



USA TRACK & FIELD

Peter S. Riegel
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May 9, 1995

to: Wayne Nicoll & Tom McBrayer

Dear Wayne and Tom,

I've just returned from teaching a seminar to beginners at our annual RRCA convention. I had only three hours. I had no idea how many would show up. I arrived in Allentown, Pennsylvania (home of **Runner's World**) with no knowledge of the venue, but was able, with help, to identify a park near the hotel that had what we needed. I made up a sketch and a very simple data sheet. It was my intention not to bore these beginners with talk, but to get them on bikes right away, and have them actually measure something.

At 7 AM I told them I would not lecture them - time was too precious, and I told them they could read later, at leisure. We used up half an hour loading and riding to the course. Spent 20 minutes laying down a 500 foot calibration course, and another parallel one, so calibrations could be done using one-way traffic on each. Then, with 9 bikes available, I took them on a ride to see what was to be measured, and set them to calibrating 4 times and then riding the course once. I repeated the guidance with other groups, telling them to ride as tight as I did, and tighter if they could. While some were riding, the rest were talking with us and getting questions answered.

I used **feet** throughout the calculations, as these were American beginners, and I didn't want to try to teach them metrics - it seemed enough to teach them the bare rudiments. Miles were not appropriate either, as the distance was best expressed directly in feet, without a lot of decimal places. They will have to learn the rest themselves.

I was fortunate to have 3 other certifiers in the group of 26, and we managed to get all of the students through the course by 10 AM, and returned them to the hotel for their next activity.

The group seemed enthusiastic - last year they said they took a measurement seminar and were subjected to a 2 hour lecture, followed by only minimal biking and doing. I hope I've got onto the right track. I gave them printed material that told them where to obtain the measurement book and a Jones Counter (I sold 4 of the ones I brought also).

The seminar was a lot of fun for me, and I got a lot of data to play with. I sent the enclosed follow-up to each of the measurers.

The thing seemed to work well. I will know it is successful if I see some work arrive here.

Best regards, Pete



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May 8, 1995

Dear Seminar Participant,

Here is the report of the seminar we had at the RRCA Convention on May 6. Also enclosed is your original submitted data sheet. Check out your work. I urge you to look at the material and congratulate yourselves for your varying degrees of perfection. I hope this exercise will encourage you to take the plunge and become a course measurer, or continue to do so.

Here are some of the mistakes that were made:

BR wrote down a wrong number in the middle of his sequence of calibration rides. This made one interval look long and the next short. It had no effect on accuracy of the average count.

Several people miscalculated the layout constant. Some rounded off too much, some did not include the 1.001 short course prevention factor. Some made mistakes I can't figure out. Do not round off calculations until you reach your final answer. Premature rounding causes errors.

CG made a 1000 count mistake when calculating the counts he obtained while riding the course, which greatly affected his calculated distance.

Calculated distances were calculated erroneously by 9 people. This probably resulted from previous mistakes in calculating the constant or the average count. The column headed "Correct Distance" shows how the distance calculated based on the counts submitted. It is not based on your calculations, it's based on mine. My calculations are shown under the columns headed "Correct." They'd better be! Let me know if you find any mistakes of mine. You will note that I have used only one decimal point in calculating the final distance, since using more than 5 significant figures in the final answer is wishful thinking. In fact, it would probably be better to report the distances only to the nearest foot - we really can't do better than that with bikes.

Enclosed you'll see a graph which shows how everybody did. The closer to 4380 feet you were, the better you did. In my own case, I think I rode a bit too tightly, but better than too loose.

Read the material and see where you went astray, or did not. Don't worry about any mistakes you may have made - you are bound to do better next time.

It was great meeting you, and I hope to see your work find its way to Kirkham Road soon.

Thanks to Tom Whitaker of LVRR, who obtained the bikes from **Runner's World** and provided site location assistance and transportation. Also, thanks are due to Alan Jones (inventor of the Jones Counter you all used, and creator of **Runscore**), and to Certifiers Woody Cornwell and Karl Ungrean who rendered invaluable assistance in answering your questions and helping to pump 26 people through the exercise in 2 1/2 hours.

I had a load of fun, and I hope you did too. If you have any questions, get in touch.

A handwritten signature in cursive script that reads "Peter Riegel".

Results of RRCA Measurement Seminar

Allentown, PA, USA - May 6, 1995

Measurement results

ID	Cal				4 Ride Variation Counts	Calculated Average Count	Correct Average Count	Calculated Constant Counts/ft	Correct Constant Counts/ft	Begin Count	End Count	Calculated Elapsed Counts	Correct Elapsed Counts	Calculated Distance	Correct Distance	Courses Measured
	1	2	3	4												
BR	1819.0	1916.0	1717.0	1818.0	3.0	1817.5	1817.5	3.638	3.638635	65443.0	81359.0	15916.0	15916.0	4374.93	4374.2	1
JO	1784.0	1787.0	1788.0	1788.0	4.0	1787	1786.75	3.577574	3.577074	60320.0	75971.0	15651.0	15651.0	4374.7522	4375.4	0
JS	1693.0	1692.0	1692.0	1692.0	1.0	1692.25	1692.25	3.388	3.387885	57392.0	72218.0	14826.0	14826.0	4376	4376.2	0
RP	1525.0	1526.0	1524.0	1524.0	2.0	1524.75	1524.75	3.05255	3.05255	99271.0	112631.0	13360.0	13360.0	4376.6694	4376.7	0
PR	1523.0	1523.5	1522.0	1523.0	1.5	1522.875	1522.875	3.0488	3.048796	60940.0	74285.0	13345.0	13345.0	4377.13	4377.1	250
SL	1797.0	1792.0	1794.0	1793.5	5.0	1794.25	1794.125	3.59	3.591838	60122.0	75850.5	15728.5	15728.5	4381	4379.0	0
DL	1806.0	1806.0	1805.0	1807.0	2.0	1806	1808	3.615612	3.615612	51224.0	67058.0	15834.0	15834.0	4379.3415	4379.3	2
WC	1787.0	1787.5	1786.5	1785.0	2.5	1786.5	1786.5	3.576573	3.576573	60300.0	75964.0	15684.0	15684.0	4379.61	4379.6	50
CG	1679.0	1678.0	1679.5	1679.0	1.5	1678.88	1678.875	3.36112	3.361108	46199.0	60920.5	13721.5	14721.5	4082.42	4380.0	500
DR	1690.0	1691.0	1690.0	1689.0	2.0	1690	1690	3.38338	3.38338	65600.0	80420.0	14820.0	14820.0	4380.24	4380.2	0
JB	1789.0	1787.0	1787.0	1785.0	4.0	1787	1787	3.577574	3.577574	60747.0	76418.0	15671.0	15671.0	4380.3426	4380.3	0
KK	1787.0	1787.0	1787.0	1785.0	2.0	1786.5	1786.5	3.576573	3.576573	18428.0	34097.0	15668.0	15668.0	4380.7334	4380.7	1
RS	1693.0	1692.0	1694.0	1691.0	3.0	1692.5	1692.5	3.3884	3.388385	9540.0	24384.0	14844.0	14844.0	4380.83	4380.8	0
BP	1686.0	1687.5	1686.5	1686.5	1.5	1686.625	1686.625	3.3766	3.376623	68789.0	83581.5	14792.5	14792.5	4380.886	4380.9	0
AJ	1787.0	1788.5	1789.0	1787.5	2.0	1788	1788	3.5796	3.579576	11400.0	27083.0	15683.0	15683.0	4381.2	4381.2	25
KU	1691.0	1694.0	1690.0	1692.0	4.0	1691.75	1691.75	3.38688	3.386884	22700.0	37539.0	14839.0	14839.0	4381.32	4381.3	50
TW	1693.0	1696.0	1694.0	1694.0	3.0	1694	1694.25	3.39	3.391889	60270.0	75133.5	14863.5	14863.5	4384.5	4382.1	3
VN	1683.0	1684.0	1683.0	1684.0	1.0	1683	1683.5	3.369366	3.370367	45200.0	59970.0	14770.0	14770.0	4384	4382.3	20
RG	1690.0	1691.0	1690.5	1690.0	1.0	1690.375	1690.375	3.384131	3.384131	52290.0	67123.0	14833.0	14833.0	4383.1049	4383.1	10
AB	1796.0	1796.0	1796.0	1795.0	1.0	1795.75	1795.75	3.59509	3.595092	6801.0	22559.0	15758.0	15758.0	4383.2	4383.2	0
BB	1782.5	1784.0	1780.5	1781.0	3.5	1782	1782	3.567564	3.567564	65364.0	81012.0	15648.0	15648.0	4386.1862	4386.2	0
DH	1813.0	1811.0	1811.0	1811.0	2.0	1811.5	1811.5	3.626623	3.626623	8960.0	24770.0	15910.0	15910.0	4387	4387.0	0
NT	1687.0	1689.0	1689.0	1689.0	2.0	1689	1688.5	3.381378	3.380377	97547.0	112387.0	14840.0	14840.0	4388.7432	4390.0	0
WR	1687.5	1688.0	1689.0	1687.5	1.5	1688	1688	3.379376	3.379376	2300.0	17142.5	14842.5	14842.5	4392.1	4392.1	6
AS	1682.0	1681.0	1682.0	1682.0	1.0	1682	1681.75	3.367364	3.366864	6517.0	21305.0	14788.0	14788.0	4391.57	4392.2	0
MW	1795.5	1800.0	1800.0	1798.0	4.5	1798.4	1798.375	3.6	3.600347	50000.0	65827.0	15827.0	15827.0	4396.3888	4396.0	10

= Difference between reported calculation and correct calculation

Median of all measurements 4380.9

Measurements of Certifiers

- PR 4377.1
- WC 4379.6
- AJ 4381.2
- KU 4381.3

Median Measurement (average of middle 2)
4380.4

Callibration course layout - No temperature correction was made on site.

5 times 100 feet = 500.00 feet
 5 times 99 feet + 5.03 feet = 500.03 feet
 Average = 500.015 feet
 Temperature correction (assume 60 F) = 0.0258 feet
 Final callibration course length = 499.99 feet
 500 feet was assumed in this exercise.

Best estimate of course length = 4380.4 feet.

Results of RRCA Measurement Seminar

Allentown, PA, USA - May 6, 1995

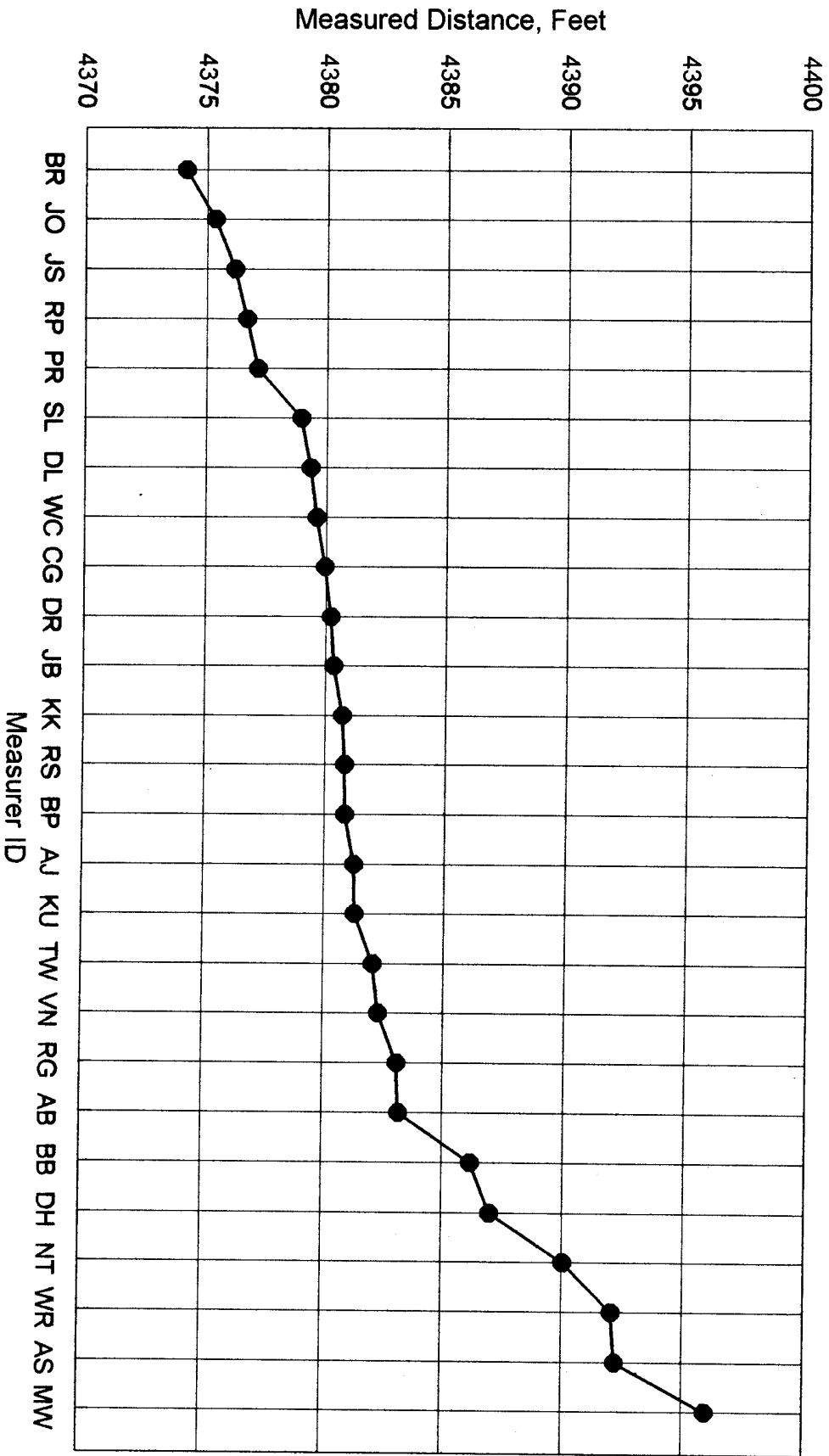
Attendees

ID

AB	Aliece	Bristol	11500 Sundance Ln	Boca Raton, FL 33428
AJ	Alan	Jones	3717 Wildwood Dr	Endwell, NY 13760
AS	Andy	Sackett	127 Upshire Cir	Gaithersburg, MD 20878
BB	Betty	Belknap	504 Barberton Dr #207	Va. Beach, VA 23451
BP	Brian	Patterson	519 N 20th St	Allentown, PA 18104-5001
BR	Bill	Roby	8504 Ridgewood Rd # 501	Rock Island, IL 61201
CG	Charlie	George	Rt 2 Box 3966	O'Brien, FL 32071
DH	Dan	Hawley	110 Valentine Circle	Yorktown, VA 23692
DL	Don	Lindley	1820 Briar Fence Ln	Ft Wayne, IN 46804
DR	Dennis	Robertson	5980 Milky Way	Waynesboro, PA 17268
JB	James	Belanger	68 Manchester St	Nashua, NH 03060
JO	Jim	Oaks	504 Lanier Rd	Huntsville, AL 35801
JS	Joseph	Seeley	411 Park Lane Drive	Champaign, IL 61820
KK	Kurt	Krauss	463 Pocatello Rd	Middletown, NY 10940
KU	Karl	Ungurean	203 E. Denison	Davenport, IA 52803
MW	Miles	Weigold	6327 Golden Hook	Columbia, MD 20817
NT	Norman	Thomas	209 Acton Ave	Homewood, AL 35209
PR	Pete	Riegel	3354 Kirkham Road	Columbus, OH 43221
RG	Richard	Griep	895 Dean Way	Ft Myers, FL 33919
RP	Robert	Platt	1300 Army Navy Dr #209	Arlington, VA 22202
RS	Rubin	Singer	414 Benedict Ave 5H	Tarrytown, NY 10591
SL	Sue	Lowe	2105 Lee Place	Memphis, TN 38104
TW	Tom	Whitaker	2520 Lantern Ct	Macungie, PA 18062
VN	Vic	Navarra	68 East Raleigh Ave	S. I. NY 10310
WC	Woody	Cornwell	1701 Violet Way	Dalton, GA 30721
WR	Wain	Rubenstein	87 Stonewall	Memphis, TN 38104

RRCA Measurement Seminar

Allentown, PA, May 6, 1995



NAME _____
 STREET _____
 CITY, STATE, ZIP _____
 NUMBER OF COURSES MEASURED _____

RRCA
 MEASUREMENT
 SEMINAR
 6 MAY 1995

CALIBRATION

	<u>DIFFERENCE</u>	
COUNT A:	>	} AVERAGE OF 4 RIDES
COUNT B:	>	
COUNT A:	>	
COUNT B:	>	
COUNT A:	>	
COUNT B:	>	
COUNT A:	>	
COUNT B:	>	

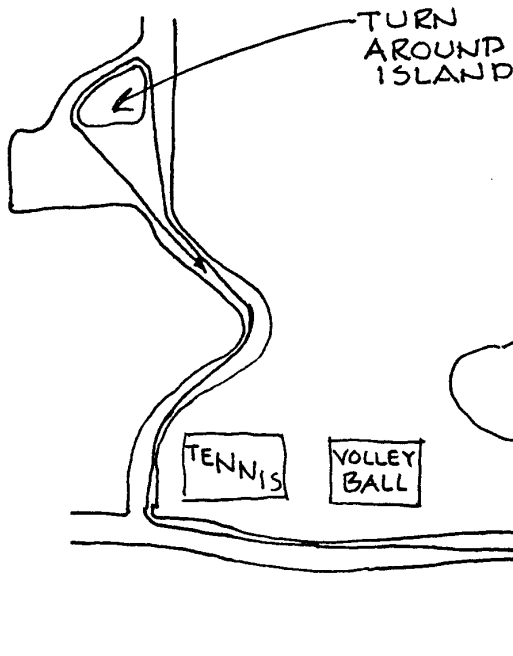
[] X

LAYOUT
 CONSTANT

$$= \frac{X}{Y} \times 1.001 \quad \text{COUNTS PER FOOT}$$

$$= [] Z$$

(1.001 IS THE SHORT COURSE PREVENTION FACTOR - SCPF)



MEASUREMENT - BEGIN AT (A).
 RIDE TO & AROUND THE TURN-
 AROUND ISLAND. RETURN TO (A).

COUNT AT (A) _____

2ND COUNT AT (A) _____

DIFFERENCE: _____ [] L

$$\text{LENGTH} = L/Z = \underline{\hspace{2cm}}$$

LENGTH OF CALIBRATION COURSE

$$= [] Y \text{ FEET}$$

(TO BE DETERMINED ON SITE)