

# Comparison of the performance and precocity of winners of the most important European classic races

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**ABSTRACT:** Racing performance of winners of European classic races and of two-year-old horses was compared on the basis of two classic races: 1 600–1 609 m (one mile) and 2 100–2 414 m (Derby). The horses included in our comparisons were winners of classic races held in England, France and Ireland in 1993–2002. The performance of the winners of classic races was based on the international classification of the performance of three-year-old horses (Classifications internationales) in kg and lb (rating) and used as the characteristics of performance. Comparisons of the correlations between the performance of winners of the most important classic races and their performance rating as two-year-olds were based on the results of 126 winners of 13 classic races. We calculated Pearson's correlation. The correlation coefficients of all the groups concerned were low ( $r = 0.109–0.325$ ). The correlation coefficient of racing performances was significant ( $P < 0.05$ ) only in the classic mile mare race.

**Keywords:** horses; English Thoroughbred; racing performance; classic races

One of the basic characteristics of the English Thoroughbred is precocity (Misař *et al.*, 2000). Due to this property the English Thoroughbred is capable of achieving the same maximal turn of speed as horses of older age categories already in the first season of performance tests. Based on the conversion of the record-high speed into m/min, Misař (2000) reported record-high performances of two-year-olds achieving the same performance level as the three-year-old or even older Thoroughbreds (Success Express 1 014.08 m/min in B.C. Juvenile, Lycius 1 032.59 m/min in Middle Park St., Delmora 1 041.00 m/min in Prix de la Salamandre, Polish Navy 1 042.55 m/min in Futurity St.). The two-year-olds achieved record-high performances in races intended exclusively for their age category.

In races where the performance of two-year-old horses was compared with older horses, the winners were three-year-old and older horses achieving record-high speed. The reason is the fact that in terms of growth and development the two-year-old horses are not yet fully mature at this age. The weight relief to which the youngest horses have a

right is respected, however it cannot completely eliminate the differences in the physical and psychic maturity of the youngest horses. According to Waksmundský (1974) the English Thoroughbred reaches its maturity at the age of 4 to 5 years. In consequence, intensive training of the two-year-olds and requirements for their repeated maximal performance may have a negative effect on their later performance, i.e. in races for three-year-old and older horses (Miller, 1961; Pouret, 1962; Mathet, 1963; Thibault, 1967; Klement, 1967).

Waksmundský (1974) analysed the effect of the number of starts of two-year-old horses on their performance in races for three-year-olds and he arrived at the conclusion that only a small number of top-class two-year-old performers confirmed their performance rating in races for three-year-olds. He also discovered that the permission for top-class performance three-year-olds to start in races intended for two-year-olds was always very carefully considered.

On the other hand, Dušek *et al.* (1993) made a comparison between two-year-old and three-year-

old Thoroughbreds on German racetracks and discovered a positive correlation between their performances; the values of the correlation coefficients were mean to high and virtually all were statistically significant.

Jiskrová and Svobodová (2003) evaluated the correlation between the performance of winners and placed horses in Czech classic races based on the general handicap and stabilised earnings for their class in the races for two-year-olds; however, their conclusions did not correspond with the results of Dušek *et al.* (1993). When applying the two characteristics of performance, the correlation coefficients of performance of the two compared age groups were low. Based on these coefficients the authors arrived at the conclusion that the top-class three-year-old performer is not, as a rule, an outstanding racing horse in races for the two-year-olds.

Comparisons between the performance of winners of the most important European classic races and their performance at the age of two years have

remained outside of the attention of authors of scientific and research studies. Considering the most important European classic races, it is particularly the classic mile and derby that show long-term stabilised propositions (Misař, 2000). This fact brought us to carry out an analysis where we could compare the performance of winners of European classic races with their performance in races for two-year-olds in dependence on the mileage of the race.

## MATERIAL A METHODS

### Selection of races

Our investigations included winners of selected classic races in England, France and Ireland in 1993–2002 and the following mileages:

1 600–1 609 m (performance of mile winners),

2 100–2 414 m (winners of Derby and/or medium tracks).

The winners of the following races were included in our investigations:

| Race                        | Mileage | Proposition of the race                      |
|-----------------------------|---------|--|
| 1000 Guineas St.            | 1 609 m | three-year-old mares (England)               |
| 2000 Guineas St.            | 1 609 m | three-year-old stallions (England)           |
| Poule d'Essai des Pouliches | 1 600 m | three-year-old mares (France)                |
| Poule d'Essai des Poulains  | 1 600 m | three-year-old stallions (France)            |
| Irish 1000 Guineas St.      | 1 609 m | three-year-old mares (Ireland)               |
| Irish 2000 Guineas St.      | 1 609 m | three-year-old stallions (Ireland)           |
| Oaks St.                    | 2 414 m | three-year-old mares (England)               |
| Derby St.                   | 2 414 m | three-year old stallions and mares (England) |
| Prix de Diane               | 2 100 m | three-year-old mares (France)                |
| Prix Vermeille              | 2 400 m | three-year-old mares (France)                |
| Prix du Jockey Club         | 2 400 m | three-year-old stallions and mares (France)  |
| Irish Guinness Oaks         | 2 414 m | three-year-old mares (Ireland)               |
| Irish Sweep Derby           | 2 414 m | three-year-old stallions and mares (Ireland) |

Table 1. Numbers of winners of classic races

| Sex of winners | No. of races | No. of starts of winners | No. of winners | No. of double winners |
|----------------|--------------|--------------------------|----------------|-----------------------|
| Mares          | 7            | 70                       | 62             | 8                     |
| Stallions      | 6            | 60                       | 53             | 7                     |
| Total          | 13           | 130                      | 115            | 15                    |

## Classification of the winners

The winners were divided into the following groups:

1. mares – winners of 1 600–1 609 m
2. stallions – winners of 1 600–1 609 m
3. mares – winners of 2 100–2 414 m
4. stallions – winners of 2 400–2 414 m

## Performance evaluation

The evaluation of the performance of winners of classic races was based on the international classification of the performance of three-year-old horses (Classifications internationales) in 1993–2002 and was characterised by kg and lb (rating). The same sources were used to evaluate the performance of the two-year-olds. In cases where data on the performance in races of two-year-olds were missing, we used the Graded 1 – Graded 3 performance and the value of 30 kg (66 lb), for the winners of the other races 15 kg (33 lb), for the placed and running horse in the other races 5 kg (11 lb). The performance of horses that did not start in any races as two-year-olds was 0 kg.

## Comparisons between the performance of winners of classic races and their performance in races for two-year-olds

We calculated the correlation between the performance of two- and three-year-olds based on the two performance characteristics – in kg and lb. Pearson's correlation in the UNISTAT programme was used to estimate the correlation of the performance of the winners.

## RESULTS AND DISCUSSION

The results of 115 winners of 13 classic races were used to express the correlation of the performance of winners of the most important classic races and the performance rating in races of the two-year-olds (Table 1).

The mileage of the races ranged between 1 600 m and 2 414 m. The fact that the number of the individual winners of the races did not differ very much from the number of runners (mares – 88.6%, stallions – 88.3%) demonstrates the high selection standard of the races.

Table 2. Statistics of races according to the mileage and sex of winners based on kg

| Characteristics                              | Races according to mileage (m) and sex of winners |                          |                      |                          |
|--|---|--------------------------|----------------------|--------------------------|
|  | 1 600–1 609<br>mares                              | 1 600–1 609<br>stallions | 2 100–2 414<br>mares | 2 400–2 414<br>stallions |
| No. of starts of winners                     | 30  | 30                       | 40                   | 30                       |
| Average kg of winners                        | 53.0  | 55.2                     | 54.2                 | 57.3                     |
| Min kg of winners                            | 49.0  | 50.5                     | 51.0                 | 53.5                     |
| Max kg of winners                            | 59.5  | 60.5                     | 59.0                 | 62.0                     |
| Max/min range                                | 10.5  | 10.0                     | 8.0                  | 8.5                      |
| SD   | 2.41  | 2.22                     | 1.62                 | 2.1                      |
| CV   | 0.045   | 0.040                    | 0.030                | 0.037                    |
| No. of classified two-year-olds              | 16  | 21                       | 10                   | 14                       |
| No. of not starting two-year-olds            | 4   | 1                        | 14                   | 7                        |
| Max kg of classified two-year-olds           | 52.0  | 58.0                     | 51.5                 | 59.0                     |
| Min kg of classified two-year-olds           | 47.5  | 48.5                     | 49                   | 47.5                     |
| Proportion of not-starting two-year-olds (%) | 12.3  | 3.6                      | 31                   | 29.2                     |
| No. of individual winners                    | 30  | 28                       | 35                   | 24                       |

Evidence supporting the continuing polarisation of the capacity of the English Thoroughbred for certain distances is the fact that only 3 mares winning the mile (i.e. 4.8%) were also winners of the Derby race. Here the winners were:

- East the Moon (USA), 1991, Private Account – Miesque (Nureyev) in Poule d'Essai des Pouliches and Prix de Diane,
- Imagine (IRE), 1998, Sadler's Wells – Doff the Derby (Master Derby) in Irish 2000 Guineas and in Oaks St.,
- Kazzia (GER), 1999, Zinaad – Khoruna (Lagunas) in 1000 Guineas St. and in Oaks St.

Only one stallion achieved a similar result, i.e. Desert King (IRE), 1994, Danehill – Sabaab (Nureyev).

Multiple winners were more frequent in the same or approximately the same mileage of the race; the following mares confirmed their class on the derby track:

- Intrepidity (GB), 1990, Sadler's Wells – Intrepid Lady (Bold Ruler) in Oaks St. and Prix Vermeille,
- Carling (FR), 1992, Garde Royal – Corraleja (Carvin) in Prix de Diane and Prix Vermeille,
- Daryaba (IRE), 1996, Night Shift – Darata (Vayran) in Prix de Diane and Prix Vermeille,
- Ramruma (USA), 1996, Diesis – Princess of Man (Green God) in Oaks St. and Irish Guinness Oaks,
- Aquarelliste (FR), 1998, Danehill – Agathe (Manila) in Prix de Diane and Prix Vermeille.

The following stallions were multiple winners in the Derby race:

- Commander in Chief (GB), 1990, Dancing Brave – Slightly Dangerous (Roberto) in Derby St. and Irish Sweep Derby,
- Dream Well (FR), 1995, Sadler's Wells – Soul Dream (Alleged) in Prix du Jockey Club and Irish Sweep Derby,
- Montjeu (IRE), 1996, Sadler's Wells – Floripedes (Top Ville), in Prix du Jockey Club and Irish Sweep Derby,
- Sindar (IRE), 1997, Grand Lodge – Sinntara (Lashkari) in Derby St. and Irish Sweep Derby,
- Galileo (IRE), 1998, Sadler's Wells – Urban Sea (Miswaki) in Derby St. and Irish Sweep Derby,
- High Chaparral (IRE), 1999, Sadler's Wells – Kasora (Darshaan) in Derby St. and Irish Sweep Derby.

The following stallions were multiple mile winners:

- Bachir (IRE), 1997, Desert Style – Morning Welcome (Be My Guest) in Poule d'Essai des Poulains and Irish 2000 Guineas,
- Rock of Gibraltar (IRE), 1999, Danehill – Offshore Boom (Be My Guest) in 2000 Guineas St. and Irish 2000 Guineas St.

None of the mares were multiple winners in mile races.

The statistical characteristics given in Table 2 show the selection standard of the rated races and the standard of the race class of the winners. The performance of the winners is expressed only in kg, because rating is a classification converted to lbs. Since the correlation of the results of races expressed in kg and in lb was high ( $r = 0.9-1$ ), we used only one performance characteristic – kg.

Out of the statistical characteristics, the narrow range of data on the average performance of classic winners deserves our attention (4.3 kg); it proves the stable level of the race class of classic winners, and also confirms that the variability in performance of the winners is low ( $CV = 0.030-0.045$ ), at the same time confirming the data of Misař (2000). According to this author's findings the variability of record-high speeds in the European classic races reached values ranging between  $CV 0.017$  (Oaks St.) and  $0.043$  (Irish 2000 Guineas).

Nureyev – Peinture Bleue (Alydar), the winner of the Prix du Jockey Club Peintre Celebre (USA), 1994, was rated the highest performance. The following stallions reached or exceeded the 60 kg limit:

- double winner on the derby track Montjeu (IRE), 1996, Sadler's Wells – Floripedes (Top Vile) – 61 kg,
- winner of 2000 Guineas St. Mark of Esteem (IRE), 1993, Darshaan – Homage (Ajdal) – 60.5 kg,
- double winner of the derby track Sinndar (IRE), 1997, Grand Lodge – Sinntara (Lashkari) – 60 kg.

The top-performance mare was Ballanchine (USA), 1991, Storm Bird – Morning Devotion (Affirmed) – 59 kg; as the sole winner of the classic race of mares (Oaks St.) topped the three-year-old stallions in the Irish Sweep Derby. The performance of the following mares drew near:

- winner of Oaks St. Moonshell (IRE), 1992, Sadler's Wells – Moon Cactus (Kris) – 57.5 kg,
- winner of Irish Guinness Oaks Pure Grain (GB), 1992, Polish Precedent – Mill Line (Mill Reef) – 57.5 kg,
- winner of Prix de Diane Egyptband (USA), Dixieland – Egypttown (Top Ville) – 57.5 kg,

Table 3. Correlation between the performance of winners of classic races and their racing class in races of two-year-olds

| Characteristics            | Races based on the distance (m) and sex of winners |                          |                      |                          |
|----------------------------|--|--------------------------|----------------------|--------------------------|
|                            | 1 600–1 609<br>mares                               | 1 600–1 609<br>stallions | 2 100–2 414<br>mares | 2 400–2 414<br>stallions |
| Pearson's correlation      | 0.325  | 0.305                    | 0.109                | 0.203                    |
| 95% interval of confidence | 0.040 <> 0.613                                     | 0.062 <> 0.600           | 0.407 <> 0.209       | 0.169 <> 0.525           |
| T – statistics             | 1.818  | 1.696                    | 0.677                | 1.098                    |
| Probability                | 0.0399   | 0.0505                   | 0.2513               | 0.1408                   |

– winner of 1000 Guineas St. Ridgewood Pearl (GB), 1992, Indian Ridge – Ben's Pearl (Tapon Wood).

A surprising result is the race class of the double classic winner Bachir (IRE), 1997, Desert Style – Morning Welcome (Be My Guest) – 50.5 kg, achieving the lowest evaluated performance in the category of stallions. Among the mares the poorest performance was achieved by the winner of the Irish 1000 Guineas Lahan (GB), 1997, Unfuwain – Amanah (Mr. Prospector), and with mere 49 kg (rating 110 lb) is the worst classic winner in the whole period of the international performance evaluation. The winning mare in the same race, Hula Angel (USA), 1996, Woodman – Jode (Danzig) with 49.5 kg, came the closest to this performance.

Table 3 shows the correlation between the performance of winners of classic races and their class in races of two-year-olds. The correlation coefficients were low in all the groups ( $r = 0.109$ – $0.325$ ). The correlation coefficient between the two evaluated performances was significant ( $P < 0.05$ ) only in the classic mile races of the mares. No correlation in the performance of derby winners in the two seasons was confirmed. These findings do not fully correspond with the conclusions of other authors. The correlation between the two- and three-year-old horses in mile races is demonstrated particularly by one of the basic characteristics of the English Thoroughbred – precocity (Misař and Jiskrová, 2001). The high proportion of internationally classified two-year-olds (70% of mares, 75% of stallions) among the winners of mile races is another proof. In terms of the three-year-old winners of mile races, only 4 mares (12.3% of winners) and 1 stallion broke their maiden first time out in races for the three-year-olds. The proved correlation in performance in both seasons on mile races does not correspond with the findings of Jiskrová and Svobodová (2003) and

does not confirm the conclusions of Waksmundský (1974).

On the contrary, the correlation between the performances of both age categories on Derby races confirms the previous findings of the above-mentioned authors. Trainers of horses qualified to run Derby races focus the performance of their horses especially on the most prestigious distance. The merit of such an orientation is to grant the tardy horses sufficient time during the races for two-year-olds to complete their physical and, in particular, psychic development. These perspective derby horses generally break their first time out not earlier than in races for three-year-olds (in our group about one third of the horses), or, as two-year-olds, the number of their starts in easier races is limited and, as a rule, they start at the end of the racing season of two-year-old horses.

The following top-performance stallions ran for the first time in races of two-year-olds:

- Dream Well (FR), 1995, Sadler's Wells – Soul Dream (Alleged),
- Commander in Chief (GB), 1990, Dancing Brave – Slightly Dangerous (Roberto),
- Hernando (GB), 1990, Niniski – Whakilyric (Miswaki),
- High Rise (IRE), 1995, High Estate – High Tern (High Line),
- Anabaa Blue (GB), 1998, Anabaa – Allez les Trois (Riverman).

The following mares started for the first time as three-year-old double winners:

- Daryaba (IRE), 1996, Night Shift – Darata (Vayrann),
- Ramruma (USA), 1996, Diesis – Princess of Man (Green God),
- Aquarelliste (FR), 1998, Danehill – Agathe (Manila),

– Kazzia (GER), 1999, Zinaad – Khoruna (Lagunas).

The preparation of other horses, which were considerably spared in races for two-year-olds for their performance in Derby races, was similar:

– Intrepidity (GB), 1990, Sadler's Wells – Intrepid Lady (Bold Ruler),

– winning mare of Irish Guinness Oaks Wemyss Bright (GB), 1990, Dancing Brave – Bahamian (Mill Reef),

– winner of Derby St. Lammtarra (USA), Nijinsky – Snow Bride (Blushing Groom),

– winning mare of Irish Guinness Oaks Petrushka (IRE), 1997, Unfuwain – Ballet Shoes (Ela Mana Mou),

– winning mare of Prix de Diane Egyptband (USA), 1997, Dixieland – Egyptown (Top Ville).

Based on the results of Pearson's correlation and supplementary information we see a different approach to preparations and engagement of the horses in the mile and Derby classic races. Their performance in mile races corresponds with the precocity of the English Thoroughbreds. This is the reason why the milers are usually subjected to a more intensive training in races for two-year-olds and to more thorough examinations of their form. In this connection we cannot neglect the economic aspect of keeping a racing horse and the requirement for a return of the costs. As a rule, the performance in Derby races is associated with later physical and psychic development of the racing horse's organism. For this reason the owners and trainers very frequently implement the so-called Derby programme, the principle of which is to avoid the overloading of potential winners of Derby races. A compensation for the high costs of this programme may be a winning horse, or placing the horse in the most prestigious races with the highest purses.

## ABSTRAKT

### Porovnání výkonnosti a ranosti vítězů nejvýznamnějších evropských klasických dostihů

Pro porovnání výkonnosti vítězů evropských klasických dostihů s jejich výkonností v ročníku dvouletých jsme vybrali klasické dostihy na vzdálenosti 1 600–1 609 m (mílové vzdálenosti) a 2 100–2 414 m (derby vzdálenosti). Do sledování jsme zařadili vítěze vybraných klasických dostihů Anglie, Francie a Irska v období 1993 až 2002. Hodnoty výkonnosti klasických vítězů jsme převzali z mezinárodní klasifikace výkonnosti koní ročníků tříletých (Classifications internationales). Charakteristikou výkonnosti byl generální handicap v kg a rating v librách. Vztah výkonnosti vítězů nejvýznamnějších klasických dostihů a jejich rovinové třídy v sezoně dvouletých jsme porovnali na výsledcích

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126 vítězů 13 klasických dostihů. Byla vypočtena Pearsonova korelace. Hodnoty korelačního koeficientu ve všech hodnocených skupinách byly nízké ( $r = 0,109-0,325$ ). Závislost hodnocených výkonností byla průkazná ( $P < 0,05$ ) pouze v mílových klasických dostizích klisen.

**Klíčová slova:** koně; anglický plnokrevník; dostihová výkonnost; klasické dostihy

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