# BemTrain

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

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.
- o 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. Ⓟ
- o Pump Track specific scoreboard displays with tailored displays for each of the event formats:
  - ▪ Solo Run Ⓟ
  - ▪ Pursuit / Head to Head Single. Ⓟ
  - ▪ Head to Head Dual. Ⓟ
- o Multi Lap Race with lap count and cumulative times. Ⓟ

- 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.
- Two timelines independently showing gaps between passings.
- Lap time display mode showing the last 8 or 16 completed lap times.
- Staging Check moto to validate transponder fitting and operation.

➢ May be used stand alone or in association with the BEM Race program.

➢ Features flagged with Ⓟ are available in the Premium version of BemTrain.
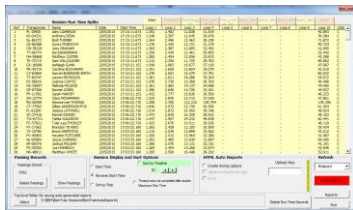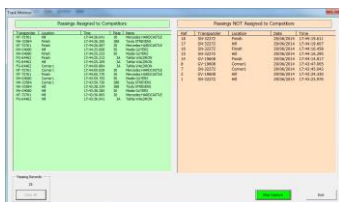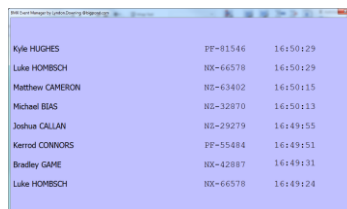

Live Split Times
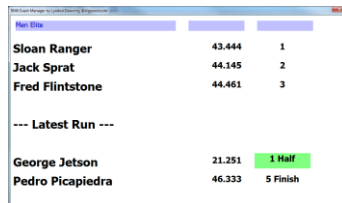
Time Trial Scoreboard
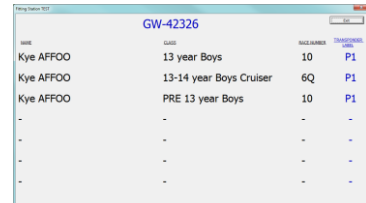
Transponder Fitting Station

Track Monitor

Staging Check

Single Timeline Scoreboard

Race Lap Time (overlay on video)

Race Lap Time Scoreboard

Pump Track Head to Head Dual Scoreboard

Pursuit Analysis Report Example

A Velodrome

BMX EVENT MANAGER, BEM TRAIN Report Created 08/Apr/2018 10:50:28

Report Summary

Run Date	2018-03-17
Run Start	15:51:15.672
Run End	15:52:20.430
Run Time	1:04.558
Participants	4
Laps	2

BemTrain Version 3.1.0.0 08 Apr 2018		Licenced to: Bemman BMX							
Location in Passing >>> Location Description >>>		Apex1 Apex 1		Half Track Back Pursuit		Apex2 Apex 2		Start-Finish Front Pursuit	
Lap 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
Second 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
Lap 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
Second 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	-

Split Time Training

Live Split Time screen below with data from a BMXA HPP training session at the Sleeman Sports Complex.

Note: data can be displayed by Start Time, Reverse Start Time, by Rider or by any of the active timelines.

Session Run Time Splits

Ref	Transponder	Name	Date	Start Time	Loop 1	Loop 2	Loop 3	Loop 4	Loop 5	Loop 6	Loop 7	Loop 8	Loop 9	Loop 10	Stat.
1	PL-29950	Alex CAMERON	2/05/2015	17:15:11.673	1.292	2.483	12.838	31.819	-	-	-	-	-	-	40.893	C
2	KS-04331	Anthony DEAN	2/05/2015	17:15:11.673	1.248	2.397	12.045	29.979	-	-	-	-	-	-	76.384	C
3	GL-86272	Bodi TURNER	2/05/2015	17:15:11.673	1.264	2.496	12.463	30.259	-	-	-	-	-	-	71.872	C
4	GZ-86388	Corey FRIESWYK	2/05/2015	17:15:11.673	1.276	2.435	12.721	31.279	-	-	-	-	-	-	40.724	C
5	CN-78218	Joey GRAHAM	2/05/2015	17:15:11.673	1.364	2.587	12.895	32.492	-	-	-	-	-	-	41.695	C
6	TT-96774	Kai SAKAKIBARA	2/05/2015	17:15:11.673	1.259	2.439	12.461	30.893	-	-	-	-	-	-	52.442	C
7	NH-58868	Matthew JUSTER	2/05/2015	17:15:11.673	1.285	2.454	12.956	33.872	-	-	-	-	-	-	43.398	C
8	TK-72715	Sam WILLOUGHBY	2/05/2015	17:15:11.673	1.212	2.356	11.725	29.763	-	-	-	-	-	-	96.862	C
9	CK-16098	Ashleigh GUNN	2/05/2015	17:10:21.152	1.549	2.893	15.677	37.193	-	-	-	-	-	-	47.087	C
10	PR-45714	Caroline BUCHANAN	2/05/2015	17:10:21.152	1.351	2.609	13.604	34.079	-	-	-	-	-	-	43.519	C
11	CV-83869	Harriet BURBIDGE-SMITH	2/05/2015	17:10:21.152	1.376	2.653	15.579	37.791	-	-	-	-	-	-	86.832	C
12	TT-80747	Lauren REYNOLDS	2/05/2015	17:10:21.152	1.381	2.631	34.288	79.264	-	-	-	-	-	-	95.672	C
13	PZ-58619	Leanna CURTIS	2/05/2015	17:10:21.152	1.476	2.730	15.368	36.765	-	-	-	-	-	-	46.498	C
14	HC-55097	Melinda MCLEOD	2/05/2015	17:10:21.152	1.361	2.583	14.137	34.968	-	-	-	-	-	-	44.450	C
15	GP-87566	Rachel JONES	2/05/2015	17:10:21.152	1.396	2.640	14.726	35.261	-	-	-	-	-	-	44.927	C
16	FP-11782	Sarah HARVEY	2/05/2015	17:10:21.152	1.432	2.777	15.626	36.509	-	-	-	-	-	-	46.223	C
17	SN-12774	Clare MCNAMARA	2/05/2015	17:06:22.710	1.525	2.845	15.715	37.539	-	-	-	-	-	-	47.861	C
18	RK-56599	Gemma-Lee THOMAS	2/05/2015	17:06:22.710	1.398	2.700	112.210	159.794	-	-	-	-	-	-	178.356	C
19	CT-77562	Gillian ANDERSON-FOX	2/05/2015	17:06:22.710	1.640	3.073	23.739	50.590	-	-	-	-	-	-	61.304	C
20	FL-62200	Jessica LATHWELL	2/05/2015	17:06:22.710	1.514	2.872	16.592	39.346	-	-	-	-	-	-	49.924	C
21	SC-27416	Rachel GASKIN	2/05/2015	17:06:22.710	1.473	2.839	16.359	38.922	-	-	-	-	-	-	49.103	C
22	TW-67721	Tahlia WALDRON	2/05/2015	17:06:22.710	1.547	2.907	24.232	49.839	-	-	-	-	-	-	60.441	C
23	FC-57921	Tyler-Lea THORLEY	2/05/2015	17:06:22.710	1.423	2.676	14.511	36.030	-	-	-	-	-	-	46.119	C
24	FX-17362	Brandon TE HIKO	2/05/2015	17:03:33.160	1.265	2.438	12.183	30.909	-	-	-	-	-	-	39.434	C
25	TX-19796	Brock GRIFFITHS	2/05/2015	17:03:33.160	1.315	2.539	13.899	33.562	-	-	-	-	-	-	42.512	C
26	PV-40965	Hayden FLETCHER	2/05/2015	17:03:33.160	1.300	2.515	13.464	32.389	-	-	-	-	-	-	41.987	C
27	NL-00984	Jayce CUNNING	2/05/2015	17:03:33.160	1.292	2.485	12.939	31.887	-	-	-	-	-	-	69.445	C
28	KP-08375	Joshua MCLEAN	2/05/2015	17:03:33.160	1.366	2.570	13.131	32.151	-	-	-	-	-	-	41.191	C
29	FS-39785	Jye HOMBSCH	2/05/2015	17:03:33.160	1.269	2.454	14.268	33.874	-	-	-	-	-	-	42.849	C
30	NK-48811	Matthew WHITE	2/05/2015	17:03:33.160	1.295	2.500	16.448	36.292	-	-	-	-	-	-	52.611	C

Timeline columns: Start, TimeLine2, Mid+Straight, First_Corner_In, First_Corner_Out, Sprint_Start, Sprint_10m, Sprint_20m, Sprint_30m, Finish

Passing Records — Passings Stored: 9762 — Delete Passings — Show Passings

Session Display and Sort Options — Sort by Timeline 10 — Start Time — Reverse Start Time — Sort by Rider — Timeout runs not completed after double Maximum Run Time

HTML Auto Reports — Create during capture — Upload to SportsLists App — Scroll — Upload Key — Start Capture

Refresh — Relaxed — Reports — Exit

Top level folder for saving auto generated reports — Select — D:\BEM\BemTrain Sessions\BemTrainAutoReports\ — Delete Run Time Records

Example below of a BemTrain generated Excel report showing elapsed time to each timing point and sector times between timing points.

Sleeman 2013 Training
BemTrain by Lyndon.Downing@bigpond.com
Version 1.1.3, 25 Feb 2014, Licenced to: Bemman BMX
Group by Rider: Sorted by Lap Time: Completed Runs

Transponder	Class	Plate	Name	Date	Start Time	Bottom of Hill	<Sector2>	First Corner Intermediate	<Sector3>	Second Corner Intermediate	<Sector4>	Finish Line 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
LR-25913	Probikx Men Elite	42	Brian KIRKHAM	9/01/2013	09:52:26.581	2.449	6.057	8.506	11.894	20.400	17.808	38.208

Sample HTML report showing elapsed time to each timing point, sector times and speeds.

By taking a subscription with SportsLists, training session reports can be uploaded for display on their phone App every few minutes during the training session.

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

									TIMELINES							
BemTrain Version 2.0.0.0 Test, 21 Aug 2015					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
Bemman BMX															
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

Transponder Fitting Station

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

Exit

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
-	-	-	-
-	-	-	-
-	-	-	-
-	-	-	-

Scoreboard Styles

A variety of foreground, background and fonts can be selected by the operator to optimise the display for the particular environment. E.g. high contrast such as yellow on black for outdoors. Settings also provided to send real time scoreboard updates to a file or HTTP destination in Json Format.
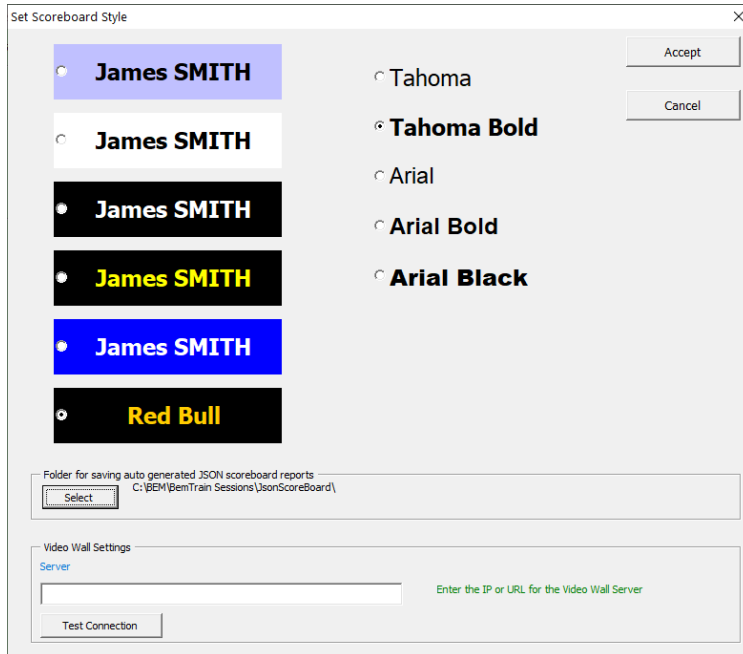
Time Trial Scoreboard

In Time Trial mode with the top 3 option, the scoreboard shows the top three in the class at the top of the screen and the latest finisher at the bottom of the screen.

> ➢ Display starts when the first rider crosses the first loop.
> ➢ Optional auto reset and clear at class change.
> ➢ Supports concurrent riders on the track.
> ➢ New leader at any of the three (max) timing points highlighted in green in the Last Completed area.

Latest competitor has the fastest time at the Half track timing point.

Latest competitor to cross the Finish line is placed 5th in the class
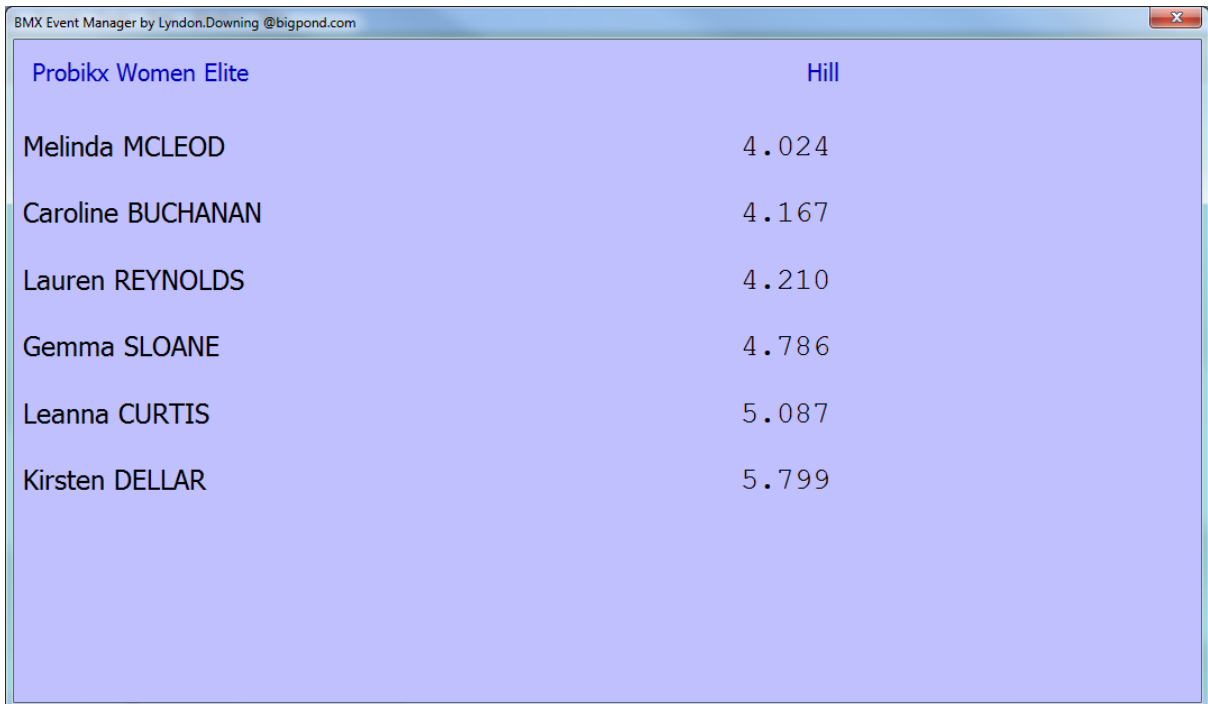
Lap Race Scoreboard

In this mode, the Scoreboard displays a single lap race with progressive updates from intermediate timelines.

- ➢ Display starts when the first rider crosses the first timeline.
- ➢ Display time for intermediate timelines can be set by an auto-clear timer or cleared when the first rider crosses the next timeline in the run.
- ➢ Finish results displayed until cleared by the operator.
- ➢ Race must be complete before the following race is started.
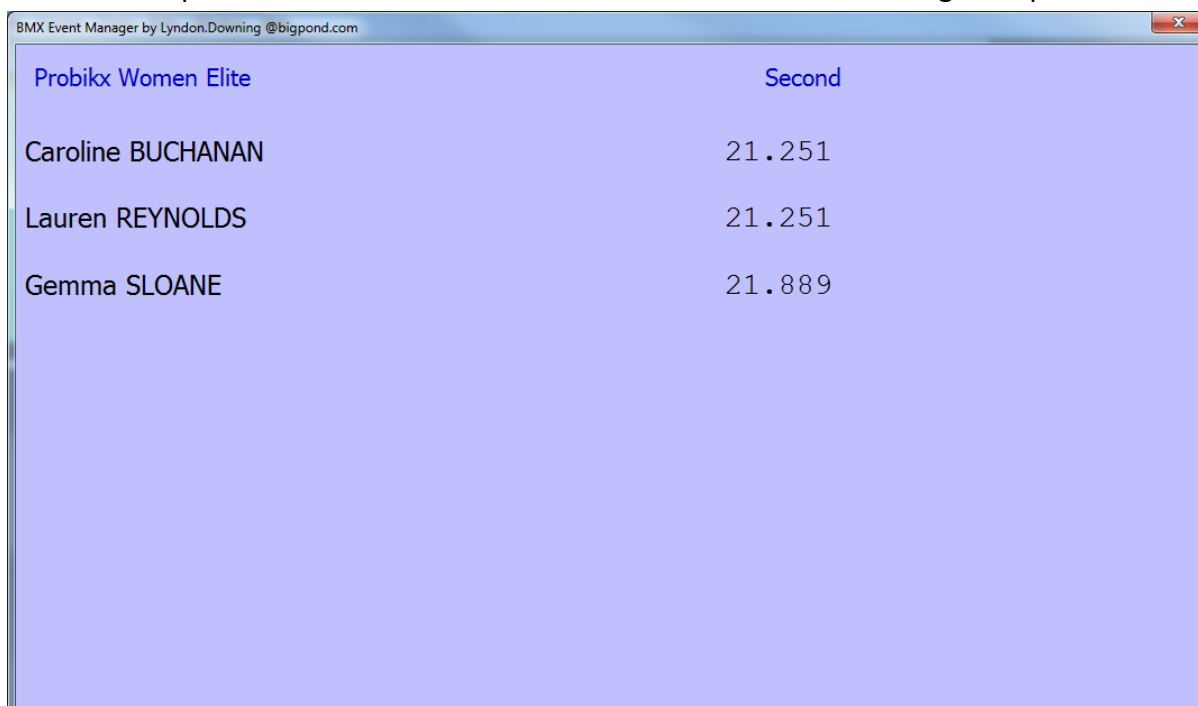
After riders have crossed the bottom of the Start Hill loop.

BMX Event Manager by Lyndon.Downing @bigpond.com	
Probikx Women Elite	**Hill**
Melinda MCLEOD	4.024
Caroline BUCHANAN	4.167
Lauren REYNOLDS	4.210
Gemma SLOANE	4.786
Leanna CURTIS	5.087
Kirsten DELLAR	5.799
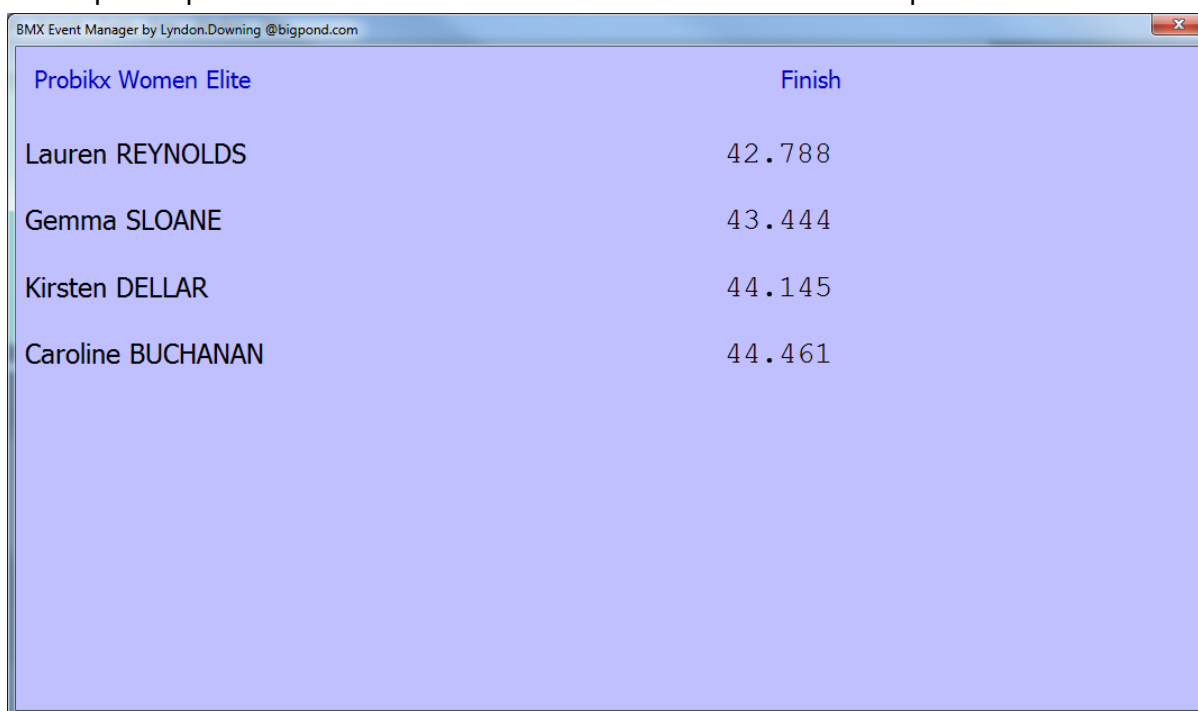
Scoreboard update after first three riders have crossed the Second straight loop.

Probikx Women Elite	Second
Caroline BUCHANAN	21.251
Lauren REYNOLDS	21.251
Gemma SLOANE	21.889

Subsequent updated after first four riders have crossed the Finish loop.

Probikx Women Elite	Finish
Lauren REYNOLDS	42.788
Gemma SLOANE	43.444
Kirsten DELLAR	44.145
Caroline BUCHANAN	44.461

Single Loop Scoreboard

The scoreboard in this mode shows passing order from a single loop with gaps shown between the riders. An auto clear timer can be applied, typically when this display mode is used for commentary purposes.

- ➢ Display starts when the first rider crosses the timeline.
- ➢ Timer controlled or manual display clearing.
- ➢ Photo finish gap setting when displaying the Finish Line.

Example of Finish Line display with Photo Finish active.

Twin Loop Scoreboard

In this mode the display shows passings from two loops with gaps shown between the riders with each loop an autonomous display. An auto clear timer can be applied, typically when this display mode is used for commentary purposes.

> ➤ Each display starts when the first rider crosses the timeline.
> ➤ Timer controlled or manual display clearing.
> ➤ Photo finish gap setting when displaying the Finish Line.

Example of twin loop display from First Corner and Finish Line

Lap Time Display Scoreboard

In this mode the operator can select to display the last 8 or 16 completed lap times in real time. Typical use of this display mode is for a rider information screen for a race meeting, practice or coaching session.

Track Monitor

The Track Monitor application is designed for use during practice to check for competitors with an unregistered transponder or practicing outside of their specified session. The setup can use from 1 to 10 individual timelines

- ➢ Up to 10 timelines can be monitored to easily track any unassigned transponder around the track or at a transponder test station.
- ➢ Each unassigned detection gives and audio alert to the operator.
- ➢ When used as a BEM Event File as the name reference, a summary report can be generated showing transponders detected on the track that are not in the BEM Event and a list of riders in the BEM Event with no detected transponder passings.
- ➢ The ability to create a Transponder Registration BEM Event file for use with the BEM Scoring program to update the registration status for riders who have a detected transponder passing.
- ➢ Assigned and not assigned transponders shown in separate panes.

Sample display:

System Requirements

- ➢ Windows XP, Windows Vista, Windows 7, Windows 8 (except for the tablet only Windows 8 RT) or Windows 10
- ➢ Excel version Office 2010 (recommended) or 2003 or 2007.

Timing System Interface Requirements

- ➢ MyLaps ProChip Transponder System.
  - o Interface to the timing system is with either MyLaps DataCollector or Timing and Scoring programs.
- ➢ RaceResult Active Transponder System
  - o Interface to the timing system with the RRconnector program.
- ➢ BeChronized Active Transponder System
  - o Interface development complete in BemTrain.

Pricing

- ➢ The full version with the Fitting Station, Split Time Training, Live Scoreboard, Staging Check and Track Monitor: AUD $390 per registered user.
  Discounts available for the standard version for multi user licencing on a Zone, State or National Association basis.
- ➢ For all enquiries regarding BemTrain, please contact Lyndon Downing.
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