BemTrain



The BemTrain program provides a range of value adding facilities for BMX, Pump Track and other cycling disciplines and sports using transponder systems.

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BemTrain Facilities

A Training and Coaching aid providing Split Time Reporting from up to 10 timelines. This facility can provide live data from a Training Session or Race Meeting or be run at a later time by importing the passing records. Reports available in an Excel file for detailed analysis or in HTML format or uploaded to the SportsLists Phone App (subscription required) every few minutes during the Training Session.

The session can be configured for gate start or first loop start and caters for multiple loops on the one decoder.

- For velodrome or speed skating, a Pursuit training report in Excel or HTML format that shows the leader at each timing point, the gap to following team participants, lap times, half lap splits, cumulative lap times, individual sector times and cumulative time at each sector.
- A transponder Fitting Station for verification that the correct transponder is fitted to the correct bike.
- A Track Monitor application for use during practice to check for competitors with an unregistered transponder, identifying riders without or with a faulty or expired transponder subscription and riders practicing outside of their specified session.

As an aid to identifying faulty or expired subscription transponders when the event is being scored with the BEM program, a report can be generated that identifies competitors in the BEM event whose transponder has not been seen during practice.

- A real time Scoreboard for commentary, public display or staging check operating in one of the following modes.
 - Time Trial scoreboard with selectable display options:
 - Three fastest times and split times with relative placing in the class for the latest competitor to cross the first, intermediate and finish line loops.
 - Five fastest times.
 - Qualification mode from single runs or multiple laps showing the top 8 qualifiers plus the last 8 completed laps.
 - Pump Track specific scoreboard displays with tailored displays for each of the event formats:
 - Solo Run P
 - Pursuit / Head to Head Single.
 - Head to Head Dual. P
 - \circ Multi Lap Race with lap count and cumulative times. \bigcirc
 - Race Progress mode for a single race with the scoreboard progressively updated as riders cross each timeline.
 - Race Lap Time, showing lap times and placings for each race.
 Allows for multiple races on the track and multiple loops on the one decoder.
 - Single timeline showing gaps between passings.
 - \circ $\;$ Two timelines independently showing gaps between passings.
 - \circ $\;$ Lap time display mode showing the last 8 or 16 completed lap times.
 - \circ $\;$ Staging Check moto to validate transponder fitting and operation.
- > May be used stand alone or in association with the BEM Race program.







| Race I | Lap | Time | Score | board |
|--------|-----|------|-------|-------|
|--------|-----|------|-------|-------|

| BMX Event Mar | nager by Lyndon.Downing @bigpond.com | | | | | | × |
|---------------|--------------------------------------|--------|-----|-----|-----------------|--------|-----|
| | STAGE RESULT | TIME | RUN | | INDIVIDUAL RUNS | TIME | RUN |
| USA | Shealen RENO | 40.570 | 1+2 | USA | Shealen RENO | 21.734 | 2 |
| AUS | Matilda WALLAN | 40.573 | 1+2 | AUS | Matilda WALLAN | 21.818 | 2 |
| | | | | AUS | Matilda WALLAN | 18.755 | 1 |
| | | | | USA | Shealen RENO | 18.836 | 1 |

Pump Track Head to Head Dual Scoreboard

| | Pursuit Analysis Report | | | | | | | | | | | |
|--------------|--|-----------------------------|-----------------|----------|----------------------------|--------|-----------------|--------|----------------------------|----------|--|--|
| | A Velodrome | | | | | | | | | | | |
| | Billy Event Manager, Ben Train Report Comme digitized is 23.00 | | | | | | | | | | | |
| Report Si | immany | | | | | | | | | | | |
| Run Date | 2018-03-17 | | | | | | | | | | | |
| Run Start | 15:51:15.872 | | | | | | | | | | | |
| Run End | 15:52:20.430 | | | | | | | | | | | |
| Run Time | 1:04.558 | | | | | | | | | | | |
| Participants | 4 | | | | | | | | | | | |
| Laps | 2 | | | | | | | | | | | |
| | | | | | | | | | | | | |
| | Bernfrain Version 3.1.0.00 Jay 2018 Licenced to: Bernman BKX | | | | | | | | | | | |
| | Location in Location De | Passing >>> cription >>> | Apex1 Apex 1 | | Half Track Back Pursuit | | Apex2 Apex 2 | | Start-Finis Front Pursu | h Jit | | |
| | La | p 1 | Sector 1 | Sector 2 | | | Sector 3 | | Sector 4 | | | |
| | Lap | 35.613 | Sector | 9.560 | Sector | 7.790 | Sector | 7.555 | Sector | 10.708 | | |
| | First Half | 17.350 | Elapsed | 9.560 | Elapsed | 17.350 | Elapsed | 24.905 | Elapsed | 35.613 | | |
| s | econd Half | 18.263 | Fred Frog | 0.000 | Fred Frog | 0.000 | Sleepy Hollow | 0.000 | Sleepy Hollow | 0.000 | | |
| | Elapsed | 35.613 | Sleepy Hollow | 0.029 | Sleepy Hollow | 0.033 | Hairy Maclary | 0.023 | Hairy Maclary | 0.040 | | |
| | | | Hairy Maclary | 0.061 | Hairy Maclary | 0.066 | Postman Pat | 0.054 | Postman Pat | 0.074 | | |
| | | | Postman Pat | 0.078 | Postman Pat | 0.088 | Fred Frog | 0.281 | Fred Frog | 0.156 | | |
| | La | p 2 | Sector 1 | | Sector 2 | | Sector 3 | | Sector 4 | | | |
| | Lap | 28.945 | Sector | 6.638 | Sector | 7.511 | Sector | 7.483 | Sector | 7.313 | | |
| | First Half | 14.149 | Elapsed | 42.251 | Elapsed | 49.762 | Elapsed | 57.245 | Elapsed | 1:04.558 | | |
| s | econd Half | 14.796 | Hairy Maclary | 0.000 | Hairy Maclary | 0.000 | Postman Pat | 0.000 | Postman Pat | 0.000 | | |
| | Elapsed | 1:04.558 | Postman Pat | 0.052 | Postman Pat | 0.031 | Fred Frog | 0.031 | Fred Frog | 0.023 | | |
| | | | Fred Frog | 0.078 | Fred Frog | 0.065 | Hairy Maclary | 0.067 | Hairy Maclary | 0.027 | | |
| | | | Sleepy Hollow | 0.124 | Sleepy Hollow | 4.366 | Ø | | Ø | | | |

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Installation

Please contact <u>Lyndon.Downing@bigpond.com</u> for all enquiries regarding the BemTrain program.

For installation and registration instructions, please refer to the version specific Release and Installation Notes (separate document).

Setup Overview

For each scenario to be run with BemTrain, the operator sets up the required configuration data for the required mode. Each individual setup can be saved in a separate Session file which has a system added .BTS (Bem Train Session) file that can be opened at a later time.

Some basic rules:

- > The first loop in the run must be Timeline 1 in BemTrain
- The last loop in the run must be Timeline 10 in BemTrain (except for velodrome or circuit racing where Timeline 1 is the Start/Finish loop).
- The Session must be saved before the Fitting Station, Scoreboard, Track Monitor or Training functions can be run.

NOTE: References and examples in this document predominantly use the MyLaps Pro-chip transponder system with the DataCollector program as the interface however interface using the MyLaps Timing and Scoring program may also be used.

Timing systems from RaceResult and BeChronized are also catered for in BemTrain.

Setup Detail

This section is a generic guide to the required settings. Refer to the individual sections for the Fitting Station, Scoreboard and Training later in this document for specific requirements for each facility.

| BEM Train Version: 3.3.0 28 October 2021 | | | | | × | | | |
|---|--------------------------------|---------------------|-------------------|---|------------------------------|--|--|--|
| Session Name | Track Name | | - Training Report | Gate Transponder | Gate2 Transponder | | | |
| Setup Example | A Track | | Distance Units | 00-09992 | 00-09991 | | | |
| Session file: C:\BEM\BemTrain\Example Sessions\Setu | up Example 5 Loops 5 Deco | ders.bts | Meters | Gate Timeline | Finish Timeline | | | |
| Timeline Name (in Passing Record) | Loop Locati (to show in rep | onts) | Gate to 1 | Start | | | | |
| First Loop in Run | | Passing Files | 20 | Same start time for all in run fro | om gate drop for single run | | | |
| 1 Hill ⊂:\BEM\Passings\Hill\Hill.txt | Bottom of Hill | < Select File | 1 to 2 | | - · · · | | | |
| 2 Corner1 | First Corner Exit | | 75 | | | | | |
| C:\BEM\Passings\Corner1\Corner1.txt | | < Select File | 2 to 3 | Start Gate - Single Run | • | | | |
| 3 Corner2 | Corner 2 Entry | | 70 | Due Time Cattings | | | | |
| C:\BEM\Passings\Corner2\Corner2.txt | | < Select File | 3 to 4 | Minimum Gate to Maximum | Gate to Time | | | |
| 4 Corner3 	☑ Enable | Cornder 3 In | | 4 to 10 | L00p 1 L00 | p i | | | |
| C:\BEM\Passings\Corner3\Corner3.txt | | < Select File | 109 | >0-1 10 | ▲ 3:40 ▲ | | | |
| 5 Loop5 Enable | Corner 3 In | < Select File | Not used | | | | | |
| C Lunc | Control Cloud | | 0 | Cases a contract | - Delete Passing Files after | | | |
| 6 Loope I Enable | sprint_start | < Select File | Not used | C T&S BemTrain Minimum | Processing (normally set) | | | |
| 7 Loop7 | Sprint 10m | | 0 | • T&S BemTrain Custom | | | | |
| 7 Loop7 Enable | oprint_10iii | < Select File | Not used | C MyLaps DataCollector 3 Multi Timelines in one F | | | | |
| | - C - 1 4 - 20 | | 0 | C BEM Event File | | | | |
| 8 Loops L Enable | sprint_20m | < Select File | Not used | C RaceResult RRconnector | □ 1 Decoder, >1 Loop | | | |
| | | N PERSON INC. | 0 | C BeChronized | | | | |
| 9 Loop9 | Sprint_30m | < Select File | Not used | Run Application | Session File Control | | | |
| 10 Finish | Finish Line | | 0 | Fitting Station | Open Session | | | |
| C: BEM\Passings\Finish\Finish.txt | 1 mon cine | < Select File | Track Total | | Cause Courseast Coursian | | | |
| | Speed Trap | | 352.00 | I rack Monitor | Save current Session | | | |
| Enable | | | Trap Distance | Scoreboard | Save Session As | | | |
| | | < Select File | | | Close Session | | | |
| Start Transponder Stop | p Transponder | | | Training | | | | |
| Initial Setup Selection Sav | e Current Setup | Use System Settings | Premium enabled | Experimental Mode (Caution!) | Exit | | | |

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Session Name

In the **Session Name** box, enter the name that will identify the Session on screen and in reports. E.g. **Shepparton Time Trial 3 May 2018**

Track Name

In the **Track Name** box, enter the location name E.g. **Shepparton BMX Club**

Timelines

For each of the timelines to be used.

Enter the Timeline Name to be an exact match with the timeline or location name in the Passing Record.

E.g. Hill for Timeline 1 and Finish for Timeline 10

- Enter the Loop Locations. These Loop Location Labels are a brief, meaningful description of the timeline location that is added to Split screen Scoreboard and Excel and Html Training Session Reports.
- Tick the Enable box for the timelines used.
 E.g. Timelines 1 and 10
- > Select the Passing File with the Select File button. (Files must exist to be selected)
 - E.g. C:\BEM\Passings\Kink\Kink.txt Timeline 1
 - D:\BEM\Passings\Finish\Finish.txt for Timeline 10
- > Where multiple loops are connected to the one decoder:
 - All loops connected to the same decoder are to have the same Timeline Name entered.
 - > Only one loop per decoder has a passing file selected.
- Once the required timelines are enabled, distances between each timeline can be entered to obtain speed details in the HTML Training Reports.

Gate Transponders

Where Starting Gates are used, enter the pseudo transponder number that the timing system uses for the Start Gate. Typical values using MyLaps DataCollector is 9992 for a single gate and 9991 in the Gate2 Transponder (00-09991 and 00-09992 for Timing and Scoring) where tracks with two Start Hills report a different transponder number for each Gate.

For RaceResult, use 99999 as the Gate Transponder.



Run Mode

The settings from the drop-down list are to be set to reflect the track configuration being used.

- Start Gate Single Run.
 The run is started from the Start Gate so the same start time applies to all in run from gate drop.
- Timeline 1 Single Run. Individual start times for each from the time of crossing of loop 1 for single run. I.e. Staggered Start.
- Gate Start for Velodrome Laps Mode.
 Laps Mode with single Gate / Gunshot start time for all riders on lap 1. For subsequent laps, loop 1 is the Start/Finish.
 Note that the Gate Start Time must be before the first rider crosses loop 1.
- Velodrome Laps Mode.

Select this option where the training run consists of laps on a closed track and Timeline 1 is the Start and Finish for each lap.

Note that a start gate transponder record can be selected for the start in a Pursuit Analysis Report.

Single Timeline S/B

Display of a single timeline showing the gaps between passings. Typical use for intermediate or finish line for announcers.

Twin Timeline S/B

Twin display timeline scoreboard for two independent timeline passing displays on the one screen.

Staging Transponder Check
 Select this option for the single Timeline Staging Check Scoreboard display.

Run Time Settings

These settings are similar to the transponder setup in BEM. Where BEM is being used to score the event and the Scoreboard function is being used in BemTrain, use settings here to match those in BEM.

Minimum Gate to Loop 1

Where the Starting Gate is being used, set the minimum time from the gate drop to timeline 1.

Note that a setting of 1 second is interpreted as a minimum time of >0.

- Maximum Gate to Loop 1 Where the Starting Gate is being used, set the maximum time expected from the gate drop to the first rider crossing timeline 1.
- Maximum Lap Time.

Set the Maximum Lap Time (seconds) to a value that each run in Single Run mode or each Lap in Velodrome mode would reasonably expect to be completed.

Note that this time must be longer that the actual run but short enough in Single Run mode that a second or subsequent run should not be started within this time period.



Passing File Format

Select the required options here for import of passing records.

T&S BemTrain Custom 2

Custom format from MyLaps Timing and Scoring to include the Athlete State and Country Code, Rider ID (e.g. UCI ID) and transponder 2 (where the one athlete has two transponders, e.g. skating).

- T&S BemTrain Custom 1 Custom format from MyLaps Timing and Scoring to include the Athlete State and Country Code.
- MyLaps DataCollector 3

Select for the standard Tab delimited Live File Export from MyLaps DataCollector or compatible export from MyLaps Timing and Scoring.

BEM Event File

Select this option to import passing records from a BEM event file that has been scored using transponders then click Run Training to import the event passing records and then generate Training Reports.

- RaceResult RRconnector
 Select for RaceResult format text file using the default settings in the RRconnector program.
- BeChronized (also applicable for Trident)
 Provided for interface to the BeChronized and Trident transponder system. Note that with this system, a Gate Timeline name needs to be entered.
- Delete Passing Files after Processing
 This option is normally selected except where specific testing is being undertaken.

Run Application Buttons

Click the appropriate button for the required mode. Note:

- Sanity checking on the settings is performed before the session can be activated.
- > The Session File must be saved before the application selections are available.
- The Track Monitor, Scoreboard and Training functions are not available in unregistered copies of BemTrain.

Session Management

A Session file must be saved before the Run buttons are enabled.

- > **Open Session** button opens a previously saved Session.
- Save Current Session saves the setup on screen in a new session file.
- Save Session As enables an existing session to be saved in a new Session File.
 E.g. where you want to keep the settings but start a new set of training data.
- Close Session saves and closes the current Session file and resets the setup screen to the default settings.



Initial Setup Selection

The user is able here to save any current setup as the default settings that are loaded on opening the program and when closing a currently open Session File.

E.g. if you always use Timing and Scoring then save the setup showing Gate Transponders as 00-09992 and 00-09991.

- Save Current Setup button saves the current settings as the user defaults.
- > Use System Settings button reverts to the BemTrain system default settings.

Premium Version Facilities and Upgrade

When the standard version of BemTrain is licenced, the button will show "Premium Enable" to allow the user to upgrading to the premium version delivering Scoreboard enhancements for multi-lap events, time-trial qualification and Pump Track Solo Run, Pursuit, Head to Head Dual and Open Session format events.

A fee applies for the upgrade. Please contact <u>lyndon.downing@bigpond.com</u> for details. Where the premium upgrade is installed the button will be disabled and show "Premium enabled".



Fitting Station Overview

The typical scenario for use of the Fitting Station display is where a dedicated decoder, loop and computer are used for riders to verify that they have the correct transponder on their bike. Envisaged configuration is that both DataCollector / Timing and Scoring and BemTrain are run on the same PC.

A selection from two methods of running and displaying the data are available:

- The display for each transponder is based on competitor information loaded into the respective transponder system and included in the passing records. E.g. DataCollector / Timing and Scoring
- 2. The display for each transponder is based on allocations from a reference BEM Event File. Note that if the Fitting Station PC is networked to the BEM Registration PC, the auto update option can be used to update the Fitting Station with entry changes from Registration.

No passing details are stored by in the Session File as this facility is only envisaged for short term display purposes. Display of competitor data can be based on the content of the passing records or by reference to a BEM Event File which is recommended when the BEM program is to be used for scoring the event.

Fitting Station screenshot (below) using a BEM event file to source the competitor details from the transponder number.

| Fitting Station TEST | | | × | | | | | | |
|----------------------|-------------------------|-------------|-----------------------|--|--|--|--|--|--|
| | GW-42326 | | | | | | | | |
| NAME | CLASS | RACE NUMBER | TRANSPONDER_ LABEL | | | | | | |
| Kye AFFOO | 13 year Boys | 10 | P1 | | | | | | |
| Kye AFFOO | 13-14 year Boys Cruiser | 6Q | P1 | | | | | | |
| Kye AFFOO | PRE 13 year Boys | 10 | P1 | | | | | | |
| - | - | - | - | | | | | | |
| - | - | - | - | | | | | | |
| - | - | - | - | | | | | | |
| - | - | - | - | | | | | | |
| | | | | | | | | | |



Fitting Station Setup

- 1. Run DataCollector or Timing and Scoring and:
 - a. Set up an event with a single fitting station decoder.
 - b. If using competitor information from DataCollector / Timing and Scoring (not required if using a reference BEM Event file, under the Registration Tab, import the list of competitors, e.g. generated from BEM export.
 - c. Under the Processing tab, got to "Live File settings" and set up the Live file export
 - i. Export Type: "Save on deletion of file.
 - ii. Export Path: e.g. C:\BEM\PASSINGS\
 - iii. Export format: Tab delimited text file.
 - d. Run a transponder across the loop and verify that the expected xxxx_LOG.txt passing file is generated.
 - e. Minimise DataCollector / Timing and Scoring
- 2. Run BemTrain
 - a. Set up Timeline 1 to match the DataCollector / Timing and Scoring setup.
 - i. Timeline Name
 - ii. Enable checked for timeline to be used
 - iii. Click the Select File button for Timeline 1 and select the live file export passing file created in step 1.d above.
 - iv. Enter a Session Name.
 - v. Save the Current Session with a meaningful name.
 - This creates a .BTS file to save the set up scenario.
- 3. Click on the Run Fitting Station button and select:
 - a. Display competitor information by using data imported from DataCollector / Timing and Scoring where you have a competitor list loaded into DataCollector / Timing and Scoring
 - b. Display competitor information by looking up Transponder number from
 DataCollector / Timing and Scoring in a reference BEM Event File (recommended)
 where a BEM Event File is to be used as the Transponder to Competitor link.
 When this selection is made, the Select BEM File button is enabled to allow selection
 of the Reference BEM Event File.
- 4. After a short delay, each passing data will be displayed on screen.



Training Split Time Overview

The Live Split Time facility provides progressive lap times from up to 10 timelines. This can be used for live data from a Training Session or Race Meeting or be run at a later time by importing the passing records from a training session or an event.

The screen below is an example with data from a practice session at the Sleeman Sports Complex. Data can be displayed by Start Time, Reverse Start Time (latest at top), by Rider or by any of the active timelines.



Reports can be generated in Excel or HTML file formats.

Excel example below showing elapsed time to each timing point and sector times between timing points.

| A | В | С | D | E | F | G | H | 1 | J | K | L | M | |
|-------------|-------------------|--------------|---------------------------|-----------|--------------|---------|---------------------|---------------|---------------------|---------------|---------------------|---------------|--|
| | | Sleem | an 2013 Training | | | | | | | | | | |
| | 1 Ben | nTrain by Ly | ndon.Downing@bigpond.com | | | | | | | | | | |
| | Version 1. | 1.3, 25 Feb | 2014, Licenced to: Bemmar | | Bottom of | | Einst Onen an | | Second | | Cininh Line | _ | |
| | Group by Rid | der: Sorte | ed by Lap Time: Complet | ted Runs | | Hill | | FlistConner | | Corner | | Fillisti Line | |
| Transponder | Class | Plate | Name | Date | Start Time | Hill | <sector2></sector2> | ntermediate 1 | <sector3></sector3> | ntermediate 2 | <sector4></sector4> | Finish | |
| FS-58369 | Probikx Men Elite | 512 | Aaron NOTTLE | 9/01/2013 | 11:34:34.680 | 2.514 | 6.070 | 8.584 | 11.427 | 20.011 | 17.466 | 37.477 | |
| FS-58369 | Probikx Men Elite | 512 | Aaron NOTTLE | 9/01/2013 | 11:00:26.427 | 2.511 | 6.174 | 8.685 | 11.757 | 20.442 | 17.681 | 38.123 | |
| FS-58369 | Probikx Men Elite | 512 | Aaron NOTTLE | 9/01/2013 | 09:41:15.909 | 2.523 | 5.990 | 8.513 | 12.222 | 20.735 | 18.435 | 39.170 | |
| FS-58369 | Probikx Men Elite | 512 | Aaron NOTTLE | 9/01/2013 | 10:35:59.108 | 2.493 | 6.456 | 8.949 | 17.437 | 26.386 | 20.299 | 46.685 | |
| FS-58369 | Probikx Men Elite | 512 | Aaron NOTTLE | 9/01/2013 | 08:50:40.565 | 2.499 | 6.222 | 8.721 | 11.886 | 20.607 | 46.484 | 67.091 | |
| FN-80590 | NADP Team | 2AUS | Abbie BLACKBURN | 9/01/2013 | 10:45:49.165 | 2.493 | 7.632 | 10.125 | 14.639 | 24.764 | 22.228 | 46.992 | |
| FN-80590 | NADP Team | 2AUS | Abbie BLACKBURN | 9/01/2013 | 11:13:06.493 | 2.653 | 7.553 | 10.206 | 14.609 | 24.815 | 22.276 | 47.091 | |
| FN-80590 | NADP Team | 2AUS | Abbie BLACKBURN | 9/01/2013 | 10:17:30.288 | 2.524 | 7.761 | 10.285 | 15.225 | 25.510 | 29.993 | 55.503 | |
| FN-80590 | NADP Team | 2AUS | Abbie BLACKBURN | 9/01/2013 | 09:08:49.377 | 9.308 | 11.114 | 20.422 | 73.176 | 93.598 | 22.480 | 116.078 | |
| RR-37746 | Probikx Men Elite | W4 | Anthony DEAN | 9/01/2013 | 11:32:58.260 | 2.438 | 6.010 | 8.448 | 11.226 | 19.674 | 16.800 | 36.474 | |
| RR-37746 | Probikx Men Elite | W4 | Anthony DEAN | 9/01/2013 | 10:35:59.108 | 2.434 | 5.909 | 8.343 | 11.158 | 19.501 | 17.200 | 36.701 | |
| RR-37746 | Probikx Men Elite | W4 | Anthony DEAN | 9/01/2013 | 11:00:26.427 | 2.471 | 5.910 | 8.381 | 11.245 | 19.626 | 17.132 | 36.758 | |
| RR-37746 | Probikx Men Elite | W4 | Anthony DEAN | 9/01/2013 | 09:46:29.724 | 2.458 | 5.835 | 8.293 | 11.605 | 19.898 | 16.962 | 36.860 | |
| RR-37746 | Probikx Men Elite | W4 | Anthony DEAN | 9/01/2013 | 08:50:40.565 | 2.407 | 5.818 | 8.225 | 11.660 | 19.885 | 30.868 | 50.753 | |
| HP-73442 | Probikx Men Elite | 747 | Bodi TURNER | 9/01/2013 | 09:48:58.334 | 2.526 | 6.160 | 8.686 | 11.326 | 20.012 | 17.357 | 37.369 | |
| HP-73442 | Probikx Men Elite | 747 | Bodi TURNER | 9/01/2013 | 11:32:58.260 | 2.488 | 6.293 | 8.781 | 11.707 | 20.488 | 16.921 | 37.409 | |
| HP-73442 | Probikx Men Elite | 747 | Bodi TURNER | 9/01/2013 | 10:37:26.864 | 2.502 | 5.929 | 8.431 | 11.764 | 20.195 | 17.481 | 37.676 | |
| HP-73442 | Probikx Men Elite | 747 | Bodi TURNER | 9/01/2013 | 11:01:44.563 | 2.522 | 6.518 | 9.040 | 11.932 | 20.972 | 17.004 | 37.976 | |
| FX-17362 | NADP Team | AUS 2 | Brandon TE HIKO | 9/01/2013 | 11:09:43.155 | 2.538 | 6.866 | 9.404 | 11.798 | 21.202 | 18.630 | 39.832 | |
| FX-17362 | NADP Team | AUS 2 | Brandon TE HIKO | 9/01/2013 | 10:42:34.166 | 2.425 | 6.823 | 9.248 | 12.266 | 21.514 | 19.473 | 40.987 | |
| FX-17362 | NADP Team | AUS 2 | Brandon TE HIKO | 9/01/2013 | 10:13:31.100 | 2.485 | 7.230 | 9.715 | 12.521 | 22.236 | 19.618 | 41.854 | |
| LR-25913 | Probikx Men Elite | 42 | Brian KIRKHAM | 9/01/2013 | 11:01:44.563 | 2.459 | 6.025 | 8.484 | 11.931 | 20.415 | 17.507 | 37.922 | |
| 2103C G I | Drahiky Man Elita | 40 | Brian KIDKHAM | 0/01/2012 | 183 30-03-00 | 2 4 4 0 | 6.057 | 202.8 | 11 80/ | 20 100 | 17 202 | 38 208 | |

HTML example noting the Speed details as distance information has been entered.

Sleeman 8M Saturday 02 May 2015

BMX EVENT MANAGER, BEM TRAIN Report Created 21/Aug/2015 16:44:35

| Group by Rider: Sorted by Lap Time: Completed Runs | | | | | | | | | | | | | | |
|--|----------------------|-------------|---------------------|-------------------|-------------|-------------------|--------------------------|-------------------|-------------------------|--------------------|--------------------|--------------------|---------------------|----------------------------|
| BemTrain \ | ersion 2.0.0.0 Test, | 21 Aug 2015 | | | | | | | TIMELINES | | | | | |
| Berman BMX | | | | Sector1 10.00m | Kink (1) | Sector2 15.00m | Bottom of Hill (2) | Sector3 75.00m | Corner 1 Exit (3) | Sector4 179.00m | Corner 3 In (4) | Sector5 109.00m | Finish Line (10) | Track Length 388.00m |
| NAME | T/PONDER | DATE | RUN START (Gate) | Time Speed | Kink | Time Speed | Hill | Time Speed | Corner1 | Time Speed | Corner3 | Time Speed | Finish | Lap Speed m/s |
| Aaron NOTTLE | FS-58369 | 2/05/2015 | 13:59:24.386 | 1.344 7.44 | 1.344 | 1.198 12.52 | 2.542 | 10.628 7.06 | 13.170 | 19.259 9.29 | 32.429 | 9.042 12.05 | 41.471 | 9.36 |
| Aaron NOTTLE | FS-58369 | 2/05/2015 | 12:45:45.823 | 1.351 7.40 | 1.351 | 1.190 12.61 | 2.541 | 10.348 7.25 | 12.889 | 19.983 8.96 | 32.872 | 8.951 12.18 | 41.823 | 9.28 |
| Aaron NOTTLE | FS-58369 | 2/05/2015 | 11:28:25.816 | 1.346 7.43 | 1.346 | 1.192 12.58 | 2.538 | 10.356 7.24 | 12.894 | 20.623 8.68 | 33.517 | 9.067 12.02 | 42.584 | 9.11 |
| Aaron NOTTLE | FS-58369 | 2/05/2015 | 15:01:12.358 | 1.316 7.60 | 1.316 | 1.207 12.43 | 2.523 | 10.756 6.97 | 13.279 | 19.455 9.20 | 32.734 | 35.850 3.04 | 1:08.584 | 5.66 |
| Adam CAREY | VC-17041 | 2/05/2015 | 11:26:20.205 | 1.311 7.63 | 1.311 | 1.181 12.70 | 2.492 | 10.522 7.13 | 13.014 | 21.779 8.22 | 34.793 | 9.264 11.77 | 44.057 | 8.81 |
| Adam CONDON | GS-48709 | 2/05/2015 | 12:39:58.718 | 1.439 6.95 | 1.439 | 1.323 11.34 | 2.762 | 13.074 5.74 | 15.836 | 24.785 7.22 | 40.621 | 10.414 10.47 | 51.035 | 7.60 |
| Adam CONDON | GS-48709 | 2/05/2015 | 11:25:36.705 | 1.422 7.03 | 1.422 | 1.278 11.74 | 2.700 | 13.401 5.60 | 16.101 | 24.665 7.26 | 40.766 | 10.304 10.58 | 51.070 | 7.60 |
| Adam CONDON | GS-48709 | 2/05/2015 | 13:56:11.302 | 1.410 7.09 | 1.410 | 1.216 12.34 | 2.626 | 12.377 6.06 | 15.003 | 25.669 6.97 | 40.672 | 11.646 9.36 | 52.318 | 7.42 |
| Adam DE NYS | NP-51792 | 2/05/2015 | 11:27:02.393 | 1.333 7.50 | 1.333 | 1.221 12.29 | 2.554 | 11.041 6.79 | 13.595 | 20.861 8.58 | 34.456 | 9.807 11.11 | 44.263 | 8.77 |
| Adam DE NYS | NP-51792 | 2/05/2015 | 12:41:16.430 | 1.354 7.39 | 1.354 | 1.217 12.33 | 2.571 | 11.477 6.53 | 14.048 | 21.224 8.43 | 35.272 | 10.484 10.40 | 45.756 | 8.48 |
| Adam DE NYS | NP-51792 | 2/05/2015 | 13:57:36.764 | 1.364 7.33 | 1.364 | 1.222 12.27 | 2.586 | 11.086 6.77 | 13.672 | 23.737 7.54 | 37.409 | 11.326 9.62 | 48.735 | 7.96 |

For velodrome configuration, Individual and Team Pursuit reports can be generated showing leader to leader times for each sector, lap and half lap times and gaps between each team member at each timing point.

Pursuit Analysis Report

| | A Velodrome | | | | | | | | | | | | |
|--------------|--|--|---|--|--|---|---|--|--|--|--|--|--|
| | BMX EVENT MANAGER, BEX TRAIN Report Created 69 Apr/2018 15 28:00 | | | | | | | | | | | | |
| Report Su | xeport Summary | | | | | | | | | | | | |
| Run Date | 2018-03-17 | | | | | | | | | | | | |
| Run Start | 15:51:15.872 | | | | | | | | | | | | |
| Run End | 15:52:20.430 | | | | | | | | | | | | |
| Run Time | 1:04.558 | | | | | | | | | | | | |
| Participants | 4 | | | | | | | | | | | | |
| Laps | 2 | | | | | | | | | | | | |
| L | | | | | | | | | | | | | |
| | Beelfrain Monice 2 10.002 der 2018 | | | | | | | | | | | | |
| | Location in i | Passing >>> | Apex1 | | Half Track | | Apex2 | | Start-Finis | h | | | |
| | Location Des | scription >>> | Apex 1 | | Back Pursuit | | | Apex 2 Front Pursuit | | | | | |
| | Lap 1 | | Sector 1 | | Sector 2 | | Costor 2 | | Sector 4 | | | | |
| | | | | | | | Jector J | | 000001 | | | | |
| | Lap | 35.613 | Sector | 9.560 | Sector | 7.790 | Sector | 7.555 | Sector | 10.708 | | | |
| | Lap First Half | 35.613 | Sector Elapsed | 9.560 | Sector Elapsed | 7.790 | Sector Elapsed | 7.555 24.905 | Sector Elapsed | 10.708 35.613 | | | |
| s | Lap First Half econd Half | 35.613 17.350 18.263 | Sector Elapsed Fred Frog | 9.560 9.560 0.000 | Sector Elapsed Fred Frog | 7.790 17.350 0.000 | Sector Elapsed Sleepy Hollow | 7.555 24.905 0.000 | Sector Elapsed Sleepy Hollow | 10.708 35.613 0.000 | | | |
| s | Lap First Half econd Half Elapsed | 35,613 17,350 18,263 35,613 | Sector Elepsed Fred Frog Sleepy Hollow | 9.560 9.560 0.000 0.029 | Sector Elapsed Fred Frog Sleepy Hollow | 7.790 17.350 0.000 0.033 | Sector Elepsed Sleepy Hollow Hairy Maclary | 7.555 24.905 0.000 0.023 | Sector Elapsed Sleepy Hollow Hairy Maclary | 10.708 35.613 0.000 0.040 | | | |
| s | Lap First Half econd Half Elapsed | 25.613 17.350 18.263 35.613 | Sector Elapsed Fred Frog Sleepy Hollow Hairy Maclary | 9.560 9.560 0.000 0.029 0.061 | Sector Elapsed Fred Frog Sleepy Hollow Hairy Maclary | 7.790 17.350 0.000 0.033 0.066 | Sector Elapsed Sleepy Hollow Hairy Maclary Postman Pat | 7.555 24.905 0.000 0.023 0.054 | Sector Elapsed Sleepy Hollow Hairy Maclary Postman Pat | 10.708 35.613 0.000 0.040 0.074 | | | |
| s | Lap First Half econd Half Elapsed | 35.613 17.350 18.263 35.613 | Sector Elepsed Fred Frog Sileopy Hollow Hairy Maclary Postman Pat | 9.560 9.360 0.000 0.029 0.061 0.078 | Sector Elepsed Fred Frog Sleepy Hollow Haliry Maclary Postman Pat | 7.790 17.350 0.000 0.033 0.066 0.088 | Sector Elapsed Sleepy Hollow Hairy Madary Postman Pat Fred Frog | 7.555 24.905 0.000 0.023 0.054 0.281 | Sector Eleosed Sleepy Hollow Halry Maclary Postman Pat Fred Freg | 10.708 33.613 0.000 0.040 0.074 0.156 | | | |
| 5 | Lap First Half econd Half Elapsed La | 25.613 17.350 18.263 25.613 | Sector Elapsed Fred Frog Silespy Hollow Hairy Maclary Postman Pac Sector 1 | 9.560 9.560 0.000 0.029 0.061 0.078 | Sector Elapsed Fred Frog Sleepy Hollow Halry Madary Postman Pat Sector 2 | 7.790 17.350 0.000 0.033 0.066 0.088 | Bector 3 Sector Elapted Sileepy Hollow Hairy Madary Postman Pat Fred Frog Sector 3 | 7.555 24.905 0.000 0.023 0.054 0.281 | Sector - Elapted Sileepy Hollow Hairy Holdary Postman Pat Pred Frog Sector 4 | 10.708 35.613 0.000 0.040 0.074 0.156 | | | |
| S | Lap First Half econd Half Elapsed Lap | 23.613 17.330 18.263 25.613 92 28.945 | Secor Elapted Fred Frog Slapp Hollow Hairy Maclary Postman Pat Sector 1 Sector | 9.360 9.360 0.000 0.029 0.061 0.078 6.638 | Sector Elapsed Fred Frog Steep Hollow Hairy Madlary Postman Pat Sector 2 Sector | 7.790 17.350 0.000 0.033 0.066 0.088 7.511 | Bector Bestor J Bepted Sileepy Hollow Hary Madary Postman Pat Fred Freg Sector J Sector | 7.335 24.905 0.000 0.023 0.054 0.281 7.483 | Sector 4 Elepted Sleepy Hollow Mainy Modary Postman Pat Fred Frog Sector 4 Sector | 10.708 33.613 0.000 0.040 0.074 0.156 7.313 | | | |
| 5 | Lap First Half Elapsed Lap First Half | 35,613 17,390 18,263 35,613 p 2 28,945 14,169 | Elspeed Fred Frog Sissey Holow Hairy Kaclary Postman Pat Sector Elspeed | 9.360 9.360 0.000 0.029 0.061 0.078 6.638 42.251 | Sector Elapsed Fred Frog Stappy Hollow Nairy Maclany Postman Pat Sector Elapsed | 7.790 17.350 0.000 0.033 0.066 0.088 7.511 49.762 | Bestor Elapsed Sleepy Hollow Harry Madary Postma Part Fred Prop Sector Elapsed | 7.535 24.905 0.000 0.023 0.054 0.281 7.483 57.245 | Sector Elapsed Sidepy Hollow Hary Madary Postma Pat Fred Frog Sector Elapsed | 10.708 35.613 0.000 0.074 0.156 7.313 1.04.338 | | | |
| 5 | Lap First Half Econd Half Elapsed Lap First Half econd Half | 28,945 28,945 28,945 28,945 28,945 14,149 14,796 | Elapsed Fred Freg Silesy Kolow Hairy Madary Pottman Pat Sector 1 Elapsed Hairy Madary | 9.360 9.360 0.000 0.029 0.061 0.078 6.638 42.231 0.000 | Sector Elipsed Fred Frog Slaspy Hollow Hairy Madary Postman Pat Sector 2 Sector Elipsed Hairy Madary | 7.790 17.330 0.000 0.033 0.066 0.088 7.511 49.762 0.000 | Elapsed Elapsed Sileopy Hollow Hairy Madary Postman Pat Field Frog Elapsed Postman Pat | 7.555 24.905 0.000 0.023 0.054 0.281 7.483 57.245 0.000 | Sector Elapsed Sileepy Hollow Hairy Madary Pastman Pat Fired Fing Sector 4 Elapsed Postman Pat | 10.708 35.613 0.000 0.040 0.074 0.156 7.313 1.04.538 0.000 | | | |
| 5 | Lap First Half Elapsed Lap First Half econd Half Elapsed | 23.613 17.330 18.263 33.613 9.7 28.945 14.149 14.796 11.04.539 | Secor Expend Field Frog Slassy Mellow Hainy Medahy Peternan Pet Expend Hainy Medahy Peternan Pet | 9.560 9.560 0.000 0.051 0.078 6.638 42.251 0.000 0.052 | Sector Elipsed Fred Freg Slapp Holiov Hairy Madary Pastman Pat Sector 2 Sector Elipsed Hairy Madary Postman Pat | 7.790 17.350 0.000 0.033 0.066 0.068 7.511 49.762 0.000 0.031 | Bestor Elepsed Sidepy Hollow Hany Wadary Patman Pat Fred Frog Elepsed Postman Pat Fred Frog | 7.553 24.905 0.000 0.023 0.024 0.281 7.483 57.245 0.000 0.031 | Sector Elizered Siebery Hollow Nery Mary Pasman Pel Fred Freg Sector 4 Elizered Postman Pel Freg Freg | 10.708 33.613 0.000 0.040 0.074 0.156 7.313 1.64.338 0.000 0.023 | | | |
| 5 | Lap First Half econd Half Elapsed Lap First Half econd Half Elapsed | 23.613 17.330 18.263 35.613 92 28.945 14.149 14.796 1.04.538 | Expose Exposed Field Frog Steepy Holew Nearly Mackey Postman Par Sector 1 Exposed Hainy Mackary Postman Par Field Pog | 9.560 9.560 0.000 0.029 0.061 0.061 6.638 42.251 0.000 0.022 0.078 | Sector Eliopsed Fred Frog Sleop Hollow Harry Maclary Postman Pat Sector Eliopsed Hairy Maclary Postman Pat Fred Freg | 7.750 17.350 0.000 0.033 0.066 0.066 7.511 49.762 0.000 0.031 0.065 | Bestor Elepsed Sidepy Hollow Hary Maclary Postman Part Fred Prog Bestor Elepsed Postman Part Fred Prog Hary Maclary | 7.555 24.905 0.000 0.022 0.054 0.054 7.483 9.7.249 0.000 0.031 0.667 | Bector Elepsed Sileppy Hollow Hairy Maclary Pattern Pat Fred Freg Elepsed Postman Pat Fred Freg Hairy Maclary | 10.708 33.613 0.600 0.640 0.674 0.156 7.313 1.04.558 0.600 0.623 0.627 | | | |



Training Split Time Setup - Live Capture

- 1. Run DataCollector / Timing and Scoring and:
 - a. Set up the event with the timelines and decoders to be used for the session.
 - b. If using competitor information from DataCollector / Timing and Scoring (not required if using a reference BEM Event file, under the Registration Tab, import the list of competitors, e.g. generated from BEM export.
 - c. Under the Processing tab, got to "Live File settings" and set up the Live file export
 - i. Export Type: "Save on deletion of file.
 - ii. Export Path: e.g. C:\BEM\PASSINGS\
 - iii. Export format: Tab delimited text file.
- 2. Have one athlete complete the training run and verify that the expected xxxx_LOG.txt passing files are created for each timeline.
- 3. Run BemTrain
 - a. Set up the Timelines to match the DataCollector / Timing and Scoring setup ensuring that Timeline 1 is the first timeline in the run.
 - i. Timeline Names
 - ii. Enable checked for timelines to be used
 - iii. Click the Select File button for each enabled Timeline and select the relevant live file export file created in step 2 for each Timeline.
 - b. If distances are available, enter the distance between each sector to enable speeds to be included in the html reports.
 - c. Enter a Session Name. This should be unique to the particular training session, particularly where session times are being uploaded to SportsLists as the Session Name is used to create the report folder in SportsLists.
 - d. Set the appropriate Run Mode option. I.e.
 - i. Select **Start Gate Single Run** where a gate start is used to start each single training run then:
 - Enter the Gate Transponder (typically 9992 or 9991 for DataCollector or 00-09991 or 00-09992 with Timing and Scoring) where the photocell input on the MyLaps decoder is used for the Gate Start signal).
 - 2. Set appropriate time values (seconds) for Minimum Gate to Loop 1 and Maximum Gate to Loop 1.
 - ii. Select **Timeline 1** where crossing this timeline is used to start each single training run.
 - iii. Select **Velodrome Laps Mode** where the training run consists of laps on a closed track and Timeline 1 is the Start and Finish for each lap.
 - e. Set the Maximum Run Time (seconds) to a value that each run in Single Run mode or each Lap in Velodrome mode would reasonably expect to be completed.
 Note that this time must be longer that the actual run but short enough in Single Run mode that a second or subsequent run should not be started within this time period.
 - f. Passing file format to be set to MyLaps DataCollector 3.
 - g. Option to Delete Passing Files after Processing to be selected.



- h. Save the Current Session with a meaningful name.This creates a .BTS file to record the passings and split time results.
- i. Click on "Run Training" button.
- j. On the Run Screen, click on Start Capture and check that the passing records for all timelines generated in step 2 are imported error free.
 If errors are reported, go back to the Set Up screen to correct.
 If unexpected passings are shown from an earlier session or date and time, use the Master Reset button to clear all data ready for a fresh start.
- k. Note that changes to the Session Display sort option takes effect immediately only when the Capture is halted. When Capture is running, display sort changes will update only after then next Capture update cycle is completed (up to 30 seconds).
- 4. Good to go to run the training session.
- 5. In Velodrome Laps Mode, the time for each completed lap is shown under Loop 1.
- 6. Manual Reports in Excel and HTML format are available by clicking on the Report button, enabled when Capture is not running.
- 7. Auto HTML reports can be generated during the training session. To set this up:
 - a. If not done previously, click on the Select button in the Top level folder for saving auto generated reports group and select a folder for storing these reports.
 BemTrain creates a folder for each training session based on the entered Session Name in this "top level" folder.
 - b. In the HTML Auto Reports group:
 - i. Select the Create during capture option.
 - ii. If reports are to be uploaded to the SportsLists phone App, select Upload to SportsLists App option and enter your Upload Key.
 Note: To use this facility you need to register and obtain an Upload Key from SportsLists. Contact email is <u>support@sportslists.eu</u> with keys normally issued per Coach or per Club.
 - iii. If you are not uploading to SportsLists and wanting to display the training session details locally, select the Scroll option to make the report auto scrolling and auto refresh then select the report file to display using a web browser.
 - iv. The vertical bar on the right side of the group is a countdown indication to the next auto report being generated / uploaded.Should the countdown timer expire when there is no activity on the track, the countdown bar is shown in red and a new report / upload will be triggered when the next passing is received.

Note that when starting the Capture for a session that has split times stored, a new report / upload is created a few seconds after the capture is started.



Training – Pursuit Analysis Report

When the training capture is used in velodrome mode, an analysis report is available for individual or team pursuit.

The user can specific the training run parameters such as number in the team, number of laps, maximum gap from the team leader to when riders are dropped.

Details in the report include the leader to leader times for each sector, cumulative time, gaps at each timeline between the leader and individual team members.

Clicking on the Pursuit Report button in the split time screen opens the Pursuit Report Control settings.

| Team Pursuit Run 1 - 27 March 2018 | | | | × |
|---------------------------------------|---|------------------------------------|---|---|
| | Pursuit Report Control | | | OK |
| Pursuit Start Options | | | | |
| C Enter Start Time | HH MM SS MS | Minimum Start to timeline Apex1 | Maximum Start to timeline Apex1 | Cancel |
| Select Gate Start Passing Record | | 02 | 12 🔺 | Output to |
| C Select Rolling Start Passing Record | Select the Gate Start record for Pursuit Start T | îme | | Excel File |
| Ref Transponder Location | Date Time Plate Name 17/03/2018 15:51:15.872 Start Gate | | | C HTML File |
| | | | | Select the Timeline to report half lap times Half Track |
| Pursuit Parameters | | | | |
| Number competing Number to c to com | ross the finish line Maximum tracking gap from lete the run first to last competitor (seconds) | Number of laps | Maximum time between any two loops (seconds) | |
| 4 3 | | 2 | 17 | |

1. Pursuit Start Options

There are three options to set the start time of the pursuit run

 a. Enter Start Time
 For this option, the operator enters the Hour, Minute, Second and Millisecond of the start time.

Typically used for a standing start without a hardware generated start signal from a gate or push button.

- b. Select Gate Start Passing Record
 When this option is selected, all gate start passing records are show for the operator to select the one relevant to the pursuit start.
 Note that the gate start transponder number must match one of the Gate Start transponder number(s) in the setup screen.
- c. Select Rolling Start Passing Record.
 When this option is selected, all passing records for first timeline in the run are shown for the operator to select the leader's passing to start the pursuit run.
- Minimum and Maximum Start to timeline. The Minimum Start to timeline and Maximum Start to timeline are sanity settings used to identify the rider(s) in the pursuit run.



They apply irrespective of the Start Time option selected and set a time window for the rider(s) to cross the second loop in the run after the start time.

3. Pursuit Parameters

The following settings are used to customise the report for various track, team and distance requirements.

- a. Number competing.
 - Specifies the number making up the pursuit team. Settings from 1-8.
- Number to cross the finish line to complete the run.
 For a team pursuit, specifies how many of the team need to cross the finish line to complete the run.
- Maximum tracking gap from first to last competitor.
 This setting (in seconds) is the maximum gap from the leader at any timeline which if exceeded by any team member, they will no longer be tracked as part of the run.
 Gap times that exceed this threshold are show in red in the reports.
- Number of laps.
 Settings from 1 20.
- Maximum time between any two loops.
 This setting is a sanity check for tracking purposes. An incomplete run error is given if this time is exceeded between any two timing points. Settings from 1 30 seconds.
- 4. Output to.

An operator selection for the report format to be an Excel or HTML file.

5. Select the Timeline to report half lap times.

An operator selection of the timeline that represents the half lap timing point. Used to report first and second half lap times in the report.



Split Time Setup – BEM Import

A transponder scored BEM event can be imported into BemTrain and the Split Time reports generated.

- 1. Run BemTrain
 - a. Set up timeline names to match those in the BEM event. Typical setting will be:
 - i. Timeline 1 name Hill
 - ii. Timeline 10 name Finish
 - iii. Enable checked for Timeline 1 & 10.
 - b. Enter a Session Name.
 - c. Set the Gate Transponder number to match that used in the BEM File.
 - d. In Run Mode, select Start Gate Single Run
 - e. In Run Time Settings, set the times to match those used in the BEM File.
 - f. In Passing File Format, select BEM Event File.
 - g. Save the Current Session with a meaningful name.
 - This creates a .BTS file to record the passings and split time results.
 - h. Click on "Run Training" button.
 - i. When the Select the Competitor Data Source is displayed:
 - i. Select "Display competitor information by looking up Transponder number from passing record in a reference BEM Event File.
 - ii. Click on the Select BEM File button and select the required BEM Event.
 - iii. Click OK.
 - j. When the Session Run Time screen is displayed, click on the Start Capture button.
 - There will be a delay dependant on the size of the event while all passing records are read and the split time records built.
 - Progress indicator is show at the lower left of the screen.
 - Build is complete when the Capture button changes from Green "Stop Capture" to Red "Start Capture"
 - k. Click Reports and create the required report(s)



Scoreboard Overview

The real time Scoreboard facility can be used to provide information for commentary or public display where suitable screens are available.

As BemTrain is operating independently from the official race scoring, results display by BemTrain should always be treated as provisional.

Envisaged configuration is that both DataCollector or Timing and Scoring and BemTrain are run on the same laptop with an external monitor for the Scoreboard display.

Works best with a second monitor set up with the Desktop extended across both displays. That enables you to drag the Scoreboard window onto the second monitor and use the laptop screen to control it.

The Scoreboard operation can be set up in one of the following modes.

Time Trial Mode

Typical setup for a typical BMX scenario with a gate start requires a minimum of two loops to be active. E.g. bottom of Hill and Finish line. If an intermediate loop is activated then splits at that time are shown.

For a typical Pump Track event using a rolling start, a common Start/Finish loop is used however separate start and finish loops or gate start configurations are possible.

In all Time Trial modes:

New leader highlighted in green in the latest competitor area.

- Display starts when the first rider crosses the first loop and is updated as each subsequent rider crosses any of the three (max) loops.
- Supports concurrent riders on the track
- While the Auto reset and clear at class change option is provided, recommendation is not to use this option and use manual reset between classes as any stray or unknown transponder will cause an unexpected and unwanted class reset.

Options for the Time Trial display are:

- \circ Show top 3 + intermediate
 - Shows the top three in the class at the top of the screen and the latest competitor to pass the Hill, Intermediate (if activated) and Finish at the bottom of the screen.



- Show top 5
- Qualification Best Time

With this qualification option, the left pane shows the top 8 fastest laps. The right pane shows the last 8 completed laps or where an intermediate timeline is included, the latest 8 crossing of either the finish or intermediate timeline.

Note that the Qualification Best Time scoreboard is applicable to stages of Pump Track Events run under Open Session format.

Qualification – Total Time
 With the Total Time qualification, the left pane shows the top 8 based on total time and number of laps completed. The right pane shows the last 8 completed laps or where an intermediate timeline is included, the latest 8 crossing of either the finish or intermediate timeline.

Race Progress Mode

Requires a minimum of two loops to be active. E.g. bottom of Hill and Finish line with each loop having a dedicated decoder and a Gate Start signal.

- Display on the Scoreboard starts when the first rider crosses the first loop on the track.
- Display is progressively updated during the race as the lead rider crosses each loop.
 Note that you can set a maximum time to display each intermediate loop before an auto clear is applied.
- A restriction of this mode is that only one race can be on the track at any one time and an operator reset of the display is required between races.

Race Lap Time Mode

Requires a minimum of two loops to be active. E.g. bottom of Hill and Finish and a Gate Start signal.

- \circ $\;$ Designed to run throughout the event without operator intervention
- \circ $\;$ Display on the Scoreboard starts when the first rider crosses the finish line.
- Operates with multiple races on the track.
- Recommended configuration is to have a dedicated decoder for each loop but will operate with Hill and Finish loops connected to a single decoder.
- Can be set for timer clearing of the display with an operator selectable time period that commences from the first place rider being displayed, or for the display to remain until manually cleared or the first placed rider from the subsequent race crosses the finish line.
- Single Timeline Mode
 - Display shows gaps between passings at the timeline.
 - \circ Selectable Auto Reset (timer) or Manual Reset.
 - Allow for a Photo Gap referral time to be set to show "Photo" rather than the gap between riders if used to show Finish Line.
 - An example for the use of this mode is to have a timeline before the last corner to provide a live display for use by the commentators.



- > Twin Timeline Mode
 - \circ Similar to Singe Timeline Mode but with two timelines displayed on the one screen.
 - Selectable Auto Reset (timer) or Manual Reset.
 - Allow for a Photo Gap referral time to be set to show "Photo" rather than the gap between riders if used to show Finish Line.
 - An example for the use of this mode is to have independent displays for a timeline coming out of the first corner on one half of the screen and the finish line timeline display on the other half of the display for use by commentators.
- Lap Time Display Mode.
 - Displays the lap time of the last 8 or 16 completed laps by operator selection of Lap Time (8) or Lap Time (16).
 - \circ $\,$ Can be used with Gate Start or Loop 1 as the start of run trigger.
 - With Manual Clearing selected, when the 8 (16) laps are displayed, subsequent laps appear at the top of the display with earlier laps scrolling off the bottom.
 - Can be used with 1:1 loop to decoder or with multiple loops connected to the one decoder.
 - Run data is preserved so that after exiting from the Scoreboard App, you can go to the Training App and display / generate training reports.
 - Envisaged use is for a rider information display.
- Staging Transponder Check.
 - Provides a scrolling display from a single Timeline with the latest passing at the top of the screen.
 - Envisaged use is as a check in staging to verify correct fitting and operation of the transponders.
- Multi Lap Race

Two layouts are included for multi-lap races to optimise clarity depending on the scoreboard characteristics.

- 8 + 8 Format with two 8 competitor panes.
 - Shows the top 8 in the left pane with cumulative time and number of completed laps.
 - Shows the last 8 completed laps in the right pane with cumulative time and number of laps or were intermediate timelines are included, shows the latest 8 crossings of either the intermediate or finish timelines.
- 3 + 5 Format with one 8 rider pane.
 - Shows the top 3 in positions 1 to 3 on the display with cumulative time and number of completed laps.
 - In positions 4 8 of the display, shows the last 5 completed laps or where intermediate timelines are included, shows the latest 5 crossings of either the intermediate or finish timelines.



Pump Track

The three options in the Pump Track section reflect the various UCI Pump Track event formats. For stages run under Open Session rules, use Time Trial Qualification scoreboard.

- Solo Run shows each competitor's as their run is started, lap time when completed with overall place when the second rider has completed their lap.
- Pursuit / Head to Head Dual Single Run shows each competitor as they start then the race result when completed.
- Head to Head Dual, 2 Runs
 Specific display and processing where there is a Left and Right track. Shows each rider's individual lap times for Left and Right track and stage result based on cumulative times.

Scoreboard Content Display

While most of the scoreboard content is fixed, user options are provided to display State or Country codes on some scoreboards and control header logos in all scoreboards.

A number of the scoreboards have the option to add a Json Virtual scoreboard output, where a Json file is generated for each scoreboard change. Initial use of this facility is in conjunction with companion graphical scoreboards.

Country or State Code

Where either a .bem event file is selected to link transponders to competitors or where the passing file format contains State and Country codes (e.g. BemTrain format from Timing & Scoring), the scoreboard control option "Show Group As" will be selectable with options to:

Not show the State or Country code in the display line. Show the State Code

Show the Country Code

Logo Display Control

• Left and right header logos can be shown on all scoreboards with operator selections of default logos, user defined logos provided by the operator or no logos being made with the Logo Control options in the Scoreboard Control screen.

To display user defined logos, create .bmp graphics files with the following names in the C:\BEM\UserData\BemTrain Scoreboard bmp logos folder.

- BemTrainUser_HL_Logo.bmp (for Header Left)
- BemTrainUser_HR_Logo.bmp (for Header Right)

Speed Trap

Scoreboards where the Json Virtual option is selected can also have the Speed Trap enabled. Output from the speed trap is only to a Json file and the Scoreboard control screen in the current design.



Scoreboard Reset Options

Two reset options are provided for when unexpected scenarios occur such as missing passings, stray passings, inadvertent importing of historic data.

Soft Reset that marks all passing records and all result records to be ignored and clears the scoreboard display.

Master Reset that will instantly delete all passing records, all result records and clear the scoreboard display.

Scoreboard Style Options

The Set Scoreboard Style button on the Scoreboard Control screen allows selection of six predefined background and text colours together with five fonts together with settings for the selectable JSON scoreboard images.

For the colour schemes, select the combination that gives the best clarity for the monitor type, monitor size and indoor or outdoor environment or sponsor requirements.

Note: JSON options are only applicable to the Premium version of BemTrain.

When the "+ JSON Virtual" option is selected, select the folder to be used to write the scoreboard content Json files.

When the "+ JSON Video Wall" option is selected, enter the Video Wall server details to send the scoreboard content in Json format.

| t Scoreboard Style | |
|---|---|
| • James SMITH | ି Tahoma |
| James SMITH | |
| • James SMITH | ି Arial ି Arial Bold |
| James SMITH | ^C Arial Black |
| • James SMITH | |
| • Red Bull | |
| Folder for saving auto generated JSON scoreboard reports C:\BEM\BemTrain Sessions\JsonScoreBoard | /t |
| Video Wall Settings | Server Port Enter the IP and Port number for the Video Wall Server E.g. IP: localhost or 192.168.0.101 Port: 8080 |
| Test Connection | |



Refresh BEM Reference Event - Scoreboard Mode

When a BEM event is used as a reference to link transponder numbers to competitors for the Scoreboard, the New BEM Snapshot button on the Scoreboard Control can be used to update the BEM file without having to close the Control window.

Envisaged use is where there has been a transponder change or new entries added to the event after the Scoreboard display was opened.

Note that Capture must be turned off for the update.



Time Trial Scoreboard Setup

The following example is for a BMX Time Trial with a gate start. Suggest that where an intermediate loop is used that the Show top 3 + intermediate option be selected else the Shop top 5.

- 1. Run DataCollector / Timing and Scoring and:
 - Set up an event with a minimum of bottom of the Hill and Finish Line decoders. Note that if intermediate loop(s) are specified, competitor details from the first intermediate loop are also shown. Other intermediate decoders can be specified but are not processed or displayed.
 - b. If using competitor information from DataCollector / Timing and Scoring (not required if using a reference BEM Event file, under the Registration Tab, import the list of competitors, e.g. generated from BEM export.
 - c. Under the Processing tab, got to "Live File settings" and set up the Live file export
 - i. Export Type: "Save on deletion of file.
 - ii. Export Path: e.g. C:\BEM\PASSINGS\
 - iii. Export format: Tab delimited text file.
 - d. Run a transponder across each of the loops and verify that the expected xxxx_LOG.txt passing files are generated.
 - e. Minimise DataCollector / Timing and Scoring
- 2. Run BemTrain and setup the Scoreboard requirements for Time Trial display.
 - a. Loop 1 must be the first loop after the start.
 - b. Loop 10 must be the Finish line.
 - c. Optional to use an intermediate loop to display splits at that timing point.
 Note in the example, the intermediate loop at "Half Track" is connected to the same decoder as the loop at "Hill"
 - d. Set the timeline names to match the location name settings.
 - e. Select the relevant xxxx_LOG.txt passing files for each timeline.
 - f. Start Trigger to be Start Gate Single Run

| BEM Train Version: 3.3.0 28 October 2 | 2021 | | | | | × |
|---------------------------------------|-----------------------|---------------------------------------|---------------------|-------------------|------------------------------------|-----------------------------|
| Session Name | | Track Name | | - Training Report | Gate Transponder | Gate2 Transponder |
| Time Trial Test | | A Track | | Distance Units | 00-09992 | 00-09991 |
| Session file: C:\BEM\BemTrain\Example | Sessions\Setup Ex | ample - Time Trial.bts | | Meters - | Gate Timeline | Finish Timeline |
| Timeline Name (in Passing Record) | | Loop Location (to show in reports) | THE REAL | | Start | |
| First Loop in Run | | (to show in reports) | Passing Files | Gate to 1 | Run Mode | |
| 1 Hil | Enable | Kink | | | Same start time for all in run fro | om gate drop for single run |
| D: \BEM\BemTrain Sessions\BemTra | in Passings\Hill\Hill | .bxt | < Select File | 1 to 2 | | |
| 2 Hill | Enable | Half Track | _ | 15 | | |
| - : - | | | < Select File | 2 to 10 | Start Gate - Single Run | - |
| 3 Corner1 | Enable | Corner 1 Exit | _ | 75 | | |
| - | | | < Select File | Not used | Run Time Settings | Gate to Maximum Run |
| 4 Corner3 | Enable | Cornder 3 In | | 179 | Loop 1 Loo | p 1 Time |
| | | 0 | < Select File | Not used | | A A |
| 5 10005 | Enable | Corner 3 In | _ | 109 | >0-1 10 | ▼ ^{3:40} ▼ |
| - | 1 Charles | | < Select File | Not used | Passing File Format | |
| 6 10006 | Enable | Sprint Start | | 0 | C T&S BemTrain Minimum | Delete Passing Files after |
| - | , chore | | < Select File | Not used | C T&S BemTrain Custom 2 | Processing (normally set) |
| 7 Loop7 | Enable | Sprint 10m | _ | 0 | • T&S BemTrain Custom | |
| - | | | < Select File | Not used | C MyLaps DataCollector 3 | Multi Timelines in one File |
| 8 10008 | Enable | Sprint 20m | | 0 | C BEM Event File | |
| | , chance | | < Select File | Not used | C RaceResult RRconnector | ✓ 1Decoder, >1Loop |
| 9 10009 | Enable | Sprint 30m | | 0 | C Decritonized | |
| | | | < Select File | Not used | Run Application | Session File Control |
| 10 Finish | Fnable | Finish Line | | 0 | Fitting Station | Open Session |
| D:\BEM\BemTrain Sessions\BemTra | in Passings\Finish\ | Finish.txt | < Select File | Track Total | Track Monitor | Save Current Session |
| | Spee | d Trap | | 100.00 | | |
| | Enable | | | Trap Distance | Scoreboard | Save Session As |
| | | | < Select File | | | Close Session |
| Start Transponder | Stop Tra | nsponder | | | Training | |
| Initial Setup Selection | Save Cur | rrent Setup | Use System Settings | Premium enabled | Experimental Mode (Caution!) | Exit |



3. Click on Run Scoreboard

You then have the choice to either use names from DataCollector / Timing and Scoring passing records or to use a BEM file to look up the names from the Transponder Number in the passing record. (Same selection as for Fitting Station)



4. The Scoreboard Control screen is now shown.



Set the **Time from Start Mode** to **Time Trial** and in this example, **Show top 3 + intermediate**. Recommended action is not to use the Reset at Class Change option but to have a clear track between classes and use Master Reset before a subsequent class starts. This is based on operating experience where a competitor with a different transponder on the bike to that in the entry will cause an unintended class reset and loss of relative placings in the class. Note that the **Split Time for Photo Finish** and **Scoreboard Clearing Options** do not apply for Time Trial mode.

5. Click **Open Scoreboard** which will open the Scoreboard frame will open behind the control. If you have a second (external) monitor, drag the scoreboard frame onto the second monitor leaving the Control window on the laptop screen.



Start Capture checks for new passings at around 100ms intervals and the button function changes to Stop Capture once it is in capture mode.
 In Time Trial mode, all passings are processed and stored with the first Scoreboard display occurring when the first competitor crosses the first loop in the run.



Race Progress Mode Scoreboard Setup

- 1. Run DataCollector / Timing and Scoring and:
 - Set up an event with a minimum of bottom of the Hill and Finish Timelines.
 The system caters for up to 8 intermediate timelines in addition to the bottom of Hill and Finish, however a rather more practical scenario would be for intermediate timelines coming out of the first corner and into the last corner.
 - b. If using competitor information from DataCollector / Timing and Scoring (not required if using a reference BEM Event file, under the Registration Tab, import the list of competitors, e.g. generated from BEM export.
 - c. Under the Processing tab, got to "Live File settings" and set up the Live file export
 - d. Export Type: "Save on deletion of file.
 - e. Export Path: e.g. C:\BEM\PASSINGS\
 - a. Export format: Tab delimited text file.
 - b. Run a transponder across each of the loops and verify that the expected xxxx_LOG.txt passing files are generated.
 - c. Minimise DataCollector / Timing and Scoring
- 2. Run BemTrain and setup the Scoreboard requirements for Race Progress display.
 - a. Loop 1 must be the first timeline after the start.
 - b. Loop 10 must be the Finish line.
 - c. Intermediate loops should be in the order they are crossed around the track.
 - d. Set the timeline names to match the DataCollector / Timing and Scoring settings.
 - e. Select the relevant xxxx_LOG.txt passing files for each timeline.
 - f. Start Gate Single Run to be the Start Trigger

In the example below there are timelines at the bottom of the Hill, in the Second straight and at the Finish line.



3. Click on Run Scoreboard

You then have the choice to either use names from DataCollector / Timing and Scoring passing records or to use a BEM file to look up the names from the Transponder Number in the passing record. (Same selection as for Fitting Station)



4. The Scoreboard Control screen is now shown.



- a. Set the Time from Start Mode to Race Progress.
- b. Set the Timer Clearing (if required) to the maximum display for each timeline.
 Note that the display is auto updated when the first rider crosses a subsequent timeline
- c. You cannot start the Scoreboard if any Passings or previous Results are Stored. Easiest way to clear is by using the Master Reset button.
- 5. Click **Open Scoreboard** which will open the Scoreboard frame will open behind the control. If you have a second (external) monitor, drag the scoreboard frame onto the second monitor leaving the Control window on the laptop screen.



- Click Start Capture when track is clear.
 When Capture is active, checks for new passings are at around 100ms intervals and the button function changes to Stop Capture once it is in capture mode.
- 7. The first Scoreboard display is initiated as the first rider crosses the first loop specified in the Setup (normally the Hill loop).
- 8. Use the **Master Reset** button to clear the display and reset ready for the next race.



Race Lap Time Mode Scoreboard Setup

- 1. Run DataCollector / Timing and Scoring and:
 - Set up an event with a minimum of bottom of the Hill and Finish Timelines.
 The system caters for up to 8 intermediate timelines in addition to the bottom of Hill and Finish, however a rather more practical scenario would be for intermediate timelines coming out of the first corner and into the last corner.
 - b. If using competitor information from DataCollector / Timing and Scoring (not required if using a reference BEM Event file, under the Registration Tab, import the list of competitors, e.g. generated from BEM export.
 - c. Under the Processing tab, got to "Live File settings" and set up the Live file export
 - d. Export Type: "Save on deletion of file.
 - e. Export Path: e.g. C:\BEM\PASSINGS\
 - d. Export format: Tab delimited text file.
 - e. Run a transponder across each of the loops and verify that the expected xxxx_LOG.txt passing files are generated.
 - f. Minimise DataCollector / Timing and Scoring
- 2. Run BemTrain and setup the Scoreboard requirements for Race Lap Time display.
 - a. Loop 1 must be the first timeline after the start.
 - b. Loop 10 must be the Finish line.
 - c. Intermediate loops should be in the order they are crossed around the track.
 - d. Set the timeline names to match what will be in the passing files.
 - e. Select the relevant xxxx.txt passing files for each timeline.
 - f. Start Gate Single Run to be the Start Trigger

In the example below set up using Timing & Scoring as the interface, there are timelines at the bottom of the **Hill**, and at the **Finish** line.

| BEM | Train Version: 3.3.0 28 October 2 | 021 | | | | | × |
|----------|--------------------------------------|-----------------------|---------------------------------------|---------------------|-----------------------|------------------------------------|-----------------------------|
| Se | ssion Name | | Track Name | | - Training Report | Gate Transponder | Gate2 Transponder |
| Ra | ce Lap Time Mode | | A Track | | Distance Units | 00-09992 | 00-09991 |
| Sess | on file: C:\BEM\BemTrain\Example ! | Sessions\Setup Ex | ample Race Lap Time Mode.b | ots | Meters | Gate Timeline | Finish Timeline |
| | Timeline Name (in Passing Record) | | Loop Location (to show in reports) | \$\$.LARS | Gate to 1 | Start | |
| | First Loop in Run | | | Passing Files | 0 | Run Mode | |
| 1 | Hill | Enable | Bottom of Hill | — | | Same start time for all in run fro | m gate drop for single run |
| | D:\BEM\BemTrain Sessions\BemTrai | in Passings\Hill\Hill | .brt | < Select File | 1 to 10 | | |
| 2 | Hi | Enable | Bottom of Hill | | 0 | | |
| - | - | | | < Select File | Not used | Start Gate - Single Run | - |
| 2 | Corner1 | Enable | Start 2nd Straight | | 75 | | |
| 5 | - Conter 1 | | Start 2nd Straight | < Select File | Not used | Run Time Settings | Maximum Run |
| 4 | Corner? | T Saabla | Comdor 2 In | | 0 | Loop 1 Loop | Gate to Time |
| 7 | - come o |) Enable | Conner 5 th | < Select File | Not used | | |
| - | | TT Factor | Carran 2 Ia | _ | 109 | >0-1 - 10 | 3:40 |
| 5 | | i chable | Comer 5 In | < Select File | Not used | - Dassing File Format | |
| - | Lines | | Cardada Charat | | 0 | | Delete Passing Files after |
| 6 | Loope | Enable | sprint_start | < Select File | Not used | C T&S BemTrain Minimum | Processing (normally set) |
| - | - | | 0.11.10 | | 0 | T&S BemTrain Custom | |
| / | Loop7 | Enable | Sprint_10m | < Salart File | Not used | C MyLaps DataCollector 3 | Multi Timelines in one File |
| - | - | | | < delett file | 0 | C BEM Event File | |
| 8 | Loop8 | Enable | Sprint_20m | | Not used | C RaceResult RRconnector | 1 Decoder. >1 Loop |
| _ | - | | | < select file | 0 | C BeChronized | |
| 9 | Loop9 | Enable | Sprint_30m | | Notused | Run Application | Session File Control |
| | - | _ | | < Select File | 0 | Eitting Station | |
| 10 | Finish | Enable | Finish Line | | Track Total | | Open Session |
| | D:\BEM\BemTrain Sessions\BemTrai | in Passings\Finish\ | Finish.txt | < Select File | 2 | Track Monitor | Save Current Session |
| | | Spee | d Trap | | | | Save Session As |
| | | I Enable | U | < Select File | Trap Distance | Scoreboard | |
| Sta | rt Transnonder | Stop Tra | osponder | | | Training | Close Session |
| 310 | | Stop ITa | | | Description and block | | Evit |
| | Initial Setup Selection | Save Cur | rrent Setup | Use System Settings | Premium enabled | Experimental Mode (Caution!) | Exit |

3. Click on Scoreboard

You then have the choice to either use names from DataCollector / Timing and Scoring passing records or to use a BEM file to look up the names from the Transponder Number in the passing

| Select the Competitor Data Source | | × | | | |
|--|---|--------|--|--|--|
| C Display competitor information by us imported from the Passing Records | ing data | ок | | | |
| Display competitor information by loo Transponder number from Passing I reference BEM Event File | oking up Record in a | Cancel | | | |
| 🗖 Auto Refresh BEM data | | | | | |
| Select BEM File | Display Rider Names from BEM File as: First Name - LAST NAME LAST NAME - First Name | | | | |
| BU_BemTrain Test V241-V260.bem | | | | | |

4. The Scoreboard Control screen is now shown.



a. Set the Time from Start Mode to Race Lap Time.

- b. Set the Timer Clearing (if required) to the maximum display time. Status Message Area Note that the timer starts when the first rider for the race crosses the finish line. When Auto Reset is selected, the display is auto cleared when the first rider from the next race crosses the finish line.
- c. You cannot start the Scoreboard in this mode if any Passings are Stored and if they do exist, you will have the option to clear these.
- d. If any lap records are stored, you will be prompted to either delete these or keep them should you wish to generate a training report at a later time.



- e. Once results are cleared for a particular race, a late finisher (e.g. after a crash) will not be displayed.
- 5. Click **Open Scoreboard** which will open the Scoreboard frame will open behind the control. If you have a second (external) monitor, drag the scoreboard frame onto the second monitor leaving the Control window on the laptop screen.
- Click Start Capture when track is clear and before racing commences.
 When Capture is active, checks for new passings are at around 100ms intervals and the button function changes to Stop Capture once it is in capture mode.
- 7. The first Scoreboard display is initiated as the first rider crosses the Finish Line.
- 8. There are two mechanisms to assist the operator in identifying out of sequence or unexpected events.
 - a. In the Results Stored group, there is a Tracking counter that shows the number of incomplete runs that the scoreboard has at any one time. This counter should be zero when there is no activity on the track. Should this not be the case then the recommended action is to either do a Master Reset or if you want to keep the Results for later use such as generating a Training Report, then stop capture and delete all Passings Stored with the Delete Passings button.
 - b. In the Status Message Area, exception messages are shown with these also being recorded in the Session file.



Single Timeline Scoreboard Setup

- 1. Run DataCollector / Timing and Scoring and:
 - a. Set up an event with a single decoder for the loop to be displayed on the Scoreboard.
 - b. If using competitor information from DataCollector / Timing and Scoring (not required if using a reference BEM Event file, under the Registration Tab, import the list of competitors, e.g. generated from BEM export.
 - c. Under the Processing tab, got to "Live File settings" and set up the Live file export
 - i. Export Type: "Save on deletion of file.
 - ii. Export Path: e.g. C:\BEM\PASSINGS\
 - iii. Export format: Tab delimited text file.
 - d. Run a transponder across the loop and verify that the expected xxxx_LOG.txt passing file is generated.
 - e. Minimise DataCollector / Timing and Scoring
- 2. Run BemTrain and setup the Scoreboard requirements for single loop monitoring.
 - a. Set up must have only Loop 1 enabled. In Loop 1:
 - i. Set the timeline name to match the DataCollector / Timing and Scoring setting.
 - ii. Select the xxxx_LOG.txt passing file.
 - b. Set Single Timeline S/B in the Run Mode setting as per the screenshot below

| BEM | Train Version: 3.3.0 28 October 2 | 021 | | | | | × |
|------|--|-------------------------|--------------------------------|---------------------|-------------------|--|-----------------------------|
| Se | ssion Name | | Track Name | | - Training Report | Gate Transponder | Gate2 Transponder |
| Si | ngle Loop Example | A Track | | Distance Units | 00-09992 | 00-09991 | |
| Sess | ion file: C:\BEM\BemTrain\Example | kample - Single Loop at | : Finish.bts | Meters | Gate Timeline | Finish Timeline | |
| | Timeline Name (in Passing Record) | | Loop Locati (to show in rep | on SEE | Naturad | Start | |
| | Scoreboard Loop | | (| Passing Files | NOC USED | Run Mode | |
| 1 | Finish | Enable | Finish Line | | | Single scoreboard from loop 1. Show gaps between passings | |
| | , C:\BEM\Passings\Finish\Finish.txt | | | < Select File | 1 to ? | | |
| 2 | Hil | Enable | Bottom of Hill | | 15 | | |
| | - | | | < Select File | Not used | Single Timeline S/B | - |
| 3 | Corner1 | Enable | Corner 1 Exit | | 75 | - | |
| | - | | | < Select File | Not used | Run Time Settings Minimum Gate to Maximum | Gate to Maximum Run |
| 4 | Corner3 | Enable | Cornder 3 In | | 1/9 | Loop 1 Loo | p 1 |
| | - | | | < Select File | Not used | | ▲ _{2:40} ▲ |
| 5 | Loop5 | Enable | Corner 3 In | | 109 | × 10 | ▼ ^{5:40} ▼ |
| | - | | | < Select File | Not used | Passing File Format | |
| 6 | Loop5 | Enable | Sprint_Start | | | C T&S BemTrain Minimum | Delete Passing Files after |
| | - | | | < Select File | Not used | C T&S BemTrain Custom 2 | Processing (normally set) |
| 7 | Loop7 | Enable | Sprint_10m | | | T&S BemTrain Custom | E a le sub- |
| | - | | | < Select File | Not used | C MyLaps DataCollector 3 | Muiti Timelines In one File |
| 8 | Loop8 | Enable | Sprint_20m | | | C BEM Event File | |
| | - | | | < Select File | Not used | C BeChronized | 1 Decoder, >1 Loop |
| 9 | Loop9 | Enable | Sprint_30m | | | Due Application | Cassian File Cantural |
| | - | | | < Select File | Not used | Kun Appication | Session File Control |
| 10 | Finish | Enable | Finish Line | | | Fitting Station | Open Session |
| | - | | | < Select File | Track Total | Track Monitor | Save Current Session |
| | Speed Trap | | | | 10.00 | | Cours Coursian An |
| | | Enable | | (Colored City | Trap Distance | Scoreboard | Save Session As |
| | | | | < select Hie | | Training | Close Session |
| Sta | rt Iransponder | Stop Tra | ansponder | | | | |
| | Initial Setup Selection | Save Cu | rrent Setup | Use System Settings | Premium enabled | Experimental Mode (Caution!) | Exit |



3. Click on Run Scoreboard

You then have the choice to either use names from DataCollector / Timing and Scoring passing records or to use a BEM file to look up the names from the Transponder Number in the passing record. (Same selection as for Fitting Station)



4. The **Scoreboard Control** screen is now shown.

Here you can set the preferences for:

- Auto or Manual Clearing of the Scoreboard and the Auto clear time Gap time for Photo finish when the display timeline is the Finish. A value of 0 always shows the gap time.
- b. The Number of Passings Stored are shown (just total, no details) and a Delete Passings button (handy for simulation testing when you are using the same Finish_log.txt file over and over again).
- 5. When you click **Open Scoreboard**, the Scoreboard frame will open behind the control. I normally then drag this frame to the second (external) monitor leaving the Control window on the laptop screen.
- 6. **Start Capture** checks for new passings at around 100ms intervals and the button function changes to Stop Capture once it is in capture mode.



Lap Time Display Mode

- 1. Notes for this display mode.
 - a. Lap-times are displayed after the riders cross the finish loop.
 - b. Start of run can be a Gate Start or where a sprint or practice session is being used without a gate, Loop 1 in the run can be the start of run trigger.
 - c. Multiple loops connected to the one decoder can be used.
 - d. At the conclusion of the display session, you can close the Scoreboard Control, go into Training and generate Training Reports with split and sector times.
- 2. Run DataCollector / Timing and Scoring and:
 - a. Set up the event with appropriate timelines and decoders.
 - b. If not using a BEM Event file as the reference for linking transponder numbers to competitors, import the list of competitors into DataCollector / Timing and Scoring.
 - c. Enable the export and generate a passing from each loop to generate a passing file for each decoder.
- 3. Run BemTrain and set the configuration to match the track setup.
 - a. Loop 1 must be the first loop in the run.
 - b. Loop 10 must be the last loop in the run.
 - c. Set the timeline names to match the names in the passing records.
 - d. Select the relevant xxxx_LOG.txt passing files for each timeline.
 - e. Set the Start Trigger to be Start Gate Single Run or Timeline 1 as appropriate
 - f. Save the Session File.
 - g. Setup example with Gate Start, Hill, Corner1, Corner3 and Finish Line loops each with dedicated decoders.





- BEM Train Version: 3.3.0 28 October 2021 Session Name
 Lap Time Display Example - 4 Loops, 3 Decoders Track N A Track Training Report Distance Units 00-09992 00-09991 file: C:\REM\RemTrain\Evar n Time I and labor Meters • SSEERE Loop Location (to show in reports) Timeline Name (in Passing Record) Gate to 1 Run Mode Same start time for all in run from gate drop for single run Passing Files op 🖬 Enable Bottom of Hill 1 HI 1 to 3 < Select File Enable Not used Start Gate - Single Run • 🔽 Enable 3 Corner1 First Corner Exit Run Time Settings 3 to 4 < Select File cimum Time 🔽 Enable Loop 1 Cornder 3 In 4 Hill 4 to 10 < Select File >0-1 🔺 10 + 3:40 109 Enable Not used Passing File Format C T&S BemTrain Minimum C T&S BemTrain Custom 2 C T&S BemTrain Custom 🗌 Enable Processing (normally set) Not used 7Γ Enable 🗍 Multi Timelines in one File Not used C MyLaps DataCollector 3 BEM Event File 🗌 Enable C RaceResult RRconnec C BeChronized Not used ☑ 1 Decoder, >1 Loop 9 [Enable Session File Control Run Application Not used Fitting Station 10 Finish 🔽 Enable Open Session Finish Line Track Total C: BEM Pa < Select File Track Monitor Save Current Sessi Speed Trap Save Session As Scoreboard Trap Dista Close Session Start Transponder Stop Transponder Training Initial Setup Sele Exit Save Current Setup
- h. Setup example where Hill and Corner 3 loops are connected to the same decoder.

Note that with this setup:

- i. Loop 1 (Hill) and Loop 4 (Corner 3) both have the same Timeline Name as the two loops are connected to the same decoder.
- ii. No Passing File is required for Loop 3.
- iii. The "1 Decoder, >1 Loop" option is selected.



4. Click on Run Scoreboard

You then have the choice to either use names from the Passing Records or to use a BEM file to look up the names from the Transponder Number in the passing record.



5. The **Scoreboard Control** screen is now shown.



Set the **Time from Start Mode** to **Lap Time (16)** to display the latest 16 completed runs or to **Lap Time (8)** display the latest 8 completed runs.

- 6. Click **Open Scoreboard** which will open the Scoreboard frame will open behind the control. If you have a second (external) monitor, drag the scoreboard frame onto the second monitor leaving the Control window on the laptop screen.
- 7. **Start Capture** checks for new passings at around 100ms intervals and the button function changes to Stop Capture once it is in capture mode.

In Lap Time Display mode, all passings are processed and stored but the actual Scoreboard display is only updated as riders cross the finish line.



- 8. With manual clearing, when you exceed the 8 (16) displayed, they just scroll off the bottom of the list so the last 8 to cross are always on display.
- 9. Scoreboard example with Lap Time (16)

| BMX Event Manager by Lyndon.Downing @bigpond.com | | | | | × | | | |
|--|------------|----------------|------------------------------|-------------------|----------------|--|--|--|
| Bem Train | nish (1-8) | | Latest | est Finish (9-16) | | | | |
| <u> </u> | Lap Time | Bottom of Hill | CLAL STREET | Lap Time | Bottom of Hill | | | |
| Lena FISCHER | 48.223 | 3.340 | Chutikan KITWANITSATHIAN | 39.002 | 2.221 | | | |
| Catherine BAILEY | 47.697 | 2.854 | Ximena RUBIO | 36.390 | 1.573 | | | |
| Valeria LOPAZ GARCIA | 47.617 | 2.880 | Shealen RENO | 35.921 | 1.582 | | | |
| Hana GADSBEY | 44.374 | 3.453 | Indiana HENRIQUES CLIFTON | 38.788 | 3.225 | | | |
| Emily ALLISON | 44.070 | 3.932 | Ellie ABBOTT | 38.401 | 2.751 | | | |
| Alena GOLDBACH - EGGERT | 43.954 | 2.867 | Matilda WALLAN | 37.353 | 3.250 | | | |
| Sae HATAKEYAMA | 39.045 | 2.487 | Maggie ALEXANDER | 34.325 | 3.797 | | | |
| Eddyna Nasuhar ZAINAL ABIDIN | 39.016 | 2.257 | Gemma-Lee THOMPSON | 34.283 | 3.779 | | | |



Sprint Track Example, 2 Decoders & 5 Loops

Note that first two loops are on the Start Decoder, Loop 3 on the Finish, Loop 4 on the Start and Loop 10 on the Finish. Sprint Track, 2 Decoders, 5 Loops

| BEW | Train Version: 3.3.0 28 October 2 | 021 | | | | | × | | |
|----------|--------------------------------------|---------------------------------|--|-------------------|-------------------|---|---------------------------------|--|--|
| Se | ssion Name | | Track Name | | - Training Report | Gate Transponder | Gate2 Transponder | | |
| Sp | rint Track, 2 Decoders, 5 Loops | | Sprint Track | | Distance Units | 00-09992 | 00-09991 | | |
| Sessi | on file: C:\BEM\BemTrain\Example S | mple Sprint Track 5 Loops 2 Dec | oders.bts | Meters 💌 | Gate Timeline | Finish Timeline | | | |
| | Timeline Name (in Passing Record) | | Loop Location (to show in reports) | FR.L.R.R.R. | Not used | Start | | | |
| | Start Loop | | | Passing Files | 0 | Run Mode | coing of loop 1 for single rup | | |
| 1 | Start | Enable | Bottom of Hill | | | (Staggered Start) | ssing of loop 1 for single run. | | |
| | C:\BEM\Passings\Start\Start.txt | | , | < Select File | 1 to 2 | | | | |
| 2 | Start | Enable | First Corner Exit | · | | | | | |
| | - | | , | < Select File | 2 to 3 | Timeline 1 - Single Run | - | | |
| 3 | Finish | Fnable | Mid Corner 2 | | 0 | | | | |
| | - | | | < Select File | 3 to 4 | Run Time Settings | Maximum Run | | |
| 4 | Start | Fnable | Mid Third Straight | | 0 | Loop 1 Lo | op 1 Time | | |
| T | - | i chubic | , and the observation of the second sec | < Select File | 4 to 10 | | | | |
| - | LoopE | T really | Corpor 2 In | - | 0 | >0-1 - 10 | | | |
| 2 | | Enable | Conter 5 In | < Select File | Not used | - Dassing File Format | | | |
| c. | 1 | | Control Olivert | | 0 | | - Delete Passing Files after | | |
| 6 | Loope | Enable | sprint_start | < Salact File | Not used | C T&S BemTrain Minimum | Processing (normally set) | | |
| _ | - | | | < delet Hie | 0 | T&S BemTrain Custom 2 T&S BemTrain Custom | | | |
| 7 | Loop7 | Enable | Sprint_10m | c Calact Cila | Not used | C MyLaps DataCollector 3 | Multi Timelines in one File | | |
| - | - | _ | | < select file | 0 | C BEM Event File | | | |
| 8 | Loop8 | Enable | Sprint_20m | | Not used | C RaceResult RRconnector | ✓ 1 Decoder. >11 oop | | |
| _ | - | | | < Select Hile | 0 | C BeChronized | is recould if i record | | |
| 9 | Loop9 | Enable | Sprint_30m | | Notused | Run Application | Session File Control | | |
| | - | | | < Select File | | Fitting Station | | | |
| 10 | Finish | Enable | Finish Line | | Track Total | | Open Session | | |
| | C:\BEM\Passings\Finish\Finish.txt | | | < Select File | ? | Track Monitor | Save Current Session | | |
| | | Speed | Trap | | | | Save Session Ar | | |
| | T Enable | | | | Trap Distance | Scoreboard | | | |
| | | | | Select File | | Training | Close Session | | |
| Sta | rt transponder | Stop Tran | sponder | | | | | | |
| | Initial Setup Selection | Save Curr | ent Setup Us | e System Settings | Premium enabled | Experimental Mode (Caution!) | Exit | | |

After completed runs from 2 riders





| Demon | stration | | | | | | | | | | | | | | | | × |
|-----------------|---------------------------------------|--|---|---|--------------------------|-------------------|--------------------------------|---------------------------|-----------------------|----------------|------------------|------------|----------------|--------------------|-----------------------------|------------------|-------------------------|
| | | Session Run Time Spli | ts | | | Bottom of Hill | First Corner Exit | Mid Corner 2 | Mid Third Straight | Corner 3 In | Sprint_Star t | Sprint_10m | Sprint_20m | Sprint_30m | Finish Line | | Lap |
| Ref 1 2 3 | 1 Transporder 1 W-2382 GW-01024 | Name Eddym Nawi ZAIINAL ABI Ximena RUBIO | <u>Date 5</u> 2020/11/07 2020/11/07 1 | 3 <u>tart1me</u> 1450:29.306 14:50:29.386 | End Time 14:50:46,727 | 0.000 0.000 | Loop 2 7.405 7.399 | <u>Loop 3</u> - | Loop 4 - | Loop 5 - | <u>-</u> - | L00p 7 | - - - | <u>Loop 9</u> - | Loop 10 17.335 17.341 | Status C C | <u>State2</u> 1 1 |
| Ses | sion Display an | d Sort Options | <u> </u> | | | НТМІ | and Auto | Reports | | Lipland Ka | | Pas | sing Recor | ds | Refres | n | |
| C | Earliest Start | C Earliest Finish | U Se | 10 10 | > | Cre | ate during ca bad to Sports | pture Lists App | Г | upidad Re | ., | e Pa | assings Stored | | Impatie | nt | - |
| C | Latest Start | • Latest Finish | | | | C Scro | ll | | | | | | Delete Passin | qs | SI | art Captu | re |
| С | Sort by Rider | C Qualification | ✓ Timed | out not completed | d runs | | | | | | | | Show Passin | qs | Ma | aster Res | et |
| - Top | level folder fo | r saving auto generated | l reports | | | | | | | | | Ru | n Time Rec | ords | Tra | aining Rep | ort |
| 5 | elect C:\BE | M\BemTrain Sessions\AutoRep | orts\ | | | | | | | | | | Delete Deer | | Pu | rsuit Repo | rt |
| | | | | | | | | | | | | _ | Delete Reco | nus | | LE | xit |

Same two runs shown after exiting from the Scoreboard and going in to Training

HTML Report from Training.

| BemTrain by Lyndon.Do | | | | | | | | | | Lynd | ion — | |
|-----------------------------------|---|-----------------|---------------------------|---------------|------------|-----------------|---------------------------|---------------|---------------------------------|---------------|------------------------|--------------------------|
| ← → C ▲ □ file | e:///D:/BEM/Bem | Train/BemTra | in%20Test%20 | Events/Spri | nt%20Ex | ample%20T | raining% | 20Report.h | tm | | ☆ 🗹 | ◎ ≡ |
| 🗰 Apps 🗋 New Tab 🛛 G | Google 📋 Importe | d From IE 🛛 🖸 O | SM - BMXA 🔣 m | iyGov - Login | √r Email N | larketing. Just | 💓 Diary | & Meeting Dat | W3 The | W3C Markup Va | dic | ** |
| End of Report | | | | | | | | | | | | |
| Sprint Track, 2 Decoders, 5 Loops | | | | | | | | | | | | |
| | BMX EVENT MANAGER, BEM TRAIN Report Created 07/Jul/2016 15:27:42 Group by Rider: Sorted by Latest Finish: Completed Runs | | | | | | | | | | | |
| BemTi | TIMELINES | | | | | | | | | | | |
| | Bernman BMX | | | | | Sector2 ? | Mid Corner 2 (3) | Sector3 ? | Mid Third Straight (4) | Sector4 ? | Finish Line (10) | Track Length 0.00m |
| NAME | T/PONDER | DATE | RUN START (First Loop) | ⇔ Time | Start | ⇔ Time | Finish | ⇔ Time | Start | ⇔ Time | Finish | Lap Speed m/s |
| CONNORS Kerrod | LF-11098 | 7/07/2016 | 15:23:44.973 | 12.450 | 12.450 | 8.932 | 21.382 | 13.142 | 34.524 | 9.675 | 44.199 | - |
| FRANKS Daniel | PK-05330 | 7/07/2016 | 15:23:44.916 | 12.495 | 12.495 | 10.200 | 22.695 | 13.389 | 36.084 | 9.245 | 45.329 | - |
| Top of Report | | | | | | | | | | | | |

Speed Trap Setup Guide

The speed trap can be enabled and run in conjunction with any of the scoreboards supporting the Json Virtual scoreboard option. Note that the output from the speed trap is to a Json file and Scoreboard Control screen and is not shown on any of the BemTrain scoreboards in the current design.

The Json file for the Speed Trap reports has a fixed file name: **BemTrainSpeedTrap.json** The location where the file is written is selectable by the operator as for other Json scoreboard reports. I.e. both Score Board and Speed Trap Json files are written to the same folder.

Typical inputs to the speed trap are from two photo cells connected to separate external device inputs on a decoder and set up a precise distance apart. E.g. 0.7m meter.



The following screenshot below an example of an enabled speed trap in conjunction with a gate start single run track configuration.

| BEM Train Version: 3.2.4.3 20 Feb 2021 | | | | | | × |
|---|--|-------------------|--|---------------------|-------------------|-----------------------|
| Session Name | Track Name | | - Training Report | Gate Transponder | Gate2 Transponder | Gate Timeline |
| Speed Trap Test | Speed Trap Test Bemman Mancave | | | | 00-09991 | StartFinish |
| Session file: C:\BEM\BemTrain Sessions\Speed Trap Tes | Session file: C:\BEM\BemTrain Sessions\Speed Trap Test.bts | | | | | |
| Timeline Name (in Passing Record) | \$\$.2 <i>6.8</i> .6 | Gate to 1 | Same start time for all in run from gate drop for single run | | | |
| First Loop in Run | , | Passing Files | | | | |
| 1 StartFinish 🔽 Enable | Bottom of Hill | - | | | | |
| C:\BEM\Passings\StartFinish\StartFinish.txt | C:\BEM\Passings\StartFinish\StartFinish.txt < Select File | | | | ingle Run | |
| 2 Loop2 Enable | Eirst Corner Evit | | 0 | Stare Gate - 5 | ingle Kun | <u> </u> |
| | | < Select File | Not used | | | |
| | | - | 0 | | | |
| 3 Loop3 Enable | Mid Corner 2 | < Colort File | Not used | Run Time Settin | gs | Maximum Run |
| - | | < Select File | 0 | Loop 1 | Loop 1 | Time |
| 4 Loop4 Enable | Mid Third Straight | | Not used | | | |
| | | < Select Hile | | >0-1 | 10 | 3:40 🔶 |
| 5 Loop5 Enable | Corner 3 In | | (Netword | | | |
| | | < Select File | Not used | Passing File Form | at | Density Films after |
| 6 Loop6 Enable | Sprint_Start | | | C T&S BemTrain C | ustom 2 Proce | ssing riles after |
| | | < Select File | Not used | C T&S BemTrain O | ustom 1 | |
| 7 Loop7 Epable | Sprint 10m | | 0 | MyLaps DataCol | lector 3 🗖 Multi | Timelines in one File |
| | opinit_2000 | < Select File | Not used | C BEM Event File |) Hara | rincines in one ric |
| | Cariat 20a | - | 0 | C RaceResult RRo | onnector | |
| O Eddpo | aprinc_2011 | < Salart Fila | Not used | C BeChronized | ✓ 1Dec | oder, >1 Loop |
| | | | 0 | - Rup Application - | - Coorie | n Filo Control |
| 9 Loop9 Enable | Sprint_30m | a Calast City | Not used | Kull Application | Jessi | IT File Control |
| | | < Select Hile | 0 | Fitting Statio | n | Open Session |
| 10 StartFinish C Enable | Finish Line | | Track Total | | | ve Current Session |
| - | | < Select File | ? | Track Monito | or | ve current Jession |
| Sp | eed Trap | | | Coroboard | | Save Session As |
| SpeedTrap 🔽 Enable | Ramp | < Salast File | Trap Distance | Scoreboard | | Close Session |
| C:\BEM\Passings\SpeedTrap\SpeedTrap.txt | | < select File | 0.7 | Training | | |
| Start Transponder 00-09992 Stop T | ransponder 00-09991 | | | | | E 1 |
| Initial Setup Selection Save C | Current Setup Use | e System Settings | Premium enabled | | | Exit |

Speed Trap Setting Notes (pink background)

Enable: Check box to enable or disable the Speed Trap facility.

- **Timeline Name**: The Timeline Name (Location in Timing and Scoring) in the passing records containing the Start Transponder and Stop Transponder. "SpeedTrap" in the example above.
- **Loop Location**: A descriptive name of the location. "Ramp" in the example above.
- Select File: Select the passing file containing the Speed Trap records.
- **Start Transponder**: Enter the transponder number from the photo cell at the start of the trap. "00-09992" in the example above.
- **Stop Transponder**: Enter the transponder number from the photo cell at the end of the trap. "00-09991" in the example above.

Note: When both a Gate Start and Speed Trap are used, the Gate Timeline name (blue background) must be entered to differentiate between gate start and speed trap where typically they will have the same transponder number.

Trap Distance: Enter the precise distance in the selected Distance Unit the photo cells are apart. 0.7m in the example.

The distance can be more or less whatever suits the particular track layout with the restriction that where the time to traverse the trap exceeds 5 seconds, a speed will not be generated.



Staging Transponder Check

- 1. Run DataCollector / Timing and Scoring and:
 - a. Set up an event with a single decoder for the loop to be displayed on the Scoreboard.
 - b. If using competitor information from DataCollector / Timing and Scoring (not required if using a reference BEM Event file, under the Registration Tab, import the list of competitors, e.g. generated from BEM export.
 - c. Under the Processing tab, got to "Live File settings" and set up the Live file export
 - i. Export Type: "Save on deletion of file.
 - ii. Export Path: e.g. C:\BEM\PASSINGS\
 - iii. Export format: Tab delimited text file.
 - d. Run a transponder across the loop and verify that the expected xxxx_LOG.txt passing file is generated.
 - e. Minimise DataCollector / Timing and Scoring
- 2. Run BemTrain and setup the Scoreboard requirements for Staging Display with single loop monitoring.
 - a. Set up must have only Loop 1 enabled. In Loop 1:
 - i. Set the timeline name to match the DataCollector / Timing and Scoring setting.
 - ii. Select the xxxx_LOG.txt passing file.
 - b. Set Staging Transponder Check as the trigger in the Run Mode setting as per the screenshot below





3. Click on Run Scoreboard

You then have the choice to either use names from DataCollector / Timing and Scoring passing records or to use a BEM file to look up the names from the Transponder Number in the passing record. (Same selection as for Fitting Station)



4. The Scoreboard Control screen is now shown.

Here you can set the preferences for:

- Auto or Manual Clearing of the Scoreboard and the Auto clear time Gap time for Photo finish when the display timeline is the Finish. A value of 0 always shows the gap time.
- b. The Number of Passings Stored are shown (just total, no details) and a Delete Passings button (handy for simulation testing when you are using the same Finish_log.txt file over and over again).
- 5. When you click **Open Scoreboard**, the Scoreboard frame will open behind the control. I normally then drag this frame to the second (external) monitor leaving the Control window on the laptop screen.
- 6. **Start Capture** checks for new passings at around 100ms intervals and the button function changes to Stop Capture once it is in capture mode.



Twin Timeline Scoreboard Setup

- 1. Run DataCollector / Timing and Scoring and:
 - a. Set up an event with the two decoders for the two loops to be displayed on the Scoreboard.
 - b. If using competitor information from DataCollector / Timing and Scoring (not required if using a reference BEM Event file, under the Registration Tab, import the list of competitors, e.g. generated from BEM export.
 - c. Under the Processing tab, got to "Live File settings" and set up the Live file export
 - i. Export Type: "Save on deletion of file.
 - ii. Export Path: e.g. C:\BEM\PASSINGS\
 - iii. Export format: Tab delimited text file.
 - d. Run a transponder across each loop and verify that the expected xxxx_LOG.txt passing file is generated.
 - e. Minimise DataCollector / Timing and Scoring
- 2. Run BemTrain and setup the Scoreboard requirements for Twin Timeline display.
 - a. Set up must have Loop 1 enabled. In Loop 1:
 - i. Set the timeline name to match the DataCollector / Timing and Scoring setting.
 - ii. Select the xxxx_LOG.txt passing file.
 - iii. Enter a short description in the Loop Location for display on the scoreboard.
 - iv. Note that the loop on timeline 1 will be shown on the left side of the screen.
 - b. Set up the second timeline to be displayed. Note that this can be any of locations $2-10\ \text{in BemTrain}.$

For this location:

- i. Set the Timeline Name to match the DataCollector / Timing and Scoring setting.
- ii. Select the xxx_LOG.txt passing file.
- iii. Enter a short description in the Loop Location for display on the scoreboard.
- iv. Note that this timeline will be shown on the right side of the display.



- BEM Train Version: 3.3.0 28 October 2021 Session Name Race Lap Time Mo Track Name A Track Gate Transp 00-09992 Gate2 Tran: 00-09991 Training Report – Distance Units n file: C:\BEM\BemTrain\Example S Race Lap Time Mode.bt Meters • Loop Location (to show in reports) 安东县东北北 Timeline Name (in Passing Record) Not used Run Mode Twin (individual) scoreboards from loop 1 and 2 Show gaps between passings Passing Files ft S/B Pani Enable 1 Hill Bottom of Hill 1 to 10 < Select File :\BEM\BemT sings (Hill (Hil 0 2 [Enable Twin Timeline S/B Not used Enable Run Time Settin Minimum Gate to Loop 1 Not used mum Gate to Loop 1 4 0 Enable 0 Not used >0-1 🔺 • 3:40 10 5 [Enable Not used Passing File Format C T&S BemTrain Minimum C T&S BemTrain Custom 2 C T&S BemTrain Custom 6 Enable Processing (normally set) Not used 7 🗆 Enable Multi Timelines in one File Not used C MyLaps DataCollector 3 C BEM Event File C RaceResult RRconnector C BeChronized Enable Not used T Decoder, >1 Loop 9 4 Enable Run Application Session File Control Not used 10 Finish 🔽 Enable Finish Line Open Session Track Total Select File D:\BEM\BemTrain S ain Passings (Finish (F ish.txt Save Current Session Speed Trap Save Session As ſ Ena Scoreboard Trap Distance Close Session Start Transponder Stop Transponder Save Current Setup Exit Initial Setup
- c. Set the Run Mode selection to Twin Timeline S/B as per the screenshot below

3. Click on Run Scoreboard

You then have the choice to either use names from DataCollector / Timing and Scoring passing records or to use a BEM file to look up the names from the Transponder Number in the passing record. (Same selection as for Fitting Station)

| Select the Competitor Data Source | × |
|---|--------|
| | ок |
| C Display competitor information by using data imported from the Passing Records | |
| | Cancel |
| Display competitor information by looking up Transponder number from Passing Record in a reference BEM Event File | |
| 🗖 Auto Refresh BEM data | |
| Select BEM File | |
| BU_Time Trial Test Event.bem | |

4. The **Scoreboard Control** screen is now shown.

Here you can set the preferences for:

a. Auto or Manual Clearing of the Scoreboard and the Auto clear time



b. Gap time for Photo finish when either of the display timeline is the Finish.
Example shows a photo finish gap time of 0.010 seconds for the right display.
Note a value of 0 in the Photo Finish split time turns off the photo checking.



- c. The Number of Passings Stored are shown (just total, no details) and a Delete Passings button (handy for simulation testing when you are using the same Finish_log.txt file over and over again).
- 5. When you click **Open Scoreboard**, the Scoreboard frame will open behind the control. I normally then drag this frame to the second (external) monitor leaving the Control window on the laptop screen.
- 6. **Start Capture** checks for new passings at around 100ms intervals and the button function changes to Stop Capture once it is in capture mode.



Pump Track Scoreboards

There are three pump track scoreboard options that have individual processing to reflect the various event formats. Typical timing loop configuration is a single Start/Finish loop with a rolling start.

For Pursuit and Head to Head Dual formats, both Start/Finish loops should be connected to the one decoder or if two decoders are used, both should report the same timeline name, i.e. assigned to the same Location in Timing and Scoring.

Solo Run

With this format, BemTrain links the two riders to the same heat by virtue of consecutive starting order. Where there is a DNS or DNF result, a Soft Reset should be used before the next pair of riders start their run.

Typical setup for a Pump Track Solo Run with a rolling start and a single Start/Finish loop is shown below. Note the same Timeline Name for both loops and the **1 Decoder**, **> 1 Loop** option selected. **Timing and Scoring setup example.**

| C Timing and Scoring - Multi-Lap Scoreboard TEST - 2020-05- Elia Edit Action Event Locations Help | 20 - BMX Victoria Inc | | Timer:BMX Victoria Inc | - 0 28012 0 g = 5 |
|---|--------------------------|---|------------------------|--|
| Timing & Scoring | | | Beta Feedback | Add location Add device Add exp |
| ¥ StarFinah । ⊷β | ke F <mark>2 6</mark> | | | er 🗈 User forhear Ff Instructure 1, - C C Depiny Weeker Seeon |
| Status Constant: TCPP 192 198 274 Denty: 0.00 passinguistic 8.0 passinguistic Pro- Tore Status 2.0 (2017) Status 2.0 (20 | \$140a | Time and Date Dartier 2004 Advanced Twatswey Off Working Units 21 Telle actions Calacterist Actions Ractions Businemed association | Gettings | |



BemTrain setup example.

Note the one physical timeline is configured as virtual Start and Finish timelines in BemTrain using the same Timeline Name for both loops and the **1 Decoder**, **> 1 Loop** option selected.

| BEM Train Version: 3.2.5 02 June 2021 | | | | × | | |
|---|-------------------------------|-----------------|---|---|--|--|
| Session Name | Track Name | | - Training Report | Gate Transponder Gate2 Transponder Gate Timeline | | |
| Pump Track Solo Run | A Track | | Distance Units | 00-09992 00-09991 Start | | |
| Session file: C:\BEM\BemTrain\Example Sessions\Setup Example Sessions | ample Pump Track Solo Run.bts | | Meters | Run Mode | | |
| Timeline Name (in Passing Record) | S.S.R.R.R.R. | Not used | Individual start times from crossing of loop 1 for single run. (Staggered Start) | | | |
| Start Loop | | Passing Files | 0 | | | |
| StartFinish M Enable | Start | a Calent Cla | 1 to 10 | | | |
| C:\BEM\Passings\StartFinish\StartFinish.txt | | < Select File | 0 | Timeline 1 - Single Run | | |
| 2 Hill Enable | Bottom of Hill | | Not used | | | |
| | | < Select Hile | 75 | | | |
| 3 Corner1 Enable | Start 2nd Straight | | Notused | Run Time Settings | | |
| | | < Select File | | Minimum Gate to Maximum Gate to Time | | |
| 4 Corner3 Enable | Cornder 3 In | | Notused | | | |
| | | < Select File | 109 | >0-1 + 10 + 1:00 + | | |
| 5 Loop5 Enable | Corner 3 In | | Notured | | | |
| | | < Select File | | Delete Passing Files after | | |
| 6 Loop6 Enable | Sprint_Start | | Notused | C T&S BemTrain Custom 2 Processing (normally set) | | |
| | | < Select File | | • T&S BemTrain Custom 1 | | |
| 7 Loop7 Enable | Sprint_10m | | Notured | Multi Timelines in one File | | |
| | | < Select File | 0 | C BEM Event File | | |
| 8 Loop8 Enable | Sprint_20m | | Netwood | C RaceResult RRconnector ☐ 1Decoder, >1Loop | | |
| | | < Select File | Not used | C Bechronized | | |
| 9 Loop9 Enable | Sprint_30m | | Netword | Run Application Session File Control | | |
| - | | < Select File | Not dsed | Fitting Station Open Session | | |
| 10 StartFinish 🔽 Enable | Finish | | Tradi Tatal | | | |
| | | < Select File | | Track Monitor | | |
| Spee | ed Trap | | | Scoreboard Save Session As | | |
| Enable | | < Select File | Trap Distance | Close Session | | |
| Start Transponder | nraandar | - sender ne | | Training | | |
| Start Transportuer Stop Tra | insponder | | | Evit | | |
| Initial Setup Selection Save Cu | rrent Setup Use | System Settings | Premium enabled | | | |

Scoreboard Displays for Solo Run

• After the first rider has started.





• After the first rider has finished.

| 2 |
|------|
| ORTZ |
| STS |
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| |
| |
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| |
| |
| |
| |

• After the second rider has started.

| BMX Event Manager | by Lyndon.Downing @bigpond.com | | | × |
|-------------------|--------------------------------|--------|-------|--------|
| Red Bull | NAME | TIME | PLACE | SPORT2 |
| THA | Chutikan KITWANITSATHIAN | 20.306 | ? | LISTS |
| GBR | Lena FISCHER | 0.000 | S | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |

• After the second rider has finished, places for the heat are shown.





Pursuit and Head to Head Single Run

With this format, BemTrain links the two riders in the same heat based on their run start time. For a rolling loop start time, both riders in the one heat must start within 8 seconds of each other (usually much closer than that). Where there is a DNS or DNF result, recommended action is to do a Soft Reset before the next heat starts.



Example Pursuit track layout from UCI Rule Book Part 4, Mountain Bike, version 01.01.2019.

Typical setup for a Pump Track Pursuit or Head to Head Single Run on a 2 lane track with a rolling start. Separate Start/Finish loops for each rider that can either be both connected to the one decoder or where separate decoders are used, have both decoders assigned to the same location in Timing and Scoring.

Timing and Scoring Pursuit setup example with a separate decoder for each loop. Note the Purple and Green decoders both assigned to the StartFinish location.





BemTrain Pursuit setup example applicable to both loops into the one decoder or separate decoders.

| BEM | Train Version: 3.2.5 02 June 2021 | | | | | | | × |
|----------------------------|--------------------------------------|-------------------|---------------------------------------|---------------------------------------|-----------------|---|-------------------------|-----------------------|
| Se | ssion Name | | Track Name | | Terisine Desert | Gate Transponder | Gate2 Transponder | Gate Timeline |
| Pump Track Pursuit A Track | | | | | Distance Units | 00-09992 | 00-09991 | Start |
| Sessi | on file: C:\BEM\BemTrain\Example | Sessions\Setup Ex | ample Pump Track Pursuit Format | t.bts | Matau | Run Mode | · | |
| | Timeline Name (in Passing Record) | | Loop Location (to show in reports) | \$\$.2.8 88 | Not used | Individual start time | s from crossing of loop | 1 for single run. |
| | Start Loop | | | Passing Files | 0 | (Staggered Start) | | |
| 1 | StartFinish | Enable | Start | | | | | |
| | C:\BEM\Passings\StartFinish\Startf | inish.txt | | < Select File | 1 to 10 | Timeline 1 - S | ingle Run | |
| 2 | Hill | Enable | Bottom of Hill | I | | I | | |
| | - | | | < Select File | Not used | | | |
| 3 | Corner 1 | Enable | Start 2nd Straight | - | 75 | - Pup Time Settin | 05 | |
| | - | | | < Select File | Not used | Minimum Gate to | Maximum Gate to | Maximum Run |
| 4 | Corner3 | - Enable | Conder 3 In | · · · · · · · · · · · · · · · · · · · | 0 | Loop 1 | Loop 1 | Time |
| 7 | - | 1 Endore | | < Select File | Not used | I | | 1.00 |
| - | LoopE | | Corpor 2 In | | 109 | >0-1 -0< | 10 💌 | 1:00 |
| 2 | | Enable | Conter 5 In | < Select File | Not used | Passing File Form | at | |
| - | | | | | 0 | C T&C RomTrain C | uston 2 | Passing Files after |
| 6 | Loop6 | Enable | Sprint_Start | < Calact File | Not used | Tab Demitrain C Tab RemTrain C | Ustom 2 Proce | ssing (normally set) |
| _ | - | _ | | < Select File | 0 | C Mulara DataCal | laster 2 | |
| 7 | Loop7 | Enable | Sprint_10m | | Notused | C not contracto | liector 5 🗌 Multi | Timelines in one File |
| _ | - | | | < Select File | 0 | C Deers Deers It DDe | | |
| 8 | Loop8 | Enable | Sprint_20m | | Notured | C Racekesult RRC | 1 Dec | oder, >1 Loop |
| | - | | | < Select File | Not used | o bechronized | | |
| 9 | Loop9 | Enable | Sprint_30m | | Natural I | Run Application — | Sessio | n File Control |
| _ | - | | | < Select File | Not used | Fitting Statio | n | Open Session |
| 10 | StartFinish | Enable | Finish | | | | | |
| | , | | | < Select File | Track Total | Track Monito | or Sa | ve Current Session |
| | | Spee | d Trap | | | | | Save Session As |
| | | Enable | | | Trap Distance | Scoreboard | | Close Session |
| | | _ | | < Select File | - | Training | | 0000 000000 |
| Sta | rt Transponder | Stop Tra | nsponder | | | | | |
| | Initial Setup Selection | Save Cu | rrent Setup Us | e System Settings | Premium enabled | | | Exit |



Scoreboard Displays for Solo Run

• After both riders have started.

| BMA Event Manager | by tyndon.bowning wolgpona.com | | | ^ |
|-------------------|--------------------------------|-------|-------|---------------------------------|
| Red Built | NAME | TIME | PLACE | ₽ SPORT2 [¬] |
| AUS | Liberty LOCKWOOD | 0.000 | S | LISTS |
| JPN | Sae HATAKEYAMA | 0.000 | S | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |

• After both riders have finished.

| on a create manager | by cyndon bowning ebigpond conn | | | ~ |
|---------------------|---------------------------------|--------|-------|--------|
| Red Bull | NAME | TIME | PLACE | SPORT2 |
| JPN | Sae HATAKEYAMA | 19.744 | 1 | LISTS |
| AUS | Liberty LOCKWOOD | 21.236 | 2 | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |



Head to Head - Dual

With this format, BemTrain links the two riders in the same heat based on their run start time. For a rolling loop start time, both riders in the one heat must start within 8 seconds of each other (usually much closer than that) and then links the two run together after the second run.

Note that a Master Reset <u>must</u> be performed before the start of each stage for BemTrain to correctly identify the riders first and second runs in the stage.



Example Head to Head Dual track layout from UCI Rule Book Part 4, Mountain Bike, version 01.01.2019.

Typical setup for a Pump Track Head to Head Dual will use a common Start/Finish loop with a rolling start. Where separate Start and Finish Loops are used, each of the Start loops can be either connected to the same decoder or the separate decoders connected to the same Location in Timing and Scoring. Same scenario for the Finish Loops.

Timing and Scoring Head to Head Dual setup example with a common Start/Finish loop or separate Start/Finish loops for each track connected to one decoder.





BemTrain Head to Head Dual setup example where each track has a common Start/Finish loop. Applicable to both loops into the one decoder or separate decoders.

| BEM | Train Version: 3.2.5 02 June 2021 | | | | | | | × |
|----------------------------|---|-------------------|---------------------------------------|---------------------|-------------------|-----------------------|-------------------------|-----------------------|
| Se | ssion Name | | Track Name | | - Training Report | Gate Transponder | Gate2 Transponder | Gate Timeline |
| Pump Track Pursuit A Track | | | | | Distance Units | 00-09992 | 00-09991 | Start |
| Sessi | on file: C:\BEM\BemTrain\Example | Sessions\Setup Ex | ample Pump Track Head to Head | d Dual.bts | Motora | Run Mode | | |
| | Timeline Name (in Passing Record) | | Loop Location (to show in reports) | S.S.S.R.R.R. | Not used | Individual start time | s from crossing of loop | 1 for single run. |
| | Start Loop | | | Passing Files | Noc used | (Staggered Start) | | |
| 1 | StartFinish | Enable | Start | | | | | |
| | , C:\BEM\Passings\StartFinish\Startf | Finish.txt | | < Select File | 1 to 10 | Timeline 1 - S | inale Run | |
| 2 | Hi | Enable | Bottom of Hill | | 0 | | | |
| - | - | | | < Select File | Not used | | | |
| 2 | Corner1 | Enable | Start 2nd Straight | = | 75 | Due Time Cathle | | |
| | - | i chone | otare bio or digite | < Select File | Not used | Minimum Gate to | Maximum Gate to | Maximum Run |
| 4 | C2 | - Contraction | Country 2 In | | 0 | Loop 1 | Loop 1 | time |
| 4 | Comers | I Enable | Conder 5 In | < Select File | Not used | • | • | <u></u> |
| _ | - | | | A DERESTING | 109 | >0-1 | 10 - | 1:00 |
| 5 | Loop5 | Enable | Corner 3 In | | Not used | - Passing File Form | | |
| _ | - | _ | | < Select File | 0 | - | - Delete | Passing Files after |
| 6 | Loop6 | 🗌 Enable | Sprint_Start | | Noturad | C T&S BemTrain C | ustom 2 Proce | ssing (normally set) |
| | - | | | < Select File | Not used | T&S BemTrain C | ustom 1 | |
| 7 | Loop7 | Enable | Sprint_10m | | | C MyLaps DataCol | lector 3 🛛 🗌 Multi | Timelines in one File |
| | - | | | < Select File | Not used | C BEM Event File | | |
| 8 | Loop8 | Enable | Sprint 20m | | 0 | C RaceResult RRo | onnector | |
| Ŭ | - | | | < Select File | Not used | C BeChronized | Iv TDec | ouer, >1coop |
| a | 10009 | Enable | Sprint 30m | = | 0 | - Run Application - | Sessio | n File Control |
| 9 | - | 1 Chabic | oprinc_boint | < Select File | Not used | | 1 | |
| 10 | Caustinish | | Turch | | 0 | Fitting Statio | n | Open Session |
| 10 | - staruminish | | Finish | < Select File | Track Total | Track Monito | or Sa | ve Current Session |
| | | Spee | d Trap | | ? | | | Save Session As |
| | | Enable | | | Trap Distance | Scoreboard | · — | |
| | , | | | < Select File | Top batance | Tasisias | | Close Session |
| Star | Start Transponder Stop Transponder | | | | | I raining | | |
| | Initial Setup Selection | Save Cu | rrent Setup | ise System Settings | Premium enabled | | | Exit |
| | | | | | | | | |



Scoreboard Displays for Solo Run

Note that this example uses the Video Graphic Scoreboard selection.

• After both riders have started Run 1.



• After both riders have completed Run 1

| BMX Event Man | ager by Lyndon.Downing @bigpond.com | | | | | | × |
|---------------|-------------------------------------|--------|-----|----------|-----------------|------|-----|
| | STAGE RESULT | TIME | RUN | | INDIVIDUAL RUNS | TIME | RUN |
| AUS | Matilda WALLAN | 18.755 | 1 | _218418_ | | | |
| | Shaplar DENO | 10 026 | 2 | | | | |
| USA | Shealen RENO | 10.030 | 2 | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |

• After both riders have completed Run 2

| BMX Event Mana | iger by Lyndon.Downing @bigpond.com | | | | | | × |
|----------------|-------------------------------------|--------|-----|-----|-----------------|--------|-----|
| UCIPUMP TRACK | STAGE RESULT | TIME | RUN | | INDIVIDUAL RUNS | TIME | RUN |
| USA | Shealen RENO | 40.570 | 1+2 | USA | Shealen RENO | 21.734 | 2 |
| AUS | Matilda WALLAN | 40,573 | 1+2 | AUS | Matilda WALLAN | 21,818 | 2 |
| AUS | | +0.575 | 172 | A00 | | 21.010 | - |
| | | | | AUS | Matilda WALLAN | 18.755 | 1 |
| | | | | USA | Shealen RENO | 18.836 | 1 |



Track Monitor Overview

The Track Monitor application allows an easy way of monitoring competitors on the track during practice to check that all transponders detected are registered to competitors in the event and if required, checking that competitors are practicing in their assigned time slot.

When the display of competitor information is from a BEM event file, a report can be generated showing the number of passings not assigned to competitors, passings assigned, a detailed listing of riders in the event who haven't registered a passing and (optional), a list of transponders with passings that are not assigned in the reference BEM event.

Monitoring can used from 1 to 10 timelines with the display showing Assigned and Not Assigned passings in separate panes. E.g.

| k Monitor | Monitor | | | | | | | | |
|---|--|--|--|---|---|--|--|--|--|
| Passings Assigned to Competitors | | | | | Passings NOT Assigned to Competitors | | | | |
| Transponder NT-72761 NH-33584 NT-72761 RH-04080 PG-64462 PG-64462 PG-64462 PG-64462 NT-72761 NT-72761 NT-72761 NH-33584 NH-33584 RH-04080 NT-72761 PG-64462 | Location Hill Finish Finish Finish Finish Finish Finish Corner1 Corner1 Finish Corner1 Corner1 Hill Hill Hill Hill | Time 17:44:26.641 17:44:26.671 17:44:26.081 17:44:26.081 17:44:25.233 17:44:25.233 17:44:25.233 17:44:25.233 17:44:25.233 17:44:0.0829 17:44:00.784 17:44:00.783 17:43:59.755 17:43:38.285 17:43:36.965 17:43:36.941 | Plate 30 388 30 50 3A 30 | Name Name Name Nercedez HARDCASTLE Tayla STREVENS Madie GUYERS Tahlia WALDRON Tahlia WALDRON Tahlia WALDRON Mercedez HARDCASTLE Madie GUYERS Tayla STREVENS Tayla STREVENS Madie GUYERS Tayla STREVENS Mercedez HARDCASTLE Tahlia WALDRON | Ref 18 17 16 15 14 8 7 2 1 | Transponder SN-32272 SN-32272 SN-32272 SN-32272 SN-32272 GV-19608 GV-19608 SN-32272 GV-19608 SN-32272 SN-32272 | Location Finish Hill Finish Hill Finish Corner1 Corner1 Hill Hill | Date 29/06/2014 29/06/2014 29/06/2014 29/06/2014 29/06/2014 29/06/2014 29/06/2014 29/06/2014 | Time 17:44:19.611 17:44:16.607 17:44:16.428 17:44:16.295 17:44:14.817 17:43:47.005 17:43:45.043 17:43:24.330 17:43:23.976 |
| | | | | | | | | | |
| Passing Recon 25 Clear All | ds | | | | | | | Stop Capture | Exit |

The reference for transponder to competitor name allocation can be from either the passing records or an operator selected BEM Event File.

Track Monitor Setup

- 1. Run DataCollector / Timing and Scoring and:
 - a. Set up an event with as many decoders as required.
 - Normal configuration would be to use all available timelines so that the progress of any unassigned transponder(s) around the track can be easily seen and the competitor identified and intercepted.

Recommended if a transponder test station is being used, that passing from that decoder are also captured during practice by Track Monitor.

b. Recommended setup is to select the backup BEM event file as the competitor reference with the Auto Refresh option so that the competitor reference is always up to date and also enables the Transponder Registration report and functions.



- c. If using competitor information from the Passing Records (not required if using a reference BEM Event file), under the Registration Tab in DataCollector or Athlete Import in Timing and Scoring, import the list of competitors, e.g. generated from BEM export.
- d. Set up the live file export as appropriate in the decoder interface program you are using. E.g. DataCollector, Timing & Scoring or race | result Connector.
 For DataColector, under the Processing tab, got to "Live File settings" and set up the Live file export
 - i. Export Type: "Save on deletion of file.
 - ii. Export Path: e.g. C:\BEM\PASSINGS\
 - iii. Export format: Tab delimited text file.
- e. Run a transponder across each loop and verify that the expected xxxx_LOG.txt passing file is generated.
- f. Minimise DataCollector / Timing and Scoring
- 2. Run BemTrain and setup the loop requirements for the Track Monitor.
 - Note Loop 1 must be enabled.
 - a. For all enabled loops:
 - i. Set the timeline name to match the passing records data.
 - I.e. Decoder name in DataCollector / Timing and Scoring or Timeline name in Timing & Scoring.
 - ii. Select the xxxx_LOG.txt passing file.
 - iii. Enter a short description in the Loop Location.
- 3. Set the Run Mode to Timeline 1.
- 4. Set the Passing File Format to match the exporter.
- 5. Save the Session File.
- 6. Click the Track Monitor button in the Run Application group.

You then have the choice to either use names from DataCollector / Timing and Scoring passing records or to use a BEM file to look up the names from the Transponder Number in the passing record.

| Select the Competitor Data Source | × | | | | | |
|---|----------------------|--|--|--|--|--|
| | | | | | | |
| O Display competitor information by using data imported from the Passing Records | ок | | | | | |
| | | | | | | |
| | Cancel | | | | | |
| Display competitor information by looking up Transponder number from Passing Record in a | | | | | | |
| reference BEM Event File | | | | | | |
| | | | | | | |
| Auto Refresh BEM data | | | | | | |
| – Display Rider Nam | es from BEM File as: | | | | | |
| © First Name - LA | ST NAME | | | | | |
| Select BEM File | irst Name | | | | | |
| BIL Transponder Registration Test hem | | | | | | |
| | | | | | | |
| | | | | | | |

7. The Track Monitor screen is now shown.

Note that the BEM Registration Report button is only enabled when display competitor information from a BEM file is selected.

Click the **Start Capture** button to start the monitor.

| Track Monitor Development | |
|---|--------------------------------------|
| Passings Assigned to Competitors | Passings NOT Assigned to Competitors |
| | |
| | |
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| | |
| | |
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| | |
| | |
| | |
| | |
| | |
| | |
| | |
| Passings Stored Names from BEM Event File | BEM Registration Report |
| D:\BEM\Backup Events\BU_Transponder Registration Test.bem | Start Caphine Fvit |
| Save Details: 28/02/2018 10:22:17 AM | |

Note that you can Clear All records if required when the capture is inhibited but is not recommended if using the Registration Report.

- a. Passings that have transponders assigned to competitors are shown in the left pane.
- b. Passings where the transponder number is not assigned to a competitor are shown in the right pane with an audible alert to draw the operator's attention to the error.
- 8. Clicking the BEM Registration Report button displays the Registration stats and report options

| BEM Registration Summary - CZE Race File Passings | | | | | | | | |
|---|---------------------|--|--|--|--|--|--|--|
| 4 Event File: D:\BEM\Backup Events\BU_Transponder Reg | jistration Test.bem | | | | | | | |
| re Details: 28/02/2018 10:22:17 AM | | | | | | | | |
| | | | | | | | | |
| assings Transponder Summary | | Report Control | | | | | | |
| ndividual transponders with passing records | 8 | Start Reports | | | | | | |
| ransponders with passings NOT in the event | 2 | Cancel | | | | | | |
| 3EM Transponder Summary | | Include in the report Transponders | | | | | | |
| intries with transponders | 50 | with passings not in the event | | | | | | |
| ndividual rider transponders in event | 50 | File | | | | | | |
| ransponders in event with passings | 6 | This file can be used in BEM with the Registration Updates facility to mark all entries with a passing record as registered. | | | | | | |
| ransponders in event without passings | 44 | | | | | | | |

In this rather contrived example, the key data is that there are 2 transponders with passings where the transponder numbers are not allocated in the reference .bem event file and that there are 44 riders in the .bem event file whose transponders have not recorded a passing.

a. The "Include in the report Transponders with passings NOT in the event" option is provided should the operator not wish to include this information. E.g. if accidentally importing a large number of passings that are not relevant to this event.

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- b. The "Create a BEM Transponder Registration File" option creates version of the .bem event file with a TP_REG_ prefix that has all riders with transponders who have a passing recorded flagged as Registered.
 This file can be used in BEM with the Registration Updates facility to mark all entries with a passing record as registered.
- 9. Clicking Start Reports prompts the operator to select a folder and file name to save the html format Registration Report. Once the report file is saved:
 - a. A file complete message is given with the save path and file name.

The report is displayed on screen in print preview mode so that it can be printed if required. E.g. to give to the announcers so that riders listed can be called up to check their transponders.

Track Monitor Example

 $B_{\text{MX}} E_{\text{VENT}} M_{\text{ANAGER}}, B_{\text{EM}} T_{\text{RAIN Report Created 03/Mar/2018 17:01:11}}$

BEM Registration Summary - CZE Race File Passings

BEM Event File: D:\BEM\Backup Events\BU_Transponder Registration Test.bem Save Details: 28/02/2018 10:22:17 AM

Passings Transponder Summary

Individual transponders with passing records8Transponders with passings NOT in the event2

BEM Transponder Summary

| Entries with transponders | 50 |
|--|----|
| Individual rider transponders in event | 50 |
| Transponders in event with passings | 6 |
| Transponders in event without passings | 44 |

Transponders in event without passings

| GROUP | NAME | CLASS | PLATE | TRANSPONDER | Label |
|-----------------|-----------------|------------|-------|-------------|-------|
| TJ Favorit Brno | Radim BOČEK | Boys 11/12 | 90 | FP-18366 | 501 |
| ?Club Unknown? | Jakub CIDLINSKÝ | Boys 15/16 | 22 | FP-03436 | 506 |

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| Laguna cycles team | Tadeáš ČUŘÍK | Boys 15/16 | 80 | KF-37263 | 508 |
|--------------------------|------------------------|---------------|----|----------|-----|
| Bikrosclub Řepy | Viktorie DORŇÁKOVÁ | Girls 11/12 | 13 | FP-42743 | 510 |
| ?Club Unknown? | Bohuslav DOSKOČIL | Men 40 & over | 97 | NK-49174 | 511 |
| ?Club Unknown? | Nikola DVOŘÁKOVÁ | Girls 15/16 | 96 | PV-65584 | 512 |
| ?Club Unknown? | Pavel EDL | Boys 15/16 | 68 | SK-91024 | 545 |
| Bikrosclub Řepy | Václáv FILIP | Boys 11/12 | 70 | RV-72334 | 514 |
| Bikrosclub Řepy | Pavel FOLTÁN | Boys 11/12 | 78 | NK-52249 | 515 |
| BIKE TEAM Uničov | Kristýna HAVLÍČKOVÁ | Girls 15/16 | 19 | FV-19204 | 516 |
| BMX & 4X TEAM OLYMPUS | Michal HRAZDÍRA | Boys 15/16 | 01 | CL-53849 | 517 |
| Bikrosclub Řepy | Bruno HUDÁK | Boys 11/12 | 76 | VF-83954 | 518 |
| Bikrosclub Řepy | Marek JANDA | Men 40 & over | 58 | VC-93363 | 519 |
| ?Club Unknown? | Lukáš KADLEC | Boys 15/16 | 54 | FZ-37622 | 520 |
| BMX & 4X TEAM OLYMPUS | Sára KALÁBOVÁ | Girls 11/12 | 4 | PV-69968 | 521 |
| SK Jantar Opava | Jakub KLEMENT | Boys 15/16 | 04 | NK-39368 | 522 |
| ?Club Unknown? | Michal KOMNÍČEK | Boys 15/16 | 50 | PV-15308 | 523 |
| ?Club Unknown? | Petr KOTVAS | Boys 11/12 | 94 | PV-12244 | 524 |
| ?Club Unknown? | Jan KRACÍK | Boys 15/16 | 18 | NK-17716 | 525 |
| BMX & 4X TEAM OLYMPUS | Ondřej KŘÍŽOVIČ | Boys 11/12 | 04 | NK-39458 | 526 |
| Bikrosclub Řepy | Viktor LOVĚTÍNSKÝ | Boys 11/12 | 40 | RK-08488 | 527 |
| TJ BMX Pardubice | Pavel LUKAŠÍK | Boys 15/16 | 58 | FG-34772 | 552 |
| Bikrosclub Řepy | Jiří MÁDR | Men 40 & over | 15 | RC-90708 | 509 |
| Bikrosclub Řepy | Vít MÁDR | Boys 15/16 | 32 | FP-69291 | 529 |
| B4 Team | Kryštof MALIŇÁK | Boys 11/12 | 44 | PV-64872 | 530 |

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| Bikrosclub Řepy | Jakub MALÝ | Boys 15/16 | 92 | TW-85738 | 531 |
|--------------------------|------------------------|---------------|----|----------|-----|
| Bikrosclub Řepy | Lisa MICHNA | Girls 11/12 | 22 | VC-99205 | 532 |
| ?Club Unknown? | Matyáš ORAVEC | Boys 11/12 | 28 | TV-49935 | 533 |
| ?Club Unknown? | Filip OREL | Boys 15/16 | 60 | TW-14715 | 534 |
| ?Club Unknown? | Tomáš OTEVŘEL | Boys 11/12 | 72 | TV-37460 | 535 |
| Bikrosclub Řepy | Barbora PETROVÁ | Girls 15/16 | 89 | TX-86223 | 536 |
| ?Club Unknown? | Jan POŘÍZEK | Boys 15/16 | 74 | TW-06578 | 537 |
| ?Club Unknown? | Radek PRUDIL | Men 40 & over | 70 | VF-98081 | 538 |
| Bikrosclub Řepy | Stanislav RADOSTA | Boys 15/16 | 52 | VF-10568 | 539 |
| Bikrosclub Řepy | Adam SEDLÁČEK | Boys 11/12 | 54 | TX-64336 | 540 |
| ?Club Unknown? | Jiří SMÉKAL | Boys 15/16 | 96 | SK-44659 | 541 |
| ?Club Unknown? | Šarlota STAŇOVÁ | Girls 15/16 | 63 | SX-52574 | 542 |
| BMX & 4X TEAM OLYMPUS | Agáta SVOBODNÍKOVÁ | Girls 11/12 | 47 | HR-57368 | 543 |
| Bikrosclub Řepy | Stella TAMME | Girls 11/12 | 18 | SK-43483 | 544 |
| ?Club Unknown? | Tereza TYLOVÁ | Girls 11/12 | 27 | TN-99711 | 546 |
| ?Club Unknown? | Tereza VANČOVÁ | Girls 15/16 | 79 | SV-72066 | 547 |
| CYKLOTEAM ABOS | Lubor VAŠÁT | Men 40 & over | 22 | SL-37724 | 548 |
| BMX & 4X TEAM OLYMPUS | Richard ŽÁK | Boys 11/12 | 38 | ST-96752 | 549 |
| TJ Favorit Brno | Daniel Jiljí ŽALMAN | Boys 15/16 | 94 | SX-56455 | 550 |
| Bikrosclub Řepy | Kristýna ZVOLSKÁ | Girls 15/16 | 41 | TX-23391 | 551 |

| Transponders with passings NOT in the event | | | | |
|---|-------------------|--------------|----------|--|
| TRANSPONDER | PASSINGS COUNT | LAST PASSING | | |
| | | DATE - TIME | LOCATION | |

| AA-12345 | 2 | 14/02/2018 - 12:35:43.873 | Hill |
|----------|---|---------------------------|------|
| ZZ-98765 | 1 | 19/01/2018 - 15:59:30.063 | Hill |

b. When closing the report and the create BEM file option was also selected, this will be saved in the same folder with the prefix TP_REG_ added to the original .bem event file name. E.g.



System Requirements

- 32 or 64 bit versions of Windows XP, Windows Vista, Windows 7 or Windows 8 (except for the tablet only Windows 8 RT)
- Excel version Office 2010 (recommended) or 2003, 2007.
 Not compatible with Office 2013 or later versions including Office 365.

Timing System Interface Requirements

- > MyLaps ProChip Transponder System.
 - MyLaps DataCollector for Scoreboard, Fitting Station and Training.
 - MyLaps Timing and Scoring (free from MyLaps) can be configured for Training, Scoreboard and Fitting Station requirements.
- RaceResult Active Transponder System.
 - Interface defined and functionally tested. Full interface availability requires a new passing export facility being developed by RaceResult with an anticipated availability of October April 2015.
- BeChronized Transponder System.
 - Interface defined and functionally tested. Full interface availability requires a new passing export facility in the process of being developed by BeChronized.
- > Tag Heuer Protime RC Transponder System
 - Under consideration.

=== End of Document ===

