2021 SPORTS CAR CLUB OF AMERICA®

National Convention

Advanced Topics – Richta GPS Timing and Scoring System

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Rich Bireta, Kansas City Region rbireta@gmail.com

Agenda – GPS Timing and Scoring Advanced Topics

Audience
Rallymasters who have used Richta GPS Checkpoints

Recent Enhancements (January 2021)

2021 App Enhancement Plans

Event Styles

Hints and Tips for Rally Organizers

Questions and Answers
(Use Chat feature of Zoom or Whova to ask questions)

Charts:
www.richtarally.com/apps/rallymaster

Recent Competitor Enhancements (Jan 2021)

- Emergency Broadcast Message
  - Allows urgent messages to entrants ("Sign down at xxx")
  - Entrants must have data connection to receive
- Entrants phone number
  - Monitor map, call them if they are off course
- Help Line
  - Entrants have a number to call if lost
- TA clearing
  - At CZT Restart, Flying Start, Flying Start – Round Up
  - When next CP is Flying Start – Truncate to :30 or Timed CP – Timed from Previous CP
- Multi-day events, restarts across midnight ("POR Bug")
- Email my timeslips
  - Underused when in Rallymaster app only

Recent Rallymaster Enhancements (Jan 2021)

- Cars screen
- Checkpoints screen
  - Insert/delete/renumber CPs!
  - Significant ease-of-use feature
- Edit Timeslips
  - Alter Out Time, In Time, TA taken
  - Rescore leg for one car
- Maximum TA can be set
  - Not limited to 19:30
- Export Event
  - Used to backup/restore/clone event
  - Events archived before deletion
  - Events deleted 30 days post event

Recent App Enhancements (continued)

- Scoreboard
  - Android app intended for entrants and spectators
  - Real time, live scores
  - Map
    - Shows entrants last position
    - Restart CPs (only) are shown
  - Security
    - Scores and map display may be hidden by rallymaster

2021 App Enhancement Plans

Target: No major functional enhancements to Competitor App
Fixes to high impact and pervasive problems only

Rallymaster: Incremental enhancements to improve ease-of-use, to save time or reduce manual effort.

Open to suggestions.
Recent changes were suggested by community

Rallymaster (iOS): Close functional gap to Android version

Event Styles – "Madison"

"Madison" Style

- CP 1 - CZT Restart
- CP 2 - Timed CP – from last restart (1)
- CP 3 - Timed CP – from last restart (1)
- CP 4 - Timed CP – from last restart (1)
- CP 5 - CZT Restart
- CP 6 - Timed CP – from last restart (5)
- CP 7 - Timed CP – from last restart (5)
- …

- Most frequently used style.
- Each timed CP is timed from the previous restart, NOT from the previous CP
- Introduces "double jeopardy" – being late at CP 2 must be made up before CP 3
- This is not an issue with low traffic roads, appropriate speeds, few stop signs/traffic lights.

Event Styles – "Evansville"

"Evansville" Style

CP 1 - CZT Restart
CP 2 - Timed CP – from last CP (1)
CP 3 - Timed CP – from last CP (2)
CP 4 - Timed CP – from last CP (3)
CP 5 - Timed CP – from last CP (4)
CP 6 - CZT Restart
CP 7 -Timed CP – from last CP (6)
CP 8 - Timed CP – from last CP (7)
CP 9 - Timed CP – from last CP (8)
…..

- Each timed CP is timed from the previous CP
- Eliminates "double jeopardy" – being penalized twice for the same amount of being early or late at a CP.
- More difficult for entrants calculating as they need to stop and reset their calculations for each leg.
- More challenging contest.

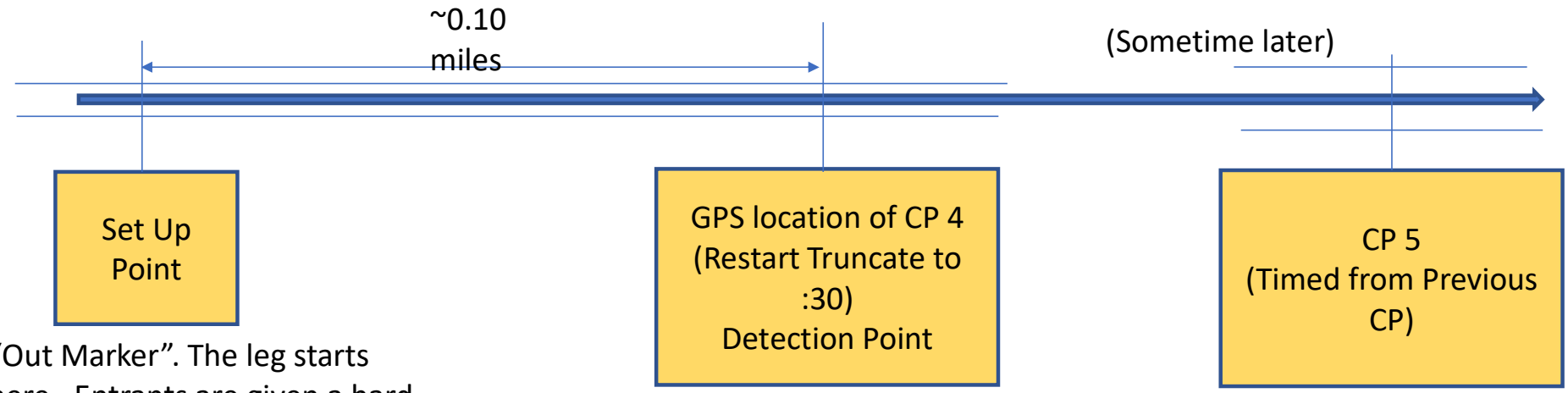
Event Styles – "LaCrosse"

"LaCrosse" Style (Course Rally)

- CP 1 - CZT Restart
- CP 2 - Flying Restart – Truncate to :30
- CP 3 - Timed CP – from last restart (2)
- CP 4 - Flying Restart – Truncate to :30
- CP 5 - Timed CP – from last restart (4)
- CP 6 - Flying Restart – Truncate to :30
- CP 7 - Timed CP – from last restart (6)
- CP 8 - Flying Restart – Truncate to :30
- CP 9 - Timed CP – from last restart (8)

- Solves problem: How do you automatically assign leg start times on a National Course Rally that uses off-course loops, pauses to penalize traps, while ...
  - … giving entrants a leg start hard reference for mileage
  - … not impeding normal road traffic?
- Anticipate seeing this in use in 2021 on National Course Rallys
- More complex to understand. Avoid this style unless you have experienced entrants.

"LaCrosse" Example



"Out Marker". The leg starts here. Entrants are given a hard mileage and instructed to set up their leg calcs here. They are told to leave this spot at the top of a minute, a different minute from other contestants.

The restart CP 4 is set and detected here.. The restart time displayed in the app is truncated back to the nearest xx:00 (or xx:30). They will be approximately on time at this point.

Cars are timed and scored at CP 5. The starting mileage for this leg was the set up point.

Competitor App Clears TA Automatically

- Time Allowances are cleared:
  - at Restart CPs except "Flying Start – Truncate to :30"
  - if the next CP is "Timed from Previous CP", or
  - if the next CP is of type "Flying Start – Truncate to previous :30"

- Slight change from Competitor releases < 1.19
- Entrants responsibility to ensure correct TA is shown in the app
- Rallymaster (Edit Timeslip) can alter TA and rescore leg.

Hints and Tips

The Validity report is your best friend.

- Catches logical errors
- Serves as documentation

Timeslips can be sent to entrants

- I don't believe most/many rallymasters are doing this.
- Competitor app enhanced with this function

Connect with the Community

- Facebook Group – Richta GPS Checkpoints

Hints and Tips (continued)

Bluestacks

Turn your laptop, (Mac or Windows) into a very large Android tablet

Free software

Use to monitor map, watch for lost entrants, contact them

Install, go to Google Play Store, install Rallymaster and Scoreboard apps, (Gmail)

Event pre-check

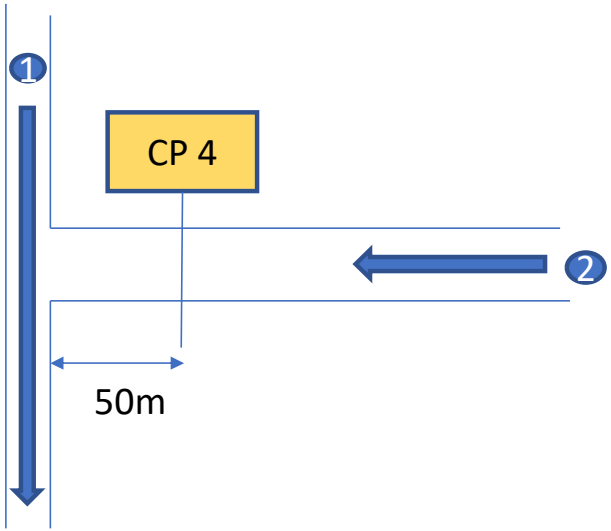
Run with Competitor app

Ensure all CPs trigger

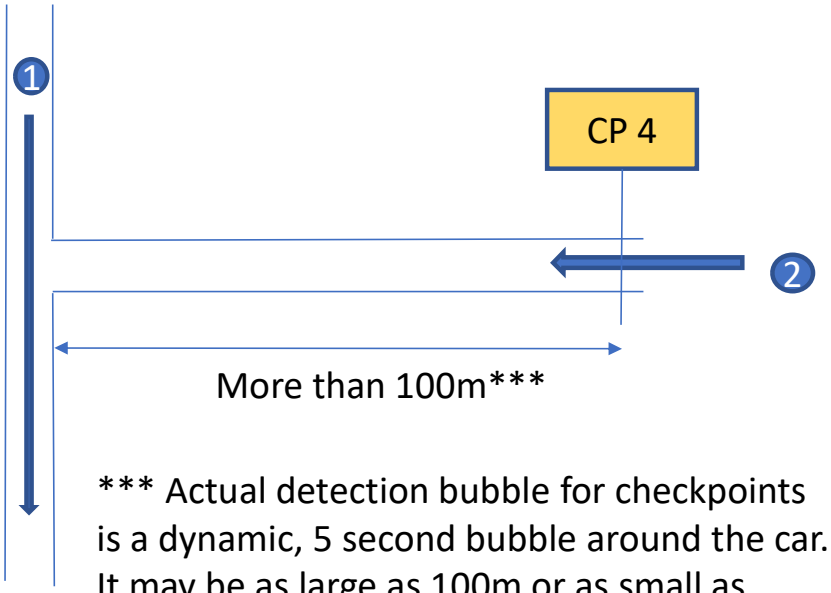
Ensure CPs do not trigger too soon (too close to intersection) (See next page for example)

Avoid Early Detection of Checkpoints

Don't do this: CP 4 too close to earlier route, will be detected as cars first pass (arrow #1)



Do this: Keep CP 4 100m away from earlier route.



*** Actual detection bubble for checkpoints is a dynamic, 5 second bubble around the car. It may be as large as 100m or as small as 15m.

Hints and Tips (continued)

- Final pre-event reset
  - (Before cars allowed to register)
  - Delete entries used to precheck
  - Ensure pre-check offset set to 0
    - (Reported in Validity Report)
  - Review Validity Report
    - Errors should be resolved
    - Warnings should be resolved or understood
    - Example: WARNING – CZT Restart before 7 am.
  - Practice rescoring legs, dropping legs from scoring

- Do not use CP Open or Close times unless you need to.
  - These are not required fields, one less thing to do/change

Improving the Post-Event Experience

- Can you imagine attending a Major League Baseball game, getting to your seat and seeing the scoreboard covered with a large curtain?
- After the last out of the game the curtain is drawn back to reveal the final score.
- No! This is ridiculous. Yet this us what we have come to expect at road rally events.
- GPS timing and scoring allows us to break this mindset and improve the atmosphere at the end of the event.
- (See next page for suggestions)

Improving the Post-Event Experience

- A positive experience after the event will increase the enjoyment of the entrants.
- Ideally, a comfortable, friendly bar/restaurant with group seating.
- Conducive to announcing results and handing out awards.

- Scoring Speed
  - Target – Have provisional results by the time the last car reaches the end point.
  - Consider having a dedicated scoring crew to monitor map, produce results
- TV/Monitor Display of results
- Advertise Scoreboard app for sharing results.
- Export Scores to custom spreadsheet for attractive presentation.

Time to the Second, or Tenth of Second?

- Time to the Second
  - Most familiar to new entrants
  - Less intimidating
  - Entrant satisfaction and pride in getting a perfect score on a leg
- Time to the Tenth of Second
  - Increased precision over 0.01 minute scoring
  - (0.1 second vs. 0.6 second)
  - Perfect leg scores are much rarer
- Suggestion: Time to the second and resolve ties by switching to tenth of a second (app scores both ways, controlled by event setting)

Other Items

- Debug Logs
  - Competitor app logs GPS location of car when near a CP.
  - CP detection and Timeslip data logged
  - Essential data for trouble-shooting
- Connect to the user community
  - Facebook Group: Richta GPS Checkpoints

Running Two Devices (Same Car)

Some entrants desire to run two devices, one for backup

- DO NOT run both devices as the same car number
  - Timeslip data (Out time, ideal leg time, TA time, in time) created on both devices
  - Both devices will update the database.
  - Unpredictable which device's updates will be saved

- DO THIS:
- Register second device as a different car number
  - Obtain rallymaster's permission
  - Do not conflict with another entrant
  - There is no provision to replace timing data, must be entered manually(Edit Timeslips)
  - Debug logs contain timeslip data, (text file, .csv format, open with spreadsheet program)

External GPS Receivers

Dual Sky Pro XGPS 160

Garmin GLO

Advantages

1. More accurate hardware than that built into phones.
2. Sends 10 GPS locations per second to the app. (Internal receiver send 1 per second).
3. Uses Bluetooth connection to phone/tablet.

Configuring Dual Sky Pro to Android Phone

The process for connecting an external GPS receiver to an Android device is not obvious

Steps

1. Turn on Bluetooth radio
2. Place Android device in developer mode. (Seven taps on build number in device settings).
3. Enable Bluetooth communications on Phone
4. Pair Phone and Receiver
5. Start GPS Helper app (Skypro app or Bluetooth GPS)
6. Enable Mock Locations in helper app

Configuring Dual Sky Pro to iPhone

- More straight forward

Steps

1. Turn on Bluetooth radio
2. ~~Place Android device in developer mode. (Seven taps on release number in device settings).~~
3. Enable Bluetooth communications on Phone
4. Pair Phone and connect Receiver
5. ~~Start GPS Helper app (Skypro app or Bluetooth GPS)~~
6. ~~Enable Mock Locations in helper app~~

Questions? Demo?

- May also include a live demo of Checkpoints and Cars

Feedback info?

Questions?

Rich Bireta
rbireta@gmail.com

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