

Analyses of the May 2008 FEI Race in Compiègne, France Top 10 Finishers

Analyzing the top 10 finishers for the May 2008, Compiègne FEI race, in France, correlations between recovery time at each gate and average speed at that same gate were calculated. A faster horse that recovered faster would have a negative correlation coefficient. Recovery time versus race time would have showed as strong a correlation coefficient but positive since the slope would be positive. Summed recovery times versus total race time were examined, exclusive of the last recovery at the conclusion of the gate.

This was a bit different than the WEC 2008. Since I had significantly less data, I first looked at average speed for each individual pulse hold, from 1-5. The correlation coefficient is really a measure of how well a linear fit can be applied to the data. However, any absolute value greater than 0.4-0.5 indicates a high probability of variable dependence.

For the average speed during a race segment relative to the recovery time, the value of the correlation coefficient were as follows:

correlation (time, speed over hold)					
1	2	3	4	5	6
-0.02453051	-0.44793374	-0.19631272	-0.2097327	-0.73435085	0.61951072

These values were compared per gate: recovery time for that gate versus average speed for that gate. There was no correlation for the first recovery hold between time for recovery and average speed for that leg. Note that pulse recovery values varied considerably from 50 to 64 in the reported results. Similar to the WEC results, after the first recovery time, there was a strong negative correlation between recovery time for an individual segment and the average speed for that segment. Again, the faster horses recovered more quickly.

For the last segment, i.e., no time penalty for recovery and 30 minutes to 64-pulse criterion, the correlation coefficient was strongly positive. Thus, the faster the last segment was, the longer it took the horse to recover. This was the reverse of the case during the race for any individual segment although the average correlation was only about -0.4, ignoring the first recovery period.

As I did for the WEC 2008 results, I looked for the strongest correlations in the data. If you took the total recovery time for gates 1-5 and the average speed through gate 5, inclusive, the correlation coefficient again was about -0.73, very similar to the WEC 2008 results. If you take the total recovery gates 2-5 and the average speed at the finish, the correlation coefficient was about -0.64, a value somewhat less than the WEC results.

In conclusion, if you look at total recovery time as a predictor of race average speed, the faster the horse recovers the faster the horse will traverse the course. There is again a strong correlation between the total recovery time and average speed.

Looking at the last leg or the “free leg”, just as you would expect for a single high speed traverse, the faster the horse went, the longer it took to recover. However, regarding the race itself, recovery time again was a very strong predictor of race performance during the course of the race.

There were a few anomalies in the data; several of the horses had very fast recovery times and relatively slow pace, well outside the statistical predictions. The bottom 5 horses did not show the much faster pace for the last segment that the top 5 horses did. The second place horse actually recovered more quickly than did the first place horse. However, the last lap was 3 km/hour slower. Even the final recovery time was much quicker, approximately 10 minutes rather than the 20 minutes for the first place horse. I suspect the final vet time was predicated upon other factors than pulse recovery.

In conclusion, once again fast recovery was a strong indicator of total race time as well; faster recovery, less time on the course and strongly so. Furthermore, for the last lap, the faster the horse went, the longer it took to recover, strongly so. During the race however, average speed were some 5-10 km/hour slower than the last lap. The winning horse showed a lot more speed on the last segment than did any other horse. Its average speed of nearly 26 km/hour was more than 3.5 km/hour faster than the average of the fastest other three finishers. This very fast last lap had a significant effect on the recovery time at the finish.

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