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# TRC



## The world's #1 dirt sire

Curlin takes the top spot in  
our new rankings category

Also inside: The infectious enthusiasm of the owner in the lurid kilt / U.S. racing can significantly reduce horse fatalities / Sir Michael Stoute: an antidote to a modern curse / Why the one horse who ran faster than Justify in the Preakness was only third / What They're Thinking: Dawn Lupul

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# Curlin is top of the pile in the new TRC Global Dirt Rankings

James Willoughby | May 23, 2019

Point Of Honor (Javier Castellano) wins the Black Eyed Susan at Pimlico last Friday for the world's #1 dirt sire, Curlin. Photo: Jim McCue

*The TRC Global Sires Rankings takes a major step forward this week with the introduction of new categories for both Dirt and Turf stallions.*

CURLIN (+7pts, #10 from #16) is the inaugural TRC Global Rankings #1 Dirt Sire in the world after a sparkling treble at the weekend.

Hill 'n' Dale's magnificent son of Smart Strike produced G2 Black-Eyed Susan winner Point Of Honor, plus a pair of G3 winners, also at Pimlico, trained by three different men and ridden by three different jockeys.

Starting this week, we are delighted to extend our classification of Sires on all surfaces to rankings specific to dirt and turf. We hope this resource will be especially useful because, in addition to the usual TRC mantra regarding the predictive power of our numbers, we have designed these new rankings to be complementary, so that it is easily possible to understand how a sire's overall ranking breaks down by surface.

Let's take some examples of a turf-only sire, a couple of more versatile sorts regarding the surfaces of their offspring's success, plus a dirt-only sire.

The obvious choice of turf-only sire is the great Galileo. In the Overall classification, the Coolmore leviathan is #2 with 1055pts. He is also #2 in Turf with 1064pts, and the difference between the two is accounted for by the absence of any record on dirt.

By contrast, world #1 Dubawi has proved more versatile regarding surface. Overall, he has 1084pts, with 1080pts in the Turf standings, added to which is a #12 standing in the Dirt rankings from a small sample of runners, mainly in Dubai.

So, Galileo's overall ranking is 9pts lower than his turf-only mark, while Dubawi's is 4pts higher. Again, the difference lies in the contrasting record of the two stallions on dirt.

A stallion whose record is even more surface-independent is the late Scat Daddy.

In the Turf classification, he lies #7 with 1035pts, while on Dirt he can be found at the same #7 spot with 1010pts (there are fewer dirt races around, so there is greater uncertainty over the sustainability of a dirt stallion's record, which is something we really care about from a predictive standpoint).

These records combine to make Scat Daddy world #3 sire in Overall, with 1046pts.

Another interesting stallion is War Front, sire of the G1 Preakness winner War Of Will on Saturday but actually better known for his grass

## TRC Global Rankings 26 May 2019 – Sires Dirt

Rank	Name	Modal Country	Points
1	<b>Curlin</b>	USA	<b>1033</b>
2	<b>Candy Ride</b>	USA	<b>1030</b>
3	<b>Quality Road</b>	USA	<b>1027</b>
4	<b>Tapit</b>	USA	<b>1019</b>
5	<b>Into Mischief</b>	USA	<b>1011</b>
6	<b>Lookin At Lucky</b>	USA	<b>1010</b>
7	<b>Scat Daddy</b>	USA	<b>1009</b>
8	<b>Medaglia D'oro</b>	USA	<b>1008</b>
9	<b>Malibu Moon</b>	USA	<b>1007</b>
10	<b>More Than Ready</b>	USA	<b>1003</b>

runners. In the Turf ranking, War Front is #21 with 1017pts, while in Dirt he is actually #14 with 999pts.

So, War Front's Overall standing is higher than in Turf, with 1019pts, making him #17.

We don't want to get into implying that a stallion's runners are better on turf or dirt, because this is an oversimplification. The Turf-Dirt split is quite often a function of the predominant racing surface in the part of the world where a stallion's stock proliferates, and a circular effect may be at work leading trainers to campaign the runners of a stallion on a particular surface just because that is his reputation.

This important caveat is similar to the notion that, say, world #1 jockey Ryan Moore is not necessarily the world's best rider (though it is a good bet he is one of them) because, like every jockey, his record is strongly related to the opportunities afforded him as stable jockey to Aidan O'Brien and first choice, when available, for Sir Michael Stoute. Those two

great trainers know a thing or two about good jockeys, and their call on Moore buttresses the notion that he is worthy of the status that our rankings allot him.

When it comes to stallions, any number of factors shape their success and failure, only one of which is their natural potency. But we don't need to know this independent of other factors for ranking purposes because we make no claim that this can be measured by our data.

We hope the surface-specific classifications available every week now will provide more useful information about the trajectory of the world's best stallions. We have tested their performance extensively for months now, and we have not taken this step of releasing them until we are sure they behave just as well as the Overall category when going live.

A major part of this exercise was back-testing. As part of this process, we have retrospectively produced the new surface-specific rankings

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*“we have designed these new rankings... so that it is easily possible to understand how a sire’s overall ranking breaks down by surface.”*

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for every week back to January 2014, bringing them into line with our other rankings.

You may find the Dirt rankings, in particular, interesting. In the table underneath, they are summarised historically, showing that we make Tapit the most successful dirt sire in the period under study, ranking him #1 for

more than three and a half years (188 weeks).

You should be able to discern how stable these numbers are - despite the sample-size being a lot smaller than for stallions on turf. Only three other sires have been our world #1 on dirt – present #1 Curlin, Candy Ride and, right at the start of the epoch, Empire Maker.

One final note: there is no reason why a stallion with mostly dirt runners should not rank #1 overall. Tapit, for instance, peaked at 1062pts, which would make him just 22pts off the top right now (Dubawi, 1084pts) and would actually have ranked #1 overall at a few points in rankings history.

All-time Rank	Sire	Modal rank	Highest rank	Weeks at No.1	Weeks at No.2	Weeks at No.3	Weeks in top 10	Max points
1	<b>Tapit</b>	1	1	188	60	2	280	<b>1062</b>
2	<b>Curlin</b>	1	1	81	71	32	210	<b>1043</b>
3	<b>Candy Ride</b>	4	1	14	19	50	196	<b>1032</b>
4	<b>Bernardini</b>	4	2	0	33	31	207	<b>1030</b>
5	<b>Ghostzapper</b>	6	2	0	21	34	208	<b>1029</b>
6	<b>Quality Road</b>	3	2	0	5	29	86	<b>1027</b>
7	<b>Medaglia D’oro</b>	5	3	0	0	30	187	<b>1026</b>
8	<b>Empire Maker</b>	2	1	8	32	34	69	<b>1025</b>
9	<b>Unbridled’s Song</b>	5	2	0	4	19	234	<b>1023</b>
10	<b>Uncle Mo</b>	6	4	0	0	0	107	<b>1023</b>
11	<b>Henny Hughes</b>	13	2	0	22	14	146	<b>1021</b>
12	<b>Scat Daddy</b>	21	4	0	0	0	57	<b>1021</b>
13	<b>Malibu Moon</b>	7	4	0	0	0	122	<b>1018</b>
14	<b>Lookin At Lucky</b>	5	5	0	0	0	47	<b>1018</b>
15	<b>Giant’s Causeway</b>	4	2	0	17	5	97	<b>1015</b>
16	<b>Flatter</b>	11	5	0	0	0	60	<b>1015</b>
17	<b>Awesome Again</b>	3	3	0	0	21	44	<b>1013</b>
18	<b>Pioneerof The Nile</b>	8	5	0	0	0	81	<b>1012</b>
19	<b>Speightstown</b>	6	3	0	0	3	77	<b>1010</b>
20	<b>Into Mischief</b>	10	2	0	16	12	102	<b>1010</b>





The man in the kilt: Bev Hendry at Meydan on World Cup day indulging in a little campaigning on behalf of his favorite horse. Twitter photo

# The infectious enthusiasm of the owner in the lurid kilt

Laura King | May 15, 2019

*The tranquil, leafy, paddock at Saratoga. One man stands out. His bright white teeth and easy smile suggests American, the lurid pink kilt suggests otherwise. Meet Bev Hendry, founder of Hot Scot Racing.*



Hot Scot Racing's Riflescope, ridden by Tadhg O'Shea, winning at Meydan in February. Photo: Dubai Racing Club/Erika Rasmussen

That Hendry is outgoing goes without saying: he's rarely seen on a racecourse without some form of tartan clothing and is a passionate supporter of racing; both in his adopted homeland and further afield in Dubai.

Born in Aberdeen, Scotland, he founded Hot Scot Racing in 2007, but was a huge fan of the sport way before that. Settling back in the conservatory of his Florida home, he takes up the story, which involves a pub, some fellow expatriates and a very good horse.

"In 2007, I lived in Fort Lauderdale and a group of friends and I would go to this pub called Waxy O'Connor's, where lots of racing guys would come in from Gulfstream. We had a corner where we'd watch racing and we called it 'Waxy's Stable'. There was this Irish guy called Jack Lally, who owned horses, and he said to me, 'Why don't you come to Gulfstream on Saturday, I've got a horse running in the Mr Prospector.'

"The horse was called Kelly's Landing. I went and sat with the owner, the horse wins, I'm in the winner's circle and the trainer starts talking to me; a guy called

Eddie Kenneally, another Irish guy; a really likeable guy. He said: 'You know, you should get into racing.'"

It probably didn't hurt that Kelly's Landing went onto even bigger success, winning the 2007 G1 Dubai Golden Shaheen at Nad Al Sheba. His exploits reignited the racing flame in Hendry, who grew up watching the sport in Scotland. "My first book was the Sporting Chronicle, as it was then," says the 65-year-old. "I used to bet sixpence each way and stuff like that. We were from Aberdeen in Scotland, so the nearest track to us was Perth [nearly 90 miles away]."

Hendry's natural enthusiasm and unbridled passion for racing hide a sharp business brain. He's the chairman of Americas at Aberdeen Standard Investments and divides his time between working in Philadelphia during the week and the 'Hot Scot Farm' in Ocala at weekends. His partner, Christine Hosier, an experienced horsewoman with names such as Claiborne Farm and the Jockey Club of America on her resume, is also based in Florida.

"The reason it's Hot Scot Racing Stable is that I was Scottish and I lived in Florida and it was hot, nothing to do with 'this guy's hot' or anything like that," he says, somewhat sheepishly. "Looking back on it, maybe I shouldn't have called it that. Our colours are Scotland's Lion Rampant flag, which is yellow with a red lion."

Back in 2007, Hendry was on the hunt for the first horse to carry those distinctive new silks.

"By now, my two kids had just finished college in America, which is very expensive, so I had some disposable income and I disposed of it! I bought a horse at the Ocala sales in February 2007; he was by Cherokee Run and we called him Cherokee Scot.

"It was group of us from Waxy O'Connor's, and I was the major shareholder. First time out, he ran great and finished third in a really tough Maiden Special Weight at Churchill Downs, so we're all really excited about that; he could be a Derby horse; Saratoga horse.

"So we're driving up to Saratoga when we get the call from the trainer: horse has bowed a tendon. Usual stuff; usual nightmare. But we still went to Saratoga,





Above: Hot Scot Racing carried out a fun campaign to try to get Riflescope invited to the Al Quoz Sprint on Dubai World Cup day. It included writing the horse's name in sand on various beaches and historic sites across the Middle East, including Wadi Rum in the Jordan Desert near Aqaba. Twitter photo

Right: Bev Hendry and partner Christine Hosier at the Dubai World Cup meeting



Above: "I've never been so happy with a horse." Bev Hendry with the trophy after Riflescope's victory at Meydan in February. Photo: Dubai Racing Club/ Erika Rasmussen

had great fun, met more people, networked and really just got into the business. Cherokee Scot came back after eight months' rest but was never the same; they never are."

He might not have been, but Cherokee Scot performed an important role in that he got his majority owner entwined in the thrill of ownership. It snowballed from there.

"I started buying regularly at the Ocala sales, one or two. That's where I met Christine, and she was able to pick out horses. My expertise is handicapping, so I would pick out the claimers and she would pick out the yearlings and the 2-year-olds. We've had some great success pinhooking, which is mostly all up to Christine, and we've started breeding our own horses."

At the moment, there are seven horses based on the ten-acre Ocala farm, including a Gio Ponti filly and a flashy Freud yearling colt, who Hendry has already named Forever Jung. They also have a Big Drama 2-year-old, Captain Flint, who is soon to join trainer David Fawkes, and recently welcomed a homebred filly foal by American Pharoah.

Despite all this, Hendry says his attention is moving outside America. In March 2018, he was in Dubai for the World

Cup meeting and decided on a whim to drop in at the Horses In Training sale. Once there, he was advised by a friend to take a look at the 5-year-old Raven's Pass gelding Riflescope. He and Christine liked what they saw and duly purchased the horse; on credit card, no less.

Riflescope rewarded their faith, winning a turf handicap in February this year. Hendry was there to see it, having flown to Dubai with the air miles he garnered from buying the horse on his Amex card. The subsequent scenes won't be forgotten soon by anyone who was there.

"My biggest success and most fun was definitely Riflescope winning at Meydan. I've never been so happy with a horse," he grins. "He's now our biggest-earning horse in Hot Scot history. Hopefully he'll go on and do even better next year."

Riflescope failed by just a nose to earn an invitation into the \$2 million Al Quoz Sprint on Dubai World Cup night, despite an energetic social media campaign by his owners, which included writing the horse's name in sand on various beaches and historic sites across the Middle East.

"We had a lot of fun trying to get him into the Al Quoz Sprint, travelling all over the world, making Twitter pictures and

giving the Meydan group a hard time, but it was all in good spirits. He was just a little bit short of it, but he seems to be improving. We'd like to get some more horses to Dubai; we've had so much fun there that I'm scaling down my racing in the U.S. and focusing more on there and on partnerships."

### Preakness runner

More immediately, Hot Scot can look forward to a Preakness runner, being part of the Bourbon Lane syndicate.

"We've got a small share in Bourbon War, who just missed out on the Kentucky Derby. But it's in a partnership, it's not the same as Hot Scot; it's more fun when you see your silks and your colours. You get your name on the programme and everything else.

"The guys at Bourbon Lane are great fun, but I'm only a small shareholder with hundreds of others. It's still very exciting when the horse does well - and I think partnerships are definitely the way to go - but it's still much more fun when it's your own horse."

Those at Meydan on that February evening can attest to that: a Hot Scot Racing winner is a lot of fun indeed.



## **DOMESTICALLY DOMINANT**

British-bred horses won 15 of the 30 races at  
Royal Ascot in 2018


## **UNIVERSALLY UNRIVALLED**

British trainers won 37 overseas G1s in 2018, more than  
double any other nation



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Racing now has some new technological tools and the equine veterinary talent to address the problem of pre-existing injuries and significantly reduce breakdowns in training and racing. Photo: NYRA.com

# U.S. racing can significantly reduce horse fatalities, but do we have the courage to do it?

Charles Hayward | May 21, 2019



*In my most recent View from the Rail, I wrote about a new technological innovation, the Positron Emission Tomography (PET) scan machine, which for the first time provides imaging of the fetlock (ankle) joint while a Thoroughbred is standing.*

This equipment is designed to aid in the detection of pre-existing conditions in horses in advance of a race or training. The Stronach Group had just announced it was collaborating on the purchase of a PET scanning machine with the Dolly Green Research Foundation and the University of California-Davis. It is still being tested and will be installed at Santa Anita for this fall's racing season.

During my research, I took the opportunity to communicate on this technology with Rick Arthur, who is the Equine Medical Director of the California Horse Racing Board and a doctor of veterinary medicine at University of California-Davis.

The PET machine had been developed by a team of veterinary doctors at UC-Davis headed by Dr Matthieu Spriet. At that time, Dr Arthur told me there were many significant projects being funded by the Grayson-Jockey Club Research Foundation on track surface and equine musculoskeletal research projects. Dr Arthur is a foundation board member and a highly regarded equine veterinarian.

Shortly after my article was published, I received an email from foundation president Jamie Haydon with extensive material on the foundation's recent activities, including the 2019 funded projects and a summary of the research recently conducted on track surface and musculoskeletal issues.

A total of \$1,338,858 is going to eight new projects at seven universities, nine continuing projects and three career development awards.

The 2019 slate of research brings Grayson-Jockey Club Research Foundation's total since 1983 to more than \$27.5 million, underwriting 366 projects at 44 universities.

The work will return tremendous value and innovation to the Thoroughbred racing and breeding industry.

To demonstrate the significance and opportunities represented by these research projects, let's examine three 2019 projects that directly relate to the prevention of catastrophic breakdowns in racehorses.

For lay readers like myself, I have asked each of the three lead researchers the same four basic questions, which will provide some insight into the scope and goals of each project.

### **Standing PET imaging of the Thoroughbred racehorse fetlock**

**Lead researcher: Matthieu Spriet, University of California-Davis**

Validation of a PET technology for early detection of fetlock lesions in standing horses to prevent catastrophic breakdowns in racehorses.

*In a sentence or two, could you provide a simple statement about what the main goal is of this project?*

The goal of the project is to validate a new Positron Emission Tomography (PET) scanner to be able to image the fetlock of the Thoroughbred racehorse using standing sedation. This scanner will provide a three-dimensional bone scan, which will allow the detection of early changes that precede fetlock breakdowns not currently amenable to other diagnostic imaging techniques.

*Are there any industry practices or procedures that need to be reviewed or changed based on your current work?*

We know from years of study through the necropsy program that pre-existing changes are associated with most fatal injuries. There is currently no reliable way to identify these precursor signs, especially in the high-risk fetlock joint. Pilot PET data obtained under general anesthesia have shown that PET can identify osseous changes that are not recognized with any other imaging modalities (X-rays, scintigraphic bone scan, CT or MRI).

*If industry changes are required, will they be changes in the state law or the rules for regulatory vets, practicing vets at the track, track operators, trainers and owners?*

The primary goal with developing the standing PET scanner is to

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*“The best outcome would be that the PET images would allow veterinarians to identify specific changes that tell them a horse is at risk of breaking down.”*

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provide practicing vets at the track a better tool to diagnose fetlock issues. Gaining more accurate information will help to improve veterinary treatment and rehabilitation of injuries, and, most importantly, prevent from racing horses that are at risk of fatal injuries. I'll leave it up to others to discuss rules and regulations.

*If possible, it would be helpful to know in layperson's terms what you would view as the best outcome for your important work?*

The best outcome would be that the PET images would allow veterinarians to identify specific changes that tell them a horse is at risk of breaking down. Horses undergoing rehabilitation could be monitored with PET. Theoretically, training and racing programs could be studied with PET findings. PET allows for quantification of bone turn-over. We will be measuring the bone turn-over and work on establishing threshold values beyond which horses are at higher risk for breakdowns.

### **Robotic CT for assessing of bone morphology**

**Lead researcher: Kyla Ortved, University of Pennsylvania**

Preventing catastrophic injuries in the Thoroughbred racehorse screening fetlock joints using standing CT and biomarker analysis.

*In a sentence or two, could you provide a simple statement about what the main goal is of your projects?*

The overarching goal of our proposal is to develop a screening method

for identifying horses with bone injury prior to development of catastrophic injuries or irreversible joint damage using a standing, robotic CT to assess bone pathology associated with training.

*Are there any industry practices or procedures that need to be reviewed or changed based on your current work?*

The standing CT could be used to screen horses during training or racing.

*If changes are needed, will they be implemented by changes in the state law or the rules for regulatory vets, practicing vets at the track, track operators, trainers and owners?*

I believe changes will need to be adopted by the entire team provided the CT is a useful way of screening horses. If all stakeholders buy in, I believe screening tools will be much more effective at preventing injury.

*If possible, it would be helpful to know in layperson's terms what you would view as the best outcome for their important work?*

The best outcome would be determining that the robotic, standing CT is a useful tool for monitoring the fetlocks of training and racing Thoroughbreds so that we can catch injuries at an early stage, thereby preventing catastrophic injury and/or development of arthritis. Horses with early damage detected can have modifications to their training made to allow the bone to heal and the horse to return to its normal routine following healing.

### **Training programs for prevention of fetlock injury**

**Lead researcher: Sue Stover, University of California-Davis**

Predicting proximal sesamoid bone fractures in racehorses from a calibrated computational model that incorporates training programs, track surface properties and bone's reparative processes.

*In a sentence or two, could you provide a simple statement about what is the main goal of your project?*

Our goal is to prevent proximal sesamoid bone fractures, and thus the largest cause of fatalities, by understanding how horses' training and racing programs and race surface properties promote, or protect horses from, the development of this fracture. In addition to improved understanding, novel training and racing programs and surface recommendations will be designed for injury prevention.

*Are there any industry practices or procedures that need to be reviewed or changed based on your current work?*

Sesamoid bone fractures are known to occur in horses that exercise at a high level of exercise intensity, and on stiff, hard surfaces. Changes to reduce the pressure on trainers to train and racehorses at a very high intensity should be beneficial for injury prevention – and not only fatal injury prevention but reducing racehorse attrition due to mild injuries (and the associated insidious, huge



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*“We know how injuries develop. We know the risk factors.  
We need to take risk and implement change, then assess the  
response to the change and change again.”*

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economic costs to the industry).

Standards need to be developed for the mechanical behavior of surfaces to allow the design of surfaces using different materials in different environmental conditions to achieve a standard behavior optimized for injury prevention.

Catastrophic injuries are only the tip of the iceberg. Mild injuries, which are the earlier stages of catastrophic injuries, adversely affect the ability of the racehorses to perform and remain sound – and cause huge attrition (loss of racehorses from racing) to the industry. Preventive measures to reduce catastrophic injuries will also prevent milder injuries and reduce racehorse attrition.

*If changes are required, will they be implemented by changes in the state law or the rules for regulatory vets, practicing vets at the track, track operators, trainers and owners?*

Possibly – all of the above. First, we need to understand the pressures that influence how trainers train and race horses and how racetrack managers manage racetracks. We can give the best recommendations for injury prevention, but, if the recommendations are not implementable under the socioeconomic structure of racing, they will never be followed.

For example, if a racetrack says a trainer can only have a stall for a horse if the horse races frequently, a recommendation to exercise less intensely is unlikely to be followed. In this example, the inventory of racehorses at a racetrack needs to be sufficient for horses to train and race at a level that allows them to

remain uninjured, while filling the races of the racetrack.

Race dates, foal crop, owners with money, all influence a trainer's behavior. A similar concept would apply to the management of race surfaces – what surface materials for what climate and how can the race dates be managed to allow refurbishing of materials when needed.

*If possible, it would be helpful to know in layperson's terms what you would view as the best outcome for your important work?*

Prevention of injuries – racing a horse should be as safe as flying in an airplane (barring the 737Max debacle) – and it can be. We know how injuries develop. We know the risk factors. We need to take risk and implement change, then assess the response to the change and change again, until injuries and safety are no longer an issue. For full descriptions of each of the three projects visit <https://bit.ly/2HJSBIG>

I chose these three initiatives because they all are concerned with developing technology and protocols that can surface and identify pre-existing conditions before a horse races or trains resulting in a breakdown.

Moderate progress has been made since the creation of Equine Injury Database, but it is not enough. The mainstream media, social media and animal rights groups are demanding a reduction in racehorse breakdowns in training and races.

The industry knows that an overwhelming majority of breakdowns occur with horses that have pre-existing injuries. The industry now has some new technological tools and the equine veterinary talent to address this problem and significantly reduce breakdowns in training and racing.

I hope that everyone has come to understand that a spike in breakdowns at one track in the country is not a regional issue. Santa Anita is certainly a high-profile racing association but, if a smaller regional track has the next breakdown spike, the entire industry is going to pay the consequences.

Dr Sue Stover said it best in answer to one of my questions, “We can give the best recommendations for injury prevention, but, if the recommendations are not implementable under the socioeconomic structure of racing, they will never be followed.”

We are fortunate to have an organization like the Grayson-Jockey Club Foundation that is willing to do the research in funding and paying for the talent that can advocate for and protect our most valuable asset, the horse.

We all need to work to support the Grayson-Jockey Club Foundation important initiatives, which will save and transform our racing industry.

People in the industry bemoan the fact that racing does not have a commissioner. Think of the Grayson-JC Foundation as the commissioner of important equine welfare on and off the racetrack.



# 17%

blacktype winners  
to runners

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## FATHER FIGURE

From their 2014 to 2017 crops only two European sires have a percentage of blacktype winners to runners over 13%. Frankel and his sire Galileo.

*Statistics supplied by [www.arion.co.nz](http://www.arion.co.nz) to 29th May 2019*

## FRANKEL

2008 b h Galileo - Kind (Danehill)

2019 Fee: £175,000 1st Oct Special Live Foal

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JUDDMONTE

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# Sir Michael Stoute: an antidote to a modern curse

James Willoughby | May 23, 2019

*Last week we honoured one European training legend when the great Andre Fabre won a Performer of the Week award. This week we honour another ...*

## TRC TRAINER OF THE WEEK

There were several possibilities here. Honourable mention should go to multiple scorers Aidan O'Brien (no change, stays #4), Brad Cox (+6pts, #15 from #18), Ciaran Maher & David Eustace (+6pts, #39 from #47), David Hayes, Ben Hayes & Tom Dabernig (+3pts, #39 from #43), John Gosden (+4pts, stays #5), Mark Casse (+4pts, #23 from #25) and Steve Asmussen (+3pts, #14 from #13).

Note that the highly ranked O'Brien makes no gain from a pair of G3 wins because his nine runners finished 112445569, which is in line with expectations based on his exceptional three-year record.

But Trainer of the Week honours must go to SIR MICHAEL STOUTE (+5pts, #13 from #14) after 6-year-old Mustashry won

the G1 Lockinge Stakes and 5-year-old Crystal Ocean the G3 Al Rayyan Stakes, both at Newbury.

The veteran Newmarket trainer's reputation with older horses is well deserved. Let's take a look at his record by the age of the horse in Group races since 2011:

Age	Wins	Places	Runs	SR	G1	G2	G3
2	1	5	22	4.5	0	1	0
3	23	52	146	15.8	3	5	15
4	38	53	180	21.1	9	12	17
5	18	13	57	31.6	2	6	10
6	3	6	30	10.0	1	1	1
7	1	1	3	33.3	0	0	1
4YC+	60	73	270	22.2	12	19	29

Sir Michael Stoute: no fewer than 60 of his 84 Group/Graded wins since 2011 have come with horses at least four years old

The table makes Stoute's modus operandi clear: during an age in which many horses have their potential ruined by being pushed too hard, too soon, Stoute is the antidote. No fewer than 60 of his 84 wins since 2011 have come with horses at least four years older, and he has an outstanding 30%+ strike rate with 5-year-olds.

Mustashry, a ready winner of the Lockinge, has never been better than he is at six. It is likely that few trainers would have managed him to a European G1 win.

Barbadian Stoute, who was gaining his eighth Lockinge victory in a storied career, has won the British trainers' championship ten times and saddled the Shergar to win the Derby (the trainer's first of five wins) back in 1981.

It has been great to witness the trainer's return to prominence in the last few years. In successive years since TRC Global Rankings began in 2014, we have placed Stoute #14, #16, #11, #13, #7 and #8 at best in each season.

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# Why the one horse who ran faster than Justify in the Preakness was only third

Paul von Hippel | May 17, 2019

*Long strides don't necessarily bring victory. New stride data sheds light on why Justify won the 2018 Preakness — and why he almost lost.*

Justify winning last year's Preakness: Tenfold (white cap), the horse who ran marginally faster, is hidden on the far side. Runner-up Braazo is on the nearside. Photo: Jim McCue



## Our obsession with stride length

Racing fans are obsessed with stride length. At the Kentucky Horse Park, along the sidewalk toward Man o' War's tomb, a pole marker proclaims that the great stallion's stride was 28 feet long. Nearby poles claim that John Henry's stride measured 25½ feet, and Secretariat's 24.

The Park may exaggerate Man o' War's stride. The likely source is a vague account in the November 6, 1920, issue of the *Thoroughbred Record*, in which an unnamed 'Eastern expert', using an unknown method to analyze 'action photographs' of Man o' War's match race with Sir Barton, reported that Man o' War's stride had an "average length of ... over 25 feet, while the maximum strides reached 28 feet."

A better documented measure of Man o' War's stride, measured from hoofprints on the track after the 1920 Lawrence Realization Stakes, was 24 feet 8 inches.

The Horse Park's claim that Secretariat's stride measured 24 feet has stronger support. In 1978, MIT engineering professor George Pratt, writing in the *American Journal of Veterinary Research* with veterinarian James O'Connor, analyzed high-speed (300-frame-per-second) film of six-stride excerpts from races where Secretariat broke records in 1973. According to Pratt and O'Connor, Secretariat's stride measured 24 feet 2 inches near the end of the Belmont Stakes and 24 feet 3 inches near the end of the Marlboro Cup.

The equine geneticist Byron Rogers later corroborated Pratt and O'Connor's measurements by counting Secretariat's strides between furlong poles in YouTube videos of the 1973 Kentucky Derby and Belmont Stakes. Rogers reported that Secretariat's stride averaged 24 feet 6 inches during the fastest furlong of both races, and 23 feet 10 inches during the final furlong of the Belmont.

By my own count, Secretariat had a 25 foot 4 inch stride during the final furlong and a half of the Marlboro Cup, while his stablemate Riva Ridge had a 23 foot stride and finished second.



The stride-length pole markers at Kentucky Horse Park. Photo: <https://www.ecauldron.net/forum>

## But are long strides enough?

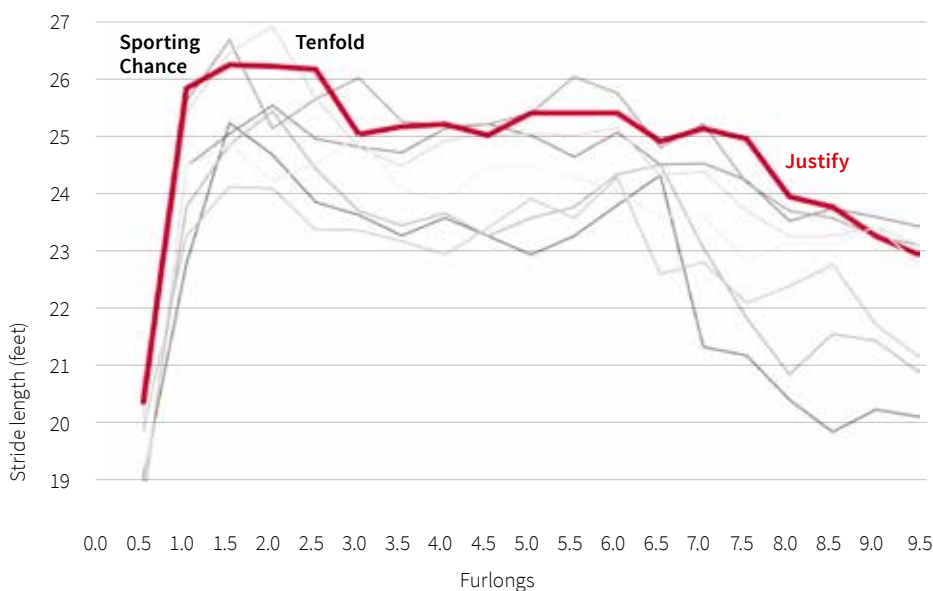
But how impressed should we be by a horse with an average stride length of 24 or 25 feet?

It's hard to know without comparing the strides of other racehorses, but until recently stride data on ordinary racehorses was hard to come by. That changed, though, in 2016, when a company called Total Performance Data, in partnership with Equibase, began counting the strides and tracking the distance covered by every horse at selected racetracks in the U.S. and UK.

Total Performance Data is something like an equine FitBit; the company's GPS tracking devices, equipped with accelerometers, fit in horses' saddle cloths and transmit live data using radio frequencies. .

Thanks to Total Performance Data, we now have data on millions of strides by thousands of horses — not just a few strides by champions in top races. Here, for example, are the average stride lengths for each half furlong of the 2018 Preakness Stakes — not just for the winner, Justify, but for all eight starters.

## 2018 Preakness Stakes





While accelerating through the first half-furlong, Justify's stride averaged 21 feet. His stride reached 26 feet during the second furlong, settled to just over 25 feet through the middle half of the race, and then shortened through the last two furlongs, reaching 23 feet near the end.

Across the whole race, Justify's stride averaged 24 feet 9 inches — a figure comparable to Secretariat, except that Secretariat could sustain his long strides into the stretch.

But Justify's stride length alone did not win the Preakness. Another horse, Tenfold, had a longer stride — nearly 27 feet — for half a furlong early in the race. Tenfold couldn't keep that up, but across the whole race his average stride length was just four inches shorter than Justify's.

And Sporting Chance approximately matched Justify's stride length throughout the race. On average, Sporting Chance's strides were only a tenth of an inch shorter than Justify's.

Yet Sporting Chance, with strides practically as long as Justify's, finished sixth, while Tenfold, with shorter average strides, finished third. Evidently, long strides by themselves aren't enough to win races.

## Stride length vs stride frequency

What a horse needs for victory is not stride length, but a winning combination of stride length and stride frequency.

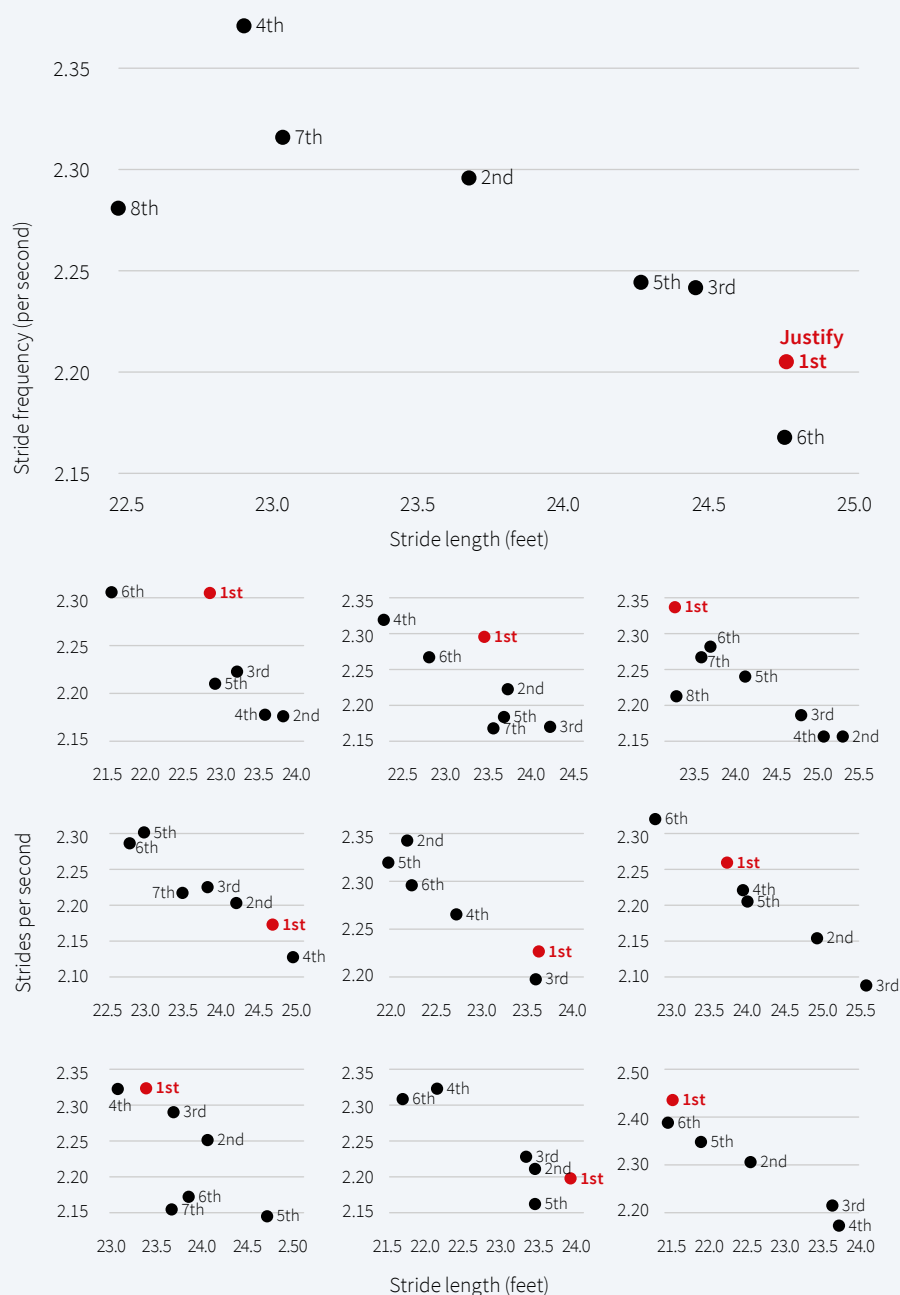
Here is a scatterplot of each horse's average stride length and stride frequency in the 2018 Preakness Stakes. It shows again that Justify's stride was approximately the same length as the strides of the 6th place horse, Sporting Chance. The reason Justify beat Sporting Chance was that Justify had a higher stride frequency, 2.21 strides per second, vs. 2.17 for Sporting Chance.

Aside from Sporting Chance, Justify had the slowest stride frequency in the field. He beat most of his quicker-striding competitors because of his greater stride length.

Stride length and stride frequency have a negative correlation. Long strides are rarely quick, and quick strides are rarely long. So a long-striding horse like Justify can win, but only if its strides are not too slow.

And a short-striding horse can win if its strides are quick enough.

## Stride length vs. stride frequency (2018 Preakness Stakes)



The Australian mare Winx is a prime example. According to the physicist Graeme Putt, Winx's stride measured just 21 feet 5 inches near the end of the 2017 George Ryder Stakes — but she won, going away, for the 16th of her record 33 consecutive victories. The second and third place horses in the George Ryder had strides a foot longer than Winx's, but Winx beat them by taking her stride frequency up to 2.7 strides per second, while her rivals were stuck at 2.3 and 2.4, according to Putt.

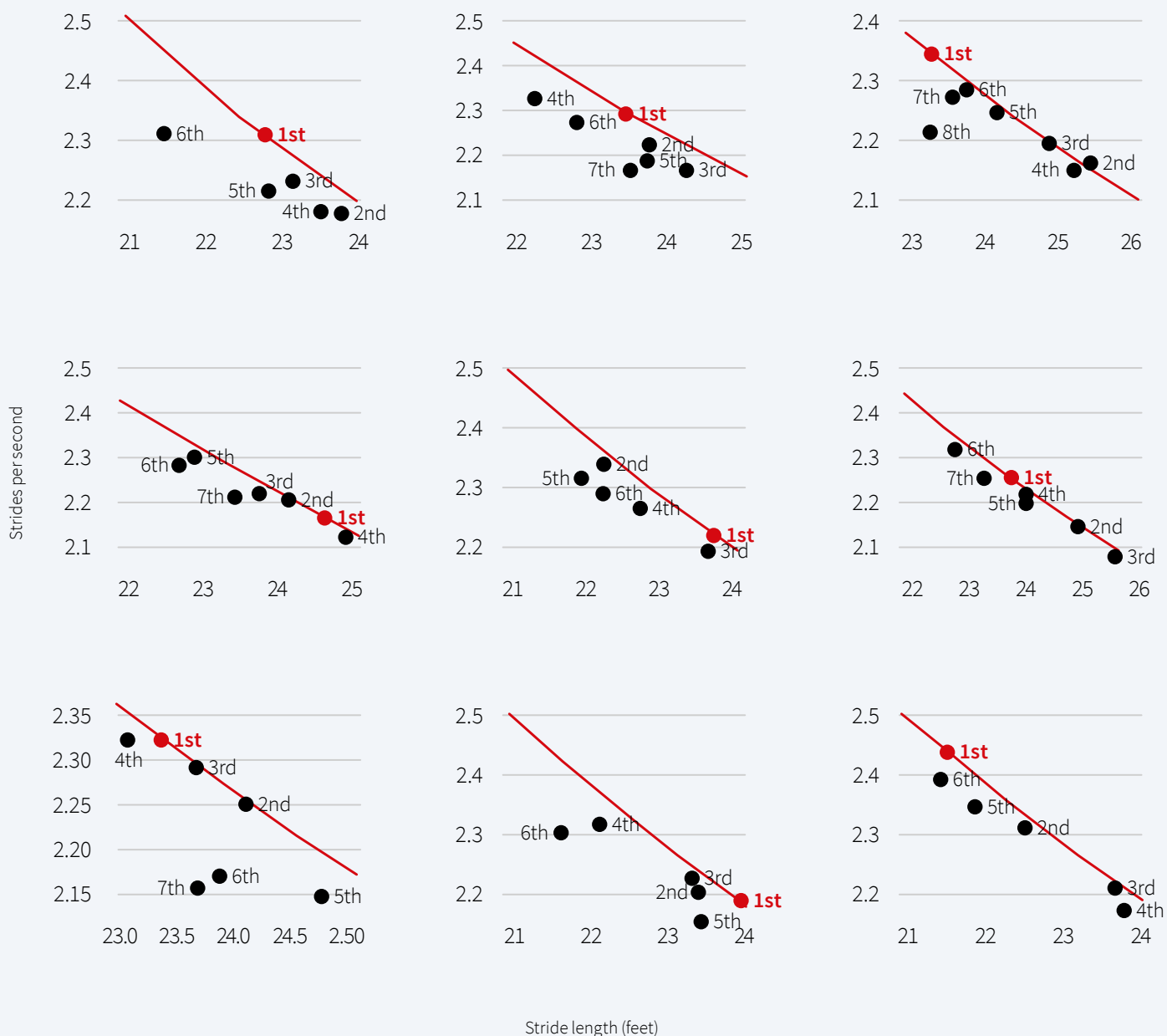
A winning horse can have a long stride that isn't too slow, a quick stride that isn't too short — or anything in between that achieves a winning

combination of stride length and frequency.

To illustrate the point, here are length-frequency scatterplots for nine mile races at Laurel — the track likely to inherit the Preakness Stakes when it leaves Pimlico in 2021.

Only two of nine races were won by the horse with the longest stride. Four races were won by the horse with the quickest stride — even though one of those horses had the shortest stride as well. The remaining races were won by in-between horses, whose stride was neither the longest nor the quickest, but achieved a nice trade-off.





## A simple formula: length times frequency equals speed

The trade-off between stride length and stride frequency is mathematically simple. Their product is the horse's speed:

$$\text{Speed} = \text{Stride length} \times \text{Stride frequency}$$

In the 2018 Preakness, for example, Justify's average stride length of 24.77 feet, when multiplied by his average

stride frequency of 2.21 strides per second, gave him an average speed of 54.64 feet per second (or 37.25 miles per hour).

With this relationship in mind, let's add to each scatterplot a curve that represents the possible combinations of stride length and stride frequency that could achieve the speed of the winning horse. Among the mile races at Laurel, for example, the first race was won by a horse with an average stride length of 23 feet

and an average stride frequency of 2.3 strides per second. But the same speed could be achieved by a stride length of 22 feet with a stride frequency of 2.4, or a stride length of 21 feet with a stride frequency of 2.5 (though such a quick stride might be impossible to sustain for a mile).

Let's call the curve that connects these possibilities an 'isovel', because any horse on it would have equal (iso) speed (velocity) to the winning horse.

## Trip length can matter, too

In most races, horses that didn't win will be below the isovel, because they did not match the speed of the winning horse. That's true for the mile races at Laurel (above) but it's not always true.

The 2018 Preakness Stakes is a striking exception. The third horse, Tenfold, is above the isovel, indicating that he ran faster than Justify.

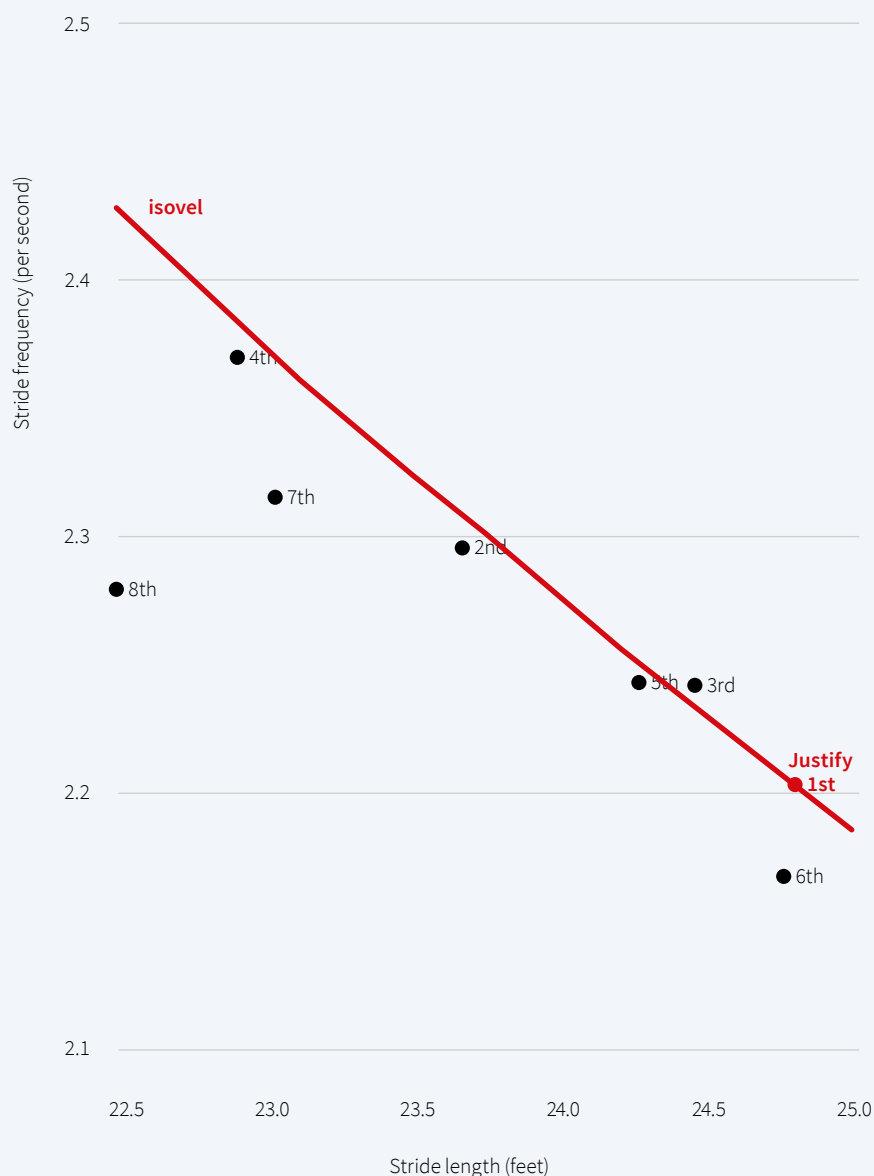
It isn't a mistake.

Tenfold's average speed was 54.83 feet per second, which exceeded Justify's average speed of 54.64. The reason Tenfold didn't win was that he had a longer trip around the track than Justify.

In the Preakness, the official length of the race is 9.5 furlongs (6,270 feet), and the trip is exactly 6,270 feet for a horse who follows the 'running line', a meter off the rail. But both Tenfold and Justify spent much of the race running further outside — 'four wide', according to trip notes published by Equibase.

By the end, Justify had covered 6308 feet and Tenfold had covered 6341 feet. Tenfold's longer trip prevented him from winning, even though he was actually faster in the sense that he covered more distance per second.

## Stride length vs. stride frequency (2018 Preakness Stakes)



## A final formula: why Justify won, and why he almost lost

The winning horse isn't always the horse with the longest stride, or even the horse who covers the most ground per second. The winning horse is the horse with the shortest finish time, and finish time is given by a final formula:

$$\text{Finish time} = \frac{\text{Trip length}}{\text{Stride length} \times \text{Stride frequency}}$$

According to this formula, victory depends on some combination of trip length, stride length, and stride frequency.

In the 2018 Preakness Stakes, Justify didn't win because of any single variable. He very nearly didn't win at all.

Justify's strides were long, but no longer than those of Sporting Chance. Justify's stride frequency put him seventh out of eight horses. Justify didn't even cover the most ground per second, but he had a shorter trip than the horse that did.

And that was how Justify won the Preakness Stakes. It was just a half-length victory, with three horses bearing down on him at the end — the least convincing

of Justify's five victories and the weakest link in his Triple Crown.

And the insights from Total Performance Data make it seem even closer than that.

*Paul von Hippel (Twitter handle @equinometrics) is a professor at the University of Texas, Austin. Thanks to Will Duff Gordon, CEO of Total Performance Data, for sharing data used in this article. Thanks also to Roda Ferraro, Head Librarian at Keeneland, for finding historical accounts describing the stride of Man o' War.*



# Your next chances to find a Derby winner

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**Windstoss - winner of the German  
Derby 2017 - a BBAG graduate**



**Isfahan - winner of the German  
Derby 2016 - a BBAG graduate**



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**+++ Entries close: Friday, 12<sup>th</sup> April 2019 +++**

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# *What They're Thinking*

## Dawn Lupul: owners and breeders must be given enough incentive to stay in racing

Emily Shields | May 14, 2019



Dawn Lupul at work: here she interviews leading trainer Mark Casse during racing at Woodbine. Photo: Will Wong

*We called Dawn Lupul ‘extraordinary’ when we featured her on this site a month ago, and that was no exaggeration.*

As writer Emily Shields said at the time she “is more than just a regular face and shrewd voice on the daily Woodbine simulcast show”. Lupul is a racing analyst at Woodbine Racetrack, and sometime race-caller at Woodbine Mohawk Park. She is a former Standardbred owner, breeder and trainer, and recently won North America’s National Horseplayers Championship Charity Challenge.

### **Who do you think is the most important figure in world racing history?**

I have to pick a horse, of course. The excellence that Northern Dancer displayed, both on and off the track in North America,

continues to impress even 19 years after his passing. As a Canadian-bred who went on to win both the Kentucky Derby and the Preakness Stakes, he stamped himself as a legend even before he went on to be a champion sire. His legacy reached every corner of the racing world.

From humble beginnings to immortality, the little guy from Ontario exemplified class and heart every step of the way.

### **Which is your favourite venue and race?**

I’ve always been a fan of Gulfstream Park. It probably has something to do with the palm trees and the beautiful January weather.

My favourite race is the Breeders’ Cup Classic. It is such a prestigious event and allows the best of the best to battle in a grueling test of wills. There are so many captivating stories behind the scenes and it is the perfect climax to a wonderful weekend of racing.

### **What is your fondest memory in racing?**

There are too many to narrow down. I’ve been involved in horse racing since I was six years old in multiple capacities. I’ve been a fan, a bettor, an owner, a trainer, a breeder and an analyst. From each of these viewpoints, I have fond memories and lots of great stories, and great races, particularly Cigar’s fantastic victory in the 1995 Breeders’ Cup Classic at Belmont Park.

### **What do you see as the biggest challenge racing faces today?**

Economics. It is difficult to turn a profit as a breeder or an owner in many of the markets. Ensuring that the horse supply is adequate to support quality fields is challenging for all racetracks right now. It is important that there is enough incentive for people to continue to be involved in the sport as a viable business.

### **If you could change one thing in racing, what would it be?**

Although it isn’t an easy thing to fix, it would be great if the major racetracks were able to coordinate post times better so races aren’t going off at exactly the same time. That way the customers aren’t forced to choose between which track to watch and bet on.



# TRC GLOBAL RANKINGS

## The Thoroughbred Racing Industry's ranking system

**Available at [thoroughbredracing.com](http://thoroughbredracing.com)**

Thoroughbred racing has its rankings of the world's leading horses and the world's best races, but the sport is devoid of meaningful classifications of the humans involved, the jockeys, the trainers, the owners.

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# TRC GLOBAL RANKINGS



26 May 2019

## Jockeys

Rank	Name	Modal Country	Points
1	Ryan Moore	Great Britain	1094
2	Mike E Smith	USA	1063
3	Christophe-Patrice Lemaire	Japan	1060
4	Zac Purton	Hong Kong	1057
5	Frankie Dettori	Great Britain	1055
6	Hugh Bowman	Australia	1052
7	William Buick	Great Britain	1051
8	Mirco Demuro	Japan	1043
9	Joel Rosario	USA	1032
9	Jose L Ortiz	USA	1032
11	Javier Castellano	USA	1030
12	Irad Ortiz Jr	USA	1028
13	Flavien Prat	USA	1026
14	Joao Moreira	Hong Kong	1019
15	Anton Marcus	South Africa	1017

## Trainers

Rank	Name	Modal Country	Points
1	Charlie Appleby	Great Britain	1076
2	Chad C Brown	USA	1067
3	Aidan O'Brien	Ireland	1062
4	Bob Baffert	USA	1061
5	John Gosden	Great Britain	1047
6	James Cummings	Australia	1027
7	Saeed bin Suroor	UAE	1024
8	Chris Waller	Australia	1020
9	Andre Fabre	France	1018
10	John Moore	Hong Kong	1017
11	Darren Weir**	Australia	1015
12	Sir Michael Stoute	Great Britain	1011
13	John Size	Hong Kong	1010
14	Steven Asmussen	USA	1008
15	Jerry Hollendorfer	USA	1001

## Owners

Rank	Name	Modal Country	Points
1	Godolphin	Australia	1084
2	Coolmore Partners	Ireland	1072
3	Sheikh Hamdan Al Maktoum	Great Britain	1051
4	Magic Bloodstock Et Al	Australia	1037
5	Juddmonte Farms / Prince Khalid Abdulla	Great Britain	1028
6	Sunday Racing Co Ltd	Japan	1025
7	China Horse Club Et Al	Australia	1020
7	WinStar Farm Et Al	USA	1020
9	Madaket Stables Et Al	USA	1013
10	Klaravich Stables Et Al	USA	1009
11	Head of Plains Et Al	USA	1007
12	Michael Dubb Et Al	USA	1005
12	Silk Racing Co Ltd	Japan	1005
12	U Carrot Farm	Japan	1005
15	Patrick Kwok Et Al	Hong Kong	1004

## Sires

Rank	Name	Modal Country	Points
1	Dubawi	Great Britain	1085
2	Galileo	Ireland	1059
3	Deep Impact	Japan	1046
3	Scat Daddy	USA	1046
5	Frankel	Great Britain	1041
6	I Am Invincible	Australia	1039
7	Street Cry	Australia	1031
8	Lord Kanaloa	Japan	1030
8	Sea The Stars	Great Britain	1030
10	Quality Road	USA	1028
11	Teofilo	Australia	1026
12	Curlin	USA	1025
13	Not A Single Doubt	Australia	1022
14	Candy Ride	USA	1021
14	Kitten's Joy	USA	1021