

# Measurement News

March 2004 • Number 124



Jim Gerweck and Rick Melanson try to stay warm before the start of the U.S. Olympic Team Trials Men's Marathon in Birmingham, AL, in early February. Rick was the measurer for the Trials course which produced fast times for the top U.S. men, while Jim was in attendance covering the race for *Running Times* magazine. Rick was also the measurer for the open Mercedes Marathon and half marathon which were held on a different route the day after the Trials race. His account of measuring those courses appears inside as the Measurement of the Month. Photo by Victah Sailer/PhotoRun.

# MEASUREMENT NEWS

#124 – MARCH 2004

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## ABOUT MEASUREMENT NEWS

Measurement News (MN) is the newsletter of the Road Running Technical Council (RRTC) of USA Track & Field (USATF). MN is our way to talk to one another, so that we all know what's going on.

MN is also sent to many foreign measurers associated with AIMS and IAAF, who are also invited to participate in the dialogue.

MN is published bimonthly beginning in January (six issues per year). MN is sent free to RRTC officers and certifiers, and AIMS/IAAF measurers. Others may obtain MN by sending \$20 (for a one year subscription - six issues) to the editor.

If you wish to reproduce or report on anything in MN, go ahead, but an attribution would be appreciated.

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

Electronic copy or clean typed material is most welcome, but send what you can.

**Deadlines:** Material intended to be included in the May 2004 issue must be in the Editor's hands by April 20. Next issue will be mailed in early May.

## ROAD RUNNING TECHNICAL COUNCIL

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A complete list of certified courses may be downloaded from this site.

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## ONLINE MEASUREMENT FORUM

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To post messages to the list, send email to **[mnforum@rrtc.net](mailto:mnforum@rrtc.net)**. Please keep your comments in the body of the email (no attachments please). Also, please send only plain text; i.e., avoid formatted (HTML) messages (If you use HTML formatting, the formatting will be removed).

\* \* \* \* \*

### Chairman's Clatter - From Mike Wickiser

**Women's Olympic Trials Validation:** A group of warmly clad measurers have completed the validation measurement of the 2004 Women's Trials Marathon in St. Louis, MO. The team was led by Carol McLatchie with Carol Kane - Weston CT, Kathy Vierzba - Waco, TX, and Mary Edwards - Kansas City, MO doing the validation riding. Assisting in the task were Tom Eckkeman, course measurer and Bill Glauz, MO certifier. The group was fortunate enough to have clear weather and temperature of 31 degrees F. Several smiles were evident in group photos. I wonder who really had it worse, the men in Birmingham with the heat or the Ladies in the midst of winter. As with the Men's course some slight modifications are being made and a new pre-validated certificate will replace the current one. A full report, with photos and data, is in this issue.

**New Certifier:** Mike Renner has chosen to retire as certifier for Idaho. With Mike's recommendation, Len Andersen has been appointed Certifier for Idaho. Congratulations and welcome aboard Len.

**Active Certifiers:** As I was loading the latest batch of certificates I couldn't help but wonder how Tom McBrayer and Jay Wight keep up with all the certifying work they do. Tom is the VC West for RRTC and certifier for Texas. Jay is certifier for Illinois and Wisconsin. Tom routinely produces in excess of 100 measurement certificates a year and Jay has followed closely behind. Since Jay has taken over as certifier for Wisconsin, he has also has been issuing over 100 certificates a year. This caused me to take a look at the course list. For 2003 Jay Wight issued 124 measurement certificates overtaking the perennial leader, Tom McBrayer at 112 certs. I guess it is only fair to mention that John Ferguson also issued 23 Texas certificates so the bragging rights for most active remain in Lone Star state. Tom still holds the one-year record with 129 certificates from 1996. Here's to all certifiers for their work but with extra thanks to Jay & Tom.

**Annual RRTC Meeting:** Jim Gerweck has offered to host the RRTC meeting this year so it looks like Connecticut. Details are still in the works but it looks like a weekend in late August. Once the time and location are set, notice will be sent out in Measurement News Forum and Measurement News in plenty of time for anyone wishing to attend to make plans and get together. I hope to see you there.



## A MEASUREMENT PUZZLER

Years ago Tom McBrayer gave me a 30 metre steel tape. It is shown as the bottommost type in the figure below. The only difference is that my tape is marked in metres and decimetres, with the leftmost portion divided into centimetres and millimetres. The zero is at the left end.

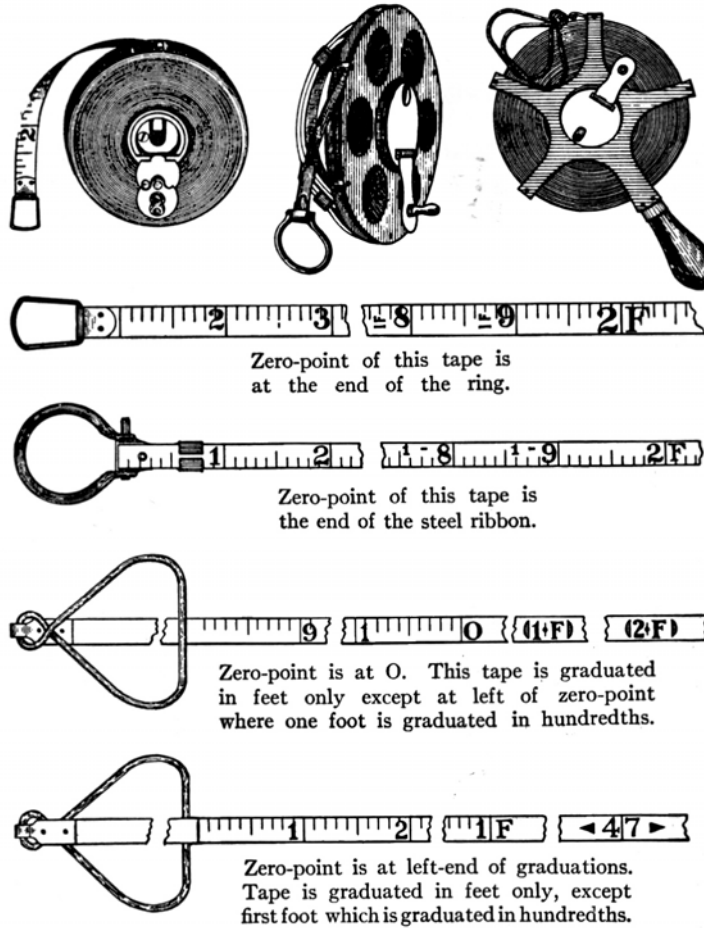


FIG. 1. COMMON TYPES OF STEEL TAPES.

Question: How do you use this tape to measure between two random points? It seems clumsy to me, and I haven't figured it out.....Pete Riegel

# Summary Report

## Women's Team Validation

### 2004 U.S. Women's Olympic Trials Marathon

Carol McLatchie

ST. LOUIS, MO

January 9-11, 2004

The team of validators met in St Louis and included veterans Carol Kane, Weston, CT, Kathy Vierzba, Waco, TX and Carol McLatchie, Bend, OR. First time validator, Mary Edwards of Kansas City, MO, joined us. Missouri/Kansas State Certification Chair, Bill Glauz, Leawood, KS drove to St. Louis with Mary and assisted with the validation. Brisk weather and friendly faces highlighted the week-end.

St Louis marked the fifth time that female course measurers have met as a team since the 1988 Trials to prevalidate the Women's Trials Marathon course.



Laying out the calibration course.

In addition to the 2004 Women's Olympic Trials Marathon, St. Louis is hosting a yearlong celebration of the 100th anniversary of the 1904 Olympic Games and the 1904 World's Fair as well as the Bicentennial of the Louisiana Purchase treaty signing and the Lewis & Clark expedition. A recently rebuilt, renovated and replanted Forest Park will host the majority of the Marathon Trials course. The 2004 Marathon Trials will start on the track at Francis Field, Washington University, the location of the start of the 1904 Olympic Men's Marathon.

The team arrived late Friday afternoon. The riders all connected with our "Spirit of St. Louis Marathon" hosts: Karen Lester and Tom and Gwen Eckelman for dinner in the Clayton Sheraton. During dinner we continued the planning for all Saturday tasks to prep for the Sunday morning validation ride. Tom Eckelman, the original measurer of the course (MO03001BG), would serve as lead rider for the validation. Ray Irwin, who worked with Eckelman when the course was measured, joined the team to drive and assist Bill with recording.

After a night's sleep, we were off to the Washington University track by 8:30am to check the race start area at Francis Field. From the track we rode in two cars piloted by Tom and Ray to review the remainder of the marathon course in Forest Park. We stopped along the course tour to mark our Sunday morning reference points.

The next stop was the Big Shark Bicycle Company, where Kathy, Carol K. and Carol M. were fitted with bikes. We installed the Jones-Oerth Counters. At Carol Kane's suggestion, the bike shop owner, Mike Weiss, added an extra washer to the front axle to ensure the counter did not hang up on

the bike fork and miss counts. This solved the skipped counts that were observed on the bikes loaned to Carol K. and Carol M. Mary and Tom used their own bikes. We met Diana Minardi Strauss, the "Spirit of St. Louis Marathon" media director, at the bike shop and reviewed the media coverage plan. She explained that she had secured a reporter to ride with Bill and Ray in the lead car for the entire validation exercise. Is this a first for Validation press coverage?

The women biked over to Forest Park to measure and mark a Women's Trials 300 meter Calibration Course on the marathon course on Lindell Avenue. The calibration course is near the 2-mile mark and Reference Point A. The planned 300m course was extended 5 meters to avoid the storm drain we encountered at the 300-meter mark. Next we practiced riding and recording on the new cal course. A quick lunch followed at Lindell Pavilion in Forest Park.



Mary Edwards and Carol Kane steel taping the track at Francis Field.

Bill reported, at first blush, that the track appeared to be about 10 meters short, so we determined that the validation ride would consist of the full 3-plus laps around the track, with no assumptions about the track length. (Later we found a transposition error in the calculations showing that the track was actually 398+ meters along the inside line, and 399.424 meters if measured 20 cm outside that line, which is where we rode, and 400.052 meters if measured 30 cm outside, which is where we would have ridden had there been curbs on the track). To compare, for the Sunday morning validation ride, we took data after a single lap of the track, showing an average distance for the five riders of 398.94 meters.

We reviewed the schedule for Sunday morning and biked back to the hotel, using the daylight to get a better idea of the route back to the Park we would use the following morning.

Mary piloted us to a quick trip downtown to the St. Louis Arch. We arrived at 5:15pm, 15 minutes late for the last trip to the "top of the Arch." We were disappointed and plan to make it to the top

The team biked over to the Washington University track and tape measured the track to calculate the distance, since a track certificate could not be located. We used the method proposed by Bob Baumel some years ago, to measure the two diameters W1 and W2 along with the track length L from apex to apex, and use the formula:

$$C = 2L + (\pi/2 - 1)(W1 + W2)$$



Commemorative plaque on the gate at Francis Field.

on our next visit to St. Louis. Dinner was early. Lots of warm clothes, hats, gloves and headlamps were prepared for the Sunday morning ride. Early to bed, early to rise!

### **Sunday Morning:**

Tom and Ray met at 5:00 a.m. to place cones on the course. Bill and the validators met at 5:30 a.m. and biked to the Lindell Avenue Cal Course. It was 30 degrees F with dark, clear skies. Bill and Ray were stationed as recorders on each end and we started our pre-cal rides by 5:50 a.m.



Kathy Vierzba celebrates the completion of the cold validation ride.

Next stop was the Washington University track. The course covers 3-plus laps of the track before exiting at the east end to connect to Forsythe Avenue. We rode the track trying to stay about 20 cm out from the line. Data was collected at track lap 1 and Mile 1.

Pete Wickham, St. Louis Post-Dispatch reporter, showed up and rode in the car with Bill and Ray. A Post-Dispatch photographer appeared out of the darkness to record the ride.

The Clayton Police had had a shift break and forgot to send us an officer to lead the group down Forsythe Avenue. We had a quiet, but thrilling ride from the track “against traffic” for a quick mile down Forsythe to Forest Park. Ray drove his car in the lead against traffic. We stopped briefly at Reference Point A on the west side of Forest Park to record data and wait for the St. Louis Park Police. The police called Tom and informed him we were on our own, as there were no available officers.

Back to the course: Reference A is on the 6.8-mile loop on the west side of Forest Park. The runners have an approximate one-mile run from Francis Field to Forest Park. The criterium course has 3.65 loops in Forest Park followed by a short final leg from the Muny Circle to the finish line in front of the World’s Fair Pavilion.

Ray continued as front driver. Diana Minardi Strauss, accompanied by her daughter, Alexis, followed our group with her car. We were off riding again at 7 a.m. with glimpses of daylight. We stopped to record data at Mile 2, Mile 5, Reference B and the Finish Line. We regrouped at Reference B and rode to Reference A to complete the loop in Forest Park. By 8:15 a.m. we were back to the Cal Course to ride and record our Post Cal rides. The temperature was 31 degrees, with some wind, but a nice, clear day.

We biked back to the historic gates of Francis Field track and the team gathered for a daylight photo op around 9 a.m. Next the riders and recorders met back at the hotel. We had a short interview with a local TV reporter and cameraman. We met for breakfast and some



Team photo in front of Francis Field.

number crunching. Bill Glauz entered the data into the laptop, which contained the spreadsheet previously prepared by Pete Riegel, customized to the St. Louis course. The numbers were in close agreement. Return flight schedules did not allow for extensive review in St. Louis, so we continued our discussion over the next week via e-mail and telephone.

Kathy and Carol K. headed to the St. Louis airport at 10:45 a.m. Mary and Bill departed for Kansas City at 11:30 a.m. Karen returned two bikes to Big Shark Bike Shop.

Tom and Carol M. called and faxed Pete Riegel with the validation numbers and prepped to head back out to Forest Park on bikes to do a preliminary location for all 5K intervals. Carol returned the loaner bike to Big Shark at 4:55 p.m., just before they closed. It was a long day of fresh air for all!

After further review, we used the data of the four women riders (this is the Women's Trials course!). The numbers agreed well, and all were within 0.08%. Pete and Bill advised to use the higher median numbers from Mary Edward's ride. The course was found to be 20 meters short of the full marathon distance. 62 meters will be added, including the 1.001 SCPF.

Course measurer Tom Eckelman had the longest ride, as he led us through the sweeping turns of Forest Park. After the "short verdict", Tom rationalized this is due to the park construction that had occurred since he originally measured the course in 2002. Three rather sharp curves on Lagoon Drive with tangents between had been replaced by three more sweeping curves during the reconstruction process, which would lead to a shorter course. This portion of the road construction was started after the April 2003 Women's Marathon Champs and finished the end of December 2003.

The team was most impressed with all the renovations in Forest Park and the historic start on the track at Francis Field.

Our support crew in St. Louis was fantastic. Thanks so much to Karen Lester, Tom and Gwen Eckelman, Ray Irwin, Mike Weiss, and Diana and Alexis Minardi Straus.

Thanks so much to our advisors and supporters: Bill Glauz, Pete Riegel, Amy Morss, Mike Wickiser, Nancy Lieberman and Elizabeth Phillips.

This is getting to sound like the Academy Awards, but the report would not be complete without a personal acknowledgement of the inspiration and support provided by Sally and Wayne Nicoll for the women's validation program.

Thanks again for the opportunity!

Yours in sport,  
Carol McLatchie, Validation Coordinator



Their efforts completed, the crew thaws out back at the warm hotel. Front row: Tom Eckelman and Bill Glauz; back row: Mary Edwards, Kathy Vierzba, Carol McLatchie, Carol Kane.



**CALCULATION PROGRAM, OLYMPIC TRIALS MARATHON COURSE FOR ST LOUIS**

- 1) Start to mile 1, three laps around the track, 20 cm to inside (track side) of inside of lane line next to infield, then 3/4 lap (approx) followed by SPR to exit gate and to 1-mile mark.
- 2) Mile 1 to Reference Point A, located between Forsyth and Lindell, under street light closest to Lindell.
- 3) Reference Point A to Mile 2
- 4) Mile 2 to Mile 5
- 5) Mile 5 to reference Point B1, located on S side of Muni Circle, at intersection with McKinley. W edge of cross walk on W side of McKinley. A9 of McKinley.
- 6) Ride Reference B1 to Finish.
- 7) Return to Reference B1. Free ride, no measuring.
- 8) Ride Reference B1 to Reference A.

Data is entered in outlined areas (red). Don't change any black areas.  
Everything else gets calculated by the program.

Enter names of riders and record the counts in the appropriate boxes. If you have more than 5 riders, copy and paste a new column. If you have less, delete the unneeded columns.

**DO NOT ALTER ANY OF THE NON-RED CELLS!**

**All calculations use average constant and include 1.001 SCPF**

**Calibration Course Layout:**

Location, Lindell, S side, 1st pole W of Des Peres to  
5 m W of W edge of storm sewer across from 6145 Lindell  
Kathy V tip, Mary E tail  
Carol M and Carol K assisting  
6 x 50 m + 5 m  
6 x 50 m + 4.999 m  
Tape temperature = 30.8 F  
Average measured length = 304.9995 metres  
Temperature correction factor = 0.99976  
Corrected length = 304.9263001 metres  
  
Final length = 304.9263  
304.9263 was used in subsequent calculation

**Calibration course lengths =** 304.9263 metres in subsequent calculations

Precalibration - 5:55 am, 31 F, clear and dark

	Tom E	Carol M	Carol K	Kathy V	Mary E
Begin ride 1	23614	498419	59450	60207	34000
End ride 1, begin ride 2	26466	501964	63023	63183	37451
End ride 2, begin ride 3	29317	505508	66594	66162.5	40903
End ride 3, begin ride 4	32168	509052	70166	69139	44353
End ride 4	35019	512595.5	73738	72116	47803

Elapsed Ride 1	2852	3545	3573	2976	3451
Elapsed Ride 2	2851	3544	3571	2979.5	3452
Elapsed Ride 3	2851	3544	3572	2976.5	3450
Elapsed Ride 4	2851	3543.5	3572	2977	3450

Average Count	2851.25	3544.125	3572	2977.25	3450.75
Precalibration counts/metre	9.35997075	11.63451341	11.7260204	9.77359857	11.3279856

Postcalibration - 8:15 am, 31 F, clear, sunny

	Tom E	Carol M	Carol K	Kathy V	Mary E
Begin ride 1	85330	699938	61940	28720	34671
End ride 1, begin ride 2	88181	703481	65511	31693.5	38119.5
End ride 2, begin ride 3	91033	707024	69081	34669.5	41569.5
End ride 3, begin ride 4	93885	710567	72652.5	37643	45018
End ride 4	96737	714109	76222	40617	48467

Elapsed Ride 1	2851	3543	3571	2973.5	3448.5
Elapsed Ride 2	2852	3543	3570	2976	3450
Elapsed Ride 3	2852	3543	3571.5	2973.5	3448.5
Elapsed Ride 4	2852	3542	3569.5	2974	3449

Average Count	2851.75	3542.75	3570.5	2974.25	3449
Postcalibration counts/metre	9.36161213	11.62999961	11.7210962	9.76375029	11.3222408
Constant for Day, counts/metre	9.36079	11.63226	11.72356	9.76867	11.32511

**Counter Readings Obtained on the Course**

	Tom E Counter Reading	Carol M Counter Reading	Carol K Counter Reading	Kathy V Counter Reading	Mary E Counter Reading
Start	48649	529588	90670	86200	64228
Mile 1	63710	548303	109556	101893	82467
Reference A	75220	562592	123962.5	113897	96383.5
Mile 2	78774	567007	128412	117610	100681.5
Mile 5	123962	623123	184951	164696	155290
Reference B1	139922	642944	204932	181325	174580.5
Finish	144239	648304	210338	185827	179798.5
Reference B1	48879	654674	16315	90770	85539
Reference A	83902	698161	60130	127272	127870.5

**Results of the Interval Measurements**

	Tom E Metres	Carol M Metres	Carol K Metres	Kathy V Metres	Mary E Metres	Shortest Split
Start						
Mile 1	1608.95	1608.89	1610.94	1606.46	1610.49	1606.46
Reference A	1229.60	1228.39	1228.85	1228.83	1228.82	1228.39
Mile 2	379.67	379.55	379.53	380.09	379.51	379.51
Mile 5	4827.37	4824.17	4822.68	4820.10	4821.89	4820.10
Reference B1	1704.98	1703.97	1704.35	1702.28	1703.34	1702.28
Reference A	3741.46	3738.48	3737.35	3736.64	3737.84	3736.64
Reference B1						
Finish	461.18	460.79	461.12	460.86	460.75	460.75
Start to Reference B1	9750.56	9744.97	9746.36	9737.76	9744.05	9737.76
3 Loops	31960.44	31938.52	31931.73	31917.33	31927.76	31917.33
Reference B1 to Finish	461.18	460.79	461.12	460.86	460.75	460.75

**OVERALL MEASUREMENT RESULTS**

	Tom E	Carol M	Carol K	Kathy V	Mary E	Sum of Shortest Splits
Total Metres course length =	42172.18	42144.27	42139.21	42115.95	42132.56	42115.83
Miles to Mile 1	0.9998	0.9997	1.0010	0.9982	1.0007	0.9982
Miles to Mile 2	1.9997	1.9988	2.0004	1.9979	2.0001	1.9973
Miles to Mile 5	4.9993	4.9964	4.9971	4.9930	4.9963	4.9924
Loop Length, A20 Metres	10653.48	10646.17	10643.91	10639.11	10642.59	10638.53
Loop Length, Miles	6.6198	6.6152	6.6138	6.6108	6.6130	6.6105

**Length of course without Short  
Course Prevention figure  
applied =**

**42214.3541    42186.4178    42181.3505    42158.0656    42174.6914    42157.9505**

## **A History of Women's Involvement in U.S. Olympic Marathon Trials Pre-Event Validation**

In 1985, Fred Lebow, of the NYRRC (New York Road Runners Club), anxious to dispel rumors about the length of the New York City Marathon Course, contacted Pete Riegel of the RRTC. Pete formed a group measurement team of the best U.S. runners that traveled to NYC from June 21-23, 1985. That team included Pete Riegel, Bob Letson, Wayne and Sally Nicoll, along with NYRRC staffers and NYC measurers Bill Noel, David Katz and Terpsie Toon. Ted Corbitt, founder of the certification program, attended the exercise but did not measure. The group laid out and measured a new NYC marathon course. The activity was reported in Measurement News #12, July 1985.

The measurement and validation was styled after the pre-validation the RRTC had completed to verify the 1984 Olympic Marathon Course in Los Angeles. As a point of information, the IAAF has utilized a procedure of course pre-validation for many years.

So this was the first time that a US woman had had an opportunity to measure with the men. From this exercise, Sally Nicoll hatched the idea to form an all-women's pre-validation for the 1988 Women's Olympic Trials Marathon in Pittsburgh, PA. Sally volunteered to coordinate with RRTC chair, Pete Riegel, to form an all-women's pre-validation team. This allowed the women to take full responsibility for their own event.

Pete agreed to support the concept and Sally was charged with identifying and training the team.

The 1988 Pittsburgh Marathon Trials sponsors were very supportive of the idea. WLDR chair, Julie McKinney, threw in some support along with the RRTC and the rest is history. The first women's pre-validation was a huge success. The 1988 team members were Carole Langenbach, Betsy Hughes, Susan Bascom and Amy Morss. Wayne Nicoll served as technical advisor. Sally Nicoll coordinated all aspects the pre-validation event. Bill Phelps accompanied the team on the course in place of course measurer, Mark Courtney.

Sally spearheaded the women's team again for the 1992 Marathon Trials course in Houston. The team of riders included Amy Morss, Betsy Hughes, Carole Langenbach, Elizabeth Longton supported by Sally Nicoll. Mary Ann and Tom McBrayer, the course measurer, served as local hosts and technical advisors. The crew came up with the idea to include a Trials qualified athlete, so Carol McLatchie was asked to ride with the women's team. Carol did not use a Jones Counter, rode at the back of the team and learned first hand what is involved in course validation. Again, this was a special event for all involved.

Four years later, Sally passed the baton to Carol McLatchie to organize and continue with the Women's Marathon Trials pre-validation. Amy Morss, the only female state certifier (New York), helped recruit the women's team and manage the technical aspects of the pre-validation for the 1996 Trials in Columbia, SC. The team included Amy Morss, Betsy Hughes, Elizabeth Longton and Carol McLatchie, riding as athlete representative.

Amy and Carol again recruited for the validation exercise for the 2000 Marathon Trials for a return to Columbia, SC. The team for the 2000 Trials included Amy Morss, Karen Gerweck, Carol Kane, Kathy Vierzba and Carol McLatchie. Local athletes were recruited to ride with the women's team: Janis Addison, a qualified Trials athlete and Holly (Hargroder) Ortland, local athlete and Carolina Marathon organizer.

For the 2004 Trials in St. Louis the women recruited were Carol Kane, Kathy Vierzba, Mary Edwards and Carol McLatchie. Bill Glauz, Kansas/Missouri state certifier, traveled across Missouri to assist the team.

A note of recognition to the course measurers of the Trials Marathon courses. They have usually ridden to lead the women's validation team—providing valuable insight in the shortest possible route for course validation. Experience has showed these men to be helpful, dedicated, and fun individuals. Hats off to all Women's Trials Course Measurers: 1988- Mark Courtney, 1992- Tom McBrayer, 1996 & 2000- Ed Prytherch and 2004- Tom Eckelman.

Submitted by Sally Nicoll & Carol McLatchie  
Fact checked by Pete Riegel (February 2004)

**USATF/RRTC CERTIFIED COURSE LIST**  
**New Entries, January - February 2004**

DISTANCE	COURSE ID	STA	LOCATION	COURSE NAME/RACE	m/km DROP	pct SEP	MEASURER	REPLACES
42.195 km	AL 03032 JD	A	Huntsville	Rocket City Marathon	0.0	1	J DeHaye	AL 94013 JD
42.195 km	AL 03033 JD	A	Mobile	First Light Marathon	0.0	1	L Mattics	AL 02014 JD
42.195 km	AL 03034 JD	A	Birmingham	Mercedes Marathon	-0.1	1	R Melanson	AL 03004 JD
21.0975 km	AL 03035 JD	A	Birmingham	Mercedes Half Marathon	-0.1	2	R Melanson	AL 03005 JD
5 km	AL 03036 JD	A	Mobile	Joe Cain Classic	0.0	1	J Bowie	
21.0975 km	AL 03037 JD	A	Auburn	Auburn Classic Half Marathon	0.0	0	D Underwood	
5 km	AL 04001 JD	A	Huntsville	Cotton Row 5k Run	0.1	1	J DeHaye	AL 02004 JD
10 km	AL 04002 JD	A	Huntsville	Cotton Row 10k Run	0.1	2	J DeHaye	AL 02005 JD
10 km	AL 04003 JD	A	Auburn	Love Your Heart 10k - Course II	0.0	1	D Underwood	AL 03003 JD
21.0975 km	AZ 04001 GAN	A	Phoenix	Rock & Roll Arizona Half Marathon	0.1	73	J Galope	AZ 03017 GAN
21.0975 km	CA 04001 RS	A	Healdsburg	Healdsburg Community H-MAR	0.0	0	D Thurston	
5 km	CA 04002 RS	A	Healdsburg	Healdsburg Community 5k Run	0.0	0	D Thurston	
5 km	CA 04003 RS	A	Los Angeles	Emerald Nuts 5km Run/Walk	0.0	3	R Scardera	
42.195 km	CA 04004 RS	A	Huntington Beach	2005 Pacific Shoreline Marathon	0.0	0	R Scardera	CA 03001 RS
21.0975 km	CA 04005 RS	A	Huntington Beach	2004 Pacific Shoreline HalfMarathon	0.0	0	R Scardera	CA 03002 RS
5 km	CA 04006 RS	A	Huntington Beach	2004 Pacific Shoreline 5km	0.0	0	R Scardera	
12 km	CA 04007 RS	A	Rocklin	Rocklin's Run for the Gold 12km	0.4	1	D Thurston	
5 km	CA 04008 RS	A	Rocklin	Rocklin's Run for the Gold 5km	0.4	2	D Thurston	
10 km	CA 04009 RS	A	Irvine	PCRf Reaching for the Cure 10km	0.0	0	R Scardera	
21.0975 km	CO 03027 DP	A	Estes Park	Estes Park Half Marathon	-0.1	2	M Moore	
21.0975 km	CO 03028 DP	A	Cherry Creek ST. Prk.	Make A Wish Half Marathon	1.1	3	P Tanui	
10 km	DC 03003 JS	A	Washington	Veteran's Day 10k	0.0	0	J Sissala	
10 km	DC 03043 RT	A	Washington	Jingle Bell Run (10K)	0.0	0	R Thurston	
5 km	DC 03044 RT	A	Washington	Jingle Bell Run 5k	0.0	0	R Thurston	
42.195 km	DE 03001 LMB	A	Wilmington	Dri-Release Delaware Marathon	0.0	0	D White	
5 km	FL 03049 DL	A	Daytona Beach	Automall Fall Festival 5k	0.0	2	F Diego	
5 km	FL 03050 DL	A	Ft. Lauderdale	Maroone Rotary 5k	0.0	1	G Witkowski	
5 km	FL 03052 DL	A	Rockledge	Rockledge 5k Winter Blast	0.0	0	J Morgan	
8.5 km	FL 03053 DL	A	Weston	8.5k Red Cross Run	0.0	1	G Witkowski	
5 km	FL 03054 DL	A	Pompano Beach	MLK Jr. Memorial 5k	0.0	3	G Witkowski	
21.0975 km	FL 03055 DL	A	Madiera/Largo	Florida Gulf Beaches Halfathon	0.0	61	C Lauber	FL 01054 DL
5 km	FL 03056 DL	A	Belleair	Run for the Rec	-0.2	2	E McDowell	
42.195 km	FL 04002 DL	A	Lake Buena Vista	Walt Disney World Marathon	0.0	2	T Ward	
42.195 km	FL 04003 DL	A	Tampa	HOPS by Tampa Bay Marathon	0.0	2	T Ward	
5 km	FL 04004 DL	A	Ft. Lauderdale	17th St. Causeway Bridge 5k	0.0	0	G Witkowski	
10 km	FL 04007 DL	A	Petersburg Beach	St. Pete Beach Classic 10k	0.0	0	A Johnson	
5 km	FL 04008 DL	A	Petersburg Beach	St. Pete Beach Classic 5k	0.0	1	A Johnson	
5 km	FL 04009 DL	A	Tampa	May Day 5k	0.0	0	J Fernandez	
10 km	GA 03015 WC	A	Augusta	WJBF News Channel 6 Turkey Trot	0.0	0	T Crute	GA 03009 WC
5 km	GA 04001 WC	A	Lithonia	Heart - to - Heart 5k Run/Walk	3.8	56	A Watson	
Cal	GA 04002 WC	A	Lithonia	Dogwood Rd. 1000 meter Calibrator	0.0	100	A Watson	
Cal	GA 04003 WC	A	Newnan	Oak Hill Cemetery 1000 ft.	0.0	100	W Cornwell	
10 km	GA 04004 WC	A	Newnan	Run for Angels	0.0	1	W Cornwell	
42.195 km	GA 04005 WC	A	Savannah	Tybee Marathon	0.0	0	R Boyette	GA 01011 WC
11 mi	IA 03018 MF	A	Ames	Army Eleven Miler	-0.2	8	D Bryner	
5 mi	IL 03101 JW	A	Channahon	Frosty 5 Mile	0.0	5	C Hinde	
5 km	IL 03116 JW	A	Downers Grove	Indian Boundary YMCA 5k	0.0	4	C Hinde	IL 01031 JW
10 km	IL 03117 JW	A	Downers Grove	Indian Boundary YMCA 10k	0.0	2	C Hinde	
10 mi	IL 03119 JW	A	Naperville	Spring Ahead 10 Mile Trail Run	0.0	0	J Wight	
5 km	IL 03120 JW	A	Northbrook	Low Blond Memorial 5k	0.0	2	C Hinde	IL 01001 JW
5 km	IL 03121 JW	A	Elmhurst	Joe Newton 5k	0.0	1	C Hinde	IL 02005 JW
8 km	IL 04001 JW	A	Chicago	Wolf Lake 8k	0.0	0	C Hinde	
5 km	IN 04001 MW	A	Indianapolis	500 Festival Training Series 5k	0.0	0	J Sauer	
10 km	IN 04002 MW	A	Indianapolis	500 Festival Training Series 10k	0.0	0	J Sauer	
21.0975 km	IN 04003 MW	A	Indianapolis	Indianapolis Life 500 Mini-Marathon	0.1	2	J Sauer	IN 03026 JW

DISTANCE	COURSE ID	STA	LOCATION	COURSE NAME/RACE	m/km DROP	pct SEP	MEASURER	REPLACES
5 km	KS 03057 BG	A	Wichita	Frosty Five	0.0	3	L Richardson	
2 km	KS 03058 BG	A	Overland Park	Corporate Woods	0.0	0	W Armbrust	
1 km	KS 03059 BG	A	Overland Park	Corporate Woods	0.0	40	W Armbrust	
42.195 km	LA 04001 JF	A	New Orleans	Nokia Sugar Bowl Mardi Gras	0.0	1	C George	LA 03001 JF
10 km	LA 04002 JF	A	Slidell	Camellia City Classic	0.0	0	C George	
0.1885 mi	MA 03023 RN	A	Lowell	La Lacheur Park Finish Loop	0.0	15	S Vaitones	
10 km	MA 03024 RN	A	Lowell	Bay State Marathon 10k	0.4	5	S Vaitones	
21.0975 km	MA 03025 RN	A	Lowell	Bay State Half Marathon	0.1	4	S Vaitones	
42.195 km	MA 03026 RN	A	Lowell	Bay State Marathon 10k	0.1	3	S Vaitones	
Cal	MA 03027 RN	A	Belmont	Belmont Concord Ave 1067.5 ft.	0.0	100	C Grant	
5 km	MA 03028 RN	A	Belmont	Brendan's Home Run	0.0	0	C Grant	
5 km	MA 03029 RN	A	Wakefield	Run for All Ages 5k	-0.4	7	J Kuo	
Cal	MA 03030 RN	A	Wakefield	Quannapowitt 1000 ft. Calibration	0.0	100	J Kuo	
5 km	MA 03031 RN	A	Boston	Boston Volvo 5k	0.1	2	S Vaitones	
5 mi	ME 04001 RF	A	Kennebunkport	Presidential 5 Miler	0.0	0	R Fitzpatrick	ME 92003 WN
Cal	ME 04002 RF	A	Kennebunkport	West Ave Quarter Mile Calibration	0.0	100	R Fitzpatrick	ME 94001 WN
5 km	MI 03025 SH	A	Grand Rapids	Calvin College Spring Classic	0.0	4	R Dewey	MI 00009 SH
5 km	MI 03026 SH	A	Troy	Reindeer Run	-0.2	2	S Hubbard	
5 km	MI 03027 SH	A	Belmont	Run A Mile For A Smile	0.0	3	R Dewey	
5 km	MN 03044 RR	A	Edina	Winter Waddle	0.0	1	D Wright	
Cal	MO 03051 BG	A	Springfield	South King's Ave 99.83 ft.	0.0	100	R Johnson	
Cal	MO 04001 BG	A	St. Louis	Lindell 3000 meter calibration	0.0	100	B Glauz	
4 mi	MO 04002 BG	A	Kansas City	Westport St. Patrick's	0.0	1	L Joline	
42.195 km	NC 03053 PH	A	Hickory	Foothills Marathon	0.1	0	T Rhodes	
5 km	NC 03055 PH	A	Greensboro	County Park 5k	-.37	1	P Hronjak	
5 km	NC 03056 PH	A	Charlotte	Twin to Twin 5k	0.0	0	D Joffe	
5 km	NC 03057 PH	A	Weddington	Band Together 5k & Fun Run	0.0	1	D Joffe	
5 km	NC 03058 PH	A	Cary	RITNY 5k	0.0	1	P Hronjak	NC 01071 PH
42.195 km	NC 03059 PH	A	Charlotte	Charlotte Observer Marathon	0.3	2	T Rhodes	NC 03002 PH
Cal	NC 04001 PH	A	Salisbury	Lanz Street 1000 ft. Calibration	0.0	100	D White	
8 km	NC 04002 PH	A	Salisbury	Winter Flight Road race	0.4	1	D White	NC 03005 PH
20 km	NC 04003 PH	A	Durham	Coach Bubba's Heart & Sole 20k	0.6	3	D Forbis	
4 mi	NC 04004 PH	A	Durham	Coach Bubba's Heart & Sole 4 Mile	1.8	9	D Forbis	
10 mi	NC 04005 PH	A	Ft. Bragg	Army Birthday 10 - Miler	0.3	2	P Hronjak	NC 97019 PH
5 km	NC 04006 PH	A	Washington	Young Run for Life	0.0	0	P Hronjak	NC 99030 PH
10 km	NC 04008 PH	A	Raleigh	Wakefield Kiwanis Club 10k	-0.9	0	N Wood	
8 km	NC 04008 PH	A	Raleigh	Wakefield Kiwanis Club 10k	0.6	10	N Wood	
5 km	NC 04008 PH	A	Raleigh	Wakefield Kiwanis Club 10k	2.5	44	N Wood	
Cal	NC 04009 PH	A	Raleigh	Ray Road 400 meters	0.0	100	N Wood	
10 km	NC 04010 PH	A	Durham	Coach Bubba's 20km- 12km split	0.7	33	N Wood	
21.0975 km	NH 03058 AM	A	Rock Hill	Celebrate Life Half Marathon	0.0	0	B Cavanagh	
5 km	NJ 03024 LMB	A	Elizabeth	Fallen Heroes 5k	0.6	32	P Hess	
5 km	NJ 03029 LMB	A	Convent Station	Safe Dating 5k	-1.8	3	P Hess	
5 mi	NJ 03030 LMB	A	Atlantic Highlands	Atlantic Highlands 5 Mile	-0.3	5	P Hess	
5 mi	NJ 03032 LMB	A	Rahay	Run Goose Run 5 Mile	0.0	4	L Baldasari	
42.195 km	NY 03020 AM	A	Buffalo	Nissan Buffalo Marathon	0.0	1	J Grandits	NY 02019 AM
5 km	NY 03051 AM	A	New York	Stop Global Warming 5k	0.0	0	P Hess	
5 km	NY 03056 AM	A	Buffalo	Bob Ivory Run	0.0	4	J John	
Cal	NY 03057 AM	A	Farmington	Farmington Cty Rd.28 2640.05 ft. Ca	0.0	100	D Freeland	NY 88007 WN
5 mi	NY 04001 AM	A	New York	NYRRC Fred Lebow 5 Miler	0.0	1	P Hess	
10 mi	NY 04002 AM	A	New York	NYRRC Frostbite 10 Miler	0.0	1	P Hess	
5 km	OH 04001 PR	A	Columbus	Arnold 5k Pump and Run	0.0	3	P Riegel	OH 03004 PR
Cal	OH 04003 PR	A	Westerville	Gentlewind Drive 1000 ft.	0.0	100	P Riegel	
5 km	OH 04004 PR	A	Columbus	Race for the Cure	0.6	9	P Riegel	OH 03008 PR
5 km	OH 04008 PR	A	Dublin	Financial Freedom 5k	0.6	8	P Riegel	
1 mi	OH 04007 PR	A	Columbus	The Miracle Mile	0.0	0	P Riegel	
5 mi	OK 04001 BB	A	Edmond	Frigid 5 - 2004	-0.1	0	G Lafarlette	

DISTANCE	COURSE ID	STA	LOCATION	COURSE NAME/RACE	m/km DROP	pct SEP	MEASURER	REPLACES
5 km	PA 04001 WB	A	Swarthmore	Habitat for Humanity 5km II	0.4	4	B Belleville	
10 km	PUR 04002 PR	A	Toa Baja	La Ruta del Encanto 10k	0.2	13	P Zapata	
5 km	PUR 04005 PR	A	San Juan	World's Best 10k - 5km split	0.6	21	P Zapata	
8 km	PUR 04006 PR	A	San Juan	World's Best 10k -85km split	-1.4	22	P Zapata	
5 km	RI 03006 RN	A	South Kingstown	Chiller Chase 5k	0.0	1	R Nelson	
5 km	RI 03007 RN	A	Providence	Jingle Bell Run & Chili Walk	0.0	3	R Nelson	
10 km	SC 03025 BS	A	Hilton Head	Hargray Hilton Head Bridge Run	0.0	0	C Magera	SC 96036 BS
5 km	SC 03026 BS	A	Columbia	Get to the Green 5k	-1.0	12	S Blane	
8 km	SC 04001 BS	A	Laurens	Main St Laurens Little River Bridge	0.0	0	D White	
5 km	SC 04002 BS	A	Manning	Lake Marion Dam Run	0.0	0	S Blake	
10 km	SC 04003 BS	A	Manning	Lake Marion Dam Run	0.0	0	S Blake	
10 km	SC 04004 BS	A	Surfside Beach	Surfside Beach 10k Road Race	0.0	0	D White	
5 km	SC 04005 BS	A	Easley	Trek for Tech 5k	0.0	2	W Terry	
21.0975 km	SC 04006 BS	A	Hilton Head	Hilton Head Half Marathon	0.1	1	C Magera	
5 km	SC 04007 BS	A	Myrtle Beach	Myrtle Beach 5k	0.0	20	D White	
10 km	TN 03013 DJR	A	Franklin	Habitrot 10k	0.0	0	J Zeigler	
5 km	TN 03014 DJR	A	Franklin	Habitrot 5k	0.0	0	J Zeigler	
8 km	TN 03015 DJR	A	Knoxville	Autumnfest/ Riverside 8k	0.1	1	A Morgan	
21.0975 km	TN 03016 DJR	A	Memphis	St. Jude Memphis Half Marathon	0.4	1	R McCrarey	
42.195 km	TN 03017 DJR	A	Memphis	St. Jude Memphis Marathon	0.2	1	R McCrarey	
5 km	TN 03018 DJR	A	Nashville	Resolution Run 5k	-0.2	3	J Zeigler	
5 km	TN 03019 DJR	A	Nashville	Friends & Kin - Partners 5k	0.0	0	j Zeigler	
15 km	TN 03020 DJR	A	Walland	Millhouse Classic 15k	0.0	0	A Morgan	TN 94013 RH
5 km	TN 03021 DJR	A	Knoxville	Turkey Trot 5k	-0.4	3	A Morgan	
8 km	TN 03022 DJR	A	Memphis	Moore Road 8k	-0.1	1	R Hunter	
5 km	TN 03023 DJR	A	Kingsport	Sugar Free 5k Dash	0.3	3	M Studholme	
10 km	TN 04001 DJR	A	Lebanon	Speedway 10k	-0.2	2	J Zeigler	
5 km	TN 04002 DJR	A	Nashville	Running to Beat the Blues 5k	0.0	0	J Zeigler	
5 km	TN 04003 DJR	A	Johnson City	Take Back the Night 5k	0.2	4	M Studholme	
5 km	TX 03111 ETM	A	Leakey	Leakey 5k	0.0	0	R Soler	
5 mi	TX 03112 ETM	A	Dallas	New Year's 5-Mile Run	0.0	1	K Ashby	TX 98117 ETM
5 km	TX 04001 JF	A	Austin	Mini Moto 5k	0.0	1	J Ferguson	
10 km	TX 04001 ETM	A	Houston	Bayou City Classic 2003	0.0	3	E McBrayer	TX 03001 ETM
Cal	TX 04001 WG	A	Edinburg	UT Pan AM 5th ave. 1000 ft.	0.0	100	B Grass	
5 km	TX 04002 ETM	A	Friendswood	Friendswood Methodist 5k	0.0	2	W Vanderbrink	
Cal	TX 04002 WG	A	McAllen	7100 N29th Street 1000 ft.	0.0	100	B Grass	
5 km	TX 04002 JF	A	Austin	The Texas 5, Independence Day Ru	0.0	0	J Ferguson	
5 km	TX 04003 ETM	A	Humble	Shriner Scurry 5k	0.2	0	R Barnhill	
5 km	TX 04003 JF	A	Austin	ASH Dash for Mental Health	0.0	0	J Ferguson	
10 km	TX 04003 WG	A	Edinburg	All American 10k	0.0	47	B Grass	
5 km	TX 04004 ETM	A	San Antonio	Police Officers Memorial 5k Run	0.0	8	M Johnson	
5 km	TX 04004 JF	A	Austin	Fertile Hope 5k	0.0	1	J Ferguson	TX 03001 JF
1 mi	TX 04004 WG	A	S. Padre Island	One Mile Beach Walk	0.0	0	B Grass	
5 km	TX 04005 ETM	A	Rockport	Whooping Crane Strut 5k	0.0	0	C Mericle	TX 00022 ETM
1 mi	TX 04005 WG	A	Alamo	One Mile Walk	0.0	3	B Grass	
10 km	TX 04006 JF	A	Cedar Point	Children's Cup 10k	0.0	4	J Ferguson	
10 km	TX 04006 ETM	A	Rockport	Whooping Crane Strut 10k	0.0	0	C Mericle	TX 00023 ETM
5 km	TX 04008 ETM	A	Houston	Running for the Arts	0.0	2	E McBrayer	TX 01010 ETM
5 km	TX 04009 ETM	A	Fulshear	Fulbrook 5k	0.0	3	E McBrayer	
2 mi	TX 04010 ETM	A	Dallas	Mardi Gras 2M & 4M	0.0	4	K Ashby	
4 mi	TX 04010 ETM	A	Dallas	Mardi Gras 2M & 4M	0.0	2	K Ashby	
Cal	UT 04001 DP	A	Castle Valley	Castle Valley Dr. half mile calibration	0.0	100	T Keogh	
21.0975 km	UT 04002 DP	A	Moab	Canyonlands Half Marathon	1.1	50	S Simmons	
8 km	VA 03045 RT	A	Virginia Beach	Shamrock 8k	0.2	6	M Studholme	
21.0975 km	VA 04001 RT	A	Virginia Beach	Shamrock Half Marathon	0.1	43	M Studholme	VA 03004 RT
42.195 km	VA 04001 RT	A	Virginia Beach	Shamrock Marathon	0.0	1	M Studholme	VA 03004 RT
5 km	WA 03023 BL	A	Redmond	Redmond Elementary Hawk 5k	-0.1	1	T Cotner	
1 mi	WA 03024 BL	A	Redmond	Redmond Elementary Hawk 1 mile	0.0	0	T Cotner	
Cal	WA 03025 BL	A	Coupeville	Crockett Lake 396.76m Calibration	0.0	100	T Cotner	
21.0975 km	WA 03026 BL	A	Coupeville	Wings of Gold Half Marathon	0.7	88	T Cotner	
42.195 km	WA 03027 BL	A	Coupeville	Wings of Gold Marathon	0.4	92	T Cotner	
5 km	WA 03028 BL	A	Issaquah	Issaquah Triathlon 5k	0.0	1	T Cotner	

DISTANCE	COURSE ID	STA LOCATION	COURSE NAME/RACE	m/km DROP	pct SEP	MEASURER	REPLACES
5 km	WI 03108 JW	A Beaver Bam	Run for Knowledge 5k	0.0	1	T Aten	
42.195 km	WI 03118 JW	A Medford	Pine Line Marathon	0.0	0	T Aten	
42.195 km	WI 03122 JW	A Green Bay	Cell Com Green Bay Marathon	0.0	1	D Moore	WI 01038 JW
21.0975 km	WI 03123 JW	A Green Bay	Cell Com Green Bay 1/2 Marathon	0.0	1	D Moore	
5 km	WI 03124 JW	A Milwaukee	Samson Stomp	0.0	6	K Gilgenbach	WI 98023 WG

**Renewed**

Cal	DE 85001 GD	A03 Wilmington	Shipleigh Road Standard 2659.34 ft.	0.0	100	R Fouse	
Cal	FL 89035 BH	A03 Ormond Beach	Ormond's Tomb Calibration 1 mile	0.0	100	P Surveying	
5 km	IL 89043 JW	A03 Tinley Park	Tinley Park Trot	0.0	2	C Hinde	
5 km	IL 93065 JW	A03 Glenview	OLPH 5k Phun Run	0.0	3	D Lamermayer	
5 km	MI 93015 SH	A04 Plymouth	Plymouth Y	0.0	2	S Hubbard	
10 km	MI 93016 SH	A04 Plymouth	Plymouth Y	-0.3	3	S Hubbard	
Cal	TX 93088 ETM	A03 Houston	4200 Yoakum Blvd. 441.18 meter	0.0	100	E McBrayer	

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2939 Vincent Road  
Silver Lake, OH 44224-2916  
Phone 330-929-1605  
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concrete island some 230 feet away and then angle back to course route. This was a lot better than using another turn-around. I also considered adding some distance to the Half Marathon turn-around for the marathon runners but since this was at the 10 mile and 23 mile point it would have resulted in some slow half marathoners mixing in with the first marathoners and it would have been a real problem.

I had another problem with the first and second measurement not being within the acceptable 0.008% difference tolerance (I had actually confused part of the course with the '04 Trials course and gone to the wrong street) and so I had to do one more measurement to get it within the difference tolerance. I think with all the preliminary adjustments I kept making on the course I ended up measuring the course about six times in all. This was the third year for the Marathon and we have changed the course each year. I think next year's will just have some minor changes. A lot of runners asked that we eliminate some of the climbs but that is hard to do in Birmingham.

*Editor's Note: I was in Birmingham to cover the Men's Olympic Trials marathon for Running Times magazine, and since my flight home wasn't until Sunday afternoon, decided to run the half marathon to get in a long run (I had hoped for warmer weather than back home, but at the start it was 27 degrees F. However, the sun quickly warmed things up). The first and last few miles utilized the same area, and in fact some of the same streets, as the Trials course. The organizers were smart enough to use the same finish line, thus being able to use the same structure for both races. There were indeed some good climbs after the halfway point, and I could only sympathize with the marathoners who would encounter them 13.1 miles further into their run. All in all it was a scenic, if somewhat challenging course, and being able to cross the same finish as America's top marathoners was quite a thrill.— J.G.*

#### Mercedes Marathon and Half Marathon

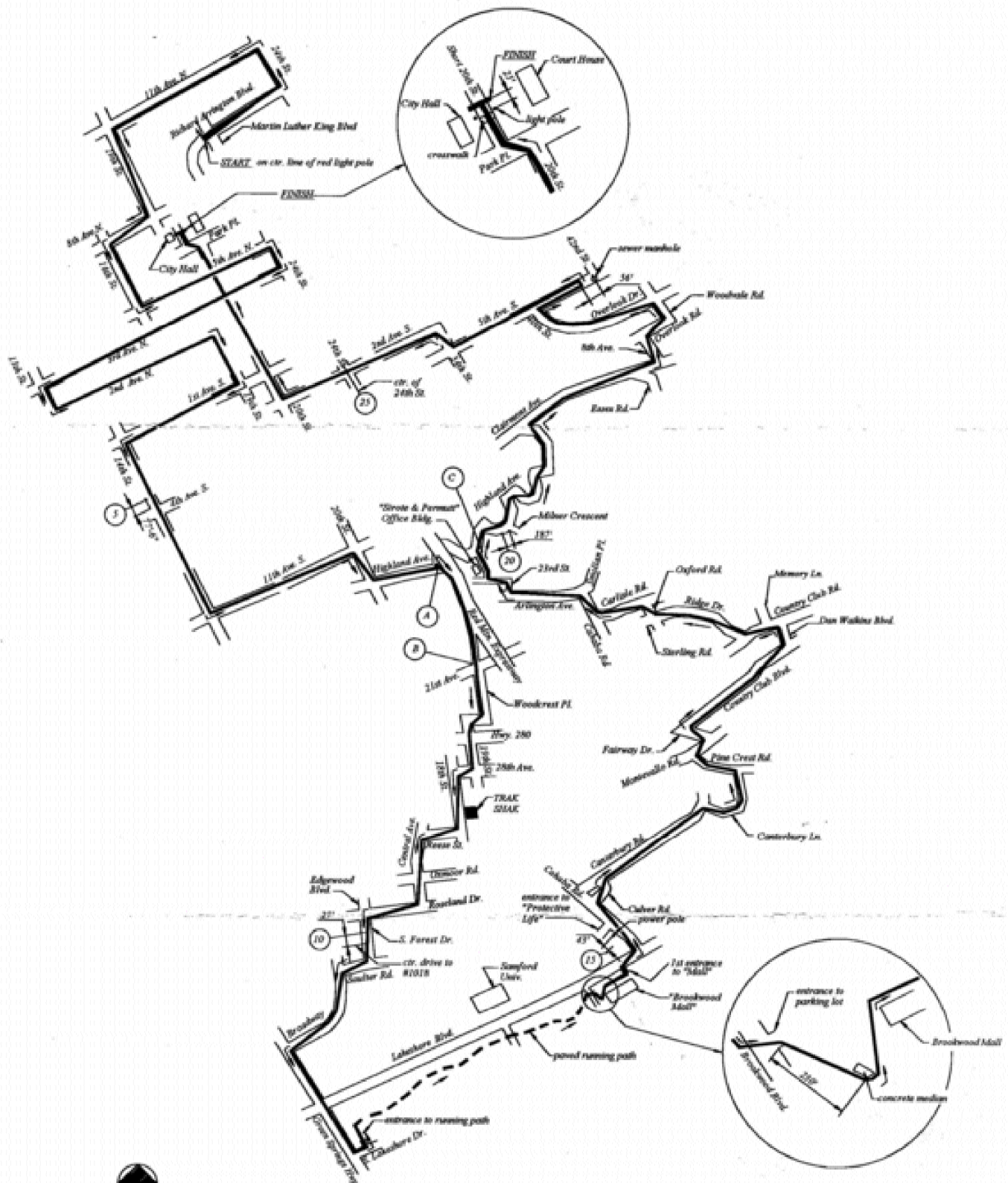
##### Half Marathon

Start to C	6.827903	6.823346
C to Fin	6.2313798	6.2808215
Total	13.1092828	13.1041675

##### Marathon

Start to A	6.648152	6.643579
A to B	.7367774	.7367774
B to C	12.565985	12.55454
C to Fin	6.2313798	6.2808215
Total	26.23229	26.214684

Course correction: Moved turnaround 13-6 out (to make half marathon correct)



**2004 MERCEDES MARATHON**  
 BIRMINGHAM, ALABAMA  
 (Map not to scale)

**AL03034JD**

Measured by: Rick Melanson  
 1235 Parliament Ln.  
 Birmingham, AL 35216 (205-979-1731)  
 on 06-29-03 using Cal course AL97012JD,  
 on 11-08-03 using Cal course AL03029JD and  
 on 11-09-03 using Cal course AL03039BDC  
 Race Director: Valerie McLean  
 Birmingham Marathon, Inc.  
 P.O. Box 59260  
 Birmingham, AL 35259 (205-870-7771)

## PUBLICATIONS AVAILABLE FROM RRTC

**Printed Course Lists** - A list of certified courses for any state is \$2.00. (Free to RRTC certifiers). You will receive a list that is current as of the last published Measurement News. Courses can be sorted in a special way; otherwise it will be sorted by distance as it appears in MN. Other specially-sorted lists can be done - for instance, you might want to have all the 5k's in IL, IN, and MO. If you are online, lists can be sent that way. Contact Mike Wickiser at [MikeWickiser@neo.rrc.net](mailto:MikeWickiser@neo.rrc.net)

**Web Page Access to Course Lists:**The complete list can be downloaded from the RRTC website at [www.rrtc.net/download/](http://www.rrtc.net/download/) Also, try the new USATF Search Engine linked from [www.rrtc.net](http://www.rrtc.net) or directly at [www.usatf.org/events/courses/search/](http://www.usatf.org/events/courses/search/)

**Individual Certificates** - These may be obtained by sending the course number and \$2.00 per course desired. **SEND THE COMPLETE ID, INCLUDING PREFIX AND SUFFIX LETTERS**, i.e: CA92057 RS. Send course name, length and location as well. If you are thinking of hiring a measurer, this is an excellent way to see the sort of work you can expect. In addition, you may wish to check out a course you intend to run. Bring the map to the course and see if the race director got it right!

Above material may be obtained from: Mike Wickiser - 2939 Vincent Rd. - Silver Lake, OH 44224-2906

**Measurement Calculation Computer Program** by Bob Baumel, version 1.2 for Macintosh or IBM PC. This software can be downloaded for free from the RRTC website at [www.rrtc.net/download/](http://www.rrtc.net/download/) or Bob will distribute it by email attachment (send requests to [webmaster@rrtc.net](mailto:webmaster@rrtc.net)) or on floppy disks (send blank, formatted diskette and stamped return mailer to Bob at: 129 Warwick Road, Ponca City OK 74601-7424). Be sure to specify Mac or PC version.

**Electronic Certificate Templates** (available to Certifiers only), in Adobe Acrobat format. Requires Acrobat or Acrobat Reader 4.0 or greater (Current Acrobat Reader may be downloaded for free from [www.adobe.com](http://www.adobe.com)). The template allows you to fill in certificates on the computer and print them. Available in both FS and non-FS version. Distributed by Bob Baumel by email or diskette [same addresses as for Measurement software]. Bob can customize the template with certifier's personal info at the bottom to avoid re-typing it every time (Be sure to specify exact ID text desired when requesting a template).

**Online course measurement book**, edited by Bob Baumel. It's a revision of the one you can buy from USATF, but the basic procedures have not changed. Available at: [www.rrtc.net](http://www.rrtc.net)

**Course Measurement Procedures** - the Bible of course measurement. Complete instructions for measuring courses for USATF certification. The same procedures are now used for IAAF and AIMS courses. \$9.00 postpaid. Available from: USATF - Book Order Dept. - PO Box 120 Indianapolis, IN 46206

**Course Measurement Video** - a concise 17 minute introduction to course measurement, intended as a supplement to Course Measurement Procedures. See how it's done! Version 2 sells for \$10 but there are still a few copies of the original version available for \$7.50. Send to: Tom McBrayer - 4021 Montrose - Houston, TX 77006-4956.

**Historical/Technical Material Available on CD**

**Measurement News Archive** - Every issue of Measurement News from #1 (1982) to #115 (2002). Full of material describing

measurement techniques, technical articles, and history, written by numerous people worldwide. Set of 2 CD's in pdf (Adobe Acrobat 5.0) format. Cost \$10.00, postpaid.

**Historical Archive** - A collection of technical articles, measurement reports, seminars spanning the period 1963 to present. Includes detailed full reports of several group rides of Olympic Marathon courses. All on one CD in pdf format. Cost \$5.00, postpaid.

The above two items are available from:  
Pete Riegel, 3354 Kirkham Road, Columbus, OH 43221  
email: [riegelpete@aol.com](mailto:riegelpete@aol.com)

## OTHER PUBLICATIONS AND EQUIPMENT

**Road Race Management** is a monthly newsletter providing race organizing ideas and news for race directors. \$97 per year from: Road Race Management - 4904 Glen Cove Pkwy - Bethesda, MD 20816 Phone: 301-320-6865 Fax: 301-320-9164

**Jones/Oerth Counters** - Paul Oerth - 2455 Union St - Apt 412 - San Francisco, CA 94123. Phone: 415-346-4165 Fax 415 346 0621. Email: [Poerth@aol.com](mailto:Poerth@aol.com). US Price is \$70 for the 5 digit model, \$80 for the 6 digit model, postpaid. Foreign price is \$75/\$85 plus postage. Foreign orders shipped by airmail. Visa, MasterCard, American Express cards accepted. Advance payment is required.

**RunScore** - The flagship of IBM-style finish line programs. For information contact: Alan Jones - 3717 Wildwood Dr - Endwell, NY 13760. Online at: [www.runscore.com](http://www.runscore.com)

**Apple Raceberry JaM** - Race management software for Macintosh and Windows. Online at [www.raceberryjam.com](http://www.raceberryjam.com) or call Jack Moran at (952) 920-0558.

## TOPOGRAPHIC MAPS

USATopographic maps are available from:

U. S. Geological Survey 303-202-4200  
USGS Map Sales  
PO Box 25286, Bldg 810  
Denver Federal Center  
Denver, CO 80225

Delivery will be made in approx. 4 weeks. Ask for latest price.

Maps can be located and ordered online at: [www.usgs.gov](http://www.usgs.gov)

Maps can be obtained in just a few days from:

Map Express - PO Box 280445 - Lakewood, CO 80228-0445  
1-800-MAP-00EX (1-800-627-0039)

Maps can be located and ordered online at: [www.mapexp.com](http://www.mapexp.com)

**Topo Maps on CD-ROM** - 3-D TopoQuads includes authentic USGS 7.5-minute quadrangle maps, assembled into one seamless database

See an interactive online demo at [www.delorme.com](http://www.delorme.com)

Also - check out Street Atlas USA from the above - it's a seamless street map of the whole USA at a decent price.

## USGS TOPOGRAPHIC MAPS ONLINE - FREE

Maps.Com has a section where you can click on to all USGS maps, free. This can be very handy for obtaining accurate elevation information.

# ROAD RUNNING TECHNICAL COUNCIL

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CERTIFIERS - Please check this listing to be sure we have your data correct.