

Horse Racing



2019v1

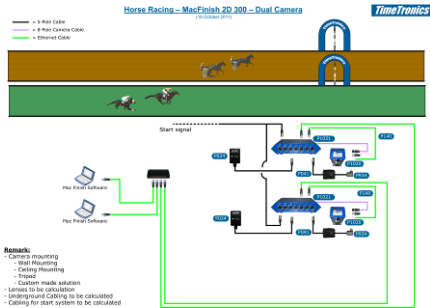


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For this spectacular and important sport the best possible photofinish is required;



- 1) Maximum recording speed (Timing resolution)
- 2) Maximum vertical pixel resolution (identical of pixels)
- 3) Maximum color depth (=dynamic range of photo)



For horse racing, we can offer you two different professional photofinish cameras:

The **MacFinish 2D 400 and the MacFinish 2D 410** system is a professional colour photofinish system. Next to the camera, lens and camera tripod we use photocells or a push button to control the recording of the finish photo. The system has a high speed Ethernet connection with the PC for a virtually unlimited distance between camera and PC and complete remote control of all digital camera functions.

The MacFinish 2D 400 can record pictures of up to 1.000 at a speed up to 2.500 lines per second or MacFinish 2D410 up to 1.600 pixels vertical and maximum 5.000 lines/sec with 16 bits colour resolution (up to millions of different colors). Therefore these cameras are equipped with minimal 256 Mbytes of internal RAM memory and maximum 2 GB.

	Typical use	Recording speed	PC-connection	Sensor Type	Internal Memory
 MF 2D 400	Professional	Up to 2.500 lines/sec	Gigabit Ethernet	2D 1000 pixels	Yes
 MF 2D 410	Elite	Up to 4.500 lines/sec	Gigabit Ethernet	2D 1600 pixels	yes

The start signal of the photofinish system can come from a start button or start gate switch, and can be connected by cable or wireless transmission.

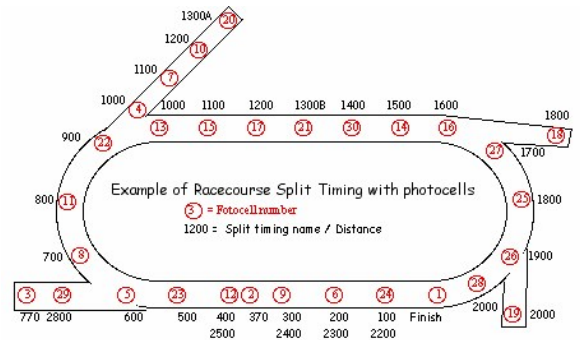


Split Time System: Photocells

For an accurate split timing system for horse races we can connect up to max 48 photocell pairs (infrared light transmitter + receiver light beams) can be installed, for up to 48 split or finish timing positions, around the track.

Each photocell pair (transmitter + receiver) is fixed installed on any desired split point on the track and can cover a track width of 60 meters (196 feet). You have the choice between two types of photocells:

- Plastic version without heating.
- Professional metal version WITH build-in heating.



Note:

Two separate cables for power and data signals are used, as this is safer to prevent the TimerBox from being damaged in case of a short circuit of the power lines.

- Power supply photocells 220V VAC -> 2x0,75 mm² double PVC insulated.
- Data cable -> standard 5 or extended 12 wires x 0,34 mm² LIYCY flexible signal cable, up to 15 wires are needed for the max of 48 photocells.

Split Time System: Universal TimeTronics TimerBox

Please note that at each split point, a photocell system will only time the FIRST horse of a group of passing horses. If you need to exactly time EACH horse, at each SPLIT point, you need a transponder or photofinish system at the split points. Of course this is much more complex and expensive.

The customer can specify where the different photocells needs to be installed around the track, and which photocells needs to be used for EACH of the different types of races.

The TimerBox will receive external 12V battery power and uses an external battery charger for **uninterrupted** functionality.

The TimerBox is calibrated to 0.1ppm accuracy and will transfer all timing results with 0.001 s resolution to a PC running our split timing software.

Split Time System: Software

The "Horseracing Split Timing" software on PC will be used to select: The race type ; total distance and which photocells to time the split points. And how (where on screen, in which mode, text colour, text font, how long, etc) the split time results will be shown on screen, and optionally on local TV.

Custom made

This package is user adaptable, to generate the timing displays for live local or national television. Also Tote scoreboards can be driven with the split timing results.



!!! Ask for YOUR custom made solution !!!



1. Presentation mode: possibility to add names, sponsor logo's,...

You can define a custom header in a settings file (Picture 1). That settings file has the layout of a standard windows *.ini file. It is located in Settings folder, a sub-folder of the MacFinish folder, it is named "advanced.ini".

All the possible settings for the presentation mode are listed below:

[presentation]

title=[DAY]-[MONTH]-[YEAR] BURSA race

[FILENAME:5:1]

font=Bauhaus 93

font-size=48

align=center

valign=top

background=#A50006

color=#F1DEE0

italic=0

bold=0

underline=0

zoom-width=500

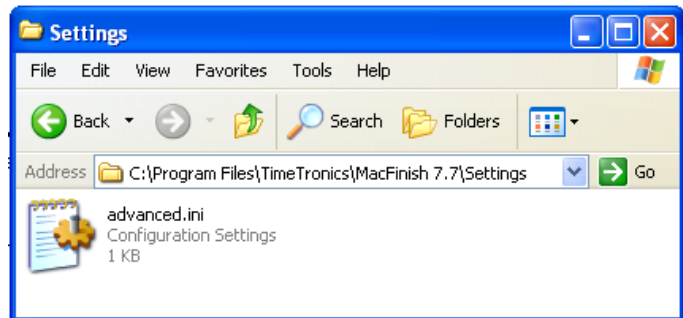
zoom-height=500

zoom-left=780

zoom-top=50

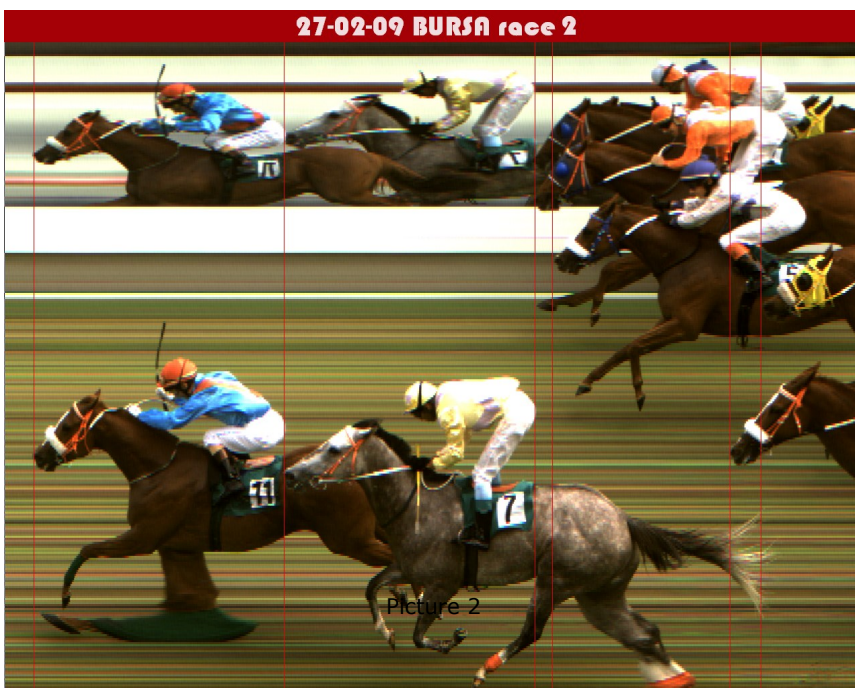
zoom-border-weight=8

zoom-border-color=#A50006



Picture 1

The settings above give the following result:



Picture 2

In the title:

DAY]-[MONTH]-[YEAR] BURSA race [FILENAME:5:1]), the fields [DAY], [MONTH] and [YEAR] are replaced by resp. the day, month and year of the computer time at the moment of presentation.

The field:

[FILENAME:5:1] is replaced by the 5th character (zero-based) of the filename (the filename here was 902272.mf3). So the syntax is [FILENAME:startposition:length].

Another example:

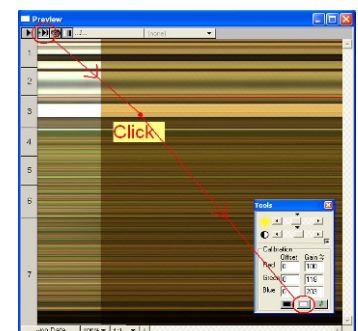
if you filenames are: racexxx-day_month_year.mf3 (e.g. race012-27_02_2009.mf3) and you want the race number, then you fill in [FILENAME:4:3] (it will give you 012).

Adding sponsor logo's, ... was already possible and is not changed.

2. Auto white balance, even during the race.

It is possible to do auto-white balance (AWB) at any time (when you are scrolling) by following these steps:

- Click on a white spot in the scrolling preview window.
- Click on the white balance button in the tools window



Picture 3



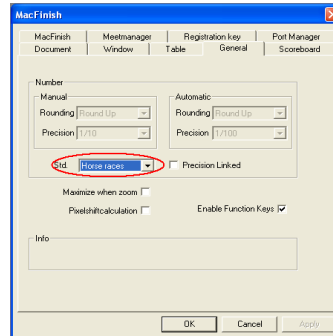
3. Faster result processing by using *.Par files

The manual for working with *.par files is attached as APPENDIX A.

An extra feature for horseracing is that not only the ID appears in the list, but also the name and the extra info. This can be very useful, if you e.g. put the color of the jockey in the extra info, like in the example below (picture 4). To get this extra feature, you have to put the general settings of MacFinish to "horse races" (see picture 5).

Place	ID	Time	Total
1	11	1:24.3	
2	7	1:24.5	
3	8	1:24.6	
4	5	1:24.6	
5	10	1:24.7	
6	9	1:24.7	
7	2	1:24.8	
8	3	1:24.9	
9	4	1:25.1	
10			
11			

Picture 4



Picture 5

4. Results file: add race information like race length, date, place and number

All lines in a *.par file that start with '#' will be copied automatically to the start of the results file.

An example of a *.par file could be:

```
#=====
# length=1200m
# place=Bursa
# date=2009-02-26
# race=1
# photofinish-operator=bart smolders
#=====
11 1 ASKAPLAN orange-blue
7 2 ÇIYA yellow-yellow
8 3 MEN ZER orange-orange
5 4 OKAY DUSTY blue-white
10 5 RED LIFE orange-white
9 6 TAMBORA orange-yellow_dots
2 7 CAVIDANIM yellow-blue
3 8 KIRIKHAN yellow-green
4 9 MISSES LOCKTER purple-white
1 10 SHARPLY DRAWN white-blue
6 11 SULTAN HANIM white-yellow
```

The according results file would be:

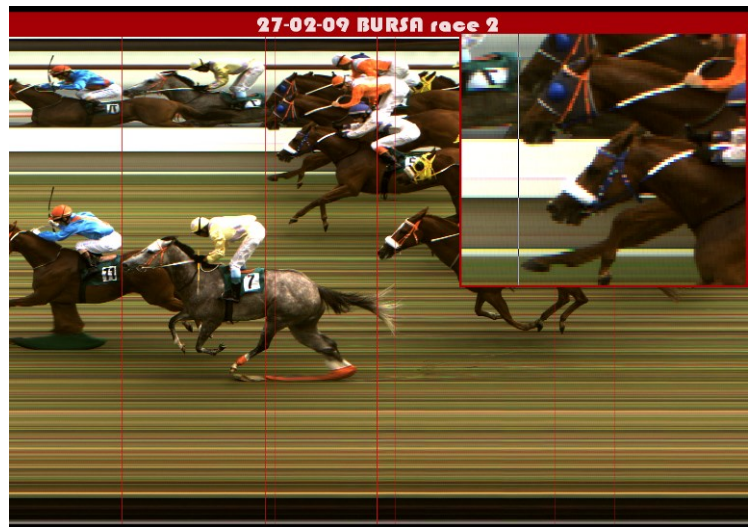
```
.mf3 N/A m/s 9,23 M 2000 l/s 26-2-2009 - 11:37:39
#=====
# length=1200m
# place=Bursa
# date=2009-02-26
# race=1
# photofinish-operator=bart smolders
#=====
Place Lane Time ID Name Information
1 1 1:24.3 11 ASKAPLAN orange-blue
2 2 1:24.5 7 ÇIYA yellow-yellow
3 3 1:24.6 8 MEN ZER orange-orange
4 4 1:24.6 5 OKAY DUSTY blue-white
5 5 1:24.7 10 RED LIFE orange-white
6 6 1:24.7 9 TAMBORA orange-yellow_dots
7 7 1:24.8 2 CAVIDANIM yellow-blue
8 8 1:24.9 3 KIRIKHAN yellow-green
9 9 1:25.1 4 MISSES LOCKTER purple-white
10 10 1:25.2 1 SHARPLY DRAWN white-blue
11 11 1:26.3 6 SULTAN HANIM white-yellow
```



5. Presentation Window: scroll and zoom functions

When the presentation mode is active, you can scroll the image using the arrow keys (left, right, up, down). You can open a zoom window by following these steps:

1. Press [Ctrl]: the timeline will change into a cross
2. Hold [Ctrl] and click with the left mouse button on the point you want to zoom in to. A zoom window appears. The size and border of this zoom window is fully customizable using the settings from the "advanced.ini" file (see Proposal 1).
3. If you want to zoom further, just press the spacebar. You can zoom up to 600%. To zoom out again, press [Shift] + spacebar. It is also possible to scroll in the presentation-zoom window, using the arrow keys.
4. To close the presentation-zoom window, just click inside the presentation-zoom window or press [Esc].



Picture 6

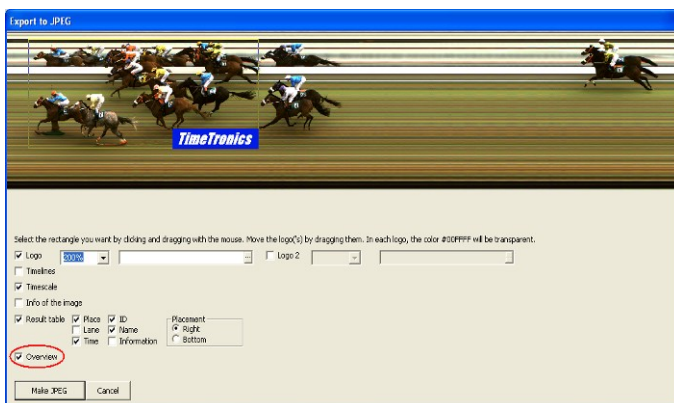
6. Presentation mode: Shortcut keys

Here is a list of new shortcut keys:

- Alt + M : Import from MM
- Alt + N : Export to MM
- Alt + I : Import competitors from file
- Alt + T : Import TP data from file
- Alt + E : Export results to file
- Alt + R : Export image to JPEG
- Alt + S : Send results
- Alt + Del : Crop
- Alt + C : Time correction
- Alt + P : Presentation

7. Jpeg export: add total race image when showing a partial zoom

There is an extra option in the screen to make JPEG's (see picture 7). The overview is placed at the bottom. An example can be seen in picture 8.



Picture 7



Picture 8



8. Distances between horses: nose, neck, 1/2 length,....

We included a horserace-specific way of defining distance between two results. When you select "horse races" as general preference (see picture 5), an extra column appears in the results table defining the distance between two horses. This distance can be calculated relative to the first, or relative to the previous (this was already possible with times in MacFinish software).

The values are only displayed, not exported yet, nor stored in the MacFinish file. The MacFinish file remains a timing file, where time is the key, not distance. The formula's to calculate this distance, are defined in a dll, which is also specified in "advanced.ini" and is located in the "Plug-Ins" folder (near the scoreboard Plug-Ins).

[horseraces]

result-conversion=horseraces_v1.dll

Note: you can find advanced.ini in C:\Program Files\TimeTronics\MacFinish 7.7\Settings and you can edit it using a standard texteditor.

The function in the dll is defined as:

unsigned int ResultConversion(double dTime, double dTimeRef, unsigned int iRaceLength)

As you can see, the function needs the race length. MacFinish gets this from the *.par file. See also topic 4, the important line is: # length=1200m

In horseraces_v1.dll the algorithm goes:

1. Calculate the average speed of the reference (first horse or the previous horse) using the race length and the reference time.
2. Calculate the time difference between the horse and the reference.
3. Distance = average speed * time difference
4. Look up the code in the next table:

nose = 1/2 ft = 0.1524 m (= short head)

head = 1 ft = 0.3048 m

neck = 2 ft = 0.6096 m

1/2 length = 4 ft = 1.2192 m

3/4 length = 6 ft = 1.8288 m

1 length = 8 ft = 2.4384 m

1 1/4 length = 10 ft = 3.048 m

1 1/2 length = 12 ft = 3.6576 m

1 3/4 length = 14 ft = 4.2672 m

2 lengths = 16 ft = 4.8768 m

2 1/2 lengths = 20 ft = 6.096 m

3 lengths = 24 ft = 7.3152 m

3 1/2 lengths = 28 ft = 8.5344 m

4 lengths = 32 ft = 9.7536 m

5 lengths = 40 ft = 12.192 m

6 lengths = 48 ft = 14.6304 m

7 lengths = 56 ft = 17.0688 m

8 lengths = 64 ft = 19.5072 m

9 lengths = 72 ft = 21.9456 m

10 lengths = 80 ft = 24.384 m

11 lengths = 88 ft = 26.8224 m

12 lengths = 96 ft = 29.2608 m

13 lengths = 104 ft = 31.6992 m

14 lengths = 112 ft = 34.1376 m

15 lengths = 120 ft = 36.576 m

16 lengths = 128 ft = 39.0144 m

17 lengths = 136 ft = 41.4528 m

18 lengths = 144 ft = 43.8912 m

19 lengths = 152 ft = 46.3296 m

20 lengths = 160 ft = 48.768 m

21 lengths = 168 ft = 51.2064 m

22 lengths = 176 ft = 53.6448 m

23 lengths = 184 ft = 56.0832 m

24 lengths = 192 ft = 58.5216 m

25 lengths = 200 ft = 60.96 m

26 lengths = 208 ft = 63.3984 m

27 lengths = 216 ft = 65.8368 m

28 lengths = 224 ft = 68.2752 m

29 lengths = 232 ft = 70.7136 m

30 lengths = 240 ft = 73.152 m

Results		Competitors	Both	Tr
Place	ID	Time	Horseraces	
1	1	3:10.0		
2	2	RF 0.1	nose	
3	3	RF 0.1	nose	
4	4	RF 0.1	neck	
5	5	RF 0.1	1/2 length	
6	6	RF 0.2	1/2 length	
7	7	RF 0.2	3/4 length	
8	8	RF 0.3	1 1/4 length	
9	9	RF 0.3	1 1/4 length	
10	10	RF 0.4	2 lengths	
11	11	RF 0.5	2 1/2 lengths	
12	12	RF 0.6	3 lengths	
13	13	RF 0.7	3 1/2 lengths	
14	14	RF 0.8	4 lengths	
15	15	RF 1.0	5 lengths	
16	16	RF 1.1	6 lengths	
17	17	RF 1.3	6 lengths	
18	18	RF 1.4	7 lengths	
19	19	RF 1.6	8 lengths	
20	20	RF 1.8	9 lengths	
21	21	RF 2.0	10 lengths	
22	22	RF 2.2	11 lengths	
23	23	RF 2.4	12 lengths	
24	24	RF 2.6	13 lengths	
25	25	RF 2.8	14 lengths	
26	26	RF 3.1	15 lengths	
27	27	RF 3.3	17 lengths	
28	28	RF 3.6	18 lengths	
29	29	RF 3.8	19 lengths	
30	30	RF 4.1	21 lengths	
31	31	RF 4.4	22 lengths	
32	32	RF 4.7	24 lengths	
33	33	RF 5.0	25 lengths	
34	34	RF 5.3	27 lengths	
35	35	RF 5.7	28 lengths	
36	36	RF 6.0	30 lengths	
37	37	RF 6.4		
38	38	RF 6.7		
39	39	RF 7.1		

Results		Competitors	Both	Tr
Place	ID	Time	Horseraces	
1	1	3:10.0		
2	2	RP 0.1	nose	
3	3	RP 0.1	nose	
4	4	RP 0.1	head	
5	5	RP 0.1	neck	
6	6	RP 0.1	neck	
7	7	RP 0.1	neck	
8	8	RP 0.1	1/2 length	
9	9	RP 0.1	1/2 length	
10	10	RP 0.1	1/2 length	
11	11	RP 0.1	1/2 length	
12	12	RP 0.2	1/2 length	
13	13	RP 0.2	3/4 length	
14	14	RP 0.2	3/4 length	
15	15	RP 0.2	3/4 length	
16	16	RP 0.2	3/4 length	
17	17	RP 0.2	3/4 length	
18	18	RP 0.2	1 length	
19	19	RP 0.2	1 length	
20	20	RP 0.2	1 length	
21	21	RP 0.2	1 length	
22	22	RP 0.3	1 length	
23	23	RP 0.3	1 1/4 length	
24	24	RP 0.3	1 1/4 length	
25	25	RP 0.3	1 1/4 length	
26	26	RP 0.3	1 1/4 length	
27	27	RP 0.3	1 1/4 length	
28	28	RP 0.3	1 1/4 length	
29	29	RP 0.3	1 1/4 length	
30	30	RP 0.3	1 1/4 length	
31	31	RP 0.3	1 1/4 length	
32	32	RP 0.4	1 1/2 length	
33	33	RP 0.4	1 1/2 length	
34	34	RP 0.4	1 1/2 length	
35	35	RP 0.4	1 1/2 length	
36	36	RP 0.4	1 1/2 length	
37	37	RP 0.4	1 1/2 length	
38	38	RP 0.4	1 1/2 length	
39	39	RP 0.4	2 lengths	

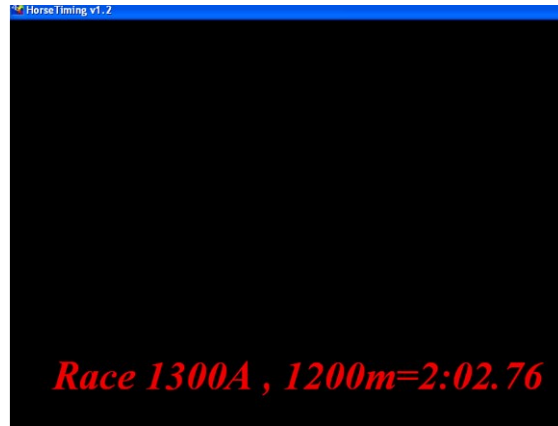
Note:

The translation table was found on

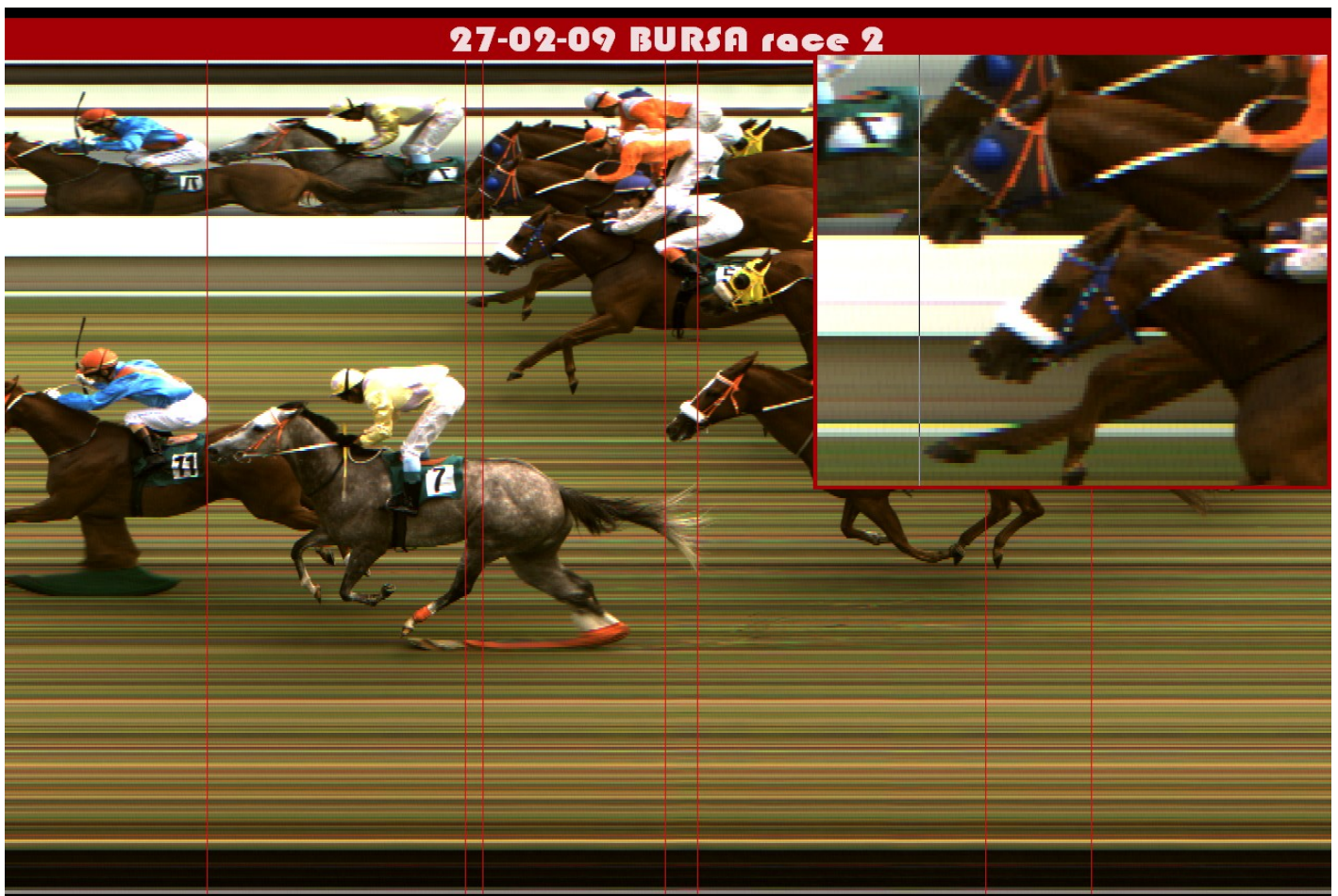
<http://www.csqnetwork.com/horseracecalc.html>. All other tables are possible to implement by TimeTronics.



One example: a print screen of split timing for horse races. This video screen is mixed with the TV cameras. The font, the color of the text, the style, the size, etc are freely programmable by the user.



Add Race information to your video



Show full screen photofinish image with zoom function to show the close finishes. With or without result table

