

*Handicapping Articles*  
**Automatic Paceline Mode Selection**

To compute various pace and velocity numbers it is necessary to select a running line(s) from each horse's past-performance that will represent a fair appraisal of ability. Far from a perfect science, paceline picking is really an educated guess as how the horse will run today. To handicappers, paceline selection can be a tedious chore, so we usually allow the computer software to do the grunt work.

HTR has five automatic paceline modes. Before any line can be chosen the software inspects all characteristics of the running line to insure that it is viable for use. This would include appropriate information about the race, such as the distance, surface, all fractional times and beaten lengths. If any of those components are missing or distorted the line will be rejected and unavailable for use.

**PL-1** - Always selects the last line for every horse. In cases where the last line has incomplete data or the horse did not finish ("lame", "pulled up", etc) the second line is chosen.

Positive: Direct comparison of every horse's most recent start. Tons of studies have proven that a horse's most recent effort is the most predictive for its next race.

Negative: Very unrepresentative for many horses, especially those that ran poorly due to circumstances such as a muddy track or trip trouble. Also weak with horses coming off layoffs of 60 days or more.

Assessment: Very good method for all 2yr races and typical maiden sprints as the most recent start is usually the tip off for today's performance. Also may be the most sensible approach for very cheap horses (5k claiming or less) that cannot reproduce older form due to physical ailments. Since most 2yr, maidens and cheap claiming races are dominated by early-speed, focus on Fr1 and E/P for comparison.

**PL-2** - This method chooses the paceline that features the horse's best Cramer speed figure from it's last three starts. My studies of paceline appraisal revealed that 90% of the time, this is the same as selecting the horse's "best" effort from among the last three starts.

Positive: Selects the line that represents the horse's best recent effort, allowing us to compare all the entrants as to their likely maximum potential. Unlike PL-1, this one forgives an excusable poor last race effort. Horses coming off layoffs also get a more reasonable appraisal.

Negative: Does not consider distance/surface, so the high figure may be unrelated to today's race situation. For example; a big effort on the grass or mud may not relate to what the horse is capable of running on fast-dirt today.

Assessment: PL-2 is excellent for 3yr horses because they tend to have up and down form cycles. The overwhelming majority of 3yr's are going to improve their "top" in a future race so the handicapper is best advised to measure and compare the maximum effort. PL-2 is a weaker method of paceline selection for good older horses, particularly grass runners, since it will not go back further than 3 starts.

**PL-3** - Method that selects the best 2-lines of the last-3 according to the speed figure. The data from the two lines is then averaged to compute the pace and velocity numbers.

Positive: PL-3 irons out aberrations in the horse's recent history and favors more consistent horses. By using two lines there is no danger of over-rating the horse.

Negative: Makes no distinction for distance/surface, so it's possible that the two lines selected could be a dirt sprint and a turf route, for example, and that's a poor mix. Averaging two lines is unfair to 2yr and 3yr that are still developing - it is better to know their maximum potential from a single line.

Assessment: Conservative method that does not allow a horse to be over-rated off a single line. Best used with higher-class horses that are more consistent, but not a good method for youngsters or cheapies.

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**PL-4** - This method was changed from the HTR DOS version. In the DOS program, PL-4 is a one-line approach to Artificial Intelligence (see PL-5 below). The Windows program uses an entirely new approach and selects the paceline with the highest A/P (average pace) that fits the following parameters >

- 1) Running line is less than 6 months old. Horses with 180-day layoffs are "blanked".
- 2) Same surface. One exception here regarding *wet* tracks, a *fast* line can be chosen, but a *wet* track line is never chosen for *fast*-dirt. If the race is on the grass, only turf lines are selected.
- 3) Same or very similar distance, within a furlong.

If the horse has no running lines that qualify under the above rules, then nothing is chosen and the horse will be "blanked" in the velocity readouts. (K-rating will still be computed, but based on other factors).

Positive: Strict method does not permit lines that may be abnormal or un-representative of today's distance/surface situation. Gives a very confident look at the pace match-up when all the horses are accounted for.

Negative: May ignore logical contenders that don't have a qualifying line. Examples of "blanks" would be a horse returning from a long layoff (180 days +) or a sprinter stretching out to route. Any horse making its first start on grass or dirt will be left out.

Assessment: PL-4 is perfect for turf race analysis as you want to compare the horses based on their best effort on grass. Turf racing is fraught with trip trouble and it is wise to determine how the race matches up according to each horse receiving a possible *clean* trip. Very effective with turf sprints. With dirt races, it works best if all the runners can be computed and there are no "blanks". If a dirt race is handicapped using PL-4 and has no "blanks" - the pace match-up will be very accurate as horses will tend to run their best A/P when the pace situation was optimal.

**PL-5** - The default method uses Artificial Intelligence scoring to select one or two lines according to the race situation and the horse's form cycle. Unlike PL-4, this method is 'forced' to select a running line for every horse no matter what the situation.

Positive: Is far more flexible than the other four PL's and selects running lines like a human handicapper. PL-5 can improvise on line selection according to the horse's preference for the distance/surface, while at the same trying not to select a line that is abnormal for the horse. This method also adapts its selection scheme for the various age/sex/class situations.

Negative: PL-5 is often stumped. Since it is forced to select lines for every horse it does overrate some of them. This happens most often with big class droppers and horses coming off long layoffs. Then there is the problem of surface and distance changes - which it handles quite well in most cases - but gets confused at times such as choosing a mud line for a grass race today, or selecting a turf route for today's dirt sprint.

Assessment: Proven and reliable method that combines the best of the other 4 PL modes. The choice for most veteran HTR users. The PL-5 methodology was a true pioneer when the first version was released in 1996 and is the only method ever devised that makes its own decisions rather than relying on "rules".

**PL-0** - This mode allows you to pick your own lines and save them. But the user can begin with any of the other five methods. As soon as you select or change a line, the software automatically switches you to PL-0. You can select your own lines by using any of the PP screens: [FIG1-2] [PPQ] [PP1-2] [FPS]. While viewing a horse's running lines, place the highlighter bar on the line you want to change or select. Press the <enter> key or dbl-click the line. A "#" will appear next to the date to notate the line has been chosen. While in PL-0 you may select as many lines as you want and they will be averaged together.

## Handicapping Articles

### Automatic Paceline Mode Selection - Statistical Comparison

Now let's run some data and compare each of the PL modes side by side with several factors. I tested with a filter that eliminated 2yr races, maidens of all types, turf and wet track races. Those types of races can be handicapped with the various PL modes, but they are more volatile and have considerable "holes" in them (horses with no useful PL data, such as a FTS). I tested fast-dirt, non-maiden races from 6.0f - 9.0f only. Longshots = qualifying winners that paid \$15 and up. About 32,000 races tested in a 2yr sample.

#### Average Pace A/P ranked 1

PL-Mode	Win%	\$ROI	WP%	Longshots
1	25%	0.86	43%	465
2	24%	0.86	41%	513
3	26%	0.85	44%	419
4	26%	0.91	43%	546
5	27%	0.88	42%	527

#### nVEL ranked 1

PL-Mode	Win%	\$ROI	WP%	Longshots
1	24%	0.85	42%	462
2	24%	0.87	41%	549
3	25%	0.85	43%	405
4	25%	0.90	43%	564
5	25%	0.89	41%	566

#### FR1 ranked 1

PL-Mode	Win%	\$ROI	WP%	Longshots
1	19%	0.90	34%	866
2	18%	0.86	30%	855
3	19%	0.89	34%	827
4	18%	0.88	34%	882
5	19%	0.91	33%	903

#### Analysis

I used nVEL in this study as it a factor that tends to balance late runners against early speed types. Fr1 is pure early speed and A/P is the best overall assessment. Good news for PL-4, it surpassed the PL-5 ROI in the critical A/P test. But keep in mind that I kept a very tight lid on the data here allowing only non-maidens and fast dirt races into the sample. PL-5 would probably score a knockout if all types of races were used. PL-5 is still the king with Fr1 and hit the most longshots.

All the PL methods can be useful depending on race circumstances. This test gives us a pretty good indication that PL-4,5 are the best overall with 'bread and butter' races. I suggest cycling through all the PL modes in cases where you are looking for early/late speed dominant horses. If the same runner is ranked on top in all 5 modes, you can be assured that it is an advantage. Consider my suggestions with 2yr and 3yr with PL-1,2 on page-8 as well.

#### Next Month

We'll try a similar test with Grass Routes. It will be interesting to see how PL-4 compares.

#### PL Picking Contest

Our on-line paceline pickers contest continues. It pits PL-5 against players selecting their own lines with PL-0. Check out the results and standings on our website. I'm sorry more players didn't get involved though, as it is a very good handicapping exercise. Big thanks to those of you that are participating!