



A VIEW OF SPORT THROUGH TIMES

LONGINES

Stride pattern frequency and range: two tools used to evaluate stamina

After missing the 'tracking' boat, the French racing world is on the verge of seeing a second opportunity pass it by: namely one afforded by a system which evaluates a horse's stride pattern in terms of frequency and range. This system is only in its infancy but it currently offers some remarkable insights and notably in terms of evaluating a horse's stamina.



City Light, Prix Anabaa

When it comes to overseas, and notably in Great Britain, this system has found its embodiment in the form of the Total Performance Data Company. The AtTheRaces website provides numerous examples of its applications. The first stage consists of collecting a vast amount of data and, to this end, a very specific GPS system has been put in place. This is currently impossible in France. Although an alternative method is possible which consists of having recourse to videos. However, the latter are alas still 'protected' in France, whereas those available on Youtube are few and far between. These are essential preconditions before one gets to the operational stage. On the other side of the Channel, and emanating from a very large base, a study has got underway from which several lessons have already been learned.

Relating aptitude for the distance to stride frequency. Speed is the by-product of stride length times stride frequency. Stride range varies in function of the topography and the state of the ground. On the other hand, stride frequency varies very little according to these criteria, although there is a strong correlation when it comes to evaluating a horse's aptitude for certain distances. The top sprinters over 1,000m have a peak stride frequency capacity of at least 2.5 strides per second. This figure is around 2.35 strides per second for milers whereas the figure for those horses with stamina

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hovers around the 2.3 mark. The explanation is a simple one and, put simply, it is hard to maintain momentum for a long time on the basis of high stride frequency which is energy sapping. When a horse races over the incorrect distance, his stride pattern is out of step in relation to the distance which he is racing over and, often, he begins to pull. Only the very best horses are able to overcome this but the examples are rare. **Winx** (Street Cry) is one of the exceptions. She is able to win over 1,400m when exhibiting a very high cadence which was in the region on 2.6 strides per second. By the same token she won the Cox Plate over 2,040m when her stride frequency factor measured 2.3. The champion racehorse is the one able to vary its stride frequency at will, but above all endowed with a capacity to pick up at the end of a race.

The example of City Light. Having proved a good winner over 1,600m on his debut when a two-year-old, and he made his racecourse introduction in October 2016, the connections of **City Light** (Siyouni), and it's a logical step after a first victory, initially persisted in racing their charge over the above trip. ●●●



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After being tried over a myriad of distances ranging from 1,100 to 1,600m, his optimum trip was finally uncovered in 2018. For he effectively found his vocation during the running of the Prix Anabaa (Course A over 1,300m) on the Chantilly fibresand. He confirmed this impression by following up in the Betway All-Weather Sprint Championships Conditions Stakes (1,200m) – a race he won in good style at Lingfield. A few months later, he managed to snare a splendid second place in the Diamond Jubilee Stakes (Gr1, 1,200m) at Royal Ascot. In this particular example, the study of the horse's stride frequency threw up many useful pointers. At Lingfield, City Light posted a figure which equated to 2.45 strides per second: this would have been insufficient for a horse racing over 1,000m, but is ideal for a horse tackling trips ranging from 1,200 to 1,400m.

Is Too Darn Hot a Derby type? Unbeaten in four starts, **Too Darn Hot** (Dubawi) is considered as the top British juvenile of the 2018 season. Over the distance of 1,400m, he recorded wins in The Darley Dewhurst Stakes (Gr1), The Howcroft Champagne Stakes (Gr2) and the 188Bet Solario Stakes (Gr3) at Sandown Park. An analysis of his pedigree lends to the belief that he can stay the 2,400m trip of the Epsom Derby. He is already favourite for the 2,000 Guineas (Gr1) over 1,600m. During the course of his victory in The Champagne Stakes over 1,400m, his stride frequency rate attained a figure of 2.44; with his stride length reaching a maximum range of 7,7m per stride. One is entitled to think, based on this criteria, that the mile will pose no problems for him. However, it is less certain that he will stay 2,000m, and, as regards staying 2,400m, there is a clear contradiction in terms when the frequency of his stride pattern is

factored in. Yet the study of the parameters relating to a horse's action isn't an exact science. It is relative to the probabilities of finding the right niche, while imperatively having to make allowances for a certain margin of error. It is a useful and, at the same time, complementary tool at the disposal of a horse's connections.

Where does Persian King situate distance wise ★? An impressive maiden winner over 1,600m at Chantilly, **Persian King** ★ (Kingman) confirmed his position as the leading French juvenile by taking the Godolphin Autumn Stakes (Gr3, 1,600m) at Newmarket. One is entitled to ask what will constitute his ideal distance next season. According to 52 per cent of internet users polled on Twitter by myself, he is seen as a 2,000m type. A further 31 per cent believe that he is a miler while only 17 per cent visualise him being a 2,400m horse. In the final stages of his two races at Chantilly, the stride length of Persian King oscillated from 7.5 to 7.7m. The colt also returned a maximum stride frequency score of 2.35 strides per second. This doesn't lend to the belief that he will develop into a first class miler. He probably has the makings of a very good 2,000m type – and one perhaps capable of seeing out 2,400m.

Other uses. Sectional times at the French breeze up sales aren't published - contrary to other countries. However, certain buyers capitalise on the relaxed attitude of the organisers to use their own devices which enables them to record the times of the lots on offer. Having recourse to a system such as Total Performance Data would enable all potential buyers to tap into the stride frequency patterns of those lots for sale. This would act as a potential gauge as to a horse's optimum trip. □

Longines gradually built a special relationship with the world of sport since 1878

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Longines' long-lasting involvement in sports started in 1878 with the first chronograph manufactured by Longines, the legendary 20H movement. Longines gradually built a special relationship with the world of sport. It can rely on many years of experience as a timekeeper for world championships in sport or as a partner of international sports federations.