USATF ROAD RUNNING TECHNICAL COUNCIL
APPLICATION FORMS FOR COURSE CERTIFICATION

Table of Contents

Steel Taping Data Sheet .............................................................................................................. 2
Application for Certification of Calibration Course ................................................................. 3
Bicycle Calibration Data Sheet ................................................................................................. 4
Course Measurement Data Sheet .............................................................................................. 5
Application for Certification of a Road Course ........................................................................ 6-8

This document contains all the forms you’ll need to apply for USATF/RRTC course certification. The above table of contents can help you print only the pages containing the forms needed on a particular occasion. For example, if you’re just measuring a calibration course, you’ll need the Steel Taping Data Sheet and the Application for Certification of Calibration Course (pages 2-3). If you already have a calibration course and you’re just measuring a road course, you’ll need the Bicycle Calibration Data Sheet, Course Measurement Data Sheet, and Application for Certification of a Road Course (pages 4-8).

These forms should be sent to the RRTC Course Certifier in your State. The current list of certifiers can be found on the RRTC website at http://www.rrtc.net/ or you may obtain this information by phoning RRTC Chairman Gene Newman at 520-904-7805.

You’ll probably have to send a processing fee along with your application. These fees vary from State to State, so we can’t tell you how much to send. Check with your Certifier to determine the proper fee before sending in the application! (Note: there is no fee for certifying a calibration course.)

Date of this revision: June 14, 2015
STEEL TAPING DATA SHEET  
(for measuring a calibration course or track)

Name of Calibration Course _______________________________________________________

City and State ___________________________________________ Date ____________________

Start Time _______________   Finish Time _________________

Pavement Temperature: Start _______   Finish _______   Average ________
(Thermometer shaded from direct sun)

Measurements and Calculations:

1. First Measurement. This establishes tentative start and finish marks which should not be
   changed until the final adjustment on line 6 below.

   ___________ × ________ + ___________ = ___________
   # tape lengths distance per tape length partial tape length measured distance

2. Second Measurement. This checks the distance between the SAME tentative start and finish
   points marked in the first measurement, but use new intermediate taping points.

   ___________ × ________ + ___________ = ___________
   # tape lengths distance per tape length partial tape length measured distance

Note: Tape measurements should agree within 0.01% (for example, 3 cm for a 300 meter course). If not, do more measurements until agreement at this level is obtained.

3. Average Raw (uncorrected) Measurement of Course __________________________

4. Temperature Correction. Use the average pavement temperature during measurement in
   whichever formula is appropriate (for Celsius or Fahrenheit temperature). Work out answer to at
   least seven digits beyond the decimal point.

   Correction factor = ( [Temp(°C) – 20] × .0000116 ) + 1.0000000
   Correction factor = ( [Temp(°F) – 68] × .00000645 ) + 1.0000000

   Correction factor =

   NOTE: For temperatures below 20 °C (68 °F), factor is less than one
   For temperatures above 20 °C (68 °F), factor is greater than one

5. Multiply the temperature correction factor by the average raw measurement of the course
   (line 3)

   ___________ × ___________ = ___________
   correction factor avg. raw measurement corrected measurement

6. If you wish, you may now adjust the course to obtain an even distance, such as 300 meters
   (not applicable if measuring a track). This is not necessary as you may choose instead to use an
   odd-distance calibration course whose endpoints are pre-existing permanent objects in the road
   to guard against hazards such as repaving. If you adjusted the course, explain what you did.

   Final Adjusted Length of Calibration Course _______________________________________

CONVERSION FACTORS:  1 foot = 0.3048 meters
                       300 meters = 984.25 feet
                       1 kilometer = 1000 meters = 3280.84 feet
APPLICATION FOR CERTIFICATION OF CALIBRATION COURSE

1. Name of Calibration Course ____________________________________________________________
2. Length of Calibration Course ___________________________________________________________
3. City and State _______________________________________________________________________
4. Date(s) Measured ____________________________________________________________________
5. Method Used to Measure Calibration Course ______________________________________________
6. How many times did you measure the calibration course? ____________________________________
7. Measuring Team Leader: _______________________________________________________________
   (Name) ______________________ (Telephone #) ______________________
   (Address) ______________________ (E-mail address) ______________________
8. List Names and Duties of Team Members:

9. Submit a map of this calibration course, showing direction of north, the name of the road (and relevant cross streets), and the exact locations of start and finish points, including taped distances from nearby permanent landmarks.

10. Is this calibration course: STRAIGHT? ____________________ PAVED? _____________________

11. How are the start and finish points marked? _______________________________________________

12. Are the start and finish points located in the road where a bicycle wheel can touch them or elsewhere?

13. Approximate altitude of calibration course (meters or feet – specify which) _________________

   Mark endpoints in a permanent way (concrete or P-K nails). Paint will fade. The calibration course, once certified, can be used to measure many courses. TAKE CARE OF IT!

14. If the calibration course was measured by Electronic Distance Meter (EDM), describe on a separate sheet the exact procedures used, the make and model of the EDM device, and the qualifications of the person operating the EDM (preferably a licensed surveyor); also include a copy of the original field notes from the measurement.

15. If the calibration course was measured by steel tape, fill out a copy of the steel taping data sheet and complete the following:

   16. How much tension (force) was applied to the tape while measuring? _________________

   17. How was this tension maintained? _________________________________________________

   18. Was the tape free of any kinks, crimps or splices? ___________________________________

19. Bicycle Check. This is a check against miscounting the number of tape lengths. (If you used a gross measurement check other than a bicycle, please explain.)

   A. Counts for full calibration course _________________

   B. Counts for one tape length _________________

   C. Divide A by B _________________

   D. Number of full tape lengths _______________
BICYCLE CALIBRATION DATA SHEET

Date of Measurement ____________________________________________________________________
Name of Measurer _______________________________________________________________________
Length of calibration course ______________________________________________________________

1. Ride the calibration course 4 times, recording data as follows:

<table>
<thead>
<tr>
<th>Ride</th>
<th>Start Count</th>
<th>Finish Count</th>
<th>Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Pre-measurement
Average Count ______________
Time of Day ________________
Temperature ________________

Note: The spread shouldn’t exceed 2 to 3 counts for riding each direction of the calibration course.

WORKING CONSTANT = Number of counts in one kilometer or one mile, calculated from Pre-measurement average count, and multiplied by 1.001 “safety factor.”

Working Constant =

2. Now, measure the course, including all intermediate distances, using the working constant. Enter data on the “Course Measurement Data Sheet.”

3. Recalibrate the bicycle by riding the calibration course 4 times, recording data as follows:

<table>
<thead>
<tr>
<th>Ride</th>
<th>Start Count</th>
<th>Finish Count</th>
<th>Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Post-measurement
Average Count ______________
Time of Day ________________
Temperature ________________

Note: The spread shouldn’t exceed 2 to 3 counts for riding each direction of the calibration course.

FINISH CONSTANT = Number of counts in one kilometer or one mile, calculated from Post-measurement average count, and multiplied by 1.001 “safety factor.”

Finish Constant =

CONSTANT FOR THE DAY = Either the Working Constant or the Finish Constant, whichever is the larger*.

Constant for the Day = ________________________________________________________________

Remember, each day’s measurement must be preceded and followed by a calibration run. You may measure as much as you want in a day, just so calibration precedes and follows it in the same 24 hour period. This is done to minimize error due to changes in tire pressure from thermal expansion and slow leakage. Frequent calibration “protects” the previous measurement. A smart measurer will recalibrate frequently—you never know when a flat tire is coming!

CONVERSION FACTOR: 1 mile = 1.609344 kilometers

* You may, if you wish, define your “Constant for the Day” as the average of Working and Finish constant instead of the larger. However, if you use the average, you will produce a shorter race course, which will face a greater risk of being found short if it ever needs to be verified. Therefore, use of the larger constant is strongly recommended.
COURSE MEASUREMENT DATA SHEET

Name of Course or Race Name ____________________________________________________________

Name of Measurer for ride #1 ________________________   Working Constant #1 ___________________

Date _________  Start: Time _____________________   Temperature __________________________

Finish: Time _____________________   Temperature __________________________

Name of Measurer for ride #2 ________________________   Working Constant #2 ___________________

Date _________  Start: Time _____________________   Temperature __________________________

Finish: Time _____________________   Temperature __________________________

Measurement Data. Use the first measurement ride to lay out the start/finish points and all intermediate split points. Use the second ride to record counts at those same points. Do not lay out a second set of marks!

<table>
<thead>
<tr>
<th>Measured Point</th>
<th>Counts for Measurement #1 Recorded</th>
<th>Interval</th>
<th>Counts for Measurement #2 Recorded</th>
<th>Interval</th>
</tr>
</thead>
</table>

Preliminary Course start-to-finish divide working = measured length counts by constant

Measurement #1 _____________________  /  _____________________  =  __________________________

Measurement #2 _____________________  /  _____________________  =  __________________________

Difference between lengths #1 and #2 divide length by #1 = Measurement comparison (less than 0.0008?)

__________________  /  _____________________  =  ________________________     ( ____ ) [yes or no]

IMPORTANT. Before you leave the course, compare the two measurements. They should agree to within 0.08%. If the two preliminary measurements do not agree to within 0.08%, something is wrong. Fix it! Then go to the calibration course and recalibrate.

If either of the Constants for the Day (for measurement #1 or #2) is not the same as the Working Constant for that measurement, recalculate the length of the course here:

<table>
<thead>
<tr>
<th>Final Course Length</th>
<th>start-to-finish counts</th>
<th>divide by constant for day</th>
<th>=</th>
<th>length of course</th>
</tr>
</thead>
</table>

Measurement #1 _____________________  /  _____________________  =  __________________________

Measurement #2 _____________________  /  _____________________  =  __________________________

The length of the race course is the lesser of the two lengths calculated above.

Measured course length __________________________. Desired course length __________________________

Use a steel tape to add or subtract distance as required to bring the minimum length to the same value as the desired course length.

Adjustment applied: How much, and in what direction, did you move relevant points (start, finish, turn-around), and how much did this change the course distance? Include a diagram if necessary to make this totally clear.

__________________________________________________________________________________

Note: you need not adjust intermediate split points unless certification is desired for those points as well. Did you adjust the intermediate points and, if so, how?
APPLICATION FOR CERTIFICATION OF A ROAD COURSE
The Calibrated Bicycle Method

1. Name this Course will be Known By ______________________________________________________

2. Advertised Race Distance ___________________   Race Date _________________________

3. Location of Start __________________________   Finish (if different) ___________________________

4. Measurer Contact Info (must be someone who actually rode the bike):

   (Name) __________________________   (Address) __________________________   (Zip) ______
   (Telephone) ______ - ______ (E-mail address)

5. Race Contact (if course is measured for a specific race):

   (Name) __________________________   (Address) __________________________   (Zip) ______
   (Telephone) ______ - ______ (E-mail address)

6. If this course replaces an older course that has changed physically (e.g., due to construction) and is no longer usable as certified, please give certification code of the old course that is no longer usable:

CALIBRATION OF BICYCLE

7. Did you calibrate the bicycle on a previously certified calibration course? ____________ (YES or NO)

   If YES, please enter the calibration course’s certification number ____________, or enclose a copy of the certificate and map verifying RRTC certification of the calibration course.

   If NO, you must enclose an Application for Certification of Calibration Course.

8. Is your bicycle calibration data sheet attached? ____________ (YES or NO)

9. Did you include the factor of 1.001 in your calibration constant? ____________ (YES or NO)

SUMMARY OF MEASUREMENTS

10. Date(s) of measurements ______________________________________________________________

11. How many measurements of the course were made? _______________________________________

12. Name(s) of measurer(s) _______________________________________________________________

13. Exact length of course _______________________________________________________________

14. Difference between longest and shortest measurements ________________________________

15. Which measurement was used to establish the final race course and WHY?

16. Is your course measurement data sheet attached? ____________ (YES or NO)

COURSE LAYOUT AND MARKING

17. Is your course map attached? ____________ (YES or NO)

   NOTE: The course map need not be to scale but must indicate direction of north. It must be black & white and fit on 8.5x11 paper. Descriptions of the exact positions of the start, finish, and all turn-arounds relative to permanent landmarks must be included on the map. Details of any restricted portions where cones and monitors are required must be detailed. Include a line representing the actual measured path.

18. List all intermediate splits (attach list describing the position of each relative to permanent landmarks).
APPLICATION FOR CERTIFICATION OF A ROAD COURSE
The Calibrated Bicycle Method (continued)

19. How far from the curb (edge of pavement) did you measure on curves? _________________________

20. How much road width is available to runners throughout the length of the course? ________________
________________________________________________________________________________

21. If your course contains pairs of opposite turns (right-to-left or left-to-right), did you follow the shortest
diagonal path? ___________________ (YES or NO)
Be sure your map shows the exact measured path.

22. Does your course contain any turn-around (double-back) points? ___________________ (YES or NO)
If YES, show them on course map, located exactly.

23. Does your course include any winding or “S” curved sections? ___________________ (YES or NO)
If YES, be sure your map makes it clear how you measured.

24. Did you measure an unrestricted route? Do the runners have use of the entire road, from curb to curb?
____________ (YES or NO)
If your course requires cones or barriers to keep runners on the proper route, be sure your map shows
their exact locations, just as you would locate the start and finish.

25. Type of course (check one):
____ one loop _____ time(s)  ____ same out/back _____ time(s)
____ figure-8 _____ time(s)  ____ several out/back sections
____ partial loop  ____ keyhole (out/loop/back)
____ complex of different loops  ____ point-to-point

26. Straight-Line Distance (as the crow flies) between Start and Finish ________________________________

27. Altitude of Race Course above mean sea level (meters or feet – please specify which!):
start _________ finish ___________ highest __________ lowest __________

28. Type of surface (give percentages):
____ paved  _____ grass
____ dirt  _____ track
____ gravel
If your course includes any unpaved sections, please attach a detail of the method(s) used to measure
such sections.

29. Have you included your start, finish and turn-around (if applicable) diagrams on your map?
____________ (YES or NO)

30. How did you mark the start and finish points (and turn-around points)?
________________________________________________________________________________

31. Did the same person ride the bicycle on both the calibration course and the race course for any given
measurement? ___________________ (YES or NO)

32. Describe weather conditions during the calibration and measurement rides:
________________________________________________________________________________

33. Did you perform both the pre-measurement and post-measurement calibrations and the measurement of
the race course on the same day? ___________________ (YES or NO)
34. Provide an overview below of the processes and procedures you followed when undertaking this measurement.

(Here, you can describe any special circumstances that may help a certifier to understand what you did. Examples include portions of the course measured on different days or in different directions, needs for offsetting on parts of the course, etc. Your description may be short and sweet or as detailed as you wish. You may attach additional sheets if necessary.)