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Favorite ALL-Ways™ Newsletter Articles

Pace Handicapping with Brohamer Figures

Part 4 of the 4 Part Series
"Turn-Time" and Series Wrap Up

This is the final part of our four-part series covering the groundbreaking concepts in Tom Brohamer's book, "Modern Pace Handicapping", based, in part, on the Sartin Methodology to which Tom Brohamer was a key contributor. With permission from both Tom Brohamer and Howard Sartin, these concepts have been implemented in ALL-Ways Handicapping Software. This fourth part of the series looks at the concept of "Turn-Time". Turn-Time, when used with other pace and/or other handicapping information, is a very useful tool for assessing a horse's current form, for identifying and measuring its' competitive capabilities and for determining its likely performance in today's race. **This is the power of the "Hidden Fraction".**

The content in this article stands alone. However, if you would like to read Part 1 ("Velocity Based Pace Figures") and/or Part 2 ("The Brohamer Track Decision Model") and/or Part 3 ("Percent Early Energy Distribution"), you will find them in the Favorite Articles Series that is posted in the Newsletter Section of the Frandsen Publishing Web site at www.Frandsen.com.

Even if you are not an ALL-Ways Software handicapper, we suggest reading this and the other articles in the series. The concepts presented are fundamental to effective pace handicapping. And, pace handicapping should, in our opinion, be a part of everyone's analysis of the races. Remember, most races are won by horses that are not the top speed figure horse coming into the race. More often than not, the top speed figure horse does not win because it is not well suited to the pace match-up scenario in the race.

All past ALL-Ways Newsletters, as well as a Major Topic Index, are posted on both the BRIS and Frandsen Publishing Web sites and they are always free. Also, articles already published as part of the Favorite ALL-Ways Newsletter Article series are posted in the Newsletter Section on the Frandsen Publishing Web site and they are free as well. See the links at the end of this article.

Part 4: "Turn-Time"

In the Brohamer/Sartin methodology, a race is divided into three segments called "internal fractions" as shown below.

Internal Race Fractions	Sprints	Routes
Fraction #1:	gate to 2 furlongs	gate to 4 furlongs
Fraction #2:	2 furlongs to 4 furlongs	4 furlongs to 6 furlongs
Fraction #3:	4 furlongs to finish	6 furlongs to finish

The basis for virtually all Brohamer handicapping concepts is the feet-per-second velocity of each horse for each fraction. The calculation for this is to divide the length of the fraction in feet by the horse's time for the fraction in seconds. Here is the example for a six furlong race that we have been using in this series of articles. The Turn-Time for this horse is 57.14 feet-per-second.

Fraction	#1	#2	#3
Furlongs	2	2	2
Feet	1,320	1,320	1,320
Horse's Times	22.2	45.3	70.5
Fraction Time	22.2	23.1	25.2
Feet-Per-Second	59.46	**57.14**	52.38
		▲	
		Turn-Time	

The "Turn-Time" for this horse in this race was 57.14 feet-per-second.

Standing alone, the first and third fractions are not good indicators of a horse's form or overall ability. Late running, non-contending, deep closers may well have the best 3rd fraction figures, but no chance of finishing in-the-money. Early running non-contending horses may well have the top first fraction figures, but start losing ground during the second fraction with nothing left to finish well. The first fraction is also more of a positional issue. Just about any horse can run fast for that short distance. These "one fraction wonders" are generally not good plays. The middle fraction, however, is a different story. It is sometimes referred to as the "hidden fraction" because it is not readily apparent to the public. It is also called the Turn-Time fraction because, in most races, it is run around the closing turn coming into the stretch run.

Pause: Turn-Time in ALL-Ways Software

We are going to pause a little bit at this point so we can look briefly at how Turn-Time is presented in ALL-Ways Software. Even if you are not an ALL-Ways Software handicapper, this brief pause will be helpful when, a little further down, we look at how best to use Turn-Time in our handicapping

ALL-Ways software shows Turn-Time figures in two ways:

1. The Brohamer feet-per-second figures for all three fractions are shown on the ALL-Ways "Brohamer Plus Handicapping Report". This includes the second fraction, which is the Turn-Time figure.

2. ALL-Ways Software also includes the velocity based Hall Pace and Speed Ratings. This includes the Hall Call One figure (the first fraction), the Hall Turn-Time figure (the second fraction) and the Hall Final Fraction figure (the third fraction). These Hall Ratings are also presented on the ALL-Ways Brohamer Plus Handicapping Report. Note: The Hall Speed Ratings and the Hall Compound Pace Ratings are also shown on the same report.

About the Hall Pace and Speed Figures

The Hall figures are also feet-per-second velocity based and go a step further than conventional ratings. Specifically, the Hall figures use a "Conservation of Energy" concept to normalize how each horse's past performance pace and speed figures would have been had the horse run the race at the same track, the **exact** distance and the surface of today's race. The Hall figures are particularly powerful for determining how a horse is likely to perform if it is changing distance in today's race. The Hall Ratings are also based on the same scale as the ALL-Ways and BRIS Race Ratings. This makes it easy to determine how a horse's pace and speed figures compare to the pace and speed figure par times for today's race.

So, a Brohamer Turn-Time (2nd Fraction) may be something like 57.14 feet-per-second. The corresponding Hall Turn-Time figure may be something like 114. A horse with a Hall Turn-Time rating of 114 has demonstrated its ability to run to the Turn-Time Par for Race Ratings of 114 and below. Please refer to ALL-Ways Newsletter #16 for a complete description of Hall pace and speed figures.

Using Turn-Time in Our Handicapping

A Word of Caution

Turn-Time is NOT a good stand-alone handicapping factor. The highest Turn-Time figure in a race may well belong to a deep closer that has no hope of finishing in-the-money. **So, when handicapping a race, Turn-Time should always be considered along with other pace figures and/or other handicapping information as we discuss below.**

Turn-Time: Evaluating Form

Quoting Tom Brohamer: "The ability to handle the turn in an efficient manner is a characteristic of a fit horse."

There are three things to look for to evaluate a horse's form:

1) Look for recent improvement in Turn-Time coupled with the running of a good race, which we define as an in-the-money finish or within 2 lengths of the winner in sprints or within 3 lengths of the winner in routes.

2) Look for recent improvement in Turn-Time coupled with an improved first fraction rating (Brohamer First Fraction or Hall Call One).

3) Look for recent improvement in Turn-Time coupled with an improved Early Pace (EP) rating. Early Pace is always measured from the gate to the 2nd call (4 furlongs in sprints and 6 furlongs in routes). The Brohamer EP and Hall EP ratings are all measured at the 2nd Call.

On the other side of the ledger, unless there is a valid excuse, downgrade horses with declining Turn-Time. A horse whose current form indicates an inability to maintain or improve its position around the turn is a poor candidate to run a good race.

Turn-Time is a dependable indicator of form at all class levels. It is particularly powerful and may well be the very best indicator of form at lower level tracks.

Turn-Time: Evaluating Ability

We will start this subject with a general "truth" about pace. Horses with a good pace figure in only one of the three fractions are poor candidates to do well in the race. You should look for horses that have good figures in at least two of the three fractions. Far more often than not, the two good pace fractions are contiguous. So, the real contenders in a race will generally exhibit one of the two situations shown below.

	First Fraction	Second Fraction	Third Fraction
		Turn-Time	
Horse A	Good	Good	OK
Horse B	OK	Good	Good

Horse "A" is typical of a solid front running horse with an "E" or "EP" running style that is capable of sustaining its pace through the turn. Here is another Tom Brohamer quote: "I know of no better bet in racing than a solid front running type capable of dominating his rivals in the second fraction."

Horse "B" above is typical for a solid late running horse with a "P" or "S" running style. It does not wait for the final fraction to make its move.

Another word of caution here: Be careful if you have to replace the "OK" with "bad" in the third fraction for Horse A or the first fraction for Horse B. Horses with good first and second fractions are good candidates to finish in-the-money provided they do not typically "crater" in the final fraction. Horses with good second and third fractions are good candidates to finish in-the-money provided they are within reasonable touch of the leaders at the end of the second fraction. This requires an "OK" first fraction.

There are two ways to identify "good" figures:

- First, since pace is all about match-ups between horses in a race, "good" can simply mean the horse has pace figures in the top 2 to 4 figures for all horses in the race. Of course, you also do not want a significant unfavorable gap disadvantage in the figures between the horse and the horses with higher figures.

- The second way to define "good", and our personal choice, is to compare the Hall figures to the Race Rating to see if the horse has demonstrated its' ability to run to Par.

Turn-Time: Handling Race Situations

Let's start with an example. Here are the Hall figures for three horses in a recent race at Belmont. The race had a 114.8 ALL-Ways Race Rating.

Hall Pace Figures

	First Fraction	Second Fraction Turn-Time	Third Fraction
Horse A	112	114	116
Horse B	113	112	111
Horse C	106	110	121

Note: These three horses were tied with the highest speed figure.

One Hall pace rating point represents about 1/2 length. We can combine the first and second fractions to project the positions of the horses at the 2nd Call. Horse "A" will have a short lead on Horse "B" at the 2nd Call (226 – 225 = 1, about 1/2 length). Horse "A" will have a big lead on Horse "C" (226 – 216 = 10, about 5 lengths). And, notice how Horse "A" is picking up momentum in the turn while Horse "B" is losing momentum. Horse "C" is too far off the pace and waits too long to make its run. Horse "C" would need a better Turn-Time to catch Horse "A". As expected, Horse "A" won this race and paid $9.30 for the win.

Multiple Early Runners: With multiple early pacesetters ("E" and "EP" horses), use Turn-Time to determine which of the early runners will be able to hold or improve their position in the turn and which will be losing their momentum against the other pace setters. Those that lose momentum in the turn will most likely not figure in the race. Turn-Time is a particularly powerful tool for separating two closely matched horses with "E" running styles. Here is another "truth": An early runner that will face a lot of pace pressure had better have a solid Turn-Time rating or it will be eliminated before entering the stretch.

Lone Pacesetter: When evaluating a lone pacesetter, the question is simply whether the horse will hold its' advantage going into the stretch with a good Turn-Time performance or will it be giving up the advantage it gained in the first fraction. If it is giving it up its early pace advantage, the horse can safely be eliminated. Stated another way: A horse with a solid Early Pace advantage at the 2nd Call (the end of the second fraction) should be downgraded if it has a substandard Turn-Time. This is because its high EP rating came primarily from a strong first fraction followed by a poor second fraction. It has no momentum entering the stretch.

Late Runners: Turn-Time is very useful for evaluating late runners as well. This works particularly well for turf races and long routes. Turn-Time will show you which of these late runners start there move in the turn and have good momentum for the stretch drive. If these runners are in touch with the field at the 2nd Call (end of the second fraction), they are solid candidates for an in-the-money finish.

Turn-Time: Some Spot Plays.

- Look for horses that have good first Fraction and Turn-Time figures and poor third fraction figures that are getting Lasix for the first time in today's race.

- Look for horses that had a good first fraction, poor Turn-Time and a good third fraction in their last race. These are the kinds of pace figures that are typical of "V" pattern horses. These are horses that did well early in the race, backed off in the turn and came on strong again in the final fraction. These "V" pattern horses are a favorite angle play of a lot of horseplayers.

- A horse taking a significant class rise today and that has a Turn-Time at or above Par should be competitive. It can probably handle the class rise. If the horse has a below Par Turn-Time, you can generally expect it to have trouble at the higher class level.

- Turn-Time is a good handicapping factor to evaluate whether a horse coming off its maiden win in its last race will be competitive in today's race. Again, if the horse's Turn-Time is at or above Par, it will probable be competitive today.

Summary

Turn-Time, when used with other pace and/or other handicapping information is a very useful tool for assessing a horse's current form, for identifying its capabilities and for evaluating its likely performance in today's race. Perhaps most important, adding Turn-Time to your handicapping arsenal will help in finding higher paying horses that the public misses. That is the power of the "hidden fraction".

Pace Handicapping with Brohamer Figures
The Wrap-Up

Part 1: "Velocity Based Pace Figures": Part 1 explains how to calculate each horse's average feet-per-second velocity for each of the 3 Internal Fractions of a race and how to use these values to calculate the Brohamer Compound Pace Ratings as shown below. Part 1 also explains how to use these Brohamer pace figures in your handicapping.

Internal Race Fractions	**Sprints**	**Routes**
Fraction #1:	gate to 2 furlongs	gate to 4 furlongs
Fraction #2:	2 furlongs to 4 furlongs	4 furlongs to 6 furlongs
Fraction #3:	4 furlongs to finish	6 furlongs to finish

- **Early Pace (EP) Pace Rating = Second Call distance/Second Call time**
- **Sustained Pace (SP) Rating = (EP + 3rd fraction)/2**
- **Average Pace (AP) Rating for sprints = (1st fraction + 2nd fraction + 3rd fraction)/3**
- **Average Pace (AP) Rating for routes = (EP+ SP)/2**
- **Factor X (FX) Rating for sprints only = (1st fraction + 3rd fraction)/2**

Part 2: "Brohamer Track Decision Model": Part 2 introduces a unique way to look at the pace demands ("Pace Bias") for each type of race run at a track that is based on the Brohamer concepts of Early Pace (EP), Average Pace (AP) and Sustained Pace (SP). The bias is shown in the "Track Decision Model". Part 2 then explains how to determine how well a horse's Brohamer EP, AP and SP **rankings** line up with these pace demands. Here is an example of a Decision Model:

Track Decision Models for One-Mile Dirt Routes at Calder Race Course

Track	EP	AP	SP	FX	Total
Win Model	4	3	2	n/a	9
Place Model	4	4	5	n/a	13

Part 3: "Percent Early" Energy Distribution: Part 3 Introduces the innovative Sartin Methodology concept of determining a horse's preferred "Energy Distribution" pattern and evaluating how the pattern matches the energy distribution demands for each race type run at the track. This is referred to in ALL-Ways Software as "%Early. Here is the %Early formula:

Total Energy = EP + Third Fraction
%Early = EP / Total Energy

The %Early Zone at Calder Race Course for One-Mile Dirt Routes

	Low %Early	Median %Early	High %Early
Win Horses	50.9%	52.0%	52.9%
Place Horses	51.4%	52.3%	53.3%

Part 4: "Turn-Time": The fourth and final part of this series of articles covering the innovative and powerful Brohamer and Sartin pace handicapping methodologies explores the "power of the hidden fraction", which is the 2nd Fraction in a race and referred to as "Turn-Time".

Sample Brohamer Figures for a Six Furlong Race

Fraction	#1	#2	#3
Furlongs	2	2	2
Feet	1,320	1,320	1,320
Horse's Times	22.2	45.3	70.5
Fraction Time	22.2	23.1	25.2
Feet-Per-Second	59.46	57.14	52.38
		▲ Turn-Time	

Early Pace (EP)	Average Pace (AP)	Sustained Pace (SP)	Factor X (FX)
58.28	56.33	55.33	55.92

Early Pace (EP) = 2640/45.3 = 58.28
Total Energy = 58.28 + 52.38 = 110.66
%Early =58.28/110.66 = 52.67%

Turn-Time = 57.14 feet-per-second

Using ALL-Ways Software to Handicap with the Brohamer/Sartin Concepts

We are grateful indeed to both Howard Sartin and to Tom Brohamer for giving Frandsen Publishing their permission to include their innovative pace methodology in ALL-Ways Handicapping Software. The first big advantage of this for ALL-Ways handicappers is that they do not have to make any of the calculations. ALL-Ways Software automatically makes all the Brohamer pace figure calculations for every horse and maintains the required pace bias models, both the "Track Decision Model" and the "%Early Energy Distribution Model", for every type of race run at the track. And, all of this is presented in a simple summary format on the ALL-Ways "Brohamer Plus" handicapping report. The "Brohamer Plus Report" also includes the velocity based Hall pace and speed figures mentioned earlier in this article. The information is also included as parts of other standard ALL-Ways handicapping reports, including the "Pace-Line Report", the "Search Report", the "All Pace Report" and the "Spot Play/Final Process Report".

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Frandsen Publishing is also the developer of ALL-Ways Handicapping Software. ALL-Ways is serious software for professional and serious horseplayers. Phillips Racing Newsletter calls ALL-Ways Software "absolutely the best free handicapping tool on the market" and gives ALL-Ways a 9 ½ rating … the highest ever awarded. And, ALL-Ways Software is FREE!

More about ALL-Ways Software

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