Computer Handicapping: Workouts

by Joe Mainardi

Everybody has a theory on workouts! Unfortunately, a majority of people use one of two methods. The first method is to devote an **entire** notebook to all of the possible workout combinations. This method is fine... but very time consuming! By the time you have applied all of the workout rules to a first-time starter maiden race, the field is turning for home! The second method --which is found to be in use at every track-- is to listen in on a conversation, where a self-proclaimed workout expert says "They was holdin' him back in his last work, just look at what he did three works back... 47 and 4 for a half!" or some such nonsense. Unfortunately, this method is often as reliable as a psychic in determining the **true value** of a workout.

Over the years, I have found myself using both methods. In the "early" days, the second method was as good as anything else I could understand... besides, my only job was finding the loudmouth quickly enough. After graduating from the "loudmouth expert" method, I realized that I would need a 3-ring binder to store my wealth of information. I painstakingly typed in the information and stuffed it into a notebook.

What was in this "magic" notebook?!? MY FORMULAS!!! Every good formula is based on reliable data. One of the things I determined was that workout times are *generally* the same at any track. I know that some of you will disagree with this, so let me explain. Even though a workout at one track may be different due to the way a surface is prepared, the horses are being targeted at a specific time. This negates the small difference in track preparation. It is also due to the fact that workouts are almost always run slower than a real race.

Another discovery was that there are two basic styles of workouts. Before continuing, let's talk about a measure of velocity I use called **seconds per furlong**. Simply divide the workout time by the number of furlongs in the workout. An example is a 3 furlong workout run in 36.30 seconds would have a seconds per furlong of 12.10 seconds. Let's get back to those style explanations.

The first workout style is the **speed** workout. These are the three, four and five furlong workouts. You will see much faster seconds per furlong speeds with this style, as most trainers use these distances to emulate the finish of a race. The second workout style is the **stamina** workout. These are the six and seven furlong and one mile workouts. The slower seconds per furlong speeds are attributed to the fact that most trainers use these distances to build stamina in their horses.

Now that styles have been established, the next task is to determine value **thresholds**. These thresholds are then attached to words that people traditionally associate with a workout: **excellent, very good, average,** and **below average**. Later on, I'll show how actual numerical values can be attached to the workouts.

The information in my old notebook was numerical data that was perfect for computerization. The first table shows the **excellent, very good** and **average** workouts for distances from 3 furlongs to 1 mile; anything below the average workout threshold is considered... **below average**. These thresholds are for the "handily" workouts, without any adjustments for "non-standard" conditions. If you have compiled times that differ from these, feel free to replace the "standard" times listed below. Note that these numbers are in hundredths of a second, with each 1/5 equaling .20 seconds.

In addition to thresholds, you next need to consider the "non-standard" conditions: "breezing" workouts, "wet" tracks, "dogs up" runs and "gate" works. The table below shows how to offset the thresholds from the "standard" table above. Simply add the number(s) to the threshold "standard" table values to adjust the threshold to the condition change(s). Both tables are shown here.

Distance	Excellent	Very Good	Average
3f	:35.10	:36.10	:37.10
4f	:47.20	:48.30	:49.40
5f	:59.30	1:00.50	1:01.70
6f	1:12.30	1:13.60	1:14.90
7f	1:25.40	1:26.80	1:28.20
1m	1:38.60	1:40.10	1:41.60

Condition	3f to 5f	6f to 1m
Breezing	1.2 sec.	1.4 sec.
Gate	0.4 sec.	0.4 sec.
Wet OR dogs up	0.6 sec.	0.8 sec.
Wet AND dogs up	1.0 sec.	1.4 sec.

Just in case this doesn't make much sense, here are a few examples. A breezing workout with the "dogs up" would change the four furlong **excellent** threshold to :49.00 (:47.20 + 1.2 + 0.6). The same conditions would change a six furlong **excellent** workout to 1:14.50 (1:12.30 + 1.4 + 0.8).

Up to this point, you have a useful tool, but it is incomplete! What's missing? I'm glad you asked! The first step is to assign a numeric value to each workout. In part 2 of this article, we will factor in training patterns to come up with a final value for a series of workouts. But, let's tackle one concept at a time.

In assigning a value to an individual workout, **Hor$ense** uses a simple calculation. By using the **excellent** threshold (with any necessary adjustments) as my starting point, I can simply subtract the workout time from it. The next two steps are to multiply the difference by 5, and then add 100 to the number. For an easy example, you can use the two tables above to prove that an unadjusted **excellent** workout of :47 1/5 for 4 furlongs is equal to a "breezing, dogs up" workout of :49 flat have the same value of 100. Another example shows that two workouts under "breezing, dogs up" conditions would yield the following scores: a 4 furlong workout of :48 3/5 calculates to an **excellent** 102 points [((49.00 - 48.60) * 5) + 100], and a 6 furlong time of 1:15 2/5 comes out to an **above average** 95.5 points [((1:14.50 - 1:15.40) * 5) + 100]. Now that wasn't so bad was it? Now, let's look into the theoretical part of workouts... the dreaded trainer patterns!!!

Now we enter the world of the unknown, or at least not totally proven... those dreaded workout patterns! **Hor$ense** bases "training patterns" on a combination of "days away" from the most recent workout to the current race, and the number of "days between" workouts. It's not perfect, but it's a solid numerical theory that I was able to program. I use the "days away/days between theory" to add a factor to the final value of the workouts. The "days away" table appears below, and is totally independent of the distance run in the last workout. The result is the DA Factor. The "days between" table is a little more complicated. The "DB/FW" column means "days between or furlongs worked" and needs some explanation. The DB Factor is based on comparing the most recent workout to any workout(s) that follow. Both tables are shown below.

Days Away	DA Factor
0	0.5
3,4,7,8	0.95
5,6	1.0
9,10	0.85
1,2,11+	0.75

DB/FW	DB Factor
same	1.1
different	1.0

There are ways to meet the "bonus" criteria. The first way is if a subsequent workout is the same number of days since the "days away" value. The second, and more complicated way, is if the distance of a subsequent workout (in furlongs) is the same as the "days away" value, and the "furlongs per days between" is between 0.75 and 1.25 furlongs per day. If either case is true, the DB Factor will be 1.1; otherwise a DB Factor of 1.0 is used. Of course, a few examples will follow the table.

Keeping in line with our previous examples, let's say that the :48.10 workouts was run four days before the current race. The DA Factor equals 0.95. Let's next assume that the previous workout of :50.50 was run five days before. What is the DB Factor? It's 1.1, because the distance of the workout in furlongs (four) is the same as the original "days away" value and the furlongs per day of 0.8, from four furlongs in five days, is acceptable.

If the workout before the :50.50 was NOT four furlongs and NOT four days before, the DB Factor would switch back to 1.0. Once the DB Factor converts to 1.0, it can not change to 1.1, as the "training pattern" has been broken! You may have noticed that the DA Factor has a larger spread between the possible low and high values, than does the DB Factor. That's because I believe that the most recent workout is the single most important factor in workout analysis. The DB Factor can only enhance the value of the most recent workout!

The only thing left is to assign an overall score to a series of workouts. Once again, the most recent workout will be more important than any other workout. If you only have one workout, the overall score is easy to determine. Simply multiply the point total of the workout by the DA Factor. In our continuing example, we'll use 104.5 points and a DA Factor of 0.95 to come up with an overall score of 99.28.

If you have more than one workout, you have a little more work to do. I use the "80/20" rule, where the most recent workout is worth 80% of the overall score, and the remaining 20% comes from the average of all other workouts.

From our example, the “80” is worth 83.6 points (0.8 * 104.5). Let's add a third workout value of 94.5 to the second workout, with no "training pattern" change. The “20” is worth 18.7 points [0.2 * ((92.5 + 94.5) / 2)]. The sub-total of 102.3 points is multiplied by the DA Factor of 0.95 and the DB Factor of 1.1, to arrive at an overall score of 106.9 points.

This score is correct, because the "training pattern" earned the horse a 10% bonus. If the trainer had broken the pattern, the overall score would have been 97.19 points. This is consistent with theories that training patterns affect workout analysis.

As a final thought, remember that you can substitute your values in ANY of the tables. These are generic formulas that can be tailored to your theories. If you don't want to go through this type of analysis, just look for your local workout guru at the races OR consult your nearest psychic... your chances are about even with either one!