How to Use the *MapRunF* Smartphone App for BAOC Events

By Bill Cusworth

Basic Instructions

1. Install the app and load the event

- Download the *MapRunF* app and Install it on your smartphone. It's free.
  - iPhone: https://apps.apple.com/au/app/maprunf/id1468994114
  - Android: https://play.google.com/store/apps/details?id=au.com.fne.maprunf
- If you prefer not to carry a phone with you on the course, you can download the companion *MapRunG* app that works on (some) Garmin GPS watches. Note, however, that you still need to have *MapRunF* on your phone. Click here for instructions for using *MapRunG*.
- Start the *MapRunF* app while you still have a reliable Internet connection.
- Enter your Name (to be used with your results). If you are competing on a team, you can enter the team name or both the team and individual names.
- Tap "Select Event" and browse to the event you are looking for. Events are located in the folder USA ¡ California ¡ BAOC.
- Alternatively, you can tap "Events Near Me" to display a list of events near your current location.
- Select the appropriate event and course from the list.
- The course and map are now loaded into your phone, and even if you lose an Internet connection, it will still work.
- If the event is restricted with a PIN, make sure you have it with you.

2. Run the course

- Download and print the map(s) for the course, and then drive to the Start location. You could also just use the map displayed in the app, but it's fairly low resolution and you can't rotate it, etc., and there are no control descriptions.
- Start the *MapRunF* app and tap "Go to Start".
- Note that if the event requires a PIN, you will have to enter it at this point.
- The app will display a Google satellite map with the orienteering map and course superimposed on top of it. The app will also display your current location on the map with a red dot. The red dot will disappear as soon as you "punch" the Start.
- You need to pass within 15 meters of the Start location to trigger the course timer. You will hear a "beep" indicating that the clock is running … GO!
- **Important Note:** The start is triggered automatically so don't go near the Start location until you are ready to begin the competition. Do your warm-up in a different direction or wait until your warm-up is done before tapping "Go to Start". If you do accidentally trigger the course timer before you are ready, see Additional Note #1 below.

- The app will "beep" when it determines that you are within the 15-meter radius of a checkpoint location. You don't need to press any button on the phone or watch. Most of the time, the beep will occur as you are approaching the feature. If you reach the checkpoint flagging and don't hear the beep, you don't need to wait, just continue your course and it can be fixed after your run.

- Purple control circles will turn to green to show that they have been "punched".

- You will again hear a "beep" when passing the Finish checkpoint.

3. Results

- At the Finish, *MapRunF* will attempt to upload your result to the main database if there is an Internet connection present. If not, you will see a load error message on the screen. In this case, see Additional Note #2 below.

- If you are using the *MapRunG* app on your Garmin watch, you will have to confirm that you are done by choosing "Finish". If you select "Continue", you will have to pass the Finish again.

- From the main screen, there is a "Show Results" button that brings you to a "My Results" screen. Click on a result to see details. If you had a clean run, it will show your time and "Result: OK". If you exit the app without doing the course, it will show "Result: Did not start".

- If one of the checkpoints failed to register that you passed through it, you will see a result called "Mis-punch" and you won't get credit for the course. See Additional Note #3 below to fix this problem and submit a revised result.

- You can compare your results with others on the same course by tapping "All Results for this Event" from the Results detail screen. You will be shown the controls visited, the total distance that the GPS measured, the total time, the calculated pace, and your race position.

- From this All Results page, you can also view the GPS tracks of everyone on the course by tapping on "Track" in the results line, which will display the GPS track in *RouteGadget*. You can then run animations of the race to simulate the race progress as if everyone started at the same time.

- To view results on the Internet, go to http://maprunners.weebly.com/ and click on "Leader Board QuickLink". Type a few characters of the event name into the Filter field, and then select the event and course from the pull-down list.

Additional Notes

1. If you accidentally trigger the course timer before you are ready, hit the home icon in the upper left corner and then confirm that you want to exit. Tap "Go to Start" again when you are ready.

2. If your result fails to upload to the main database at the Finish, you can upload your result manually when you get within Internet signal range. From the main menu, tap on "Show Results" to see a list of all your recorded results using the app. Open (by tapping on) the

result in question, then from the menu on the top-right, select "Upload (Manual)". You should see confirmation that the upload was successful.

3. If one of the checkpoints fails to register that you passed through it, it's probably because the GPS had an error greater than 15 meters. You can submit a revised result using a radius value greater than 15 meters. From the menu on the top-right of the Results list screen, select "Review Results (HITMO)" and tap on the info button in the top-right to get on-screen instructions on submitting a revised result. Use 30 meters as the Tolerance (size of new punching radius in meters).

4. If the app does not beep when you are at the Start, you may need to restart your app or even restart the phone.

5. *MapRunF* will not punch the Finish until you have visited at least one checkpoint. Be careful not to get close to the Finish in the middle of your run. Once the Finish is triggered, the race is done.

6. You may find it helpful to store your phone in a carrier so that you can run without having to carry it in your hand. I have personally found a <u>fanny pack running belt</u> very helpful. Although, if you are using the *MapRunG* app on your Garmin watch, it wouldn't be necessary to take the phone with you.

7. Running the GPS continuously takes a lot of battery power. Make sure your phone is fully charged before you start.

8. Please direct all concerns or feedback to Bill Cusworth at billcusworth@gmail.com.

Frequently Asked Questions

1. Why is 15 meters used as the GPS radius?

   Most recreation-grade GPS devices have an inherent error of about 3–10 meters. That error can be larger when moving. If a radius less than 15 m is used, a number of checkpoints would not be registered. If a larger radius is used, you would often get a "punch" recorded before you even see the feature or the flagging. Also, the time measurement error between the Start and Finish becomes greater. See the next question for details.

2. Are the course times accurate to within 1 second?

   No, because of the inherent error in GPS measurements, you may trigger the Start and Finish between 15 meters (or more) before or after the actual locations. So there could be a 15-meter discrepancy in where both the Start and the Finish are triggered for a total of 30 meters. 30 meters at 8 min/mile pace corresponds to 9 seconds of time. In reality though, the errors are not usually this large, and the elapsed times are usually accurate to within 4-5 seconds of the true time, but definitely not 1 second. There is also a range of locations that the beep will occur at for every control, so that will add to the time discrepancy between competitors. As such, it's not really comparable to E-punch timing.

3. I noticed that there is an Options and Settings button on the main menu. Is there anything useful there?

   No, most of these settings are locked, and the ones that aren't are best left in their default setting.