

Measurement News



November 2001

Issue #110



A measurement seminar was held in October in Belo Horizonte, Minas Gerais, Brazil. Organized by Rodolfo Eichler (kneeling at right), it brought together measurers from many places in Brazil, experts and beginners alike. Eichler is beginning to organize Brazilian certification along the same lines as the US and Canada.

MEASUREMENT NEWS

Issue #110 - November 2001

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Chairman's Clatter - From Mike Wickiser

With the USATF Convention in Mobile, AL just around the corner, things are gearing up for annual reports and discussions. Being able to meet face to face with many of the hard working group we see only once a year is always beneficial and enjoyable. RRTC meetings are scheduled for Thursday, November 29 from 4 PM to 7 PM and Friday Nov.30 from 3 PM to 6 PM. An agenda has yet to be completed and discussion topics are requested. Please send any agenda items to me and I will see they are included. I am reasonably sure we will be hashing over the results of The Great Steel Tape Measurement exercise. Leon Mattics has agreed to lay out and measure a pacing contest course. Leon lives in the Mobile area and has been active measuring race courses since 1989. This is generally the fun part of the convention for many.

The great steel tape "stretch" is history now and the raw results are posted in this issue of Measurement News. Some background information to help understand the data is in order. Pete Riegel and I checked 34 steel tapes using a set of pulleys and two sandbags to apply equal tension to each tape. The bags were attached to the zero ends and the tape was pulled to a common point, lifting the weight. Measurement data was handwritten and transferred to Excel before leaving the area. Temperature was constant throughout the day and we were inside a building where no direct sunlight was available. This was repeated for each tape. Sandbags each weighted 11 pounds or 50N.

In preparing for this experiment I contacted the NIST (formerly National Bureau of Standards). They supplied me with plenty of information. Most notably, the acceptable tolerance for a 100-foot steel tape is 0.120 in or 3mm for 30m. It is also their experience that steel tapes almost never vary by more than a quarter inch, except when one end of a tape is hooked to a car and the other to a fire hydrant. This actually happened and their only comment was "All bets are off" on that one.

For the tape comparison Pete brought along his famous Brazilian 30m tape AND a 100-foot Keuffel & Esser Co. steel tape that had been certified by the Bureau of Standards in 1954. With the Brazilian tape being laser checked by Stanley and this certified tape we had some very precise measuring tapes to compare with. In short the variance found would equal less than 3 meters in 10k. Since the certified tape and the Brazilian tape corrected values reside near the median of the entire group, the opportunity for a course being short or long due to tape variance is pretty small, less than 2 meters either way.

So much for the great tape stretch. I look forward to some of your analysis of this data.



Mike Wickiser

TAPE CHARACTERISTICS

This is a quick presentation of the data obtained. There may be some errors in the calculations, but the data are believed to be correct.

These data and calculations exist in an Excel file. Contact Pete Riegel if you want a copy.

Date of these calculations 7 November 2001

FURTHER ANALYSIS IS INVITED AND WILL BE DEALT WITH IN NEXT ISSUE OF MN.

Code	Owner	Reading at Mike's End	Tension 50 N Reading at Pete's End	Tension 50N Calculated Length Metres	Tension 50N Calculated Length Feet	Tension by feel 50 metre pull metres	Tension by feel 50 metre pull feet	Tension 100 N Reading at Pete's End	Tension 100 N Calculated Length Metres	Tension 100 N Calculated Length Feet
PR3	Pete Riegel	30	0.7435	29.257	95.986			0.748	29.252	95.971
PR1	Pete Riegel	97	0.995	29.262	96.005			1.008	29.258	95.992
WN1	Wayne Nicoll	146	0.53	29.264	96.010			0.55	29.260	95.997
JFD1	Jean-Francois Delasalle	30	0.736	29.264	96.010	48.376	158.7139	0.739	29.261	96.001
PR2	Pete Riegel	30	0.735	29.265	96.014			0.7375	29.263	96.006
PR6	Pete Riegel	97	0.985	29.265	96.015			0.99	29.264	96.010
HW1	Harley Watts	96	0.015	29.265	96.015			0.012	29.264	96.012
PH2	Paul Hronjak	97	11.8125	29.266	96.016			11.975	29.261	96.002
BL1	Bob Lang	97	11.8125	29.266	96.016			11.9375	29.262	96.005
JD1	John Disley	30	0.734	29.266	96.017	48.379	158.7238	0.739	29.261	96.001
ETM1	Tom McBrayer	97	11.7875	29.266	96.018			12	29.261	96.000
BC1	Bernie Conway	30	0.7335	29.267	96.019			0.7395	29.261	95.999
PR5	Pete Riegel	30	0.7335	29.267	96.019			0.738	29.262	96.004
PH1	Paul Hronjak	97	11.7625	29.267	96.020			12	29.261	96.000
WN2	Wayne Nicoll	97	0.98	29.267	96.020	48.3809	158.73	1	29.261	96.000
PxR1	Patrick Riddell	30	0.733	29.267	96.020			0.738	29.262	96.004
HD1	Hudson Hudson	97	11.75	29.267	96.021			11.9375	29.262	96.005
HD2	Hudson Hudson	97	11.75	29.267	96.021			11.9375	29.262	96.005
KU1	Karl Ungureau	97	11.75	29.267	96.021			11.875	29.264	96.010
MW3	Mike Wickiser	97	11.75	29.267	96.021			11.875	29.264	96.010
MW4	Mike Wickiser	97	11.75	29.267	96.021			11.875	29.264	96.010
MW5	Mike Wickiser	97	11.75	29.267	96.021			11.875	29.264	96.010
MW2	Mike Wickiser	97	11.7375	29.267	96.022	48.38383	158.7396	12	29.261	96.000
ETM2	Tom McBrayer	30	0.7325	29.268	96.022			0.7365	29.264	96.009
RE1	Rodolfo Eichler	30	0.732	29.268	96.024			0.738	29.262	96.004
LL1	Laurent Lacroix	30	0.732	29.268	96.024	48.378	158.7205	0.737	29.263	96.007
PO1	Paul Oerth	30	0.732	29.268	96.024	48.385	158.7434	0.737	29.263	96.007
MW1	Alan Jones	97	11.6875	29.269	96.026			11.75	29.267	96.021
RT1	Bob Thurston	30	0.731	29.269	96.027	48.387	158.75	0.735	29.265	96.014
SH1	Scott Hubbard	97	11.6625	29.269	96.028			11.9375	29.262	96.005
RS1	Ron Scardera	97	0.97	29.270	96.030			0.983	29.266	96.017
PR4	Pete Riegel	30	0.73	29.270	96.030			0.734	29.266	96.017
DC1	Don Connolly	97	11.625	29.270	96.031			11.8125	29.266	96.016
DS1	Don Shepan	97	11.625	29.270	96.031			11.875	29.264	96.010

For WN1: 1 link = 7.92 inches
100 links = 66 feet

Notes:

- 1) Testing was done in a vehicle maintenance building, on a concrete floor.
- 2) Tension was maintained by two weighted sandbags, 11 pounds each. Mike would pull the tape until the sandbag rose from the floor, establish his mark, and Pete would then read the tape
- 3) The order of testing was random, as tapes were removed from the storage box. The 50 meter tapes were checked last.
- 4) Temperature during testing was stable at 71F
- 5) Date of testing was November 3, 2001, from 11:00 to 14:00

Pr3 was calibrated by Stanley (1996). 30 meters indicated = 30.00987 meters.

HW1 was calibrated by the US Bureau of Standards (1954). 100 indicated feet = 100.001 feet.

Corrected length by PR3, by Stanley calibration = 96.0175 feet

Corrected length by HW1, by USBS calibration, at 10 lbf at 68F = 96.0160 feet

PR1 is a very thin ribbon of steel, coated in a lot of plastic. It is marked "50N" but the manufacturer says to use 4.5 pounds

RT1 has 50 N on the tape itself, but Bob Thurston reports that the literature recommended 70 N.

outline indicates original data readings

Code	Length	Marked Tension	Reel	Type	Zero at	Smallest Division	Thickness, in	
							includes coating	Width, in
PR3	30 m		Cased	Painted Steel	Inset 10 cm	1 mm	0.006	0.375
PR1	103 ft	50N	Open	Plastic coated steel	Inset 0.7 ft	0.01 ft	0.02	0.405
WN1	150 links		Open	Unpainted steel	end	1/10 link	0.0168	0.312
JFD1	50 m	50N 20C	Open	Painted Steel	end	1 mm	0.0075	0.5
PR2	30 m		Open	Unpainted steel	Inset 15 cm	1 mm	0.019	0.25
PR6	100 ft		Cased	Painted Steel	end	0.01 ft	0.01	0.375
HW1	100 ft		Open	Unpainted steel	Inset	0.01 ft	0.0223	0.305
PH2	100 ft		Cased	Painted Steel	end	1/8 in	0.0098	0.375
BL1	100 ft		Cased	Unpainted steel	end	1/8 in	0.0075	0.375
JD1	50 m		Open	Plastic coated steel	end	1 mm	0.021	0.53
ETM1	100 ft		Cased	Painted Steel	end	1/8 in	0.007	0.375
BC1	30m/100 ft	50N	Cased	Painted Steel	end	1mm, 1/8 in	0.0063	0.375
PR5	30m/100 ft		Cased	Painted Steel	Inset 10 cm	1 mm	0.01	0.375
PH1	100 Ft.		Cased	Painted Steel	end	1/8 in	0.0068	0.375
WN2	200 ft.	2kgf	Open	Plastic coated steel	loop	1/10 in	0.0218	0.41
PxR1	50m/164 ft	50N	Open	Unpainted steel	end	1mm, 1/8 in	0.0132	0.255
HD1	100 ft		Cased	Painted Steel	end	1/8 in	0.0064	0.375
HD2	100 ft		Cased	Painted Steel	end	1/8 in	0.0064	0.375
KU1	100 ft		Cased	Painted Steel	end	1/8 in	0.0192	0.375
MW3	100 Ft.		Cased	Painted Steel	end	1/8 in	0.0095	0.375
MW4	100Ft.		Cased	Unpainted steel	end	1/8 in	0.0083	0.375
MW5	100Ft.		Cased	Unpainted steel	end	1/8 in	0.0091	0.0375
MW2	165 foot	20C 5kgf	Open	Plastic coated steel	end	1/8 in	0.0205	0.409
ETM2	30m/100 ft		Cased	Painted Steel	end	1/8 in	0.01	0.375
RE1	30 m	50N	Cased	Painted Steel	Inset	1 mm	0.0076	0.375
LL1	50m/164 ft	50N	Cased	Painted Steel	end	1mm, 1/8 in	0.0065	0.375
PO1	50m/164 ft	50N	Cased	Painted Steel	end	1mm, 1/8 in	0.0097	0.375
MW1	30m	50N	Cased	Painted Steel	end	1mm, 1/8 in	0.0089	0.375
RT1	60 m	50N	Open	Plastic coated steel	inset 30 cm	1 mm	0.0178	0.25
SH1	100 ft		Cased	Painted Steel	end	1/8 in	0.0072	0.375
RS1	100 ft	15 lbf	Open	Plastic coated steel	inset 30 cm	0.01 ft	0.0185	0.26
PR4	30m/100 ft	50N 20C	Cased	Painted Steel	end	5mm, 1/8 in	0.0055	0.375
DC1	100 ft	50N	Open	Plastic coated steel	end	1/8 in	0.018	0.4
DS1	100 ft		Cased	Painted Steel	end	1/8 in	0.0066	0.375

Subj: **Gregory Underwood**
 Date: 11/8/2001 11:59:24 AM Eastern Standard Time
 From: *tuxbro@ameritech.net (Donald K. Carr)*
 To: *ZGerweck@aol.com*
 CC: *riegelpete@aol.com*

Jim

Don't know if you heard the news about Gregory Underwood (USATF course certifier here in Indiana).
 Unfortunately Gregory died in a house fire last week. Gregory has measured a few different courses for me
 through the years.
 We will miss him!

Don Carr
 Tuxedo Brothers Event Management

Code	Made in	Markings on Blade	Markings on Reel
PR3	Brazil	Stanley - II - Made in Brazil	Stanley - 34390 - Ind Brasileira - Made in Brasil
PR1	Japan	100 FT - 50N - Leltz - Eslon	Leltz-Eslon Nylon Coated Steel Tape - 100 ft - 10ths - 8652-44 Japan
WN1	USA		Chicago
JFD1	France	50 m - C25 - Stanley - F6705.311 - France - 50N 20C	50m/mm - Stanley - master acielak - 34-415 - Made in France
PR2	USA	Mitre - The Lufkin Rule Co. - Made in USA - Patented	Lufkin - Made in USA - Hardened - 30M
PR6	USA	Tenth ft. - Made in USA	Lufkin 100' - White Tape - HW 226
HW1	USA	K&E Invinible NBS 1954 NBS No 10448	Champion Keuffel & Esser Co Made in USA
PH2	USA	Inch - Lufkin - Made in USA - P.R. App'd - 254 Tc	HYT 100 - 100' - Lufkin USA
BL1	USA		Universal Lufkin Rule Co. Steel Tape 100 Ft.
JD1	England	C - Rabone Chesterman - Made in England	Rabone Chesterman - 76000-50m - Made in England
ETM1	USA	Eights	Sears/Craftsman 939003 - 100 ft. Heavy Duty Long Tape
BC1	USA	30m Lufkin 20C 50N Made in USA Inch P.R. App'd 254 Tc	Benchmark 30m/100' 1049W788
PR5	USA	Lufkin - Made in USA - P.R. App'd - 254 Tc	Lufkin - 30m/100 ft - White Tape - W 226 ME
PH1	USA	Inch - Lufkin - Made in USA - P.R. App'd - 254 Tc	Lufkin USA 100'
WN2	Japan	20C 2kgf Keson Nylon Clad N845	200 Foot Nylon-Clad Keson Made in Japan
PxR1	USA	20C 50N Made in USA P.R. App'd for 254 Tc	Lufkin
HD1	USA	Lufkin P.R. App'd 254Tc	Lufkin USA 100'
HD2	USA	Lufkin P.R. App'd 254Tc	Lufkin USA 100'
KU1	USA	Feet/inch Stanley Life Guard Mylar Protected P.R. App'd No. 339 T.C. 16 inch centers	100' Stanley Steelmaster Long Tape 34-400 Made in USA
MW3	USA	Lufkin Made in USA PR APPD 254Tc	Lufkin 100 foot
MW4	USA	Made in USA	Lufkin NI-Clad, steel tape, Lufkin Rule Co, Saginaw Mich, USA
MW5	USA	Made in USA	Lufkin NI-Clad, steel tape, Lufkin Rule Co, Saginaw Mich, USA
MW2	Japan	20C 5kgf Keson Nylon Clad 165 ft. PAT no. 603062N150	165 FOOT Perma Clad Nylon - Coated Steel KESON Japan
ETM2	USA	30m(inch) - Lufkin - Made in USA - P.R. App'd - 254 Tc	Lufkin 30m 100 ft. Yellow Clad HW226ME
RE1	Brazil	Lufkin-Brazil 20C 50N	Lufkin 30m YSL30CM
LL1	USA	50m Inch Lufkin 20C 50N Made in USA	HYT50CNE 164750m Lufkin USA
PO1	USA	Lufkin 20C 50N Made in USA	Lufkin 50m 164 ft Yellow Clad HW227CME
MW1	USA	Rabone Life Guard P.R. App'd No 229TC 20C 50N	30m - 100 ft, Stanley, Steelmaster, 34-230, 62-230
RT1	England	Rabone Chesterman Made in England 50N 20C	Rabone Chesterman 60 m Made in England Leltz Rabone Chesterman Made in England
SH1	USA	Feet/inch - Mylar protected - made in USA - P.R. App'd No. 339 T.C. - 16 inch Centers	100' - Stanley - Hi-Visibility Long Tape - 34-096 - Made in USA
RS1	England	Decimal Foot 68F 151bf Stanley Made in England	Rabone Chesterman 100 ft Made in England
PR4	USA	In - cm - 30m - Stanley - P.R. App'd No.339TC - 20C 50N	30m/100 ft - Stanley - 34-353 - US Pats 3,908,277
DC1	Japan	100 ft - 50N - Sokkia - Eslon	Sokkia/Eslon Nylon Coated Steel Tape 100 ft-in 8651-44 Japan
DS1	USA	Inch - 16" Stud Centers - P. R. App'd 262 T.C. - Inch - Made in USA	Sears Craftsman/39002 - 100 ft x 3/8 in - Made in USA

A MEASUREMENT SEMINAR IN BRAZIL

In late October I traveled to Brazil, to assist Rodolfo Eichler in the organization of a measurement seminar for Brazilian measurers. Eichler, and half a dozen others, have been measuring courses in Brazil for the last 17 years, and on the occasions when their work has been checked, the courses have been OK. They know what they are doing.

Rodolfo has studied various schemes for organizing a certification system for Brazil, and has decided to do it according to the North American model, with regional certifiers and measurement open to all. To this end, with the assistance of Globo TV, he brought experienced measurers from various parts of Brazil together, along with a group of novices.

The seminar was held in the city of Belo Horizonte, a city in the mining and agricultural state of Minas Gerais, a few hundred kilometers north of Sao Paulo. It was held in the parking lot of the city stadium.

Measurers were given brief oral instruction. They watched as a 60 meter calibration course was laid out, and then asked to calibrate their bikes and find their way around a serpentine course defined by gates, building columns, metal barriers and concrete blocks. The course was not optimum, as space was in short supply. Nevertheless the students soon got the right idea, and improved their rides as they repeated their measurements.

Next day we met at the start/finish area, and I laid down an accurate 30 meters on the curb, using the calibrated Stanley/Brazil tape. Several tapes were checked, and all fell within a millimeter or two of the 30 meter length. This news was received gladly, as news of the badly-manufactured Brazilian Stanley tape had traveled.

The students laid down two parallel calibration courses, one on the asphalt sidewalk and one on the road. This permitted one-way riding while calibrating the next day saving time and confusion.

In the afternoon a long traffic island was used as the measured course, and students were instructed to ride around it until they reached their own idea of where the 1 km mark should be. There was considerable difference of opinion, caused partially by the fact that the 1 km course took just over 7 laps of the island, and included fourteen 180 degree turns.

On the final day, the real world was introduced. All 13 measurers assembled at the start of the International Pampulha Lake race, a circuit around the lake of about 17.9 km, with many turns. Results were reasonably good. The experts (x) were generally clustered having the lower measurements while the novices (b) had higher values.

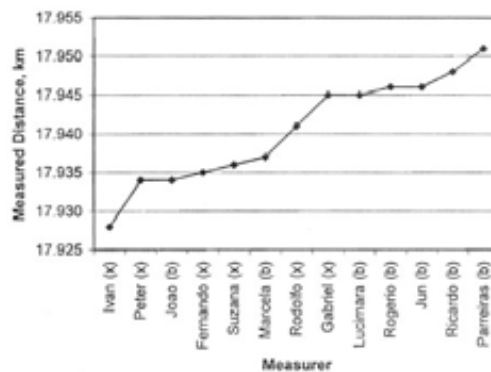
Upon completion of the ride, all measurers recalibrated and went to a lakeside restaurant for needed refreshment

Pete Riegel



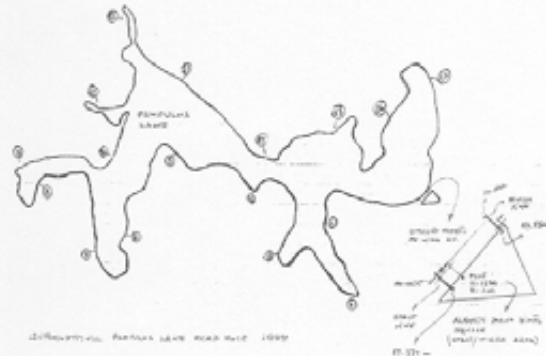
Laying out the calibration courses.

Measurements of Pampulha Lake

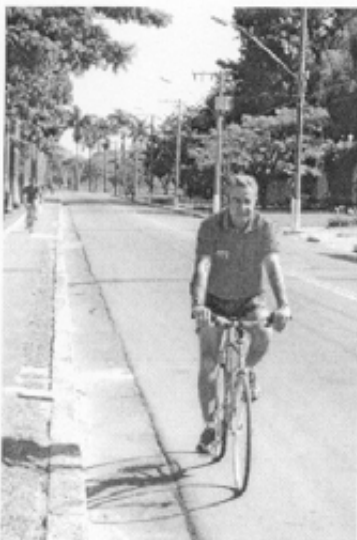




The race was sponsored by Kaiser Beer. The pasta Party featured 100 pretty models. Here are 6 in one t-shirt, while Gabriel Monteiro converses.



The Pampulha Lake course



Rodolfo riding the calibration course



Viewing space was at a premium during the race. Here we see spectators in the trees.



Washing the roads before the race

PICTURES FROM BELO HORIZONTE

CERTIFICATE NUMBERING

October 31, 2001

From David Reik

Dear Mike Wickiser:

Thanks for your "Road Running Technical Council Certified Course Renewal Procedure" memo. It's helpful to have a coherent national policy.

I think we could use a coherent national policy regarding multiple-course certificates. I note that multiple-course certificates, with multiple race distances specified but each given the same identification code, are still being produced. In recent issues of "Measurement News," I see listed TX 01048 ETM (1 mile and 5 km); MN 01011 RR (5 and 10 km); IL 01011 JW (16.7 km and 50 km); TX 01038 ETM (1 mile and 5 km); and BER 00042 RT (half and full marathon).

Apparently, such certificates have been issued for a long time; in the March, 1985 edition of "NRDC News," I see WA 84008 TD listed six times; a 15, 20, 25, 30, 50 and 100 km all have that identification code, and, presumably, are on the same certificate.

This causes me to ask, What is a "certified course"? Is it a running route on which a race of one distance can be run, or is it something similar to a track, a measured path along which races of various distances can be run between any number of specified points? Our certificate forms are set up with the assumption that a course is for a race of one distance, but we have a long tradition of multiple-race-distance courses.

I have been issuing multiple-race-distance certificates myself for a long time, but (I believe) I have always given each distance a separate identification code. I count fifteen different multiple-distance certificates that I have issued over the years, the earliest from 1985. In that year, I issued a certificate that contained both a 50-miler (CT 85008) and a 100-K (CT 85009). At that time, we had a system involving two signatories on certificates; Peter Riegel also signed this one.

In 2001, I put CT 01009 DR and CT 01010 DR, a 5-K and a 10-K that share a common start, a common finish, and a common turnaround point, on the same certificate. The certificate was sent back to me by Paul Hronjak, Vice Chair East. He wrote, in a letter dated July 1, 2001:

"While your excellent map makes everything completely clear, a separate certificate should be issued for each certification number for filing purposes."

I wrote back, asking if he realized that he was "suggesting a change in established national policy." I quoted a November 5, 1997 letter from Peter Riegel to Jim Gerweck in which Riegel wrote:

"I believe it is chintzy to charge two fees for one certificate. When I can get two courses (or more) on a single certificate, the fee is \$15 (that's what I charge). And I combine courses when possible onto one certificate."

"Joan's Registrar fee is \$2.00 per certificate, not \$2.00 per course."

Paul Hronjak wrote back on July 7, 2001. He wrote, in part:

"Although I can understand your interpretation of Pete's earlier correspondence his intent was to say that two distances on a given course may be included on a single certification with a single number (emphasis mine). If we start accepting multiple certificates on a single sheet of paper we are setting a dangerous precedent."

You wrote, on July 15, 2001:

"Some certifiers add an additional distance to the certificate with the appropriate drop and separation where a course utilizes a certified split. This is OK, but I don't see the reasoning in combining two unique race courses on a single certificate. Simply because it happened in the past isn't justification to continue a poor practice."

"If you can provide me with a logical reason to continue with multiple certified courses on a single sheet of paper, I will listen."

All this leaves me confused. Your July 15, 2001 letter seems to express your disapproval of all multiple-race-distance certificates, whether or not all the courses on a single certificate are assigned one identification code or multiple codes, but I see that single-code multiple-race-distance certificates are still being accepted. Certainly the "dangerous precedent" that Paul Hronjak makes reference to in his July-7 letter was set a long time ago. Some of Paul Hronjak's comments lead me to believe that he would accept

two courses on one certificate if they had the same identification code. Perhaps I could change CT 01009 DR to CT 01010 DR and he would accept my two-distance certificate because each distance would have the same identification code. I am reluctant to do that because I believe that, while it may be messy to have two or more courses on one certificate, it is even messier to have multiple courses share the same identification code.

I agree with the opinion expressed by Bob Baumel at the December, 1997 meeting of the RRTC. The minutes of that meeting (written by Bob Baumel and printed in the January, 1998 "Measurement News") contain this passage:

"Bob Baumel noted that, even in a set of related courses from a single measurement, the courses may suffer different fates over time; for example, one course may get destroyed by construction and be decertified, while the others remain valid. This can be difficult to keep track of if both are on the same certificate and, especially, if they share the same certification number!"

I think it would be valuable if we asked for comments on this issue and arrived at a national policy, effective at some specified time in the future. It's awkward if previously accepted practice is changed so that a certificate is invalidated after the certificate has already been issued and distributed, and reimbursement has been solicited and received.

Sincerely,

David Reik
87 Wood Pond Road
West Hartford, CT 06107

Copies to: Peter Riegel (Riegelpete@aol.com), Paul Hronjak (hronjak@simflex.com), Tom McBrayer (mametm@aol.com), Bob Baumel (bobbau@earthlink.net), Jay Wight (Jaywight@earthlink.net), Robert Thurston (Thurret@aol.com), Bill Glauz (wglauz@kcnet.com), Rick Recker (rick_recker@hotmail.com), Jim Gerweck (zgerweck@aol.com), Will Graustein (wgraustein@snet.net) and Peter Volkmar (pvolkmar@snet.net)

Mike's Response

I have responded directly to David Reik on the issue of including multiple distances and multiple certificate numbers on a single document.

For those who are wondering just what the 'official policy' is, there is no written policy BUT, refrain from issuing more than one certification number on a single document. Multiple distances are acceptable if the distances are a part of one course. Certified splits are a prime example of including additional distances on a single certificate. Another example might be a 5k loop that gets repeated for a 10k race. I have always issued a separate certificate for such situations. It just makes for a cleaner finished document. This was my choice and not always required. Of course a 2.5km race walk course could generate several certs in order to cover all possible distances so a little common sense is in order.

The concern is that whenever extra distances are added to any certificate it can become cluttered and difficult to determine the proper drop and separation for each distance. Placing more than one number to a cert goes beyond acceptable. The certificate gets far too cluttered, looks sloppy and unprofessional and most importantly becomes a real headache for the person sorting out the data for the course list.

To go one step further, certifiers have the authority and responsibility to make decisions on courses that don't always fit neatly into the textbook examples. A boat load of written procedures can't cover every possible scenario. It is the certifier's experience and judgement that must guide their acceptance of a course, or concerns for the measurer to resolve. It ain't certified till the certifier says so, but once the certifier is comfortable the course is measured properly and the map reflects that course adequately, then issue the cert. That, along with helping out with measurement problems and questions is the certifier's job.

The VC's job is to provide additional assistance & expertise, and to review certificates & maps before they are forwarded to the registrar as a quality control check, not to override the certifier's job or authority.

Mike Wickiser Chairman RRTC

Subj: **Sydney Marathon Course 2001**
Date: 11/2/2001 8:00:20 PM Eastern Standard Time
From: *marathon@wave.co.nz (Andrew Galloway)*
To: *Riegelpete@aol.com*

Dear Pete,

I am writing this and maybe you'd like to publish it as a **warning** to event organisers, that they **must** have all necessary permissions and approvals before they go to the trouble and expense of measuring their course.

I was recently, at fairly short notice, asked by Dave Cundy, to travel to Australia to measure and certify the Sydney Marathon course which was being held on the 28th October this year. Although the event was advertised as following the 'blue line' of the Sydney Olympic Marathon it in fact only followed the Olympic course for part of the 42.195 km.

I flew to Sydney on Friday 5th October and on Saturday we drove around the proposed course. Sunday morning, we calibrated the bicycles (two local measurers and me) in a park at approximately the 9km mark. It had been decided that as they did not have any protection or permissions to measure the first 9km which went over the Sydney Harbour Bridge, crossing about 6 lanes of traffic and as it was exactly as had been used for the Olympics, we would take it as correct trusting the work done by Hugh Jones and about 10 others.

We measured from the 9km mark to the 25km mark which was largely in Centennial Park but also on roads through the city. This was fine and we had good police protection by two police motorcyclists. The people from Sydney decided it was far too difficult to measure from 25km to 37km along a busy State Highway (the M4) and again as this was exactly the same as the Olympic course it would be taken as correct. It was then off to the finish line in the athletic stadium, which was used as the warmup track for the Olympics, with the cars on a roof rack of station waggon. Then we rode and measured from this finish line back to the 37km mark. Finally as this was a little short, we found a loop on a road in the Olympic Complex and used this to make up the deficit. Taking the Olympic measurement parts plus what we measured we finally arrived at the 42.195km required. I left Monday back to New Zealand.

I had only been back home less than 24 hours when I received an email advising that the authorities would not approve the use of some roads the organisers had used within Centennial Park - **thus the measurement was invalid**. They asked if I could go back again to Sydney the next weekend to re-measure. This was impossible for me and finally I understand they used local measurers to do the job

The cost of my flights from Hamilton to Sydney return, meals and the AIMS fee - all for nothing and so I suggest that warning be given to organisers - **get all your approvals before you employ a measurer**.

Best regards,
Andy Galloway.

Subj: **Measurement Question**

Date: 9/26/2001 8:36:56 PM Eastern Daylight Time

From: [Thurston60](#)

To: rscar@pacbell.net

CC: [Riegelpete](#)

Ron,

I have a quick question. I am measuring and directing a new half marathon next month in Folsom, just outside of Sacramento. Almost all of the race is on a bike path around a lake. We have had to alter the start and first mile a couple of times. We have finally finalized the course.

One of my complete measurements was previous to the last change. On a separate day, I used the two mile mark to measure back over the new route to a new starting line. On a third day, I measured the course in full. The full measurement comes within .0005 of the combination of the two previous measurements.

I wasn't sure how to handle all of this paperwork since it deals with six calibrations (counting pre and post) and three working constants over three months. I have no problem with the volume of paperwork on my course measurement data sheet and calibration sheets if you have no problem with the end result.

I might just ride the entire course again, making the matter moot. It's a difficult measuring job, however. The winding, rolling bike path will be closed on race day to all other traffic, but it's open when I measure making for a lot of blind corners and confused bikers, walkers, and runners, even with an escort.

Any ideas on the paperwork? Should I just submit three different calibration data sheets?

Thanks,

Doug Thurston
Race Director
Gold Medal Event Management
905 Enterprise Drive
Sacramento, CA 95825
Phone number (916) 929-4786
Fax Number: (916) 929-4157
Website: www.rungoldmedal.com

Dear Doug,

One thing that has always helped me, when I receive it, is a rough diagram of the course showing the various segments and how the various measurements came out. It really helps to get my head around what I am looking at. It's much better than a written description.

The sketch need not be world-class, and it can use color, as it's not the course map. It can do a lot to clarify what was done.

You may find that it also helps you to understand better what you did. I have found that if I am unable to prepare such a diagram, I may not really understand what I did, or inadvertently left something out.

Best, Pete

Subj: **marathon certification**
Date: 9/21/2001 6:25:09 AM Eastern Daylight Time
From: glaze@premieraces.com (Premier Sports)
Reply-to: glaze@premieraces.com (Premier Sports)
To: riegelpete@aol.com

Hi Pete,

I'm planning a February marathon here in Columbus - the "Last Chance for Boston" Marathon. Feb. 1 is the last day people can register for the Boston Marathon, so we are putting together a 1 loop course (that will be run 26 times, approx.!!!) -- and we need it certified. It will be in downtown Columbus, beginning at COSI.

We want the event to be as unique as possible (offering splits for all 26 miles is a thought!).

Is there anything special I need to know before I go about the certification process for a marathon? Hopefully not, but thought I better ask, just in case.

Thanks,

Jeff Glaze
Premier Sports
<http://www.premieraces.com/>
glaze@premieraces.com
Phone: 614/431-9134

Dear Jeff,

You didn't say specifically but it appears that you are going to run the race on a one mile loop. You said a "1 loop course" and went on to say it would be run 26 times.

Here are some observations:

Make the loop exactly one mile. This will allow you to have only one timing point. Of course, this will almost certainly require you to have a turn-around point somewhere on the loop, unless a miracle occurs. You could have the whole thing be a half-mile out, half mile back course on the same road. Fewer cops to hire.

How are you going to keep track of how many laps each runner has completed? If you are doing Chip timing this may not be a problem. It can also be done with an army of lap counters, but mistakes will be made.

You will need to add the extra .21875 miles from the timing point to a finish line, perhaps an out-back from the timing point.

In terms of measurement, this one is dead easy. It does pose interesting questions of race administration.

If I understand this correctly, all you need to do is measure a one-mile loop or out-back, and a "tail" of 0.21875 miles to go with it. Nothing very special about it. Stay in touch and I'll help if you get stuck.

Best, Pete

MEASUREMENT OF COSTA RICA INTERNATIONAL MARATHON

When I went down I expected this to be a simple remeasurement of the 1995 course. How silly of me. He changed the marathon course by eliminating part of the route on the freeway to the airport, and doubling the smaller loop. He had it pretty well figured out when I arrived, but the actual measurement caused some adjustments. Basically he created a two-loop course, one time around for the half marathon, and twice for the full. As a result I almost measured the course twice. I say almost because the measurement to extend the half to the full marathon picked up at the 20K point and continued to the finish. So there was some offset if you will, between the two courses. I can't say, however, that I measured either course twice. I saw enough to say that there was very good agreement, but not a direct comparison of numbers

Ed note: AIMS requires only a single measurement, to be done by an expert.



L. to R.:

Don Augusto , head of the C.R. Athletics Federation; Me; Guillermo Saenz, RD; Transit police officer who provided escort.

Doug Loeffler

COUNTER IMPROVEMENT!

Paul Oerth
2455 Union St. #412
San Francisco, CA 94123
(415) 346-4165
(415) 346-0621 fax
email: POerth@aol.com

Dear Pete,

I've developed a magnifier that fits on the face of the counter. It effectively doubles the size of the numbers which of course makes it much easier to read. I will send a counter to you to try out as I greatly value your feedback.

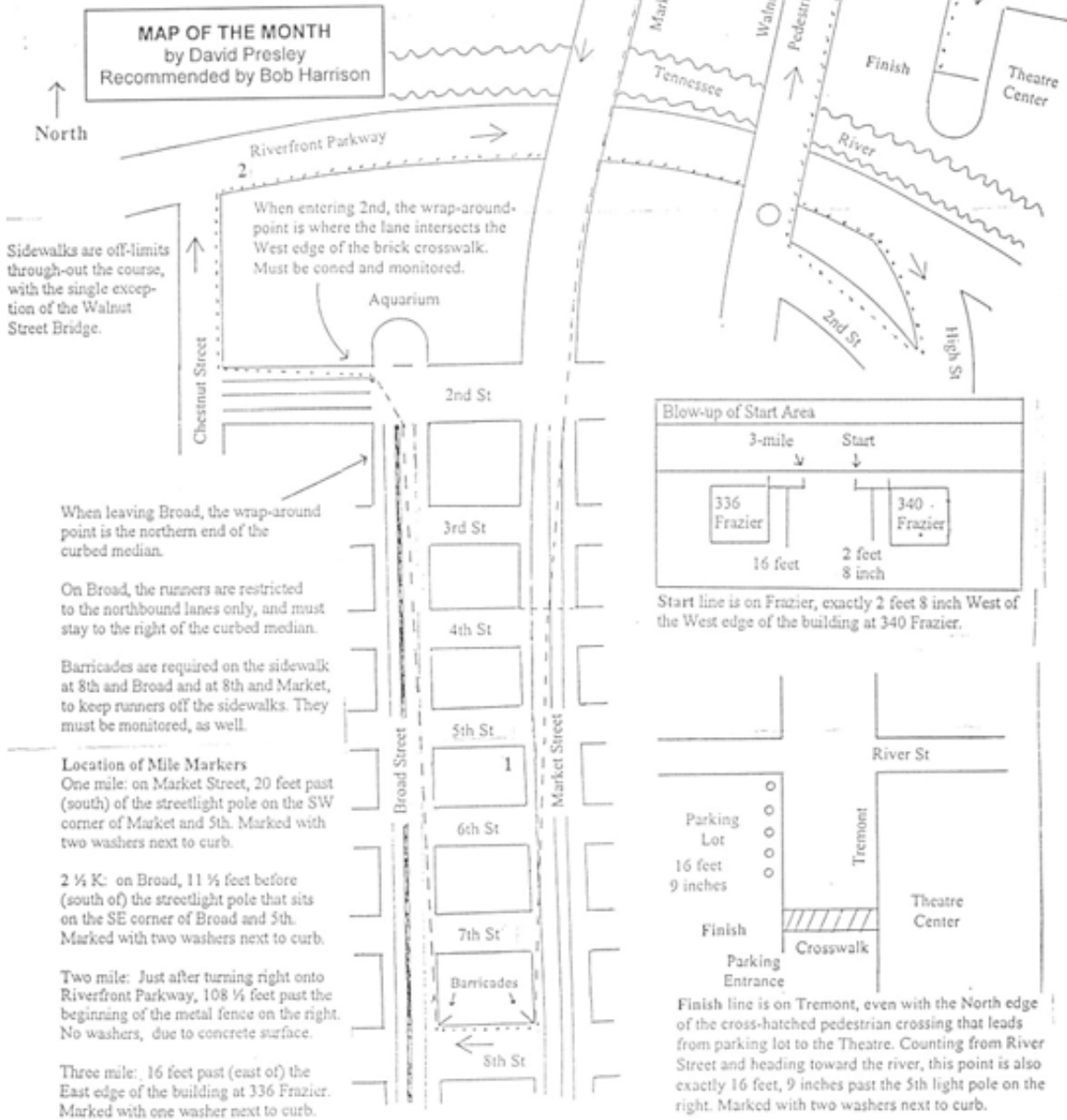
Warm regards,

Paul

Susan G. Komen Breast Cancer Foundation
Race for the Cure 5K
 Chattanooga TN TN 01022 RH

Runners have use of all four lanes on Frazier.

Runners have use of all four lanes on Market Street, until they reach the northern edge (crosswalk) of the intersection with 4th street. From that point southward, they are restricted to the two southbound lanes.



Sidewalks are off-limits through-out the course, with the single exception of the Walnut Street Bridge.

When leaving Broad, the wrap-around point is the northern end of the curbed median.

On Broad, the runners are restricted to the northbound lanes only, and must stay to the right of the curbed median.

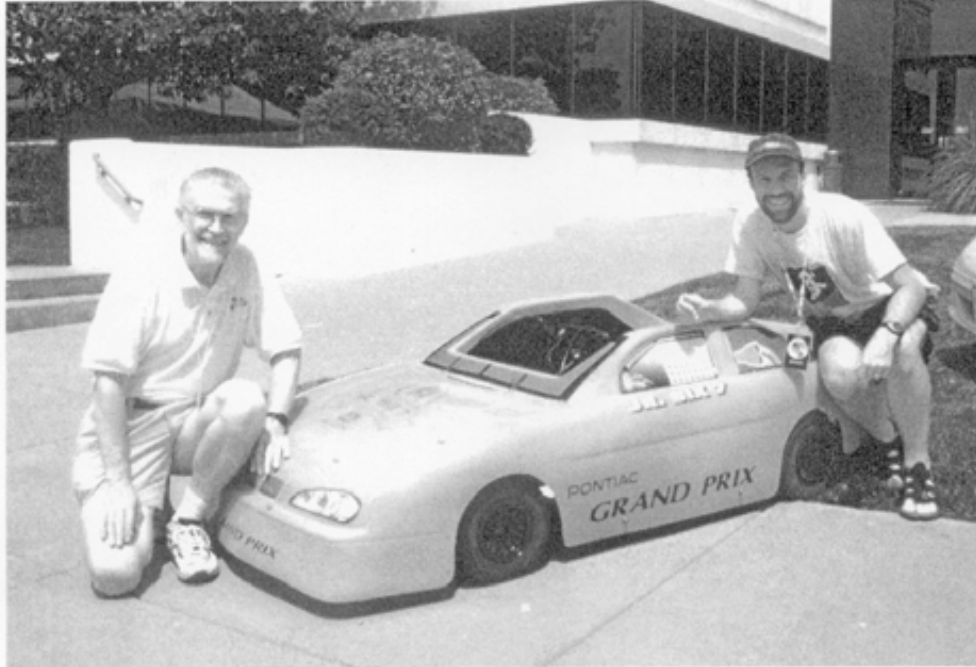
Barricades are required on the sidewalk at 8th and Broad and at 8th and Market, to keep runners off the sidewalks. They must be monitored, as well.

Location of Mile Markers
 One mile: on Market Street, 20 feet past (south) of the streetlight pole on the SW corner of Market and 5th. Marked with two washers next to curb.

2 1/2 K: on Broad, 11 1/2 feet before (south of) the streetlight pole that sits on the SE corner of Broad and 5th. Marked with two washers next to curb.

Two mile: Just after turning right onto Riverfront Parkway, 108 1/2 feet past the beginning of the metal fence on the right. No washers, due to concrete surface.

Three mile: 16 feet past (east of) the East edge of the building at 336 Frazier. Marked with one washer next to curb.



Karl Ungrean and Jim Gerweck, Nebraska and Indiana certifiers, respectively, meet midway between their domains in Davenport, Iowa at the Bix 7 Miler in July. Karl, an officer of the Corn Belt Running Club, is a veteran Bix official, and Jim has assisted the timing company for the past two years. Here, the two examine an operational model car used at the Junior Bix kids race. Efforts to fit the car with a Jones/Oerth counter proved unsuccessful.

RRTC OFFICERS - 1982 TO 2001

Year	Chairman	Vice Chair East	Vice Chair West	Finish Lines	Validations	Secretary	Webmaster	MNForum	Registrar	Treasurer	MN Editor
1982	Bob Campbell				Ken Young				Ken Young		Pete Riegel
1983	Alan Steinfeld	Pete Riegel	Tom Benjamin		Ken Young				Ken Young		Pete Riegel
1984	Alan Steinfeld	Pete Riegel	Paul Christensen		Ken Young				Ken Young		Pete Riegel
1985	Alan Steinfeld	Pete Riegel	Paul Christensen		Ken Young				Ken Young		Pete Riegel
1986	Pete Riegel	Wayne Nicoll	Bob Baumel	Alan Jones	Sally Nicoll	Jennifer Heskeith			John White	Harold Tinsley	Pete Riegel
1987	Pete Riegel	Wayne Nicoll	Bob Baumel	Alan Jones	Sally Nicoll	Jennifer Heskeith			John White	Pete Riegel	Pete Riegel
1988	Pete Riegel	Wayne Nicoll	Bob Baumel	Alan Jones	Sally Nicoll	Jennifer Heskeith			Joan Riegel	Pete Riegel	Pete Riegel
1989	Pete Riegel	Wayne Nicoll	Bob Baumel	Alan Jones	Sally Nicoll	Tom Knight			Joan Riegel	Pete Riegel	Pete Riegel
1990	Pete Riegel	Wayne Nicoll	Bob Baumel	Alan Jones	Sally Nicoll	Joan Riegel			Joan Riegel	Pete Riegel	Pete Riegel
1991	Pete Riegel	Wayne Nicoll	Bob Baumel	Alan Jones	Sally Nicoll	Joan Riegel			Joan Riegel	Pete Riegel	Pete Riegel
1992	Pete Riegel	Wayne Nicoll	Tom McBrayer	Alan Jones	Mike Wickiser	Joan Riegel			Joan Riegel	Pete Riegel	Pete Riegel
1993	Pete Riegel	Wayne Nicoll	Tom McBrayer	Vacant	Mike Wickiser	Joan Riegel			Joan Riegel	Pete Riegel	Pete Riegel
1994	Pete Riegel	Wayne Nicoll	Tom McBrayer	Ryan Lamppa	Mike Wickiser	Bob Baumel			Joan Riegel	Pete Riegel	Pete Riegel
1995	Pete Riegel	Wayne Nicoll	Tom McBrayer	Ryan Lamppa	Mike Wickiser	Bob Baumel			Joan Riegel	Pete Riegel	Pete Riegel
1996	Pete Riegel	Wayne Nicoll	Tom McBrayer	Ryan Lamppa	Mike Wickiser	Bob Baumel			Joan Riegel	Pete Riegel	Pete Riegel
1997	Pete Riegel	Mike Wickiser	Tom McBrayer	Ryan Lamppa	Doug Loeffler	Bob Baumel	Bob Baumel	Jim Gerweck	Joan Riegel	Pete Riegel	Pete Riegel
1998	Pete Riegel	Mike Wickiser	Tom McBrayer	Ryan Lamppa	Doug Loeffler	Bob Baumel	Bob Baumel	Jim Gerweck	Joan Riegel	Pete Riegel	Pete Riegel
1999	Pete Riegel	Mike Wickiser	Tom McBrayer	Vacant	Doug Loeffler	Bob Baumel	Bob Baumel	Jim Gerweck	Joan Riegel	Pete Riegel	Pete Riegel
2000	Mike Wickiser	Paul Hronjak	Tom McBrayer	David Katz	Doug Loeffler	Bob Baumel	Bob Baumel	Jim Gerweck	Karen Wickiser	Pete Riegel	Pete Riegel
2001	Mike Wickiser	Paul Hronjak	Tom McBrayer	David Katz	Doug Loeffler	Bob Baumel	Bob Baumel	Jim Gerweck	Karen Wickiser	Pete Riegel	Pete Riegel

AGE HANDICAPPING

by Jim Gerweck

About a year ago I came across an article on handicap starts based on age, with charts, written by Pete in an early issue of Measurement News. I was interested because we put on a handicap race each summer as part of a weekly cross country race series. In this event, runners start at staggered intervals based on their estimated finish time, slow to fast, and come together at the finish.

In the past, we have always handicapped runners based on actual recent performances, preferably in earlier series events or at least from a road race of a similar distance. The problem arises when someone shows up with no recent times, and we have to handicap them on a performance from previous years or, even worse, on what they think they can run. Invariably, people tend to think they are in worse shape than they actually are, and wind up running significantly faster than their handicap.

To combat this, several years ago we instituted a rule that anyone finishing more than a minute ahead of their handicap was disqualified. This has prevented the outliers (or outright liars) from winning prizes. In general, 95 per cent of the field finishes within the span of 30-45 seconds. This year, we decided to use a handicap based on age and sex, and Pete modified his original chart to be more accurate.

This made things much easier at registration. Runners simply looked up their age on the chart, and started when the clock counted down to their predicted finish time.

However, the end results were less satisfying than in the past. Since the tables take into account only age and gender, rather than ability or fitness, the more talented or trained runners were first across the line. And the field took almost 11 minutes to finish, removing the element of excitement the old method created. (full results are available online at:

http://members.aol.com/_ht_a/ClubCT/Results/01Results/01handicap.html).

This isn't to say that age-grading doesn't work in scoring distance races. Later in the summer, we held an age-graded 5K in which all the runners started together, but the final results were adjusted using the WAVA tables (available online at:

http://members.aol.com/_ht_a/ClubCT/Results/01Results/01AgeGrade.html).

This proved a more satisfactory use of age grading. We will continue using the method in scoring a traditionally run race, but for the handicap event, plan to go back to the old method next year.

Handicapping the 5 K in the Real World

Laurent Lacroix

Pete Riegel, in an article entitled Handicapping the 5K in the September Issue of Measurement News suggested a way of handicapping runners based on age-group record times. Pete's system of head starts based on age and sex had start intervals ranging from one second to several minutes. His handicapping system makes sense, but I felt that the logistics of one-second start intervals for groups of runners would be a race director's nightmare. To resolve this issue, I adapted his handicapping system by rounding off start times to ten second intervals, making the starting groups larger and start times much more manageable.

Lacroix-Riegel 10 Second Interval Handicapping

Sex/Age	Head Start (min)	Sex/Age	Head Start (min)	Sex/Age	Head Start (min)	Sex/Age	Head Start (min)
M 25-31	0:00	M 57; F 16, 44	4:20	M 74; F 8	8:40	M 81	14:00
M 24, 32-33	0:10	M 58	4:30	M 7; F 58	8:50	F 69	14:30
M 22-23, 34	0:20	M 59; F 15, 45	4:40	No starters	9:00	M 82; F 70	15:10
M 35-36	0:30	M 60; F 46	4:50	M 75	9:10	F 71	15:50
M 21, 37	0:40	M 11, 61	5:00	F 59	9:20	M 83; F 72	16:30
M 20, 38	0:50	M 62; F 14, 47	5:10	No starters	9:30	F 73	17:10
M 19, 39	1:00	M 63; F 48	5:20	F 7, 60	9:40	M 84; F 74	18:00
M 40	1:10	F 13	5:30	M 76	9:50	F 75	18:40
M 18, 41	1:20	M 64; F 49	5:40	No starters	10:00	F76	19:30
M 42	1:30	M 10, 65	5:50	F 61	10:10	M 85	20:00
M 17, 43	1:40	M 66; F 12, 50	6:00	No starters	10:20	F 77	20:30
M 44	1:50	No starters	6:10	M 77	10:30	F 78	21:30
M 16	2:00	M 67; F 51	6:20	F 62	10:40	M 86	22:00
M 45	2:10	M 68; F 11	6:30	No starters	10:50	F 79	22:30
M 46	2:20	M 9; F 52	6:40	No starters	11:00	F 80	23:40
M 15, 47	2:30	M 69	6:50	M 78; F 63	11:10	M 87	24:30
M 48; F 27-31	2:40	F 53	7:00	No starters	11:20	F 81	24:50
M 49; F 24-26, 32-34	2:50	M 70; F 10	7:10	No starters	11:30	F 82	26:10
M 14, 50; F 23, 35	3:00	F 54	7:20	F 64	11:40	M 88	27:30
M 51; F 22, 36-37	3:10	M 71	7:30	No starters	11:50	F 83	27:50
M 52; F 21, 38	3:20	M 8; F 55	7:40	M 79	12:00	F 84	29:30
M 13, 53; F 20, 39	3:30	M 72; F 9	7:50	F 65	12:10	M 89	31:00
F 19, 40	3:40	F 56	8:00	<u>Other Head Starts</u>		F 85	31:30
M 54; F 18, 41	3:50	M 73	8:10	M 80; F 66	12:50	F 86	33:50
M 55; F 42	4:00	No starters	8:20	F 67	13:20	M 90	35:20
M 12, 56; F 17, 43	4:10	F 57	8:30	F 68	13:50	F 87	36:40

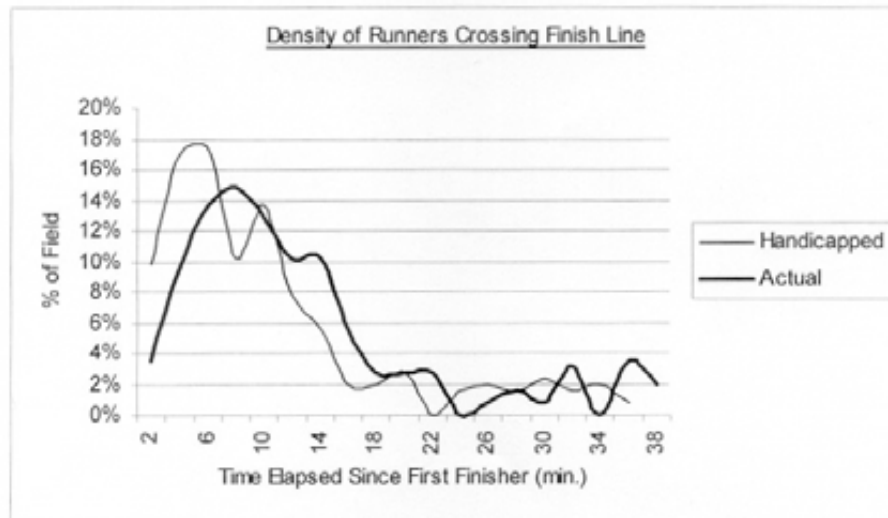
This system does away with age-group awards, and if a particular age group is very competitive, more than just the top three in the age bracket receive awards. Conversely, an age grouper couldn't win an award by default. In a sense, the handicapped race rewards age-group performance more than the traditional age groupings do. I wondered if one age group might have an advantage over another using this system. To test it, I plugged results of two local races into a spreadsheet to see how they would theoretically pan out. The top ten finishers in races here are usually a foregone conclusion, but the handicapping made things a lot less predictable. In addition to the getting rid of the *hohumness* of the races' rankings, the finish would be more exciting due to a higher density of finishers within the first few minutes of the top finisher's arrival, as illustrated in the graphs that accompany this article. Although there is a superficial similarity between the two curves, the age distribution of runners as they cross the line is a lot different.

Dietitians of Canada Eat to Run 5 km Results (255 Finishers)

At first glance, the results of the handicapped **Eat to Run 5 km** seemed to favour the women (5 of the top 7) and the teens (7 of the top 10). It may be that the quality of the field was high for those groups on that particular day. I'm not sufficiently familiar with the performances of these athletes to draw conclusions. Anyway, the next race that I handicapped (after-the-fact) seemed to favour the male Masters (5 of the top 10). As I suspected, the handicap is cruellest to runners who are in the age bracket that normally includes world record holders. They can take solace in knowing they won't stay young forever. As Pete says: "Consolation is available."

Dietitians Eat to Run 5 km with Addition of Handicap
First starter: Female - 70

Handicapped Placing	Sex	Age	Handicapped Time (min.)	Handicap (min.)	Actual Time (min.)	Actual Placing	Change in placing
1	F	65	29:31	2:50	26:41	162	161
2	M	15	29:38	12:30	17:08	12	10
3	F	21	29:47	11:40	18:07	26	23
4	F	15	29:50	10:20	19:30	42	38
4	F	19	29:50	11:20	18:30	29	25
4	M	16	29:50	13:00	16:50	7	3
7	F	39	29:56	11:30	18:26	28	21
8	M	14	29:57	12:00	17:57	22	14
9	M	14	30:02	12:00	18:02	24	15
10	M	14	30:03	12:00	18:03	25	15
11	M	43	30:09	13:20	16:49	6	-5
12	M	28	30:14	15:00	15:14	1	-11
13	M	17	30:16	13:20	16:56	8	-5
14	M	34	30:19	14:40	15:39	2	-12
14	M	52	30:19	11:40	18:39	30	16
16	F	15	30:22	10:20	20:02	53	37
17	F	15	30:24	10:20	20:04	54	37
18	M	41	30:27	13:40	16:47	5	-13
19	M	16	30:30	13:00	17:30	17	-2
20	F	11	30:31	8:30	22:01	90	70



Athletes in Action Funk's Toyota 5 km Handicapped Results
154 Finishers, First starter: Male - 72

Handicapped Placing	Sex	Age	Handicapped Time (min.)	Handicap (min.)	Actual Time (min.)	Actual Placing	Change in placing
1	M	61	21:22	2:50	18:32	19	18
2	M	16	22:10	5:50	16:20	6	4
3	M	66	22:14	1:50	20:24	38	35
4	M	55	22:22	3:50	18:32	20	16
5	F	21	22:58	4:30	18:28	18	13
6	M	34	22:59	7:30	15:29	2	-4
7	M	14	23:11	4:50	18:21	16	9
7	M	28	23:11	7:50	15:21	1	-6
9	M	43	23:21	6:10	17:11	9	0
9	M	52	23:21	4:30	18:51	23	14
11	M	56	23:27	3:40	19:47	30	19
12	M	28	23:28	7:50	15:38	3	-9
13	M	41	23:34	6:30	17:04	7	-6
14	M	17	23:39	6:10	17:29	12	-2
15	M	51	23:43	4:40	19:03	25	10
16	F	13	23:46	2:20	21:26	47	31
17	M	40	23:48	6:40	17:08	8	-9
18	M	72	23:50	0:00	23:50	90	72
19	M	30	23:53	7:50	16:03	4	-15
20	M	31	23:57	7:50	16:07	5	-15
21	M	19	24:05	6:50	17:15	10	-11
22	M	48	24:10	5:10	19:00	24	2
23	M	39	24:24	6:50	17:34	13	-10
24	M	14	24:41	4:50	19:51	32	8
25	M	12	24:49	3:40	21:09	46	21
26	F	32	24:53	5:00	19:53	33	7
27	M	40	24:55	6:40	18:15	14	-13
28	F	49	25:02	2:10	22:52	74	46
29	F	23	25:06	4:50	20:16	36	7
30	M	24	25:07	7:40	17:27	11	-19

