

# Measurement News



July 2001

Issue #108



The routes of the Edmonton 2001 World Championships Marathon and Racewalk courses were given a group measurement on May 26 & 27, 2001. The measurement team is shown here in Commonwealth Stadium. Left to right: Gerry Dragomir, Kelcey Stilwell, Pete Riegel, John McBean, Bernie Conway, Laurent Lacroix, John Jacobson, Marcel LaMontagne. See story inside.

## MEASUREMENT NEWS

Issue #108 - July 2001

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### Chairman's Clatter - July 2001

From Mike Wickiser

**Welcome to our newest state certifier.** Jim Gerweck has taken over certification duties for Indiana. Jim is the editor for Measurement News Forum and editor at large for Running Times. He has measured over 60 courses and was part of the Olympic Trials measurement team in Pittsburgh. This leaves your chairman without a state assignment. Maybe I will wrestle Hawaii from Pete and go off to conduct a few measurement seminars on measuring at the beach!

The Course Registrar, my wife Karen, has warned me about commenting on our full mail box or the increase in measurement activity. The once friendly mailman no longer smiles until after he empties his bag at our door. Karen's fingers are getting a real work out with 322 new courses and 17 renewals in the past two months. Actually this is great news, with nearly 600 new courses so far this year, certified accurate course measurement is alive and doing well.

There has been some call for printed copies of Course Measurement Procedures. A printed version is now available for \$4.00 from Pete Riegel. I have several copies available for regional certifiers at no charge. These preprinted copies are for the 1989 version. The latest version is available from the web site ([www.rrtc.net](http://www.rrtc.net)). Bob Baumel reminds me that the online version is superior and contains several improvements.

I recently had a request for a printed course list. Complete state lists can be sorted several ways and are available to any regional certifier upon request. Contact me to custom design a file or printed report of courses.

A course renewal procedure is in the works and will be sent to each certifier once complete. Since renewals represent such a small percentage of certified courses a hard copy procedure will provide a reference.



### JONES/OERTH COUNTER UPDATE - From Paul Oerth

We have found a new type of bonding material that is far superior to anything we have used in the past. Bonding delrin to delrin (the material of the actual counter mechanism and the connector that fits onto the sprocket gear) has always been a difficult problem. But, now, finally we seem to have found the best solution. The counters should never come apart. If there are any out there which have I will fix them at no cost if they are sent back to me. **NO JONES/OERTH COUNTER SHOULD EVER FAIL IN THE FUTURE!**

My cost of manufacture keeps creeping up. I haven't had an increase in the cost of the counters in the last two years; and I don't plan one at this time. Eventually I will have to increase the price. But not now.

## TOPPING OFF VALIDATIONS

A proposal from Scott Hubbard

Currently, after a course has been validated following a record, it isn't required to then be brought up to the full distance plus SCPF if found short of that amount. It's also unclear what the Validations Chair would decide to do if a second record were set on a previously validated course that declined to add the SCPF (after being found short of that amount). Does he send another validator in?

An example: A 20km course is found by a validator to be 20006 meters; long enough for records to be accepted. The race director's naturally very happy his course was found long enough and all records will count. He declines to add the 14 meters to bring his course up to the full distance plus SCPF. His thinking is: Why would another expert agent of USATF be sent in to see if his course were long enough if a record is set in the future? Didn't the first guy do his job right? How does the Validations Chair decide, in a case like this, to send in a second validator to remeasure the course after another record?

I propose to ease the situation by requiring all validated courses to be brought up to the full distance plus SCPF (if found short as per the example above). The race director above would be required to add the 14 meters for his course to remain certified. This would have a twofold effect: close a loophole in the current system and allow for more equitable comparison of records. The current system has worked very well over many years. My proposal takes a look at what we do after a validation. It doesn't seem much to me to require that courses be brought up to their full distance plus SCPF to retain certification.

I also propose that we 'grandfather' in all previously validated courses and not require them to be brought up to their full distance plus SCPF if they were found short of that amount.

*Editor: Commentary is invited.*

## CLOTHES MAKE THE MAN

Dave Poppers  
5938 S. Franklin St  
Centennial, CO 80121

Pete,

I want to share something that I used recently. I used iron-on letters of 5" height purchased at a craft store and applied to an old t-shirt. I was amazed at the respect I gained from drivers, at least when riding with traffic as it is only on the back. Not once did anyone honk at me and I was always given a comfortable amount of room. Now they have an idea what that crazy fruitcake is doing in the middle of the road. Granted, it is good for nice weather on a t-shirt, but I'm sure it can be used with other clothing for less desirable weather. Amazing how it takes years until something so simple and effective occurs to you.

Dave  
dpoppers@earthlink.net



**FINAL REPORT OF THE MEASUREMENT  
of the  
EDMONTON 2001 WORLD CHAMPIONSHIPS  
MARATHON  
and  
RACE WALK COURSES**

by Pete Riegel, IAAF Road Course Measurement Administrator, Americas

The Edmonton 2001 World Championships Marathon and Racewalk courses were originally measured by John McBean. The marathon route was given Canadian certification of accuracy under the identification number AB-2001-010-BDC. The racewalk route was certified as AB-2001-023-BDC.

A group measurement of the courses was performed on May 26 and 27, 2001, under my supervision. Confirming my measurements were Bernie Conway, Canada's chief course certifier and IAAF "A" level measurer, and six other Canadian measurers.

The marathon course had a measured length of 42214 metres, and it was recommended that 19 metres be removed at the start.

The 4 km stadium-to-stadium portion of the racewalk course had a measured length of 3985 metres, and it was recommended that 15 metres be added at the start. The 2 km loop had a measured length of 1998 metres, and it was recommended that the turnaround be extended southward 1 metre, bringing the loop to the desired 2000 metres.

The course adjustments will be performed by John McBean and checked by Bernie Conway when he comes to Edmonton in August as official observer of the events.

#### THE SEMINAR

A seminar was held concurrently with the course measurements. Organized by John Jacobson of Athletics Alberta, it consisted of myself and seven Canadian measurers of varying levels of experience, including Jacobson himself, and Bernie Conway, Chief Course Certifier for Canada.

The seminar was quite informal, with the principal goal being to give the measurers as much hands-on experience as possible within the two available days, and to provide them with copies of the Canadian course measurement manual for detailed study. Six of the eight measurers had



The class. Left to right, front row: Laurent Lacroix, Bernie Conway, Pete Riegel, Kelcey Stilwell. Back row: John McBean, John Jacobson, Marcel LaMontagne, Gerry Dragomir.

previous experience, while Jacobson and Kelcey Stilwell were novices.

The students quickly grasped the fundamentals of proper riding. Later when data was being calculated, a small amount of one-on-one guidance in calculation helped them complete the first day. No such guidance was necessary on the second day, as they now had the calculation procedures clear in their minds.

The quality of the work, judging by the data obtained, was equal to that of the best group rides I have seen. There was no way to distinguish between the work of these relatively inexperienced measurers and that of far more experienced people. As they have a viable certification system in Canada, I am hoping to see them take advantage of their newfound knowledge and confidence to produce certified courses.

The report in its entirety may be found online at the Athletics Canada/Run Canada Committee Road Race Course Measurement web site:

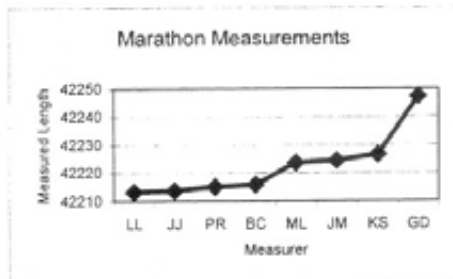
<http://www.mts.net/~llacroix/index.htm>

WORLD CHAMPIONSHIPS MARATHON AND WALKS MEASUREMENT - May 26 & 27, 2001

RECOMMENDATIONS FOR COURSE ADJUSTMENTS

MARATHON RECOMMENDATION:

Measurer	Length
LL	42213.37
JJ	42213.72
PR	42215.07
BC	42215.85
ML	42223.63
JM	42224.33
KS	42226.52
GD	42247.31



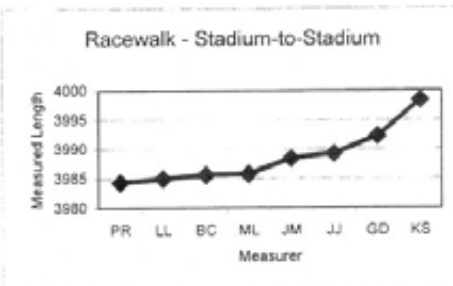
Use 42214 metres as official

Recommendation: Remove 19 metres from the course at the start.

RACEWALK RECOMMENDATIONS:

Stadium-to-Stadium:

PR	3984.31
LL	3984.96
BC	3985.62
ML	3985.77
JM	3988.38
JJ	3989.21
GD	3992.23
KS	3998.41

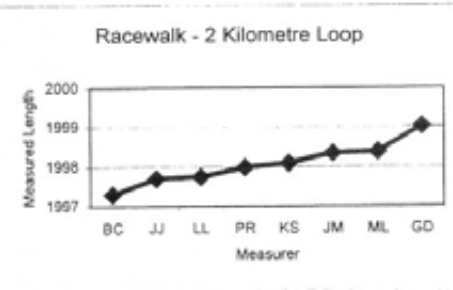


Use 3985 metres as official

Add 15 metres to the course at the start.

2 Kilometre Loop:

BC	1997.31
JJ	1997.71
LL	1997.75
PR	1997.99
KS	1998.08
JM	1998.34
ML	1998.38
GD	1999.03



Use 1998 metres as official

Move turnaround south 1.0 m

From Laurent Lacroix' supplementary report: The team consisted of:

Pete Riegel (PR), Columbus, Ohio – IAAF/AIMS Measurement Administrator for the Americas.

Laurent Lacroix (LL), Winnipeg, Manitoba – IAAF/AIMS Grade B measurer

Bernie Conway (BC), London, Ontario – IAAF/AIMS Grade A measurer and Canada's Chief Certifier.

Kelcey Stilwell (KS), Edmonton – Novice measurer

Gerry Dragomir (GD), Vancouver, British Columbia – Measurer with a year of experience and 3 certified courses to his credit

John McBean (JM), Edmonton, Alberta – IAAF/AIMS Grade C measurer, measurer of the Worlds courses and lead measurer for the validation rides.

Marcel Lamontagne (ML), Calgary, Alberta – Measurer with a few years experience and one certified course to his credit

John Jacobson (JJ), Edmonton – Novice measurer

## Measurement of the Guayaquil Half Marathon Guayaquil, Ecuador

by Pedro Zapata - San Juan, Puerto Rico

Dear Pete:

Today, June 18, I finally found the opportunity to write a little about my first international measurement in Ecuador. As the plane is flying over the Pacific in route to Panama, this is the perfect setting to put together a small story.

It never came to my mind when we invited you in 1999 to measure our race in Puerto Rico, *World's Best 10k*, that I was about to become a measurer. Going back to that moment and before your visit I had downloaded a just published measurement manual, I read it and became familiar with the procedures and philosophy. I'm glad that Mr. Alan Jones put together a simple piece of metal that takes people to meet others. (Jones counter). This past February while in the ChampionChip conference I had the pleasure of meeting Mr. Jones.

You kind of pushed me to measure my first race, the legendary San Blas Half Marathon, which in the previous year it was blamed to be 500 meters too long by the International Media. What a challenge, *Runners World* has described this route as the 3H's for hilly, hot and humid. After couple of attempts and after few cramps we got the course measured, yes it was too long the year before.

After the San Blas measurement a few other local races found out that there was someone in Puerto Rico who thought he could measure races, so a few of them were measured by me, of course with you (Peter Riegel) on the other side of the internet following my steps. This year at the *Worlds Best 10K Race* in February I got to meet Hugh Jones from AIMS and he mentioned that he has heard that I'm a measurer, just one person could of told him that, Peter Riegel, who also was present at the race. I realized that something is getting real serious here after Peter ask me during the race if I was willing to measure in South America, thinking that you were joking I said yes.

Now I'm going back to Puerto Rico after successfully completed the measurement of the *Media Maraton de Guayaquil* in Ecuador. About a month ago I got an e-mail copy from Peter sent to Mr. David Parducci of Ecuador commenting about me, here I was in the Caribbean and a couple of thousand miles closer

than Peter. So the next day I got an e-mail from David asking me if I could come to Guayaquil to measure the first edition of the Media Maraton. After asking Daddy Peter, he was able to build up my confidence to accept the my first International measurement, the only requirement was that Peter had to be available on the internet to verify the calculations and map before my departure from Ecuador. After couple of changes on the schedules (blame me) we finally chose the measurement date. The airplane tickets were sent ahead of time to me and I was told that I was to be received in Ecuador at the VIP lounge.

Copa was the Airline, which impressed me greatly. After so many years traveling with other airlines, I saw a big difference: the departures on time, great service and food. Arriving at Guayaquil was as told, someone was with my name on a board and after the proper identification he took my bag and passport, showed me the way to the VIP lounge where David and Diego Maruri were waiting for me, great service no hassle. I was taken that night to the Hilton tower where Diego has an apartment ready to be sold. The place was very nice and charming.

Diego came to pick me up at 7 am and we both had breakfast together at the hotel, then we picked up one bike at the front desk and drove to meet David, the steel tape follower and second measurement rider. We got the second bike from Mr. Castro who happened to be their corporate lawyer for their sport marketing business called MP3. Castro also a marathon runner maniac.

Diego, David and myself took off to a close by 6 lane road where the calibration course is to be set up. It surprised me the amount of cars going thru the road and I got a little anxious. We were provided with one Police in a tiny motorcycle that couldn't go faster than 25 mph. We lay down the calibration course about 9 am and started our calibration rides, to my surprise, the cars were giving the right of way to us without getting close and without stress to me. We drove thru the center of the city to the chosen starting line, it could not be any more scenic, with the Malecon on the back, the river and a nice looking monument called "La Rotonda".

From that point David and I started our measurement ride that turned out to be the course lay down ride plus the check ride. We rode thru the cars

down town and turned left against the traffic, this is where the police small bike became handy, and started to yellow paint each kilometer on the course. The traffic was something else, at that time I didn't care what was going on with the cars, I just rode the bike making the turns on the shortest possible way and stopping where my counter told me to. I had a yellow spray paint with a roll of masking tape my orange safety vest plus my sun glasses on. Diego who is the General Manager for MP3, a sister company of a family held communications monster called Demaruri was riding his Nissan Pathfinder in the attempt to protect us from the front and leading the route course.



Pedro Zapata (foreground) and David Parducci enroute in Ecuador.

It was really amazing riding the bikes in a unfamiliar culture where the turning signal light of the vehicles apparently is an option because no one uses it. Riding in the path of the buses dropping off passengers without making a full stop. Riding in the middle of these big high ways with two lanes on each side of you, and stopping some times to make markings right in the middle of a crossing, it was something else.

At one time I looked back and saw this line of about 6 to seven buses being held back in the middle of a traffic light because we were painting on the street, we just stopped the traffic. On the other hand, the course is mostly flat except for a couple of level bridges, I mentioned to David and Diego that I prefer to measure this course 100 times than measure San Blas one time. The finish line was set to be on a beautiful local running stadium, in which at that time we were banned to go in because a big inauguration was about to start. Diego

quickly took control of the situation and I don't know why the guard in charge of the gate got relieved from his duties. After a couple of laps in the track we came to our finish line. After marking and drawing the finish



line point we drove back to the calibration course for the final runs. David was in pain, he has not ride bicycles in a while, I could not walk on the second ride but the pain went away on the third ride.

We went to Mr. Castro's beautiful house by the river where I meet his wife and his 3 daughters (future runners). He owned one of the bikes and offered to me a beer, I didn't hesitate to accept the invitation, matter of fact I forgot how many beers I had. From there Diego took me to the apartment where I entered the data into the Excel worksheet, took a shower and I got pick-up by David this time to send the measurement data to you Pete. The offices of the business are something else, so different beautiful that I got amazed. From there we went to Diego's mother's house to have dinner and a couple of drinks. There was his younger brother and his son, David, Diego and his wife and of course, their charming Mother.

On Sunday we went back to the office and read your e-mail on the comments and prepared the map for the certification. On your final mail you mentioned to have a beer and we laugh, we already had some.

I want to thank you Peter for pushing me on this new adventure, and I want to give a special hug to these new friends in Ecuador. Diego gave me two books, one scenery book from Guayaquil and one family oriented book of their accomplishment on the legendary Guayaquil baseball team called "Fatty", this one was dedicated to me. I wish the best of the luck on this new event, I would be available anytime to help with anything I can to people like my friends from Ecuador.



## LAST MONTH'S PUZZLE - THE HAT PROBLEM

### The Problem:

Three players enter a room and a red or blue hat is placed on each person's head. The color of each hat is determined by a coin toss, with the outcome of one coin toss having no effect on the others. Each person can see the other players' hats but not his own.

No communication of any sort is allowed, except for an initial strategy session before the game begins. Once they have had a chance to look at the other hats, the players must simultaneously guess the color of their own hats or pass. The group shares a hypothetical \$3 million prize if at least one player guesses correctly and no players guess incorrectly.

### The Solution:

There are 8 possible combinations. The probability of each is 1/8.

Strategy: It is agreed that if you see two hats of the same color, you will guess that you are wearing the opposite color. If you don't see two hats of the same color you will pass. Of the 8 possible combinations, this will produce a successful strategy 75 percent of the time.

Combo	Head 1	Head 2	Head 3	Action taken	Result
1	R	R	R	1,2,3 guess blue	wrong
2	R	R	B	3 guesses blue	right
3	R	B	R	2 guesses blue	right
4	R	B	B	1 guesses red	right
5	B	R	R	1 guesses blue	right
6	B	R	B	2 guesses red	right
7	B	B	R	3 guesses red	right
8	B	B	B	1,2,3 guess red	wrong

### Winners

Ray Thompson

Bill Glauz

Mike Sandford

Bernie Conway

### Dunces

Pete Riegel

Malcolm Heyworth

An excellent discussion of this problem appeared in the New York Times, April 10, 2001. It may be found at: <http://channel.nytimes.com/2001/04/10/science/10MATH.html>

## MEASUREMENT SEMINAR AT THE RRCA CONVENTION

RRTC conducted a three-hour seminar at the RRCA Convention in Albuquerque. Led by Don Shepan, New Mexico certifier, the seminar was intended as a short orientation to the measurement process. On the day before the seminar, Don, Pete Riegel, and Tom McBrayer scouted out a somewhat suitable venue across the street from the convention hotel, in a development of condominiums. It was not ideal, but we needed something very close to the hotel because of the limited time available. On seminar morning, Don, Tom and Pete laid out two 150 meter calibration courses on a parking-free street adjacent to the hotel, and affixed Jones/Oerth counters to bicycles. The seminar was held after lunch.

After a brief orientation, the group went outside to measure the course. It immediately started raining, but measurement proceeded anyway. Pete led the way, getting lost amid the course twists. The group finally got its wits collected, and all successfully measured the course.

Because of time and weather constraints, we did not do everything in a "standard" manner. We had intended to have attendees do some steel-taping, but because of the rain this did not happen. We did only two pre-calibrations and two post-calibrations, instead of the standard 4. Also we used 150 meter calibration courses, rather than the mandated minimum of 300 meters. While the teaching methods were modified to fit the situation, the results are probably close to what would have been obtained had we had more time.

The measurement venue, in the subdivision across the street from the hotel, contained an inordinate number of turns relative to its length. This caused results to vary more than they would on a longer course. Also, some corners, due to the sloping curbs used in the area, were not as clearly-defined as we would have liked. This also caused variation.

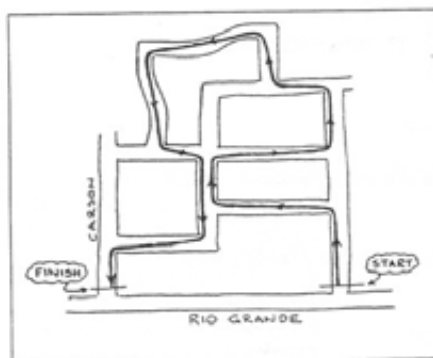
### RESULTS OF MEASUREMENTS TAKEN AT RRCA MEASUREMENT SEMINAR - MAY 4, 2001

Measurers	Abbrev
Becky Ryder	BR
Charlie Van Etten	CVE
David Cotter	DC
David Epstein	DE
Dave Jankowski	DJ
Donna Sellers	DS
Joe Sellers	JS
Pete Riegel	PR
Ralph Collins	RC

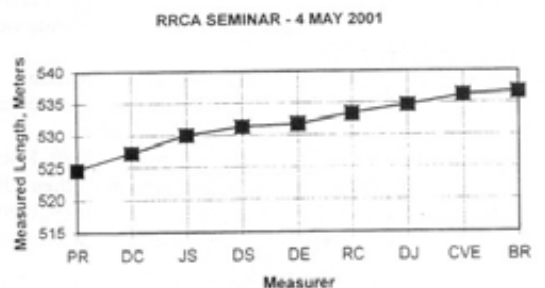


The faculty: Pete Riegel, Tom McBrayer, Don Shepan (leader)

Photo: David Epstein



The Course



How things came out

## IAAF WORLD HALF MARATHON CHAMPIONSHIPS

BRISTOL, UK

7 OCTOBER 2001

I measured the course in Feb 2000, and observed the City race held on 8 October. I made a slight adjustment to the course on 11 June 2001:

After a rough measurement of the course I realised that the turning point of the lap would fall under the canopy under the Clifton Suspension Bridge, out of TV shot. Using a shorter route, right at the start of the second lap, the turning point could be pushed northward beyond the canopy (and into TV shot).

After calibration about 1km from the eastern end of the course I measured 4km-3km in reverse, to avoid later riding against the traffic. I then measured the difference between the 'long' and 'short' routes, which was 224.2m. This implied that the first, longer lap would have to be a quarter-marathon plus half of the difference ( $21097.5/2 + 112.2 = 10660.85\text{m}$ ), and the second lap 224.2m less than this.

Starting from the proposed start/finish on St Augustine's Parade I measured the first 3km, stopping to note reference points for split kilometres. I then moved on to the point at which I had started the section measured in reverse and advance the counter by the number of counts recorded for this section. This gives the appearance of an unbroken ride and makes calculations much simpler. Continuing to beyond the Bridge canopy I turned around and restarted at lp89, riding to the end of the lap. The last 1.8km of the lap was against traffic, and I decided to make a check on this section by repeating the measurement in reverse from the finish line. It turned out to be virtually identical, but also gave me the chance to locate new references closer to the split locations (beyond the turning point, these had been guessed).

I repeated this procedure for the second lap, riding the shorter variation immediately after the start and reaching the turnaround reference with only a single count of difference, once the 224.2m had been accounted. I recalibrated and used the average constant for overall length, but I then returned to the finish line to measure out the final few split references in reverse using the finish constant.

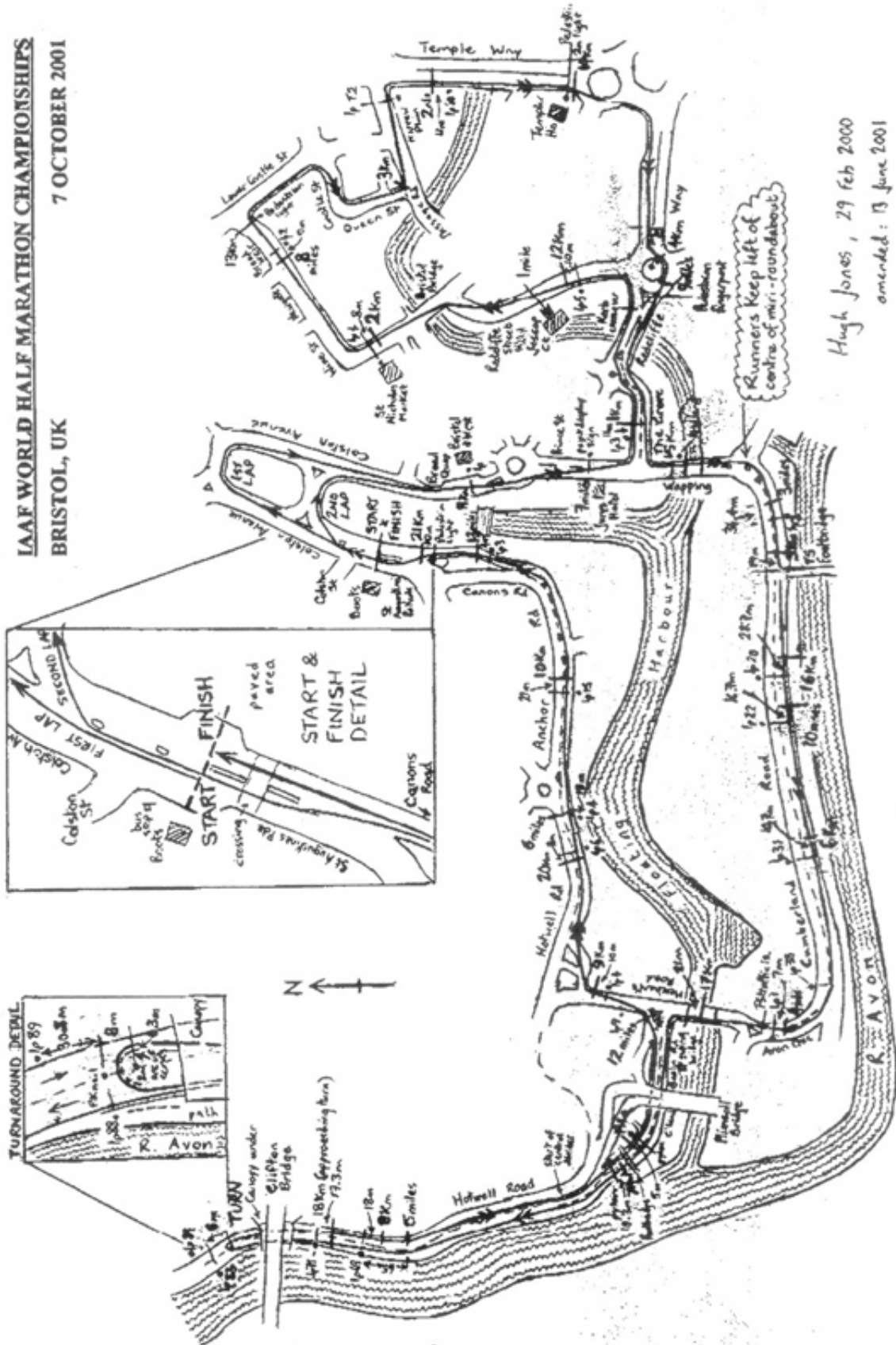
On 11 June 2001 I measured the difference between a new route and the old one for a 200m length of the course either side of the 4km point, going the opposite way around a roundabout. The new route proved to be 17.7m longer than the old route, so the turnaround point was retracted by half this amount. Below the calculation is presented as if done for the first time, without reference to the previous turnaround point:

To fix lap (and course) length: Course = 21097.5m; 1<sup>st</sup> lap = 10,660.85m; 2nd lap = 10,436.7m  
Start to lp89 = 72860/9.386752 + 17.7m )  
Lp89 to finish = 27706/9.386752 ) = 107731.3m + turn of 2.3m x pi  
= 10738.52m or 77.68m overdistance

Therefore the centre of the turnaround circle (radius 2m) should be located 38.8m before (south of) lp89, or 8.0m south of lamp-post 88

70000	counts	distance	adj.distance	St Augustine's Parade, TF traffic island outside Boots
(re-routing of course adds 17.7m at 4km)				
42860	72860	7762.0m	7779.7m	lp89, Hotwell Road
restart, add 72860 counts and 7.2m turn circle, then adjust by -77.6m				
43000				lp89, Hotwell Road
70706	27706	2951.6m	10660.9m	St Augustine's Parade, TF traffic island outside Boots
<b>SECOND (SHORTER) LAP</b>				
reading	counts	distance	adj.distance	location
03000			10660.9m	St Augustine's Parade, TF traffic island outside Boots
(re-routing of course adds 17.7m at 14.4km)				
73754	70754	7537.6m	18216.2m	lp89, Hotwell Road
restart, add 72860 counts and 7.2m turn circle, then adjust by -77.6m				
43000				lp89, Hotwell Road
70706	27706	2951.6m	21097.5m	St Augustine's Parade, TF traffic island outside Boots

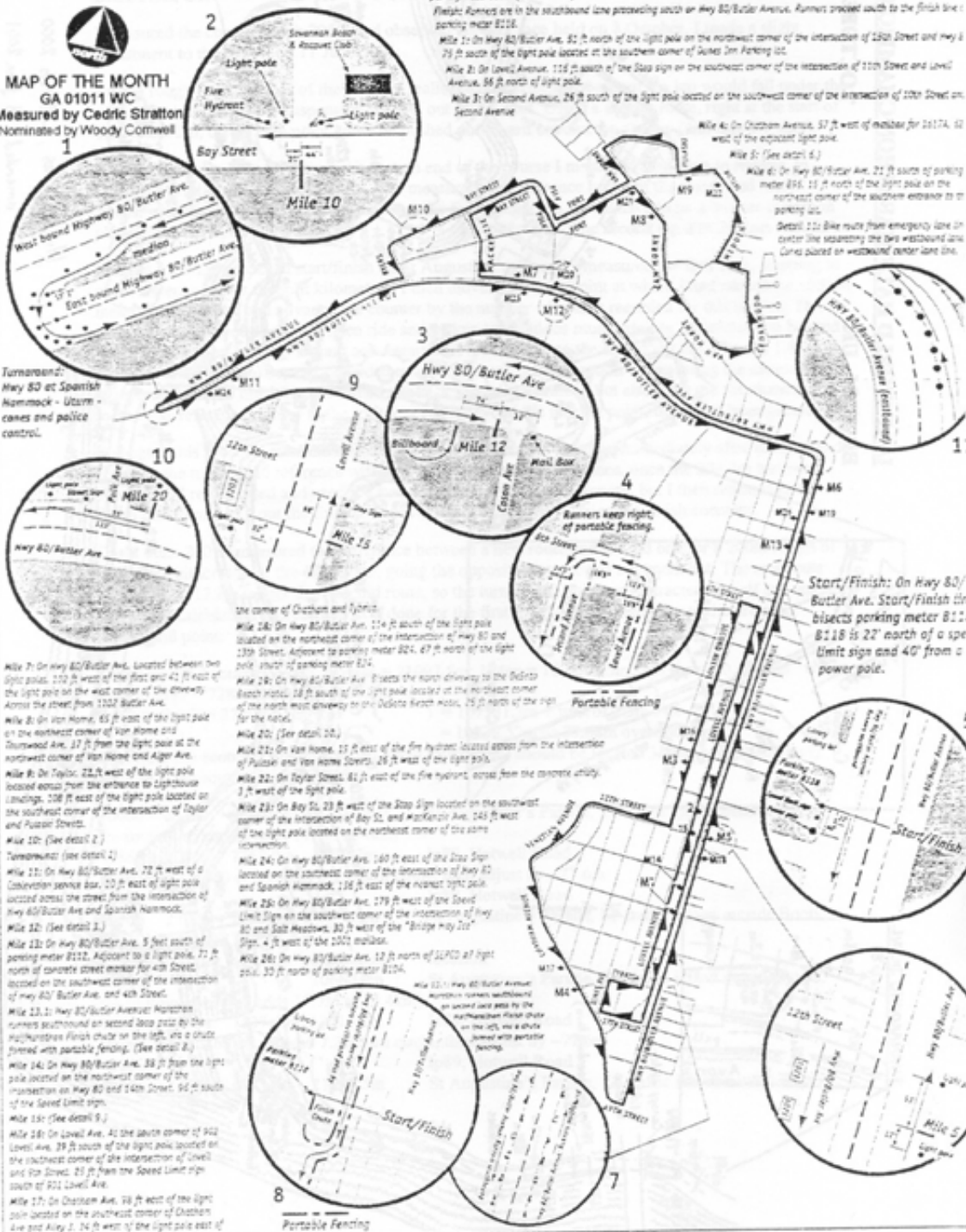
**IAAF WORLD HALF MARATHON CHAMPIONSHIPS**  
**BRISTOL, UK**  
**7 OCTOBER 2001**



Hugh Jones, 29 Feb 2000  
 amended: 13 June 2001

# 2001 Tybee Marathon

**MAP OF THE MONTH**  
GA 01011 WC  
Measured by Cedric Stratton  
Nominated by Woody Corwell



The Marathon course is two laps of the 2001 Half Marathon course.  
**Start:** Runners line up in the southbound lanes of Hwy 80/Butler Avenue. Runners proceed south to 17th Street from the start line parking meter 811A. (See detail 5.)  
**Finish:** Runners are in the southbound lane proceeding south on Hwy 80/Butler Avenue. Runners proceed south to the finish line parking meter 811B.  
**Mile 1:** On Hwy 80/Butler Ave, 82 ft north of the light pole on the northwest corner of the intersection of 12th Street and Hwy 80 29 ft south of the light pole located at the southern corner of James Jim Parking lot.  
**Mile 2:** On Level Avenue, 116 ft south of the Stop sign on the southwest corner of the intersection of 12th Street and Level Avenue, 36 ft north of light pole.  
**Mile 3:** On Second Avenue, 26 ft south of the light pole located on the southwest corner of the intersection of 12th Street and Second Avenue.  
**Mile 4:** On Ochsman Avenue, 37 ft west of marker for 2617A, 32 west of the adjacent light pole.  
**Mile 5:** (See detail 6.)  
**Mile 6:** On Hwy 80/Butler Ave, 21 ft south of parking meter 856, 16 ft north of the light pole on the northeast corner of the southern entrance to parking lot.  
**Detail 1:** Bike route from emergency lane on center line westward the two westbound lanes. Cones placed on westbound center lane line.

Turnaround:  
Hwy 80 at Spanish Hammock - Ultram - cones and police control.

**Mile 7:** On Hwy 80/Butler Ave, located between two light poles, 100 ft west of the first and 41 ft east of the light pole on the west corner of the driveway across the street from 11022 Butler Ave.  
**Mile 8:** On Van Home, 65 ft east of the light pole on the northwest corner of Van Home and Thurwood Ave, 37 ft from the light pole at the northwest corner of Van Home and Ager Ave.  
**Mile 9:** On Taylor Street, 22 ft west of the light pole located across from the entrance to Lighthouse Landings, 108 ft east of the light pole located on the southwest corner of the intersection of Taylor and Puzos Streets.  
**Mile 10:** (See detail 2.)  
**Turnaround:** (See detail 1.)  
**Mile 11:** On Hwy 80/Butler Ave, 72 ft west of a Convector service box, 10 ft east of light pole located across the street from the intersection of Hwy 80/Butler Ave and Spanish Hammock.  
**Mile 12:** (See detail 3.)  
**Mile 13:** Hwy 80/Butler Avenue: Marathon runners turnaround on second lane pair to the right-hand lane finish chute on the left, into a chute fenced with portable fencing. (See detail 8.)  
**Mile 14:** On Hwy 80/Butler Ave, 38 ft from the light pole located on the northwest corner of the intersection on Hwy 80 and 14th Street, 94 ft south of the Speed Limit sign.  
**Mile 15:** (See detail 9.)  
**Mile 16:** On Level Ave, 41 the south corner of 902 Level Ave, 39 ft south of the light pole located on the southwest corner of the intersection of Level and 12th Street, 25 ft from the Speed Limit sign south of 902 Level Ave.  
**Mile 17:** On Ochsman Ave, 38 ft east of the light pole located on the southwest corner of Ochsman Ave and Alley 1, 24 ft west of the light pole east of

the corner of Ochsman and Tybee

**Mile 18:** On Hwy 80/Butler Ave, 114 ft south of the light pole located on the northeast corner of the intersection of Hwy 80 and 12th Street, adjacent to parking meter 824, 47 ft north of the light pole, south of parking meter 824.

**Mile 19:** On Hwy 80/Butler Ave, it meets the north driveway to the Deltona Beach motel, 28 ft south of the light pole located at the northeast corner of the north west driveway to the Deltona Beach motel, 16 ft north of the pole for the hotel.

**Mile 20:** (See detail 10.)  
**Mile 21:** On Van Home, 11 ft east of the fire hydrant located across from the intersection of Puzos and Van Home Streets, 26 ft west of the light pole.

**Mile 22:** On Taylor Street, 81 ft east of the fire hydrant, across from the concrete utility, 7 ft west of the light pole.

**Mile 23:** On Bay St, 29 ft west of the Stop sign located on the southwest corner of the intersection of Bay St and Wackerline Ave, 24 ft west of the light pole located on the northeast corner of the same intersection.

**Mile 24:** On Hwy 80/Butler Ave, 160 ft east of the Stop Sign located on the southeast corner of the intersection of Hwy 80 and Spanish Hammock, 116 ft east of the nearest light pole.

**Mile 25:** On Hwy 80/Butler Ave, 179 ft west of the Speed Limit Sign on the southwest corner of the intersection of Hwy 80 and Salt Meadows, 30 ft west of the "Bridge way 10" Sign, 4 ft west of the 2001 marker.

**Mile 26:** On Hwy 80/Butler Ave, 12 ft north of 2LPCD at light pole, 30 ft north of parking meter 810A.

**Mile 27:** Hwy 80/Butler Avenue: Marathon runners turnaround on second lane pair to the right-hand lane finish chute on the left, into a chute fenced with portable fencing.

**Mile 28:** On Hwy 80/Butler Ave, 38 ft from the light pole located on the northwest corner of the intersection on Hwy 80 and 14th Street, 94 ft south of the Speed Limit sign.

**Mile 29:** (See detail 9.)

**Mile 30:** On Level Ave, 41 the south corner of 902 Level Ave, 39 ft south of the light pole located on the southwest corner of the intersection of Level and 12th Street, 25 ft from the Speed Limit sign south of 902 Level Ave.

**Mile 31:** On Ochsman Ave, 38 ft east of the light pole located on the southwest corner of Ochsman Ave and Alley 1, 24 ft west of the light pole east of

**Start/Finish:** On Hwy 80/Butler Ave. Start/Finish line bisects parking meter 811. 8:18 is 22' north of a speed limit sign and 40' from a power pole.

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# COURSE MEASUREMENT

by Ken Kaiser

first published in May 1998 Striders News

In the last newsletter, various points were raised regarding how courses are measured, so I thought I would pass on what information I have. A couple of years ago after doing several races where I had a good moan about the dodgy mile markers, I read an article in one of the running mags about course measurement, at the end of which there was an appeal for more people to train as approved measurers. In true Yosser Hughes style, I thought "I can do that! Gizza job" and shortly went on a training weekend at Lancaster University to become duly qualified as a North of England AAA course measurer (Grade 2). The only acceptable means of measurement for road races is by Jones Counter. This is not a measuring device however. It fits on the front wheel of a bike and resembles the pre-electronic mileometers many of us had as kids with a row of 5 numbers. Every revolution of the wheel registers 20 counts. To translate this into distance it is necessary to calibrate the device and in order to do this an accurately measured course is needed. This should be a straight, level section of road. It is possible to measure a course using a surveyors steel (not Nylon) tape, correcting for temperature and keeping the tape under the correct tension, but this is incredibly tedious and a far more convenient method is Electronic Distance Measurement (EDM) as used by surveyors. This, I am told, is incredibly accurate (3cm/km) and such a measured course exists in Leeds on Skeltons Lane, Whinmoor and is used by myself and Colin Morath, the other measurer in Leeds. So now you have an accurately measured kilometre (or half-mile) you can ride your bike along it and record the counts per 'k'. This is repeated for at least four rides, two in each direction and the average taken. Then a short course prevention factor is added by multiplying by 1.001. This adds 1 metre per 'k' to the course, so a 10k will be 10 metres long and a marathon will be 42 metres long. The final figure is your working constant. This is greatly affected by temperature and tyre pressure, and a further calibration is needed after measuring the course to see if the constant has altered. If it has, the greater measurement is taken. Many of these inaccuracies can be avoided by using (as I do) a solid front tyre, which gives much more consistent readings. It is still necessary to calibrate before every course measuring session. Having obtained your constant, the proposed course is ridden and adjusted as required. It is a common misunderstanding that courses are measured 1 metre from

the kerb on the left side of the road. Courses are measured where the measurer thinks the runners will run, so that means tight to the left on left hand bends and cutting corners to the right, particularly on minor country roads. It should not be possible to run shorter than the measured route, except for blatant deviations from the course.

Which brings us to track races, a whole new kettle of fish. Track measurements are taken 30cm from the kerb on the inside lane and 20cm from the lane marking elsewhere. There is no short course prevention factor involved as measurements can be much more easily standardised in the construction of the track. At a recent major event where several course measurers were present, they were asked to measure the track and all did so using road race technique, hugging the kerb on the bends. By doing this, a distance of up to two metres per lap short on a standard track is recorded, but still legal because the same applies to all tracks. This presumably accounts for the confusion in Max's race, not knowing how far to run. The other point raised was about road race records. Road courses vary tremendously and for this very reason marathon times are referred to as World Best times not world records. It has also been suggested that separate times should be kept for circular courses, point to point courses and out and back courses. Point to point courses in particular may have an overall fall in height (e.g. Boston, GNR) and may also take advantage of a following wind.

There can be no standardisation of road records because of the wide variety of courses. Finishing time is the only reasonable guide there can be. Even such variations as adding two minutes for Spen 20 is very arbitrary (and regional!). It is up to the runners to pick the courses that they know will suit them or are known to produce fast times. This does not necessarily mean flat e.g. Wakefield 10k.

*P.S. from Max: In statistics-mad USA, there are separate records for point-to-point and "loop" courses.*

**Ken Kaiser is a second-claim member of Valley Striders. His first claim is Horsforth Harriers.**

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*Created by Bob Jackson eMail [bob.jackson@virgin.net](mailto:bob.jackson@virgin.net)*

*Created on 23 June 1998*

Valley Striders Athletic Club is based in Leeds, Yorkshire, England

We participate in Road Running, Fell Running and Cross Country

<http://www.lecars.eu.org/bob.jackson/striders.htm>