

# USATF ROAD RUNNING TECHNICAL COUNCIL APPLICATION FORMS FOR COURSE CERTIFICATION

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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 4-7).

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!

## 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.

$$\frac{\text{\# tape lengths}}{\text{\# tape lengths}} \times \frac{\text{distance per tape length}}{\text{distance per tape length}} + \frac{\text{partial tape length}}{\text{partial tape length}} = \frac{\text{measured distance}}{\text{measured distance}}$$

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.

$$\frac{\text{\# tape lengths}}{\text{\# tape lengths}} \times \frac{\text{distance per tape length}}{\text{distance per tape length}} + \frac{\text{partial tape length}}{\text{partial tape length}} = \frac{\text{measured distance}}{\text{measured distance}}$$

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.

$$\text{Correction factor} = ( [\text{Temp}(\text{°C}) - 20] \times .0000116 ) + 1.0000000$$

$$\text{Correction factor} = ( [\text{Temp}(\text{°F}) - 68] \times .00000645 ) + 1.0000000$$

$$\text{Correction factor} =$$

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)

$$\frac{\text{correction factor}}{\text{correction factor}} \times \frac{\text{avg. raw measurement}}{\text{avg. raw measurement}} = \frac{\text{corrected measurement}}{\text{corrected measurement}}$$

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; 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:

<u>Ride</u>	<u>Start Count</u>	<u>Finish Count</u>	<u>Difference</u>
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Pre-measurement  
Average Count \_\_\_\_\_

Time of Day \_\_\_\_\_

Temperature \_\_\_\_\_

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:

<u>Ride</u>	<u>Start Count</u>	<u>Finish Count</u>	<u>Difference</u>
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Post-measurement  
Average Count \_\_\_\_\_

Time of Day \_\_\_\_\_

Temperature \_\_\_\_\_

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 validated. 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!**

Measured Point	Counts for Measurement #1 Recorded	Interval	Counts for Measurement #2 Recorded	Interval
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Preliminary Course Length	start-to-finish counts	divide by	working constant	=	measured length
Measurement #1	_____	/	_____	=	_____
Measurement #2	_____	/	_____	=	_____

Difference between lengths #1 and #2	divide by	length #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:

Final Course Length	start-to-finish counts	divide by	constant for day	=	length of course
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.

How much did you add or subtract, and where (start, finish, turn-around point)?

\_\_\_\_\_

**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) \_\_\_\_\_  
City, State City, State

4. Person in Charge of Measurement:

\_\_\_\_\_  
(Name) (Address) (Zip) ( ) - \_\_\_\_\_  
(Telephone)

\_\_\_\_\_  
(E-mail address)

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

\_\_\_\_\_  
(Name) (Address) (Zip) ( ) - \_\_\_\_\_  
(Telephone)

6. Should this course replace a previously-certified course? If so, give name/number of course to be replaced.

**CALIBRATION OF BICYCLE**

7. Did you calibrate the bicycle on a calibration course previously certified by the Road Running Technical Council? \_\_\_\_\_ (YES or NO)

If YES, 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).

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

**APPLICATION FOR CERTIFICATION OF A ROAD COURSE**  
**The Calibrated Bicycle Method (continued)**

20. 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.

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

22. 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.

23. 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.

24. Type of courses (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              |

25. Straight-Line Distance (as the crow flies) between Start and Finish \_\_\_\_\_

26. Altitude of Race Course above mean sea level (meters or feet – please specify which!):  
 start \_\_\_\_\_ finish \_\_\_\_\_ highest \_\_\_\_\_ lowest \_\_\_\_\_

27. Type of surface (give percentages):

- |                                    |                                  |
|------------------------------------|----------------------------------|
| _____ curbed streets               | _____ graded dirt road           |
| _____ uncurbed streets/roads       | _____ ungraded dirt road         |
| _____ concrete sidewalk            | _____ gravel road                |
| _____ concrete/brick streets/roads | _____ undefined paved surface    |
| _____ paved bike path              | _____ undefined dirt surface     |
| _____ unpaved bike path            | _____ undefined grass surface    |
| _____ trail (single file)          | _____ track (curbed or uncurbed) |

If your course includes any unpaved sections, please attach a detail of the method(s) used to measure such sections.

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

29. How did you mark the start and finish points (and turn-around points)?  
 \_\_\_\_\_

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

31. Describe weather conditions during the calibration and measurement rides:  
 \_\_\_\_\_

32. 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)