USA TRACK & FIELD

Peter S. Riegel
Certifier, Road Running Technical Council
3354 Kirkham Road
Columbus, Ohio 43221-1368

614-451-5617 (phone)
614-451-5610 (fax)
Email: riegelpete@aol.com

Dear RRCA Measurement Seminar Students,   May 8, 2001

Here are the results of our work. It is divided into two pages. The first page (lines 1-53) is simply the data that was collected during the seminar. This page contains no calculations. The second page (lines 56-93) contains calculations based on the data, for all attendees.

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. It is not difficult. Please read the copy of *Course Measurement Procedures*, which you received at the seminar, to see how it is done. We had you do 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 causes 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.

In calculating length, we used the average of all 4 calibration rides to obtain the day's constant. This is non-standard. The preferred method is to calibrate, calculate a pre-calibration constant, measure the course, recalibrate, and calculate a post-calibration constant. The preferred constant is the larger of precal and postcal. Usually, but not always, this will be the precal constant.

A CHANGE TO THE TEXT: On page 6 (paragraph 1) of *Course Measurement Procedures*, the source for Jones/Oerth counters is obsolete. The correct source is:

Jones/Oerth Counters - Write to: Paul Oerth - 2455 Union St - Apt 412 - San Francisco, CA 94123. Phone: 415-346-4165 Fax 415 346 0621. Email: Poerth@aol.com. US Price is $65 for the 5 digit model, $75 for the 6 digit model, postpaid. Foreign price is $70/$80 plus postage. Foreign orders shipped by airmail. Visa, MasterCard, American Express cards accepted. Note: Payment in advance is required.

I hope this brief introduction to course measurement inspires you to begin. The best start is to go to the hardware store, buy a steel tape (fiberglass won't do), measure a calibration course near your home and send the data to your state certifier to get it certified. There is no application fee for a calibration course. This will get you started.

Order a Jones/Oerth counter, and when it arrives play around with it on your new calibration course. Your knowledge will grow as you experiment.

Don't be afraid to make mistakes. We all do it. Your certifier will help you if you have any questions or problems. You can learn a lot at the RRTC web site: **http://www.rrtc.net** Explore it and learn.

If you have any questions at all, please get in touch with me. I'll be happy to help out.

Thanks to Don Shepan, our New Mexico certifier, and RRCA's Peter Casals, who together organized the seminar, and Texas certifier Tom McBrayer, who traveled from Houston to help with the instruction.

Best regards,

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

	Measurers	Abbrev
1	Measurers	Abbrev
2	Becky Ryder	BR
3	Charlie Van Etten	CVE
4	David Cotter	DC
5	David Epstein	DE
6	Dave Jankowski	DJ
7	Donna Sellers	DS
8	Joe Sellers	JS
9	Pete Riegel	PR
10	Ralph Collins	RC

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

The Course

RRCA SEMINAR - 4 MAY 2001
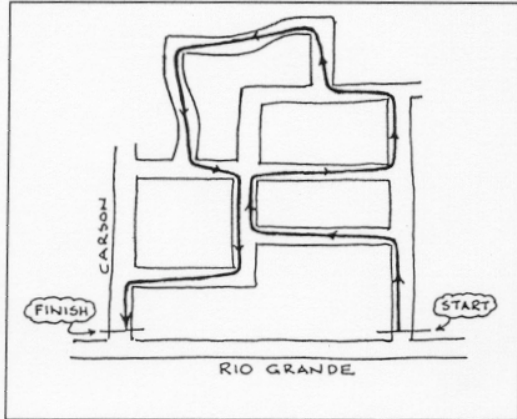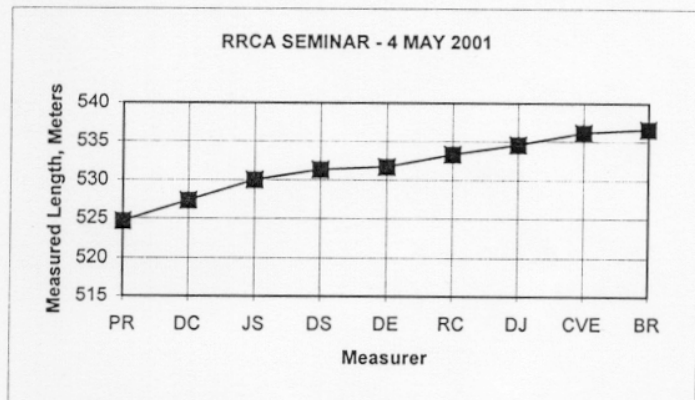
How things came out

31 Calibration course length = 150 meters

33 Raw data as taken

	BR	CVE	DC	DE	DJ	DS	JS	PR	RC
35 Pre-Calibration									
36 Begin ride 1	23800	23369	25430	27900	22800	16452	97580	49710	24639
37 End ride 1	25565	25038	27238.5	29659	24452	18191	99382	51525.5	26398
38 Begin ride 2	25650	25064	27238.5	29659	24600	18225	99600	51525.5	27203
39 End ride 2	27416	26512	29047	31418	26251	19965	101401	53341	28962
40									
41 Post-Calibration									
42 Begin ride 1	44268	43051	46050	56850	42100	36751	18600	70360	47258
43 End ride 1	46039	44716	47858.5	58610	43754	38492.5	20406	72175.5	49019.5
44 Begin ride 2	46129	44716	47858.5	58610	43800	38646.5	20600	72175.5	49240
45 End ride 2	47899	46385	49667	60369	45455	40388	22406	73990.5	51002
46									
47 Course Measurement									
48 Begin ride 1	28716	28592	30395	41623	27500	21397	2750	54700	32023
49 End ride 1	35116	34541	36759	47865	33421	27580	9141	61065	38313
50 Begin ride 2	36183	35575	37850	48943	34400	28647	10420	62160	39324
51 End ride 2	42514	41539	44217	55186	40297	34818.5	16799.5	68516	45589
52									
53 Calculated length, m	536.98	536.14	527.31	531.68	535.06	531.34	530.61	524.66	533.30

56 Calculations

57

	BR	CVE	DC	DE	DJ	DS	JS	PR	RC
59 Pre-Calibration									
60 Ride 1 counts	1765	1669	1808.5	1759	1652	1739	1802	1815.5	1759
61 Ride 2 counts	1766	1448	1808.5	1759	1651	1740	1801	1815.5	1759
62 Average	1765.5	1558.5	1808.5	1759	1651.5	1739.5	1801.5	1815.5	1759

63

64 Calculated pre-calibration constant = 1.001 X (average) / calibration course length, counts per meter

	BR	CVE	DC	DE	DJ	DS	JS	PR	RC
65	11.78177	10.40039	12.06872	11.73839	11.02101	11.60826	12.02201	12.11544	11.73839

66

67 Post-Calibration	BR	CVE	DC	DE	DJ	DS	JS	PR	RC
68 Ride 1 counts	1771	1665	1808.5	1760	1654	1741.5	1806	1815.5	1761.5
69 Ride 2 counts	1770	1669	1808.5	1759	1655	1741.5	1806	1815	1762
70 Average	1770.5	1667	1808.5	1759.5	1654.5	1741.5	1806	1815.25	1761.75

71

72 Calculated post-calibration constant = 1.001 X (average) / calibration course length, counts per meter

	BR	CVE	DC	DE	DJ	DS	JS	PR	RC
73	11.81514	11.12445	12.06872	11.74173	11.04103	11.62161	12.05204	12.11377	11.75675

74

75 Day's Constant (larger of precal constant and postcal constant) (preferred constant for course layout)

	BR	CVE	DC	DE	DJ	DS	JS	PR	RC
76	11.81514	11.12445	12.06872	11.74173	11.04103	11.62161	12.05204	12.11544	11.75675

77

78 Average Constant (best for comparative purposes)

	BR	CVE	DC	DE	DJ	DS	JS	PR	RC
79	11.79845	10.76242	12.06872	11.74006	11.03102	11.61494	12.03703	12.1146	11.74757

80

81 Course Counts	BR	CVE	DC	DE	DJ	DS	JS	PR	RC
82 Ride 1	6400	5949	6364	6242	5921	6183	6391	6365	6290
83 Ride 2	6331	5964	6367	6243	5897	6171.5	6379.5	6356	6265

84

85 Course length (meters) = course counts / Day's Constant

	BR	CVE	DC	DE	DJ	DS	JS	PR	RC
86 Ride 1	541.68	534.77	527.31	531.61	536.27	532.03	530.28	525.36	535.01
87 Ride 2	535.84	536.12	527.56	531.69	534.10	531.04	529.33	524.62	532.89

88

89 Course length (meters) by average constant - for comparison with self-calculated length

	BR	CVE	DC	DE	DJ	DS	JS	PR	RC
90 Ride 1	542.44	552.76	527.31	531.68	536.76	532.33	530.95	525.40	535.43
91 Ride 2	536.60	554.15	527.56	531.77	534.58	531.34	529.99	524.66	533.30
92 Official (shorter)	536.60	552.76	527.31	531.68	534.58	531.34	529.99	524.66	533.30
93 Self-calculated	536.98	536.14	527.31	531.68	535.06	531.34	530.61	524.66	533.30