which new records can be set.

Is there a solution?

RRTC COURSE MEASUREMENT BOOK TO GO ONLINE

As decided at the RRTC meetings during the 1998 USATF Annual Convention in Orlando FL, RRTC's Road Race Course Measurement Procedures manual will soon go on the Internet. This idea was suggested by Wisconsin certifier Bill Grass in order to counteract the dwindling supply of hard-copy manuals available at the national office. Bob Baumel will head the project of converting our book to web format, with help from Jim Gerweck, Bill Grass, and Bob Langenbach. If all goes well, the online version will be available early in 1999. Look for it to appear on this website! (from "Late Breaking News" on RRTC website: <http://www.hit.net/~bobbau/rrtc/>)

REGIONAL CERTIFICATION MAPS POSTED ON WEB

In at least one region of the United States, a systematic effort is being made to post certification maps on the Internet, according to Lance Phegley, Editor of Runner Triathlete News, a regional running publication that serves Texas, Louisiana, Arkansas, New Mexico, and Oklahoma. Phegley appeared at the RRTC meeting during the USATF Convention in Orlando and explained that he and RRTC Vice-Chairman West Tom McBrayer are trying to post all of the maps for this five-state region. Phegley said he is doing this to provide information to runners, especially for races that don't have their own websites, and also to promote RRTC course certification. Phegley also said he is not a computer guru, implying that other people can easily do the same thing for other regions. Phegley's and McBrayer's current online map collection can be viewed at the Runner Triathlete News website. (from "Late Breaking News" on RRTC website: <http://www.hit.net/~bobbau/rrtc/>)

RRTC FINISH LINE CHAIRMAN RESIGNS

Ryan Lamma has resigned from the post of RRTC Finish Line Chair, stating that he didn't wish to hold an office in which he wasn't doing anything. RRTC Chairman Pete Riegel notes that everybody who has held the Finish Line position has found it difficult to figure out what they were supposed to do. Nevertheless, participants at the RRTC

meetings during the USATF Convention in Orlando pointed out that accurate finish line timing, along with accurate course measurement, are the primary technical requirements for a good race and that an active Finish Line Chair could provide many valuable services including: updating our existing Road Race and Finish Line Management book, furnishing guidelines for choosing timing companies as well as information for small races that can't afford to hire a timing company. We are currently seeking a suitable replacement for Lamppa. (from "Late Breaking News" on RRTC website: <http://www.hit.net/~bobbau/rrtc/>)

"RUNNING SHORTS WITH SCOTT HUBBARD"

THUNK. Two days later I saw it when I took a closer look at my helmet, A 7" jagged diagonal crack ran from mid-way along the left side, back and down toward a large split in the foam along the helmet bottom. Boy, I don't remember hitting my head that hard, I thought, but obviously I'd whacked the ground in a big way. The helmet had done its job, one, I'd hoped it'd never have to perform, really well. My 'brain bucket' might still be intact if a dog hadn't crossed my path.

After running 2 weeks on a tight hamstring that wasn't improving, I'd gone back to my bike for exercise. Figured I'd ride 5-7 days, then give my hamstring another try. On my third ride, Aug. 28, I was rolling along with the wind at my back, going 20 m.p.h. down a concrete road, 1.5 miles from home. In about 3 seconds my world of solitude got turned upside down. I heard a yell from the left and saw a dog in my peripheral vision at the same time. I had about one second to size up the speeding, decent sized dog before we collided. The next second is a blur as I flipped over the handlebars and landed on my back. OUCH!

I was lucky, very lucky that all I had was, some "soft tissue hematoma" and a cracked rib. The closer review of my helmet condition made me appreciate all the more how fortunate I am to be writing this 4 days later. With my long history of athletic related injuries (I'll spare you the list) I feel like the guy who's the brunt of all the accidents that you don't think will happen to you.

This cycling incident is the most serious athletic injury to hospitalize me. While laying on the ground I was focused on the potential damage and was relieved to at least be able to move my legs, arms and neck. When thoughts turn to the consequences I would've suffered if I'd been helmetless, I feel small. Thinking the unthinkable is overwhelming, centering and sobering. If you think I'm going to urge you to wear a helmet if you don't currently, you're undeniably right. If you're not going to do it for yourself, do it for others that care about you. *From Michigan Runner, Winter 1998.*
Sent in by Tom McBrayer

MEASURING IN DUBAI

A brief communication to let you know that I had one of my more memorable course measurement assignments this week namely in Dubai, United Arab Emirates. The race which is the first marathon to be held in the Emirates is next Friday 27th November and they left it late to seek certification, but I managed to lay out an acceptable course during my four day stay in the Gulf.

My year of work experience in Egypt helped me enormously, Arab culture and protocol must be seen to rule the day, and many times I had to take a step back and count my blessings as they deliberated over trivial matters. A few words of Arabic during the procedures won me many friends, I was able to interact with them as they eagerly sought to glean knowledge from my previous experiences.

In an effort to seek maximum publicity for the event my visit was the centre of much media attention, and every newspaper contained coverage of the measurement procedure. I even had to hand over the Certificate of Accuracy to the Chairman of the Race Committee under the glare of TV cameras - quite an experience.

Kindest Regards - Ma assalaema - Paul Hodgson

I was driven round the course by race director Marino in the morning (while the temperature was rising). I would use a mountain-bike to cope with the roughness of the tracks (and the low gearing useful for saving my exertions at 4,300m of altitude). I considered that temperature variation was best kept to a minimum in view of the thick, knobbly tyres. My pre-and post-measurement calibrations, 3 hours apart, were only 1C different.

I had previously selected a 400m stretch of the broad, ill-defined track southward from Tingri village as a suitable location for the calibration course as it was roughly representative of most of the race surface. It was impossible to find a course which included all the variable surfaces (sand, grass, stones of various grades, etc) encountered throughout the race route. I tape-measured between two permanent end points - a prominent stone which became a marker for the race route and from which I started the sequential measurement, and the TS side of a metal bridge across a drainage channel. With Marino's help (and that of many eager local children) I measured this distance twice and found only 20mm of difference between measurements.

Before calibrating on this course I took readings on a nearby asphalt road between chalk markings I made which corresponded to re-locatable points. I hoped to tape this distance later to compare road and off-road calibrations. I did this after the race with the help of Martin Rodriguez (MEX) during the last bit of daylight before our departure early the next morning.

I started measuring from point A, near the usual startline and designated as one end of my calibration course. I measured sequentially without problems except for the boneshaking riding (exacerbated by the need not to alter weight disposition by standing out of the saddle and relieving the bum-jarring I got). There were very short sections where I had to 'scooter' the bike (large stones) or get off and push (sandy surfaces), but these totalled very little of the overall distance. The tracks themselves were better defined than I had feared they might be. I could easily follow even the faint track to the west side of the main hill and managed to switch sides of it according to the SPR. On the well-defined track to the East of the hill I also did this although crossing between the tyre tracks was difficult. When I ran the race (first lap only) next day I cut across from one side to the other much more frequently in an attempt to find the better running surface, and this added to the distance actually run.

As I completed the large lap to point A (to be run twice) I recorded a reading for the calibration course as a check. I then continued on the small lap around the hill around which the village of Tingri is built. This was much easier riding and very simple to follow, including a 260m stretch of sealed surface on the "main" Kathmandu-Lhasa road. I continued to take intermediate readings arbitrarily (in the absence of a clear idea of how the course would measure up) in the hope that I would

be able to locate split marks from them. I finished the measurement on return to point A. By doubling up the measurement for the large lap and adding the small lap I found the distance accumulated was 41,449.m (using average constant).

I returned to seek advice on how Marino wanted to handle the amended start and finish. I suggested either having a common start and finish line somewhere in the village, or starting to the west of the village and finishing in the usual place, a large flagpole in the middle of the village. For the sake of finish photographs, this second option seemed most appropriate.

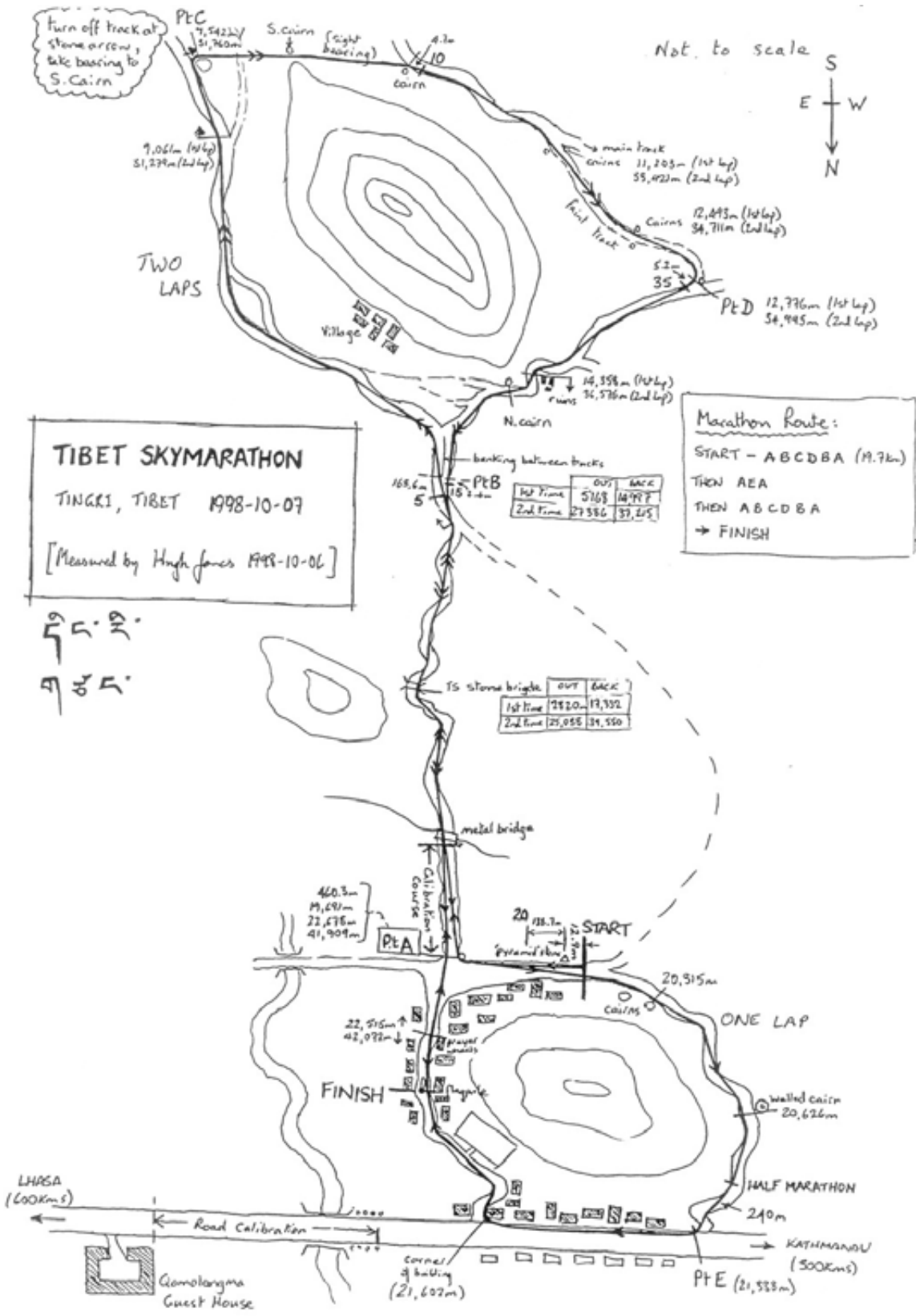
To do this I added in the measurement from Point A to the prayer wheels in the village (which I had mistakenly thought was the normal finish line) and the taped distance from them to the finish line (flagpole). These figures were: 163.1m + 122.6m = 285.7m. This left 460.3m to be found west of the start (before Point A is passed). My reading for the second cairn west of the village gave me 623.9m extra, so I taped 163.6m back from this cairn. This fixes the start 12.9m west of a distinctive pyramidal stone which stands on the south side of the track.

MEASUREMENT OF TIBET SKYMARATHON - BY HUGH JONES - This article appeared in AIMS Newsletter - October 1988:

At Lauri's (Lauri Van Houten of the Tibet Skymarathon) invitation I went to Tibet to measure the Skymarathon earlier this month. It is held only every two years. The course is two large laps and a small one, nearly all on defined but rough-surface tracks within (impressive) sight of Everest (or Chomolangma, according to the local name). Measurement is not a particular difficulty, as the uncertain margin of error involved in such variable and rough-surface measurement is counterbalanced by the practicalities of navigation faced by runners. It is completely impractical for them to follow the shortest possible route in such terrain. The "least difficult route" is that which, de facto, has to be selected by runners (myself included, though I retired at 20km). This involves for example, repeated switching between the tyre tracks of the dirt/stone/sand roads to find the better surface. When I measured the course (the day before, which helps explain my premature retirement from the race) I stuck to the shortest possible route far more assiduously, even though the sand sections meant I had to occasionally get off the bike to push, and on the stoney sections I had to 'scooter' it carefully through - not least to avoid being thrown off.

Runners also find it hard to threaten the World's Fastest Time - or any personal bests - because of the thin air at 4,300m altitude (14,000'). Matt Carpenter (USA) did exceptionally well to record 2:53. His best low-level time, dating from seven years ago (those intervening years not spent in Tibet) is 2:19.

Measurement and narrative by Hugh Jones



FROM
BILL GRAFS

Calibration Course Layout 5 Nail Solo Method

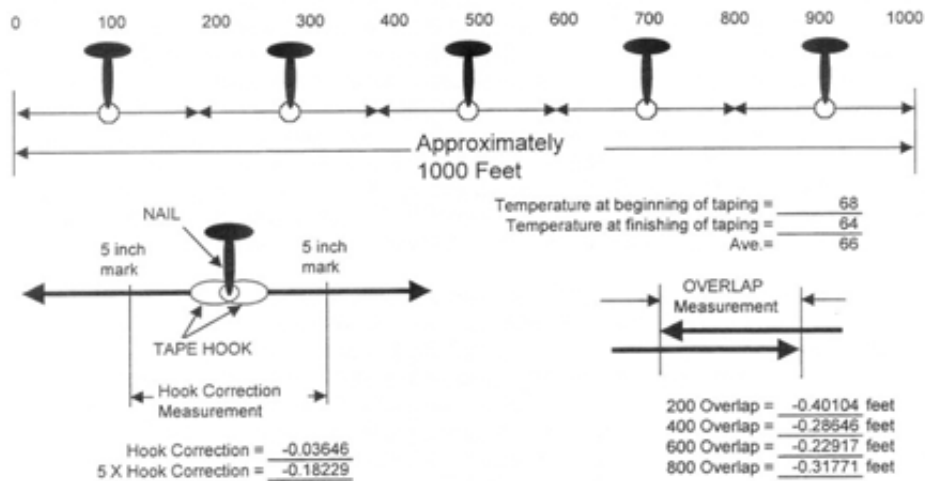
To use this method on course layout you will need a 100 foot tape, masking tape, a heavy hammer, five concrete nail and two P-K nail. Beginning at the desired starting point of the course, drive a concrete nail approximately 100 feet up the course (with-in a few inches) exposing only the last 1/4 inch. This will be repeated at approximately 300, 500, 700 and 900 feet as you progress with the measurement. Record the temperature and the beginning and finishing of the taping.

Place the hook over the "100" nail and after applying an estimated 10 pounds of tension, mark the **start** of the course on a piece of masking tape at the tape's 100 foot mark. Swing the tape around and mark, on masking tape appropriately positioned, the 200 foot location as determined by the tape.

Drive the "300" nail slightly less than 100 feet up the course from the 200 foot location. Place the hook over the "300" nail and mark the tape's 100 foot position on the masking tape located at 200 feet. There will be two marks on the masking tape, one from the "100" nail and one from the "300" nail. By placing the 300 nail slightly less than 100 feet up the course, you will generate an overlap. To reduce confusion, it is a good idea to **always** have an overlap. This overlap will later be subtracted from the overall course length. For convenience, the overlap should only be a few inches. Indicate with an arrow where the measurement was made from so that it will verify an overlap and not a gap. Swing the tape around and mark, on masking tape appropriately positioned, the 400 foot location as determined by the tape. This process is repeated until you complete the calibration course intended length. Record each of the four overlap dimensions at 200, 400, 600, and 800 locations.

Determine the "Hook Correction" by placing a 6 inch piece of masking tape one each side of one of the nails. Place the ring over the nail and mark the 5 inch location on each of the pieces of tape. Measure the distance between the two marks. This distance will be less than 10 inches depending on the true hook location and the size of the nail. The "Hook Correction" is equal to the direct measurement minus 10 inches. You can expect this number to be negative and less than 1/2 inch. Once all the tape marking is completed, drive all the nails flush with the pavement surface.

Three steps remain. 1st, calculate the measured distance from the start to the finish. This distance is equal to the ten 100 foot lengths of tape (1000 feet) minus five "Hook Correction" minus the four overlaps (if any of the overlaps are actually gaps, they should be added rather than subtracted). 2nd, use the temperature correction formula to find the amount to add or subtract to the course. 3rd, re-adjust the course length to an even 1000 feet to simplify future use of the course.



The taped distance is equal to 1000 - 5 x "Hook Correction" - 200 overlap - 400 overlap - 600 overlap - 800 overlap

10 X 100 foot tape lengths = 1000 feet
5 X Hook Correction = $\underline{-0.18229}$ feet
200 Overlap = $\underline{-0.40104}$ feet
400 Overlap = $\underline{-0.28646}$ feet
600 Overlap = $\underline{-0.22917}$ feet
800 Overlap = $\underline{-0.31771}$ feet
Taped Distance = 998.5833 feet
1.41667

Temperature Correction
= $1.000000 + (.00000645 \times (\text{Temp } (66 - 68)^2))$
0.999987

Temperature Corrected Taped Distance in ft. **998.5704516**
Course was NOT adjusted to an even 1000 feet

**Minutes — Road Running Technical Council
USATF 1998 National Convention — Orlando, FL**

1st Meeting — Wednesday, December 2, 1998

Attending: Bob Baumel, Dan Brannen, Jim Gerweck, Basil Honikman, Bill Kehoe, Jim Knoedel, Bob Langenbach, AC Linnerud, Leonard Luchner, Mary Anne McBrayer, Tom McBrayer, Al Morris, Joan Riegel, Pete Riegel

The meeting was called to order by Chairman Pete Riegel at 17:45. All present introduced themselves. The following reports were given by officers present at this meeting:

Officers' Reports

Vice Chairman West, Tom McBrayer: Tom reported that certification activity in the West has continued at its previous brisk pace. Tom is also involved in a new project—putting certification maps on the Web. This is being done by **Lance Phegley** who publishes *Runner Triathlete News*, a regional publication that serves Texas, Louisiana, Arkansas, New Mexico, and Oklahoma. We were told that Lance would be present to give a presentation at our Friday meeting; therefore, discussion of this topic was deferred to that meeting.

MNForum Moderator, Jim Gerweck: MNForum is our Measurement News Email Forum, which Jim has operated since June 1997. This email list picked up 20 subscribers during the past year and now has about 75 subscribers. The list is an extension of *Measurement News* which provides more immediate feedback and includes many worthwhile exchanges. Most posted messages are about course measurement, although some also address race performance issues. Activity of the list varies—sometimes more than one broadcast in a day, sometimes nothing for a week or more. [Note: This is a moderated list in which people send messages to Jim; then he broadcasts collections of messages to all subscribers. Information on joining can be found on our RRTC website.] Jim plans to follow up on a suggestion from last year's meeting to create an online archive of MNForum messages, which will be organized by subject matter. Jim remarked that when he attended the Expo at the New York City Marathon recently, he was thrilled to meet **Ted Corbitt**, the father of course certification, and also UK measurer **Hugh Jones**.

Course Registrar, Joan Riegel: RRTC has certified 1048 courses so far in 1998; currently, Joan and Pete have 17 514 paper certificates in their files. One problem has been the proliferation of races with **very long names** such as the "1998 ABC Foods/National Realtors Association Boilerhouse Marathon" which are way too long to fit in the computerized course list (limited to 30 characters for the course name). Certifiers are urged to follow some naming discipline when writing the course name on the certificate. Please include the key destination in the name. Be aware that if the name is longer than 30 characters, Joan and Pete will truncate it as they see fit on the computerized list. Putting a year at the beginning of a name is also problematic, as it plays havoc with sorting of course names; if the year must be included, don't put it at the beginning.

Webmaster, Bob Baumel: The RRTC website changed its address (URL) in Feb 1998 because Bob had to switch to a different Internet provider. Our site is now at

<http://www.hit.net/~bobbau/rrtc/>

We've acquired a link from the front page of the USATF national site (<http://www.usatf.org/>), in addition to previous links from RRIC site (<http://www.usaldr.org/>); thus, we are more accessible now than we were a year ago. Our website includes information on course certification, the

current list of RRTC Certifiers, and access to the computerized course list in several forms: you can download the full list as a tab-delimited ASCII file (most compact format), or go to Pete's file area to download it in Lotus 1-2-3 or Excel format, or you can use the certified course Search Engine maintained by Basil Honikman at the RRIC site. Pete's file area also includes a small file containing updates since the last bimonthly revision of the main list, and our "foreign" list (USATF-certified courses outside the US). There was discussion recently on the importance of maintaining this foreign list. Pete speculated that it might not be of much interest, but Linda Honikman wrote in MNForum that RRIC finds it extremely valuable. The only problem Bob mentioned regarding our website was that, for the second year in a row, Pete forgot to mention it in the RRTC report printed in the Convention program book! A new feature on the website will be our Online Measurement Book—see discussion later in these minutes.

Chairman, Pete Riegel: In addition to serving as RRTC Chairman, Pete is Monitor of the IAAF course measurement program for the Western Hemisphere. Pete noted some similarities and differences between USATF and IAAF certification programs. Both use the same method of course measurement, but procedures differ in many other respects: In the US, anybody is allowed to measure but data is reviewed by a certifier, two measurements are required for certification, and "validation" measurements are performed when records are set. IAAF relies on an 'authority' system where measurers must be approved before they can measure (A, B, and C categories), only *one* measurement is required for certification, and there is no validation program. Anybody who attends a measurement course becomes a "C" measurer (although few people who attend such courses go on to measure anything). "C" measurers must submit courses to an area administrator, but after a few measurements, are promoted to "B" measurer; then, their work is accepted without question, and they are allowed to measure anything except Olympics or World Championships (which require an "A" measurer). So far, there hasn't been an important performance (record, etc.) run on a course measured by a relatively unknown measurer using the standard IAAF procedures of one measurement, no review, no validation. (Not yet!)

Other Business

Many topics were brought up at this meeting. In many of these cases, the discussion was left incomplete and then continued at Friday's meeting.

Resignation of Finish Line Chairperson: Ryan Lamppa has resigned from the position of Finish Line Chairman because he didn't wish to hold an office in which he wasn't doing anything. This raised the question: What is the role of the RRTC Finish Line Chairperson and, indeed, do we need such a position? Pete noted that everybody who has held this job has found it difficult to figure out what they were supposed to do. Joan pointed out that, aside from accurate course measurement, accurate timing is the most important technical requirement for a race. We need material to send people when they ask for information on timing. This led to discussion of our existing 13-year-old *Road Race and Finish Line Management* book. Jim Gerweck said there's lots of good stuff in this book. Jim Knoedel said the book includes all the basic principles, although it would be good to add a simple checklist of important items (select times, backup systems, etc.). Bob Baumel suggested adding information about newer technology such as chip timing. Joan suggested guidelines to help choose a timing company. Bill Kehoe emphasized the importance of furnishing information for small races who can't afford to hire a timing company. Discussion of this topic was temporarily adjourned, to be continued Friday.

Course Measurement Book on the Web: It's been getting more difficult to obtain our *Course Measurement Procedures* book from USATF headquarters. Shortly before the Convention, Bill Grass suggested that instead of preparing a new hard-copy edition, it's time to put our book on the Internet where anybody can download it. Everybody at the meeting thought this was a good idea. Pete revealed that he already had the book's text in electronic form (though admittedly with many errors), as he had scanned and converted it to electronic text using optical character recognition (OCR) software. Bob Baumel expressed interest in converting the book to web format, and Jim Gerweck said he was willing to help. (Discussion continued Friday.)

Expired Courses – Pruning deadwood from the list: Pete expressed concern that although we add more than 1000 new courses to our certified course list every year, none of the old courses are ever removed, and the list keeps growing. We did establish a 10-year expiration policy (adopted at the 1992 Convention); however, expired courses are not removed from the list: they just acquire an "X" status code, and may be restored to active ("A") status at any time by submitting a valid renewal application. In practice, few courses are actually renewed, so it seems clear that we're carrying a lot of "deadwood." Pete would like to start trimming the deadwood. Unfortunately, we have no way of knowing which of the old courses are still active, although never renewed. (Much as we'd like to think that everybody knows the decisions reached at RRTC meetings, many race directors haven't heard about our 10-year expiration policy!) Joan suggested that if we want 10-year expiration enforced more strictly, people must be informed about this at the time of certification. As a corollary, Bob Baumel observed that because none of our certificates carried any warning about 10-year expiration until 1993, we shouldn't begin any stricter enforcement until at least the year 2003. Dan Brannen said it's not right to invalidate a race that actually has a good course, simply because we decide to expire it. Bob Baumel stated that, so far, growth of the course list has been easily handled by increased capacity of computer storage media and speedier Internet transfer rates. The consensus was to make no change in existing policy, although we may wish to revisit this question at the 2002 Convention.

Prevalidation of US Olympic Trials Marathon courses: Before every Olympic year, RRTC has sent teams to prevalidate the courses used for the US Olympic Trials Marathons. We think our budget will be adequate to continue this tradition. For the 2000 Olympics, the US Women's Trials Marathon will be held in Columbia SC in Feb 2000, and the Men's Trials Marathon in Pittsburgh PA in May 2000. It was suggested to prevalidate the Men's course in early Spring of 2000 (details to be arranged by correspondence). Uncertainty was expressed as to whether the Women's course would need validation, or if this course has already been validated. (Discussion continued Friday.)

Matters arising from USATF reorganization: A major topic at this USATF Convention was reorganization of the Association, including streamlining of the Board of Directors and reduction in the number of committees. RRTC is not affected by this reorganization. However, the Records Committee had been slated for elimination, based on the idea that members of individual sports committees could handle approval of records for their sports. Records chairman Basil Honikman reported that, in spite of his recommendation to disband it, the Records Committee apparently wished to continue. In particular, Bob Hersh argued that a central, combined Records Committee served an important function in sharing best practices and resolving disputes. Bob was presenting this case for continued existence of the Records Committee to Law and Legislation [and, in fact, the Records Committee did survive the reorganization].

Y2K and RRTC: We've realized for several years that RRTC has its own Y2K (Year 2000) problem because our certification codes use a 2-digit year designation; for example, the first code

Pete Riegel issues in Ohio in 1999 will be OH-99001-PR, and his first in the year 2000 will be OH-00001-PR. The unfortunate result is that whenever anybody sorts the list according to certification number, the certifications issued in 2000 and beyond will appear to be earlier than those issued in the 1900s. The ideal solution to problems of this type is to use 4-digit year designations. In our case, this would mean lengthening the code numbers from 5 to 7 digits, with results like OH-1999001-PR and OH-2000001-PR. Joan said she wants to include the additional 2 digits when entering courses on the computerized list (and it's trivial to prefix "19" to all the existing codes, simply by adding the number 1900000 to the current column of certification numbers). It was asked whether Certifiers would need to write longer code numbers when filling out Certificates. Bob Langenbach would like to see 4-digit years used everywhere, including the Certificates. However, most people thought there was no reason to lengthen the code numbers on hard-copy Certificates, but it's adequate to change just the computerized list to facilitate correct sorting. Pete suggested that the additional century designator could be added to the computerized list in either of two ways: as two extra digits in the code number column (extending those code numbers from 5 to 7 digits as described above), or as a separate "century" column. Bob Baumel argued that, from the standpoint of the tab-delimited ASCII version of the list that he provides for download on the RRTC website, two extra digits in the existing code number column would be preferable to adding a whole new column—which would complicate formatting by adding another tab-stop, and would complicate sorting by adding an extra "level" to each sort. At the end of this discussion, the issue appeared to be settled: Joan would include the extra 2 digits in the computer list, although Certifiers would not have to write longer codes on their Certificates. However, see minutes of Friday's meeting.

International measurement: Referring to his earlier discussion about differences between USATF and IAAF/AIMS procedures, Pete said there is currently a controversy regarding the Cancun Marathon. This was USATF certified using standard USATF procedure (including two measurements) by Jon Hughes. Pete wants to consider it a legitimate AIMS course, but sees a potential conflict because Hughes isn't a vetted AIMS measurer.

Measurement by Pacing Contest: In spite of fears that there wouldn't be a measurement contest at this Convention, a contest course was measured by Tom Ward at the request of Betsy and John Hughes, and prizes were donated by Track Shack. The test course was located behind FAO Schwarz, just across International Drive from the Clarion Hotel. Contestants had until noon Friday to turn in their entries. Results to be announced at Friday's meeting.

Other Discussion: Bill Kehoe asked three questions: (1) Where can one obtain Jones Counters? [answer: See inside back page of *Measurement News*, or check RRTC website]; (2) Are USGS topographic maps available in computerized form? [answer: Yes, USGS is putting all their topo data in electronic form, as explained in some detail last year by Alaska certifier Ric Wilson—see <http://www.usgs.gov/>]; (3) Are "chip" times (elapsed time) valid for age group records [answer: No, only gun times are legal for records, including age group records]. Also at this meeting, Paul Cajka, a candidate for USATF representative to the IAAF Race Walking Committee, gave a brief presentation urging us to vote for him.

The meeting was adjourned at 19:45.

2nd Meeting — Friday, December 4, 1998

Attending: Bob Baumel, Erin Davis, John DeHaye, Linda DeHaye, Jim Gerweck, Bill Grass, Finn Hansen, Bob Langenbach, Justin Kuo, Mary Anne McBrayer, Tom McBrayer, Lance Phegley, Joan Riegel, Pete Riegel, Donald R. Shepan

After a 15 min delay while Pete Riegel addressed the Joint Men's and Women's LDR meeting, this RRTC meeting was called to order by Pete at 13:15. Most of the topics discussed were continuations of discussions begun at Wednesday's meeting.

Course Maps on the Web: Tom McBrayer introduced **Lance Phegley**, Editor of the regional publication *Runner Triathlete News*, which covers a five-state area consisting of TX, LA, AR, NM and OK. Lance has begun posting certification maps for this region on his website at <http://www.runnertriathletenews.com/>

Lance said he is doing this for three reasons: to provide information to the runners, because not all races have their own websites, and to promote USATF course certification. The way it works is: Tom McBrayer feeds him course maps; then, Lance scans the maps and posts them on the web. Lance says he is not a computer guru, meaning that if he can do it, people in other regions can easily do the same thing.

Several people asked how individual courses can be located in Lance's online collection. Lance replied that courses are currently listed by race name and city and certification number. As he adds more maps, he plans to add a search engine for locating courses. Bob Baumel (RRTC webmaster) asked about technical aspects of file formats used for posting maps. Lance explained that he's currently using two-color (black & white) GIF files which are mostly under 20 kB, although some early ones were in JPEG format and were much bigger (e.g., around 100 kB). Bob suggested that, although it would make files slightly bigger than Lance's current GIFs, greater readability can be obtained by using anti-aliased 6-color GIFs containing the 6 gray shades of the 'browser-safe palette.' At the time of this meeting, Lance had 30 maps in his online collection. Tom McBrayer has about 2400 more maps in his files for this 5-state region. Lance can be contacted by phone at 713-781-7090 or by email at rtnews@ix.netcom.com.

Measurement Contest: Mary Anne McBrayer announced the winners of the Measurement-By-Pacing contest, and presented awards consisting of bags of goodies from Track Shack in Orlando. The top three finishers were Pete Riegel, Justin Kuo, and Tom McBrayer. Complete results will be posted in January 1999 *Measurement News* and on the RRTC website. Actually, the results were remarkably accurate: The top four (of 12 entrants) came within 1% of the correct distance, and the top eight within 1.2%. These results were achieved even though some contestants had to work around a beer truck parked atop one of the nails. Strangely, the box originally placed in the Convention hall to collect contest entries disappeared and was never recovered; thus, we'll never know whether this contest's real winner was among the lost early entries!

Prevalidation of US Olympic Trials Marathon courses: We received news from Women's LDR that the Women's Trials course in Columbia SC (Russ Pate, race director) is a new course which will, indeed, benefit from prevalidation. Traditionally, prevalidation of the women's trials course has been done by an all-women measuring team. This will be done again, as **Carol McLatchie** has volunteered to organize the measuring team. The race will be in Feb 2000, so the prevalidation should be done sometime in late 1999.

Finish Line Chairperson: Based on the discussion at Wednesday's meeting, there are clearly many valuable things that an RRTC Finish Line Chairperson could potentially do. The problem is finding somebody who wants the job. A name was suggested of a person who may be interested and would make a good candidate. We agreed to contact this person about the position.

Y2K Problem: Although this issue appeared to have been settled at Wednesday's meeting, we discovered that it wasn't really settled because Joan and Pete didn't agree with each other. Joan wanted to add two extra digits (for century numbers) to certification codes in the computerized course list, but Pete didn't want to change the existing format. Pete argued that even without changing the list format, any spreadsheet user who wants to sort by certification number can do so (after the year 2000) by computing an additional column using some logic to determine which century a course was certified in. Others claimed that many computer users wouldn't have the skill to accomplish this. Considering that this issue hadn't been settled, all we could agree was to let Pete and Joan slug it out. (Bob Baumel said he was rooting for Joan!)

Measurement Book on the Web: Bob Baumel confirmed that he is willing to oversee the project of putting our Course Measurement book on the web, and Jim Gerweck agreed to help. Bob said that the first step will be to proofread the text that Pete scanned with his OCR software. Bill Grass and Bob Langenbach then volunteered to help with this proofreading. Several other meeting attendees urged that putting our book on the net be considered a high-priority project. [Note: As these minutes are written, we've already made good progress on this project, and expect that it may be completed some time in January 1999.]

Other Discussion: Joan Riegel displayed a measurement report that we had received from French measurer Jean-François Delasalle and said it's a real work of art. This report was passed around the room for all to admire. Finn Hansen reported that USATF will soon put its whole Rulebook on the web, although without the Records section. He also said USATF is moving toward establishment of Officials oriented more toward road racing. Joan asked how long people have to wait now when ordering a Jones-Oerth counter. Bob Langenbach replied that he held a measuring seminar recently and ordered several counters for it; the counters arrived very quickly.

The meeting was adjourned at 15:00.

Minutes prepared by Bob Baumel, RRTC Secretary

**1998 Measurement-by-Pacing Contest
USATF Convention - Orlando, Florida**

Official Distance: 201.777 meters

		Estimated Meters	Meters Error	Percent Error	Place
Pete	Riegel	200.840	-0.937	-0.46	1
Justin	Kuo	200.746	-1.031	-0.51	2
Tom	McBrayer	200.387	-1.390	-0.69	3
Bill	Grass	199.883	-1.894	-0.94	4
Bob	Langenbach	203.961	2.184	1.08	5
Bill	Kehoe	204.000	2.223	1.10	6
Carol	Langenbach	199.527	-2.250	-1.12	7
Don	Shepan	199.380	-2.397	-1.19	8
Bob	Baumel	206.338	4.561	2.26	9
Joan	Riegel	192.942	-8.835	-4.38	10
Jim	Gerweck	254.139	52.362	25.95	11
Dave	Gwyn	17.333	-184.444	-91.41	12

Length of the calibration course was 56.388 meters. Jim Gerweck mistakenly incorporated this length in his answer. His correct paced distance was thus 197.751 meters, for an absolute error of -4.026 meters, which would have put him in 10th place.

Some competitors were adversely affected by a beer truck which was parked atop one of the nails.

The course was measured by Tom Ward, as requested by Betsy Hughes, of Track Shack, Orlando. Track shack also donated the prizes for the contest.

PERCENT ERROR RECORDED IN RRTC PACING CONTESTS

		1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	Average
Wayne	Armbrust								1.15	1.86	1.74	-1.44		0.83
Bob	Baumel	0.07		-3.03	-0.91	2.63	-0.72	-1.03	-1.18	-0.52	0.29	2.63	2.26	0.04
Marcia	Baumel	0.02				4.37								2.19
Andy	Beach					-5.36	-2.42			-4.54				-4.11
Ken	Bernard											-4.82		-4.82
Michael	Blanchard						1.14							1.14
Bob	Boal				27.76	-0.19	-4.33	1.72	2.75					5.54
Haig	Bohegian				6.72									6.72
Norm	Brand	41.61	8.07	0.80	-0.90	9.56	-24.63	-4.00	-6.84	1.44		3.29		2.84
Dan	Brannen		-0.21											-0.21
Margaret	Brooke	-6.52												-6.52
Nick	Brooke	-6.61												-6.61
Jim	Brown			0.36						-0.48				-0.06
Frances	Childs					10.46					-27.34			-8.44
Felix	Cichocki	2.14	0.76	6.51	0.99			-1.89						1.70
Sal	Corrallo								-11.38	-10.11	-1.67			-7.72
Robert	DeCelle				187.61									187.61
John	Dunaway			4.58										4.58
Jim	Gerweck												25.95	25.95
Miriam	Gomez		-3.86											-3.86
Sharon	Good								3.13		15.90			9.51
Barb	Grass					-1.11	12.17	-0.60						3.49
Bill	Grass					-0.83	-3.73	-2.57			-3.13	-0.06	-0.94	-1.88
Dave	Gwyn	-3.33		4.91	0.65	1.86	-10.20		0.63	4.55	-6.82	4.69	-91.41	-9.45
Ben	Hablutzel	-3.05												-3.05
Finn	Hansen	3.31	4.16	-1.02	4.28		-0.07	-1.04	2.05	2.75	1.46			1.77
Bob	Harrison								-0.83		1.26			0.21
Walter	High						-3.34							-3.34
Basil	Honikman			5.67	-1.22	-29.89	-0.17	1.35	2.52	-0.06				-3.11
Linda	Honikman								3.28					3.28
Bard	Horton				-0.47									-0.47
Paul	Hronjak									0.64				0.64
Jim	Jacobs				28.14									28.14
Alan	Jones			0.01	1.27									0.64
Clain	Jones				0.09									0.09
Bill	Keesling					22.29								22.29
Bill	Kehoe												1.10	1.10
Tom	Knight	1.50												1.50
Carol	Kuo					0.72			0.34	0.03	-0.61	3.08		0.71
Justin	Kuo			17.14	-1.61	0.07	-2.85	40.21	-1.09	0.16	1.43	6.00	-0.51	5.89
Bob	Langenbach	-0.66		3.50		-0.93	0.33	0.42	-0.52	13.55	-3.21	3.91	1.08	1.75
Carole	Langenbach						1.76		-2.23		1.06		-1.12	-0.13
Mel	Lemon								157.85					157.85
Tom	Mayda				-0.21									-0.21
Mary Anne	McBrayer	-2.91	0.14	4.06	-1.69	0.61	2.54	2.40				3.69		1.11
Tom	McBrayer	-3.66	-2.38	-1.48	-0.90	3.07	-0.43	0.52		-1.53	1.34	4.10	-0.69	-0.19
G	Mercator											-0.70		-0.70
Dick	Mochrie						-6.11	2.13						-1.99
Wayne	Nicoll	-1.11		-10.34	0.54	-2.55		1.32	-1.26	0.10				-1.90
Ron	Pate				-7.62									-7.62
Bob	Rauch											36.38		36.38
Rick	Recker	-0.79	-2.22	-0.17	-1.96									-1.29
Joan	Riegel		1.74	-3.35	-1.40	2.28		-1.17				13.65	-4.38	1.05
Pete	Riegel	-1.00	0.95	0.08	-0.52	-1.25	-0.39	0.13	-0.99	1.16	-1.03	3.50	-0.46	0.01
Bruce	Robinson								4.00					4.00
Ron	Scardera										-4.52			-4.52
Larry	Schloss			2.07										2.07
Don	Shepan								-0.82		2.75	67.39	-1.19	17.03
Jim	Skelly								0.15					0.15
Jim	Smith	0.86												0.86
Christine	Steele						-1.83							-1.83
Phil	Stewart								6.48					6.48
Stephen	Tabb	0.62												0.62
Bob	Thurston		0.84											0.84
George	Tillson								-1.65	2.43				0.39
Peter	Torres, Jr.				33.21									33.21
David	Troy					18.38								18.38
Steve	Vaitones										-5.57			-5.57
George	Vemosky				27.30	-1.49	-4.68	1.31	0.50					4.59
Karen	Wickiser				-1.53		-5.02			0.19				-2.12
Mike	Wickiser				2.49	0.22	-0.86	2.36	-0.00	0.98	2.39			1.08
Ric	Wilson											-2.92		-2.92

Contestants	18	11	18	26	22	22	18	25	19	19	17	10	72
Median	-0.72	0.76	0.58	-0.06	0.42	-1.83	0.47	0.15	0.19	0.29	3.50	-0.49	0.64
Average	1.14	0.73	1.68	11.54	1.50	-2.45	2.31	6.24	0.66	-1.28	8.38	-5.86	7.11
Std Deviation	10.46	3.28	5.57	37.57	9.66	6.49	9.63	31.78	4.37	7.88	17.74	28.04	29.64

From: Alan Jones : I have a few comments on the following:

In November *Measurement News* Len Luchner writes:

<< The bicycle is powered by a centrifugal force, created by the rider rotating the pedals.

A bicycle is NOT powered by centrifugal force. Centrifugal force is the apparent force caused by the curved path that a particle takes due to its acceleration toward the center of the curved path.

>The generated torque (foot-lbs.) is in turn transmitted to the rear wheel through a system of gears and chain drive. It is a dynamic system creating a balance by which the rider advances in a horizontal direction. In a static condition, there are >no forces. The front wheel independently rotates from the forward motion created by the rear wheel drive. There is no >transfer of active energy from the rear wheel to the front wheel.

Not sure what "active energy" is. When the bike is moving, there is kinetic energy due to the motion -- some of it due to the linear motion of the bike and rider and some of it due to the circular motion of the front and back wheels.

>The weight of the rider and frame are fully absorbed by the wheel's tires.

Yes, but is this important?

>Upon application of rider force, the wheels, supporting both frame and rider, may be compressed over the tire surface in >contact with the road. The degree of compression varies with either a pneumatic or solid type tire. In motion, the >compressed surface is constant, yet varies millimeter by millimeter along the wheel circumference, thus maintaining a >constant reduced wheel radius. There is no transfer of force from horizontal to vertical. Furthermore, there is no >"slippage". The form of movement is no different than that of the standard automobile with four wheels and rear axle >drive. Acceptance of slippage would involve forward movement without wheel rotation, creating a false reading of total >distance traveled. The dynamics of bicycle energy does not support any such theory.

Huh? Slippage would not involve forward movement without wheel rotation. Slippage would mean that the wheel is rotating slightly slower than would be computed from the forward speed and the effective radius.

>Other features for comment relate to "wobble" at slow speed, sometimes required.

What does this sentence mean?

>One way of overcoming this is the addition of smaller support wheels mounted on the rear wheel support.

You mean like "training wheels?"

>Tires, either pneumatic or solid, should not be subject to compression from the weight of the rider. Racing tires do not >have this problem.

Any tire will compress some. A pneumatic more than a solid but will still compress. Compression is not a problem -- just a fact of life. Any material compresses due to applied force. What do you mean that racing tires to not have this problem? Racing tires are pneumatic.

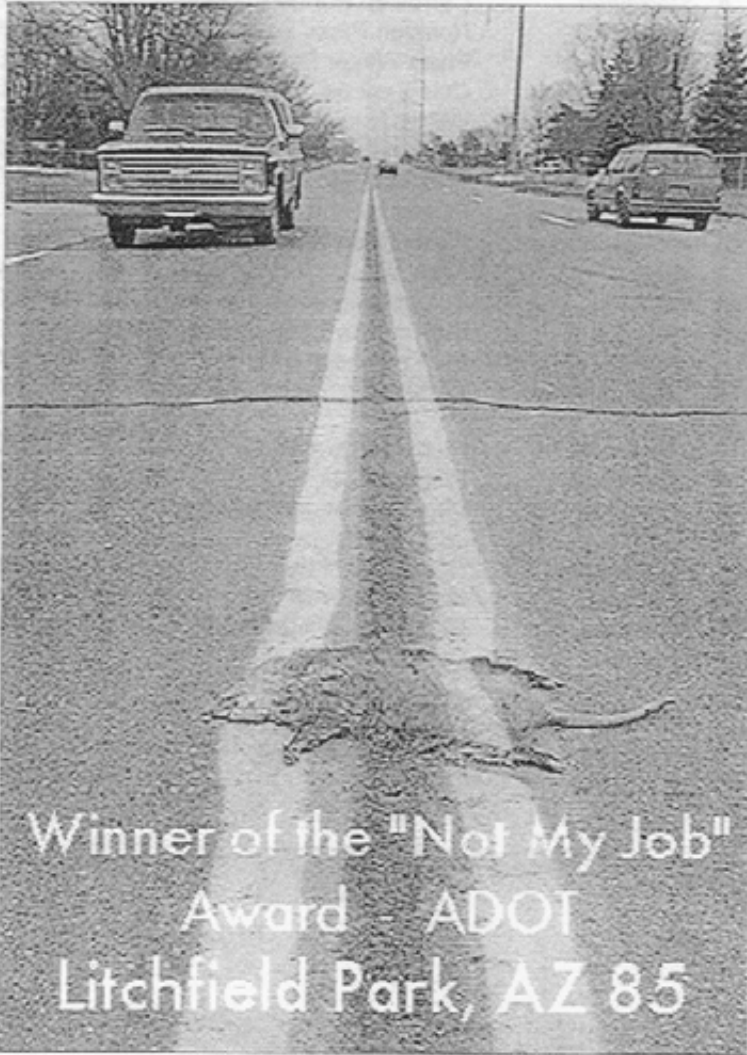
>Gear teeth manufacture, within the counter, should be examined to improve its tolerance and eliminate the "slack" at stop >and start.

As long as you read the counter as the bike is slowly advanced you eliminate the backlash problem. How can the backlash, what you call "slack," be eliminated by examining the gear teeth? This is a non-problem.

>Electronic measurement should be continuously investigated. Current units have an accuracy of thousandths of a meter. >As opposed to the counter, the electronic unit is a computer with controlled movement. The needs for calibration are >simplified and accurate to a millimeter. Temperature is no longer a factor. Athletic performance today, on a comparative >basis requires as accurate a basis as current technology allows.

Before commenting on the above paragraph, please explain what "electronic measurement" means. Are you talking about an electronic device to measure wheel rotation or are you talking about EDM (Electronic Distance Measuring) equipment?

A space-filler from Jim Gerweck:



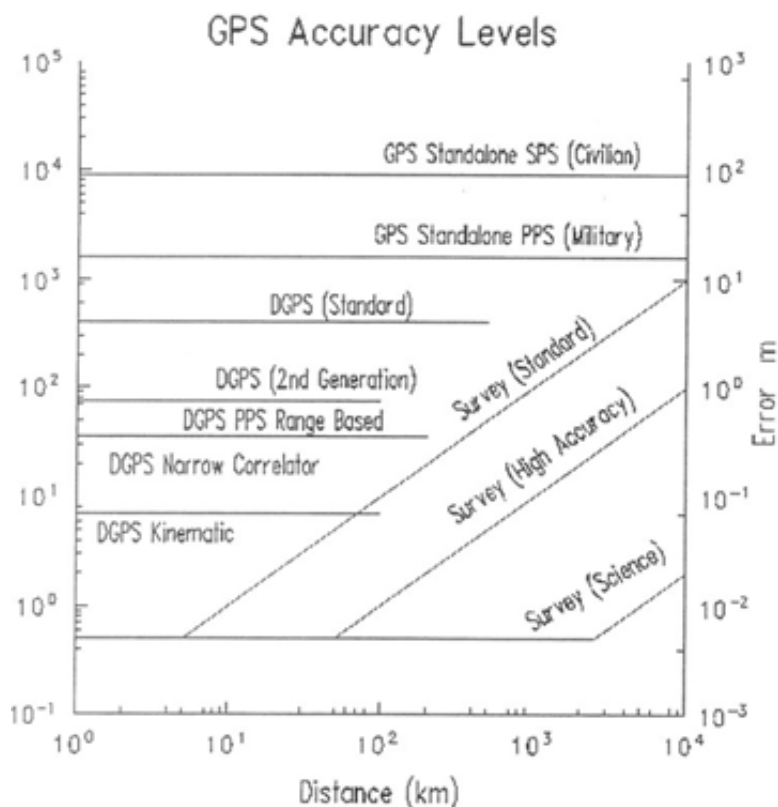
Winner of the "Not My Job"
Award - ADOT
Litchfield Park, AZ 85

GPS Accuracy Levels

Levels of Accuracy

There are different levels of accuracy that can be achieved with different techniques and equipment. In the commercial world, there have been roughly 4 generations of equipment, with some from the last three still in service. There are also different techniques, many made possible by LSI Chips and faster/cheaper microcomputers.

The graph shows the accuracy levels of all currently available systems. The vertical axis is the expected accuracy or error level, shown both in centimeters and meters. The horizontal axis is the distance along the earth's surface between the reference station and the remote user. If there is no reference station, the line is drawn all the way to 10,000 km, all over the earth.



The text and graph on this page were taken from the website shown at the bottom of the page. The site contains a very nice and complete discussion of the accuracy levels of GPS equipment, indicating that very accurate measurement can be made using this equipment.

However, the unit that most of us have access to is the civilian "stand-alone" unit which can be bought commercially. Its accuracy is insufficient for ordinary course measurement, although a case could be made that it's good enough to measure, say, a 100 km point-to-point course on Australia's "Gun Barrel Highway."

TECHNOLOGY MARCHES ON

Dear Pete:


Great sharing a beer with you at the USATF convention.

I thought I'd send you a photo I took a few years ago showing Jeff Darman operating a simpler version of a Jones Counter. I thought you might like to include it in "Measurement News."

Just two drawbacks to this device:

- 1) For proper calibration, Kim Jones needs to be present.
- 2) It only counts to ten.

Best regards,



Don Kardong
President, RRCA



TIDBITS FROM MNFORUM

CORNER CUTTING

• We aim to measure on the shortest possible legal route, and in general we do a pretty good job. Share my frustrations on my local marathon where despite my efforts as measurer, I suspect some runners may have been allowed to cut the course by perhaps the amount of the SCPF through poor marshalling. (Note for USA readers LEFT=RIGHT and vice versa, PAVEMENT=SIDEWALK)

The course is generally country roads, which were not closed to traffic. The instructions agreed again with the course director for this year's remeasurement were to stay in the left hand half of the roadway. Do not cross the centre line. Do not use pavements except where explicitly allowed (in last 2 miles). At right hand turns stay in left half of road on approach to junction then cross diagonally to new half of road.

There were only 3 right hand turns and they were easy to measure on the shortest possible line consistent with staying in the left hand half on approach. I provided sketches of the line for two of the right turns.

I provided a list of points where marshalls, cones or tapes would be needed to ensure no corner cutting.

On race day I informally observed the race at one right hand corner (at 24 miles) and witnessed marshalls fail to direct the lead runner to turn right at all. I had to call out to warn him at the last moment. He must have lost 5 m compared to the SPR. Then number 2, some 200m behind, approached on the shorter, right hand side of the road and was allowed by the marshalls to cut the turn on the right half of the approach, going what I eyeballed to be 10 m shorter than the allowed and measured route. I remonstrated with the marshalls but not too strongly since I had seen 1 and 2 running together at half-way well in the lead and I assumed that by 24 miles 1 had broken 2, and so 200m looked an unassailable lead. The marshalls then proceeded to ignore my plea and let runners take whatever line they chose at the corner, incidentally making their job of controlling the traffic a bit more difficult. The course director was nowhere to be seen at this time.

I discovered later that runner 1 had dropped 2 at 20 miles and got 300m ahead, but that 2 had in fact caught 1 with less than half a mile to go, and then went past him easily to win, since 1 then had nothing left. What difference did the 15 m difference in route due to poor marshalling make? Probably not decisive, but races should not be determined on the basis of what-ifs but equal conditions for all. Clearly No. 2 had been focussed on the (illegal) minimum route as he passed me. No.1's concentration had lapsed since he did not notice the lead car turn right 100m ahead of him.

I later discovered that a knowledgeable single marshal at another right turn had been unable to prevent the runners who approached it on the wrong (right) side cutting through on the right. So much for the course director's desire to have runners run on the left for safety reasons. He did not put in place the marshalls to implement it. I conclude that I shall have to measure the whole course using the full road width at the places where one can save distance report how many metres could be shaved off. I predict several 100m potential saving.

This is a sad story, but I wonder how often it is repeated when the measurer is not watching. I can't help thinking that I should in future prepare instruction sheets to be given to marshalls as part of my measurement reports. Yet more work.

Mike Sandford

• Mike's tale brings to mind several recent experiences:

1. At the New Haven 20 km on Lanor Day, Khalid Khannouchi was forced onto the sidewalk at a corner by an oncoming car that had strayed on course. I estimate his saving of 2-3m; fortunately he set a new world best by a substantial margin;

2. At the Express-News Alamo 10,000 in San Antonio last Sunday, almost the entire course was delineated by cones placed on the center line of the major roads. While I believe this was to keep cars off the running course, there was no indication which side of the cones the runners were to run on. Lacking this or any pre-race instructions, I ran the total road width SPR, except where it was obvious/dangerous in the face of oncoming traffic;

3. This weekend 30,000+ runners will cover the last miles of the NY Marathon through Central Park. In Park races, runners are instructed to stay in the recreation/bike lane, and I believe the courses are measured accordingly. But in practice, everyone (even the leaders, most of the time) cut the tangents across the full roadway width.

The conclusion: Always use SPR, unless there is a very, VERY strong reason not to do so. If the course is coned and the runners follow instructions, they may run a bit long, but generally I find the opposite situation to be the case.

Jim Gerweck

• Pete was concerned about my well-being, since there had been a mid-October drought of MNFs. Mike Sandford's comments on corner-cutting have certainly opened the floodgates, as seen below.

Jim Gerweck
Zgerweck@aol.com

MARSHALLING THE SPR

• I sympathise with Mike Sandford's dilemma, but I'm surprised he wasn't more cynical about the race/course director's promises. I had an exchange of letters with an official of my own club after I had measured the Half Marathon we promote (copied to Mike) revolving around a similar situation.

He remonstrated that my measurement of the SPR by full road width (over most, but not all of the course) encouraged runners to cut corners and take risks by running around blind corners into oncoming traffic. I know this is dangerous, but it's only the race director who is privy to the line I took, not the runners in general. I felt I had to measure in this way because I know that my club simply cannot supply the marshalls required to enforce the 'safe' running line (specified as within 1m of the kerb/curb). Sure enough, at a later date I spoke to a woman spectator (an official from another club) who had voluntarily taken on the duties of marshalling on the spot due to the obvious dangers in how runners doggedly stuck to the 'absolute' SPR, and not that specified by the conditions laid down by the race director. She had intervened to warn and stop the traffic rather than 'correct' the runners' line.

Hugh Jones

- Although I use SPR, there are places it is difficult to apply, such as on country roads without curbs, where a runner MIGHT run off-pavement on an inside curve. In those places, you rely heavily on cones and marshals, and it is important for the measurer to be involved in the planning of course marking and marshalling.

It is my understanding that the 1.001 factor which we apply in calibration is to assure that the runner travels at least the nominal race distance, in spite of minor, random short-cutting. On a marathon, the short-course factor is about 42 meters. So, unless the course markings and/or marshalling is inadequate over a significant portion of the course, a corner-cutting incident such as Mike describes shouldn't matter so far as course records are concerned. Fairness to the competitors is another matter, however.

Marshals need to be well-trained so that they understand the significance of what they are doing. At the Big Island International Marathon, I was fortunate to also be involved in the training of lead marshals. At the most critical turning points, lead marshals were instructed to put their most reliable and intelligent people, and to make sure they knew which cone(s) are the important ones. Even so, the marshalling performance was scary in places. I drove the entire course, staying ahead of the lead runner by 15 minutes, and asked every marshal if they understood their instructions. Too many of them didn't, and I was forced to provide last-minute instructions. But we got the job done, and I'm confident that the competitive runners ran the course properly. The 4-hour-and-longer crowd is more difficult to monitor, but fortunately their occasional short-cutting doesn't matter in the overall picture.

Curtis Beck cbeck@hei.com

- I totally agree with Jim on how race marshalls do not enforce land restrictions on courses which is also my experience. In fact, when I am measuring, I specifically ask the race director not only whether there will be cones and marshalls but if the marshalls will record the numbers of runners who ignore their instructions and cut the course to be used for possible disqualification or, at the very least, eliminating them from possible record consideration. I've never had a race director claim that any action will take place against runners who may cut a course. Therefore, I routinely measure the line that I'm pretty sure that the runners will take, whether this means the whole road or cutting through the gas-station parking lot where the total corner is paved.

I understand that this is unfair to the runner who follows the rules; however, my experience is that most don't and race organizations virtually never do anything about it. Perhaps I would feel differently if I wasn't also responsible for state records in NC.

Unless the road is full of many winding sections such as the Central Park section of the NY Marathon course, I do not believe that my practice adds very much to the course length. On the other side of the coin, it is a rare runner who follows the SPR as completely as we do in measuring so their course cutting may only even things out.

Paul Hronjak
hronjak@simflex.com

- I have frequently experienced the frustrations described by Mike. I used to get very annoyed having seen my careful work as a measurer undermined by could-not-care-less or incompetent race directors. As I grew older I came to terms with the situation, and feel now that as long as I have done a professional job then my responsibility ends there. I would however suggest the following:

1. Only measure to the centre if you are absolutely sure the necessary cones and marshals will be employed. Otherwise use the whole width.

2. Put your agreed measuring line in writing and be very precise with it.

3. If the RD insists on a path other than the shortest possible route, 'frighten' him by telling him that to do so will necessitate the employment of an extra 36 marshals and 300 cones. You'll win the argument.

4. Put it in writing that if the agreed route is not precisely adhered to, the course certificate is nullified, and any claim for records will not stand up. The realisation of possible acute embarrassment resulting will concentrate the mind.

Taking care to register what exactly you have done will clear you from blame - from runners, officials, media etc.

I must say the courses that I have found to be strictly according to that measured have invariably been directed by people who have been measurers themselves.

Roger Gibbons
zeando@globalnet.co.uk

- The vast majority of New York-Central Park races are measured and certified as being restricted to the recreation lane. However, the New York City Marathon is one of the few which is measured and certified full-road SPR through the Central Park sections.

-Dan Brannen
(djbrunn@idt.net)

- I have found that the SPR is the best way to measure and the coning the course for traffic control does not endanger a record run not being valid.

Ron Pate (Honolulu)
ronpate@iav.com

- Thank you everyone for the wise comments. I had a discussion the other day with the race director. He is pretty concerned and is determined to do better next year. He had spotted what was going wrong in places where runners had decided to cross to the wrong half of the road. He had been badly let down with the number of marshalls and he is going to put his foot down in the feedback to the race committee. The race made quite a bit of money so we are going to see a lot more cones and signs next year. Actually his 'caution runners' and mile signs had been really excellent this year so I am ever optimistic.

Going back to whether I should have measured the whole road. It would certainly be of marginal safety to allow runners any side they choose over these country roads. We both agree safety demands keeping them to the left hand half. In the UK I tell the measurers (as I was told by Roger when he taught me) that the measurer is sometimes the only person with real knowledge of road racing who sees the event before the race and if he notices something that is dangerous he should not measure it. However, I would never advocate that a course measurer should take any responsibility for the safety of a course. Road safety is a real problem in the UK where the police forces have a formal policy against events on roads which have not been closed. In fact in my local marathon the organiser had been promised 6 special constables, only to find on

the day they had gone off to a training course, all he had from them was three or four 'police slow' signs at major road crossings.

Mike Sandford
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• I've measured a few courses where the race director has told me that the road will be coned and runners instructed to keep to the right of the cones, and when previewing have usually agreed with him due to safety concerns. However, I still measure the SPR, even if I feel 99.44/100ths of the runners will follow the instructions. It's that remaining fraction you must measure for. Better the majority of rule followers run a bit long than one or two "course cutters" get a win or record they shouldn't have.

Jim Gerweck
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• I always measure courses SPR unless the race director wants to make a federal case out of it. If the course is only half-road, I will sometimes take an SPR route at all corners, beginning and ending about 5 or 6 road-widths before and after the corner. The race director generally thinks this is a good idea.

Generally the runners will obey the half-road restriction, but it frequently comes apart at the corners.

If I do measure SPR everywhere, I tell the race director to cone as he wishes for safety, but keep the runners on the road. No curb-hopping. This is easy to enforce. Setting cones up properly on race day is difficult to do with last-minute volunteers.

For those who believe the 1.001 is an unjust and unconscionable imposition on the aspiring runners, just look at a meter stick. The 1.001 amounts to one millimeter out of the whole stick. I do not believe this to be significant.

Also, it is not at all certain that the 1.001 fully exists. It is mandated because not all measurers are equally skilled, and equipment varies.

Yes, 42 meters in a marathon does occupy some seconds of running time. But it is not suddenly added on at the end of the race as a dirty surprise. Instead, all the way along the runners know how they are doing, and what they must do.

The length of every course, road or track, is unknown. No two courses or tracks are exactly the same length. All that can be done is to rely on a proven, standard layout method. If this is done, then all courses may be assumed to be functionally equal (except for drop and separation). The track people do not torment themselves with the uncertainties of measurement - in their minds, all tracks are equal.

Pete Riegel
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• Each year I measure the Sydney Morning Herald Half Marathon for the race organisers (they change the course every year) and each year we discuss arrangements at each corner and intersection because runners always have an opportunity to cut corners by running on the footpath/sidewalk. As the course is 2 laps of city streets there are many opportunities for short-cutting.

The race organisers claim no runners will be allowed to step off the roadway but race day marshalling is never satisfactory. My observations over the years (as mid-field competitor or watching

from up-front) are that the leaders run the course as measured because they don't risk jumping gutters. But at some point the bulk of runners cut every possible corner unless it is barricaded. I'm satisfied that the leaders have run the full distance; I'm never sure about the leading women; and I know that the 80+ minute runners don't run the full distance.

When measuring in the future, do I cut all corners (measure across the sidewalk) and disadvantage the leaders but add certainty about all other runners? Or am I measuring for the leading men? Or do I become more forceful about marshalling and barricading and not certify the race day layout unless ALL runners are kept on the roadway and off the sidewalks at ALL times. Maybe I measure by cutting all the corners and advising the leaders that they can do the same but then we have a safety issue (by recommending that runners actually jump over gutters).

Dave Cundy
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ASIAN GAMES MARATHON

• As some of you may be aware, there is a bit of a controversy raging among track & field statisticians, who don't know quite what to make of the women's marathon at the Asian Games. The winning time (2:21:47) seemed almost impossible given the weather conditions (hot and humid—temperature in the 80's F). One obvious possibility relates to the length of the course. Does anyone know anything about how this course was measured and by whom, and when, and did they run the course as measured, and all the other usual questions?

Bob H
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• I have heard from FUNG Wang-Tak and further measurement reports are on the way. He was at the race and firmly believes the distance was at least 42.195k but noted that the runners were aided by a strong tail wind. I have a rough map and the final 32k is in the one direction; separation between start and finish looks to be at least 25k.

I will keep you posted.

Dave Cundy

Pete Riegel sent Cundy's message to Alan Storey and got this reply:

Thanks for the message - I e-mailed Dave Cundy on this subject last week as London has an issue with the (winning) woman's performance in Bangkok.

At a Press Conference that we have called for Thursday of this week, we intend to announce our prize and time bonus structure for our '99 event. Within this list is a new award for any woman breaking the best time achieved in a 'woman's only' race. Until last week this was a performance in Japan by Lisa Ondeki, but has it now been beaten by Takahashi in Bangkok?

My question is - would the IAAF accept performances on the predominantly point to point course in Bangkok? Would AIMS? If I was drawing up a ranking list I would mark the Bangkok times in the same way as I would Boston - i.e. not acceptable for record purposes. But that is only my view - what is yours?

kind regards, Alan

Pete Replied to Alan Storey

Dear Alan,

IAAF is still struggling with the idea of world records on the roads, and has reached no resolution. AIMS seems to list all performances, throwing in a few asterisks here and there. Neither, to my knowledge, has a standard procedure for determining what a "world record" is, on the road. The best standard, at present, is that of USATF's Road Running Information Center. They are particular about what they recognize. Ryan Lamppa can give the best answers to questions of this sort.

However, both AIMS and IAAF have accepted that a "standard" course must not have a drop in excess of 1 m/km (42 m for a marathon) nor a separation between start and finish more than 30 percent. Bangkok exceeds that separation, and performances were reportedly aided by a tailwind.

Most of us on the technical side would not accept Takahashi's run as a "record." I certainly would not. It may also be that the course is short, but we have no information on that at present. I would not give it credence equal to Boston's, at least until the accuracy of the course is established.

I'd stick with Ondieki's run as the record myself, if that is the "record." Its provenance is somewhat unknown to me, as I don't recall what race Ondieki ran in to set her "record", nor whether it was established as accurate.

Ryan Lamppa can tell you more about the best verified women-only marathon record. I am sending him a copy of this, in the hope that he will reply to all.

IAAF/AIMS could certainly do the sport a favor by setting up a system with teeth in it. Every time somebody does something at an unknown "important" race everybody gets their knickers in a twist hoping that everything is OK, after the fact. I suspect in many cases it is not. Bangkok is an example - measured to nobody's standard that we know of, although Dave Cundy is trying to sort it out. These post-race shenanigans should not be done. If people don't value their race enough to properly measure it, why should we rupture ourselves saving their bacon? Documented measurement should be done before the race, or else the performances should be ignored. To do otherwise leaves everybody on the technical side hostage to checking every dubious fast run around. The fact that a race is "big" or "important" does not make its course valid. We know better.

Best regards, Pete Riegel

T-AND-F: TIMING TO HUNDREDTHS?

Hi Pete,

Didn't know if you subscribe to the t-and-f list so I thought I would pass this on to you. I remember we discussed this at the 1987 RRTC meeting in Houston, Texas and am trying to recall the gist of the various arguments.

Tom Knight tdk@stanford.edu

Forwarded message:

Last night I looked in my IAAF Handbook for the rules specifying the accuracy of the length of a track. Two quotes are appropriate:

"The length of a standard running track shall be 400m." and

"In measuring the track, two independent measurements must be made which may not differ from each other by more than $0.0003 \times L + 1$ cm, where "L" is the length of the track in metres.

Note: This formula gives a highest permitted difference between the two measurings for

100m.....4 cm 400m.....13 cm"

This is not entirely clear. It does not state whether one measurement can show the track to be short or whether both must show the measurement to be at least 400m. Perhaps Bob Hersh can clarify.

Now consider a 5000 meter race where the world record is broken by 0.01 seconds. This happened when Said Aouita broke Dave Moorcroft's record in 1985.

A 5000 meter race is 12 1/2 laps, so the margin per lap is an average of .0008 seconds. A 13 minute pace is 6.4 meters per second. In .0008 seconds the runner moves 5 millimeters. Comparing marks made on two different tracks, the difference in the two records is much less than the allowable error in the measurement of the track. We should certainly eliminate hundredths of a second timing for all races 800 meters and over, possibly 400m and over. The reason for eliminating excessively precise timing is that it is meaningless.

For a single race on a given track, the track is the same length for the two runners. (I didn't say they ran the same distance.) A hundredth of a second may be a margin of victory, and may be meaningful. However, it is not meaningful for comparing marks on different tracks.

Dave Carey
Member ATFS
Secretary General FAST

SHORT TRACK

Along the same if-it-weren't-so-serious-it-would-be-funny line, Pleasantville, New Jersey, is in a new high school building this year and intended to play its first football game on the new field Thanksgiving Day. Can't do it. Officials discovered this week that the track, which was supposed to be the center-piece of the athletic fields, measures only 360 meters. Work has begun on ripping up parts of the track to try to stretch it to acceptable size.

A spokesman for the engineering firm of Remington & Vernick says the company is still trying to figure out what went wrong, but that the gentleman who designed the track is no longer with the firm.

Perhaps they accidentally made it 400 yards not 400 meters. Before you laugh, this is not without precedent. A local community college where high school meets are held is actually 440 meters. It was always a blast taking relay splits on this track.

And while I was at UMass, the track was redone and was made a few meters too long. It was fixed shortly thereafter, but there were some great stories going around to explain how it happened

Edward Parrot eparrot@ix.netcom.com