MAXVEL Software User Guide

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Maximum Velocity Software (MAXVEL) – Installation and Introduction

A new year 2007 brings a resolute set of tools for HTR subscribers. Brand new original software is titled *Maximum Velocity*, accessed with MAXVEL.EXE file. The new program is run separately from HTR2, but uses the same download files. If you have HTR2 already running on your computer, MAXVEL will be no problem to install. Just SAVE the .exe file to your HTR folder and create a new shortcut on your Windows screen. MAXVEL has an icon that looks like a high-tech graph.

You can download MAXVEL now from our website, click on the link and then click SAVE. Be sure the destination folder is **C:\HTR** at first, but the software will run from any folder or drive.

MAXVEL was designed to increase the focus on the running line aspects of the past-performances. The main screen shows two panels in view at all times. The top one has the velocity information along with all the factors that are affected by changes to running line selection. The bottom panel has the past-performances shown one horse at a time.

Features are summarized below ➔

- Highly interactive, lots of button clicking, a laboratory for velocity and pace handicapping.
- User will spend more time on individual horse analysis.
- Greater latitude (ease of use) to inspect every running line per horse.
- Total flexibility over the sorting of the factors, including VEL, (K) and HTR Consensus.
- Highlight-bar placement on the velocity screen has three options for stable viewing.
- An optional variant alternative (VAR2) that does *not* use class pars or speed figure variants.
- New PL modes and an easy method to access all of them quickly.
- Unique modeling for pattern and bias recognition with any race type and current races.

Although it was built on the basic frame of the HTR2 software and the *Robot*, MAXVEL was designed to be a quicker application. The concept was to allow the user to move fast and furious through these normally tedious handicapping methods and have the ability to research rapidly.

MAXVEL – Main Screen Operation (Top)

The initial load screen for MAXVEL is the same as HTR2. The same initial options are available such as Download and Time Zone screens. Click the "eye" as usual to enter. Files are unzipped as necessary and listed at the top in the same manner as HTR2.

MAXVEL Main Screen

The screen has two separate panels →

Top or Upper Screen = Data, velocity, rankings, projected times, etc.
Bottom or Lower Screen = Single horse interaction

Top Section Buttons

[V1]
This is the default top view screen. It shows the complete feet-per-second (fps) ratings, early energy%, as well as the PAC-PER, (K) and HTR. These latter four ratings are also affected when the user changes the running lines from the bottom section. What happened to PED, Wk, TRN and JKY ratings? MAXVEL is a *paceline-driven* application and the intangible ratings are not affected by a change to the line selection. Those items are found in the PP headers and the Program Screen (PRGM) if you need to look at them while working in MAXVEL. Do you need some background or a primer on velocity fps ratings? No need for me to re-write the best text on the subject:- Modern Pace Handicapping by Tom Brohamer available on-line at Amazon.com.

[V2]
Click this button to view the Projected Times chart. This screen takes the fps ratings and divides them into the fractional distance segments for today's race. Approximate times and lengths behind are displayed. You can use this screen to inspect a horse's entire history line by line and assess how fast he projects to run each of his past races today.

[V3]
Complete rankings are shown on this screen. This display also lists all the horses in the race, even first time starters (FTS). The V1 and V2 screens do not display horses that have no running lines selected.

[VAR1]
This is the default option for variant adjustments to the output. Includes projected daily track variant and speed adjustments as provided by Jim Cramer at HDW -- same as used in HTR2 – enables comparison of the numbers across all class levels and race types.

[VAR2]
This option eliminates the daily track variant and minimizes the adjustments to distance and surface equalization only. It should be used to compare the current field on its own; the numbers are not applicable to all other horses outside of the current race. This option has *not* been tested; it is offered for your observation and modeling. One good use of VAR2 is to change the projected times on the [V2] screen, perhaps making them look more realistic and thus the entire race analysis may be improved.

Sort Buttons [PP] ---- [HTR]
These buttons will instantly resort the screen to the factor or column desired. The horse with highest rating will move to the top and all the others follow in order. Early energy% is sorted by highest (see more on energy later in this text). Allows unlimited assessment of the factors in view.

[H1]
Holds the highlight bar on the top header, keeping it out of the way if desired.
[H2]
Holds the highlight bar on the top ranked horse in the selected sort category.
[H3]
Keeps the highlight bar focused on the current horse in view (see bottom section operation) no matter where he ranks in the mix.

MAXVEL – Main Screen Operation (Bottom)

The bottom section of the screen displays a single horse at a time.

[PPQ] [FPS] [FIG2]
Past-performances screen choices for viewing the running lines for each horse. Same basic screens found in HTR2.

[Previous]
Toggles to display the previous horse in field order.

[Next]
Toggles to show the next horse in order.

[Cycle PLs]
Clicking this button toggles through each of the PL modes one at a time.

[PL-0] – [PL-8]
Individually select the PL mode. There is more information to read on the details and methodology for each of the PL methods later in this text.

A key feature in MAXVEL is the ability to rapidly roll through the various PL methods and recalculate the screen instantly for evaluation. Check all PL modes for any unusual changes and surprise positives. Hidden strength for some horses can be found this way.

[Rotate Lines]
This button will toggle through each of a horse's running lines one at a time and re-calculates the data for instant analysis. Use [H3] option to keep the horse in focus with the highlight bar on the top screen. If you click this option, the PL mode automatically switches to PL-0.

Reminder: the selected running line for each horse is shown with a (#) on the far left of its past-performances. Using PL-0 and the <enter> key, or dbl-clicking, you can change these selections manually.

Modeler vs. Robot

The modeler function within MAXVEL has some similarities to the HTR2's *Robot* screen, but don't expect *Robot deja vu* – the Modeler is a whole different concept of statistical analysis and is designed for immediate handicapping rather than long-term research.

Modeler output is an entirely different methodology from the typical testing we do in HTR2 with our Export (db) data or *Robot* tester. Modeling is about looking for recent patterns, bias and the dominant tendencies of winners.

Let's look at some of the differences between *Robot* testing and modeling ➔

Robot
Looking for long-term statistical positives and consistent profits.
Modeler
Uncovering recent (and perhaps hidden) patterns of success or bias with winners. Short term analysis.

Robot
Often look at multiple tracks (universal testing) over long periods to find spot plays or winning combinations of factors.
Modeler
Checking one track for recent win patterns during the most recent month or last 20 –30 races.

Robot
Filtering data with a variety of parameters and factors.
Modeler
Almost always looking at one track / distance / surface at a time. Rarely including additional items, but simple class separation (maiden, claiming, etc.) is a useful option.

In the early 1980's when the *Sartin Group* first began the modeling procedure, they had to do the work by hand, writing down the rankings of the winners after the races were over. After publishing the technique in his book in 1991, this method became known as the *Brohamer Decision Model*. It was as simple as tallying the velocity factor ranks for winners in a few basic categories. The key was that they used a specific track/distance/surface for the procedure. This often uncovered hidden patterns with early/late categories that the general public could not see. Read *Modern Pace Handicapping* chapter VII for more.

The modeler used in MAXVEL is a high-tech advancement over the old methods -- you'll get your data in seconds -- but the concept is still the same, looking at stats to determine if something is repeating or if there is underlying strength in the ranking numbers from recent winners. Then betting the horses that match that scenario in the current race.

A major advancement to our 2007 Modeler is the *Rating*. This is used to immediately identify and compare the various factors for hierarchy of strength and weakness. The Modeling screens are sorted by the highest rated factors. Field size is a key element of the algorithm for the Rating. A horse with rank=3 in a field of 14 has more meaning than rank=3 in a field of 5. This was a drawback of the *Brohamer Model*, it was an observational approach only, but today we can quantify that information more accurately. On the next page are details of the Modeler operation.

Modeler Operation – Race Filters

You'll use the Model screen to quickly evaluate recent races at one track. The left side of the screen has familiar filters for those that use the HTR2 *Robot.* The key item for quick modeling of current races is the "Race Analysis" button and it sets the filters automatically. But you can model virtually any race scenario on your own. I mention the HTR2 *Robot* several times below – if you are not familiar with it, read the *Robot User Guide* in the HTR Library.

The Modeler has functions that you won't be able to duplicate with the *Robot* or even with a db program such as Access. You can instantly evaluate a current race and quickly check all the PL modes with considerable speed to find the most optimal scenarios for horses running today.

To use the Modeler, load up all your files at startup as you would if using the *Robot* or *PPX* in HTR2. You'll want to have at least the last 30 days of files for the focus track in your test folder. If the meet has just started, it will only take about a week to get a good model.

Race Filters

- *Class Type*, *Age* and *Gender* Restriction checkboxes are used for specific race categories if desired. For example: if you want to test Maiden Claimers only, un-check the boxes for *Stk/Alw*, *Clm*, and *Msw* and leave only the checkmark for *Mcl*.
- *State-Bred* boxes allow you latitude over whether you want State-bred or Non State-bred in your sample. Default uses both.
- *Purse Range*. Use this to filter a range of purse values.
- *VI Range*: You can set a range for the VI (Volatility Index) in the Modeler. The lower the VI, the more likely a longshot will win. Range 15-50.
- *Field Size*: this allows you to test various field sizes (number of horses in the race). Typically this is used to separate larger fields.
- *Surface Filters* are the same as those found in the *Robot*. You can manually set these, but they are automatically set for you if you select a race for analysis (see below).
- *Distance Filters* are used to isolate an individual distance, these are also automatically selected by the individual race analysis Modeling.
- *Days Back To Test*: This option allows you to set up the number of days back you want the modeler to test your data. It works by calendar days, not race days. While you can set it for long term, this is not the most advantageous approach. You will rarely want to test past 90 days. The "Race Analysis" tool stops after 20 matches are found no matter how many days back are set. The key to modeling is *recent* data analysis.

PL Modes (PL-1, etc.) and Variant options (VAR1, VAR2) are selected by the handicapper directly in the modeler and can be changed as often as desired during the testing process. More information on these options is found later in this text.

Modeler Operation – Modeler Options and Output

There are four options when using the Modeler to produce useful output =

[Full Stats] = Robot style printout of every factor found in the MAXVEL. All the factors are shown with their entire spread of ranks from 1-10.

[Run Modeler] = This is the custom setup Modeler that uses your selected filters. Setup your criteria, such as distance/surface and class type and choose how many days back you want to test. You can select multiple tracks to test with this option.

[Race Analysis] = Runs data for a single selected race. When clicked, this option automatically sets the track and race filters for you.

A list of races for the current date (or choose any date from the main screen before entering the Modeler) is shown above this button. Choose a track and race number that you want to research and handicap.

There is an option right below to choose distance/surface or dist/surf/class type as the filter choices. You may want to try the second option to start with, but if the data is short (less than 10) then choose the first option to get more races in the sample.

After choosing a race and clicking the [Race Analysis] button, the Modeler will search for the last 20 winners that match the race criteria. You can extend the Days-back to test if 20 matching races are not found. If you want to test more than 20 races, then use the [Run Modeler] option above.

The field for the selected race is shown in post-position order at the top of the output. The stats for the model results and the Rating are shown at the bottom. Read more about the *Rating* on page-15.

[Show Model for this Race] = This is very similar to the above option as it will automatically set the criteria for the selected race. But instead of displaying the field for the current race, it lists all the winners for the past matching races – up to 20.

This list of past winners with all the factor ranks is the classic *Brohamer Decision Model* output.

All of the Model options will display additional information for you perusal →

Early Energy = Low, High and Average
Post Position Bias = Inside, Outside or None
Running Style Bias = Early, Closer, or None
Average Win Mutuel = average win payoff for the matching races in the sample
Longshots = percentage of the winners that paid $20 or more (normal = 17%).

The first three items listed above have a complete output explanation found in the "Advanced Handicapping" sections starting on the next page.

MAXVEL Advanced Handicapping - Page 1

PL-Modes

There are nine PL modes in MAXVEL, (0-8). The first six are the same ones used in HTR2 (0-5).

PL-0 User selected.
PL-1 Selects last line only.
PL-2 Selects the best line of the last three based on performance figures.
PL-3 Selects the best two lines of the last three and averages them.
PL-4 *Selects the best line that is congruent to today's distance and surface condition, last 6 months.
PL-5 (default) Artificial Intelligence method, selects one or two lines based on logical criteria.

PL-6 Selects the horse's best available E/P velocity line, regardless of race conditions.
PL-7 *Selects the best A/P velocity line if within the last 365-days and congruent to today's dist/surf.
PL-8 Selects ALL the lines for each horse, averages them together. Unusual perspective!

***** Note: PL modes 4 and 7 are *not* forced to choose a line. If the horse has no running lines that match the criteria for layoff or today's race conditions, it will be left blank and no velocity numbers computed. The other PL methods, including PL-5, are forced to select a line no matter how incompatible it might be to today's conditions.

Which PL mode is best? It depends on the race. The MAXVEL modeler is a rapid data processor so you can quickly check several PL modes for the strongest factors and highest ratings.

Variants and Adjustments **VAR1 – VAR2**

The velocity factors in HTR2 and MAXVEL are adjusted with several proprietary variants and algorithms to equalize the ratings for all horses as much as possible. This adjustment process seeks to normalize the A/P velocity and PER ratings above all else. This can lead to unusual distortions in the early and late factors when horses change distances, but the A/P and PER will be held accurate for comparison for all thoroughbreds.

Cramer speed figures and variants are used in the default adjustment process (VAR1), particularly for daily track variant computation. This has enabled HTR to provide the most accurate pace and velocity numbers in the business.

The VAR2 available in MAXVEL eliminates the Cramer figure variant but retains the standard HTR2 adjustment process. This means VAR2 will not have ratings that can be compared universally between all horses. VAR2 is only useful for the current race comparison.

I have not researched VAR2 extensively. You can test and model it's effectiveness using the MAXVEL Modeler and compare to VAR1.

RATING - Modeler Output

The *Rating* is the key output for understanding the Modeler data. The Modeler has a sophisticated algorithm that senses the strength of the rankings for winners and computes a Rating for each of the 13 MAXVEL factors based on field size and the depth of the rankings. Rank=1 is weighted higher than Rank=2 etc. But a rank=3 from a field of 14 is more impressive than a rank=2 in a field of 5 and the algorithm addresses that issue for greater accuracy. Below is chart with a basic summary of the *Rating*.

99 maximum rating, most of the winners were rank= 1 in this factor
80 very strong prediction, mostly 1-2-3 ranks are winning
60 good prediction range, try to locate a 60 or higher rating for each race you look at
50 average rating, fair prediction
40 mixed results, factor not reliable
30 negative prediction
10 lowest possible rating, highly negative

MAXVEL Advanced Handicapping - Page 2

Tops - Modeler Output

In addition to the *Rating* score, there are Modeler stats showing the following information about each factor ➔

TOP1 = this is win percentage for rank=1 only.
TOP2 = win rate for ranking = 1 or 2
TOP3 = win percentage for the 1-2-3 ranks combined
TOP4 = win percentage for the top-4 ranks together in that factor

For example: FR2: TOP3 = 70%. This tells us that the horses ranked = 1,2,3 w/ FR2, won 70% of the races. What is considered a good percentage for each of the four? Benchmarks for a strong factor =

30% - 50% - 70% - 85% **Benchmark *Rating* = 60**

Sometimes you'll notice a high percentage with the "tops" that does not seem to correspond with the *Rating*. Also, the factor with the highest win rate, does not always receive the top *Rating* score. There are two primary reasons why this will happen.

1. The Rating takes into account field size. A factor rank= 4 in a field of 5 has almost no meaning, but rank= 4 in a field of 14 has more impact. The final *Rating* algorithm weights the ranking based on the number of horses that ran and gives more credit for larger fields.

2. Many fields are not 100% inclusive with every ranking. FTS (first starters) for instance, don't receive any of them except (K) and HTR. Horses with no PLs, such as with PL-4 or PL-0, will be zeroed out of the ranking mix in most factors. These horses are blanked or "x" on the screen. The *Rating* takes into account the dispersal of the ranks. Some fields with many FTS will have just one or two horses with velocity rankings and they obviously will be 1-2 in every factor. This can greatly distort the data so adjustments are made.

The above brings up an important issue when running your models and handicapping a race. Maidens, PL-0, PL-4, PL-7 will tend to have many blank horses. As mentioned, the *Rating* will attempt to iron out the scores for each factor, but this still leaves a field full of holes to handicap if it is a current race you are looking at. Adjust accordingly, if some of the contenders don't have any numbers to look at, consider the intangibles such as Wk, PED and TRN.

Post Position Bias

You'll see three possible outcomes with this.

1. **INSIDE**
2. **OUTSIDE**
3. **NONE**

If the bulk of the winners are coming from the inside half of the field (keeping in mind again that the Modeler inspects field size), the "Inside" will get the nod. If the majority of horses are winning from out-side posts, the "Outside" is displayed. "None" can mean there is no bias and horses are winning from all post-positions or it could mean the middle posts are strongest. The algorithm I used isn't sophisticated enough to determine the difference, so peruse the Track Profile for greater detail.

Running Style Bias

Output also has three basic designations. It is based on the predominant style of the winners.

1. **EARLY**
2. **CLOSER**
3. **NONE**

The two items above are a summary of information compiled from the winners of the modeled races. They are not predictions for the future, so use them as a guide only.

MAXVEL Advanced Handicapping - Page 3

Early Energy%

If you are not familiar with the concept of Early Energy%, please read *Modern Pace Handicapping* by Tom Brohamer, page-215 "Energy Distribution".

In the past I have printed that my experience with testing early energy (EE%) is like "trying to pin jello to the wall" – just cannot make anything stick. Unlike all the other velocity factors and ratings, EE% can't be ranked with hierarchy of probability. In other words, rank=1 is not more effective than rank=9 by any means. Without some structure, it is difficult to quantify and research with a computer.

The concept of EE% is to locate horses that utilize their running style and pace tactics in accordance to the typical winning energy profile. The MAXVEL Modeler displays the high/low and average range for the winning energy distribution. Some horses will fit perfectly with the normal and many others would seem to be easy eliminations. There are several problems with EE% in terms of contender identification however →

- Track course geometry is the most important aspect to EE% ratings. Horses and jockeys have no control over this. The difference between 1-turn and 2-turn (or even 3-turn at bullring tracks) is significant and can make comparison difficult between the various racecourses.
- Jockey pace characteristics exert a major influence on EE%. Riders will rate their horses according to their perception of how the race is typically won. For example, at 5.5D they will probably go all out to gain position, but at 9.0T, they would hold the horse and stay away from the lead and save the energy for late in the race.
- Young horses tend to run full blast from the gate. Their energy ratio will be very high at the beginning of their career and drop down as they mature and learn to conserve their energy. With any age group, pace duels are common and produce a suicide pace that distorts the energy on the high end.

Winning a horse race is usually not about running the perfect energy profile. Consistent successful horses are able to improvise on any pace situation and will run a variety of energy ratios in their top efforts. Closers tend to be more dependable as they will reserve themselves off the pace at the same rate of speed most of the time. Although the late runner may have recurring EE% ratings, they don't win as often because they need the horses in front of them to fail, usually due to suicidal fractions.

Having said all that I'm not ready to ignore the EE% in my handicapping yet. A single simple distinction that came up with the MAXVEL convinced me that there is some method to the madness. It was the sorting of the EE% on the screen from high to low. Unlike the other factors on the screen, high EE% has no meaning in terms of probability of winning, but is useful for evaluating the pace setup (or "matchup"). Take a look at the example field below, who do you like based on the EE% alone? Sorting like this helps us to see possible pace scenarios and who it might favor.

```
Normal energy 6.0D for this track (from the Modeler)
     = 52.50%
HorseA  53.79%
HorseB  53.66%
HorseC  53.52%
HorseD  52.93%
HorseE  51.30%
HorseF  50.59%
```

The first four horses have high-energy ratings. "D" is in the best shape if he can rate off the other three. But clearly A-B-C want to run fast from the start and that may wipe them all out. Can "E" and "F" win the race? Maybe, but their profile is a little low, they'll need help up front, and might get it here. At least the EE% sort in MAXVEL has enabled us to ponder it again.