

MY ANNUAL WRITE UP FOR THE KENTUCKY DERBY

By Jordi Visser



SATURDAY, MAY 1, 2021



CHURCHILL DOWNS
LOUISVILLE, KY

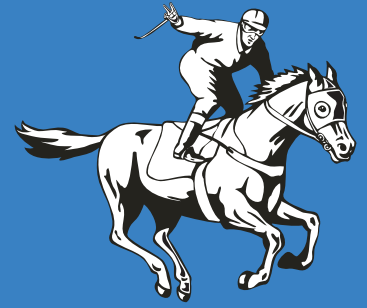
Churchill Downs, the world's most legendary racetrack, has conducted thoroughbred racing and presented America's greatest race, the Kentucky Derby, continuously since 1875.

The first Saturday in May is here so it is time for Kentucky Derby 147.

After a year off in the write-up due to the breakdown of the normal Triple Crown race pattern because of Covid, we are back for our regular analysis. For those of you reading this for the first time, this analysis takes longer to read than the two minutes the race will take so be prepared but remember it is free. While I do hope you make money using the analysis, the key message is it is free. The only thing I guarantee is you will see some data you will not see anywhere else. This is my data analytics attempt to help all of you enjoy the Kentucky Derby even more than in past years by giving you a breadth of unique information about the history of the race and each horse. In this world of big data, there is more and more information to process. This is meant to give it to you in one place along with some of my own statistics from years of database building and of course to hopefully give you a chance to make some money.

After attending fifteen of the last 20 Derbies, each year I hope the time spent analyzing the race will prove to be profitable but more importantly, I will reiterate what I wrote in the first piece years back. For those of you who have never attended the Derby, it is something I recommend for all Americans at least once in their life. The Kentucky Derby has survived the test of time and is a true piece of Americana. It gathers friends and families from all over the country as they come back to see each other and enjoy a day of laughter, excitement, and in some cases overindulgence. It is like a prom, reunion, and Mardi Gras wrapped up into one and you can visit all three parties during the day that feels like it never ends. No matter your age, the Derby makes you feel young for the day, and in this age of millennials

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"AMERICA'S GREATEST RACE"

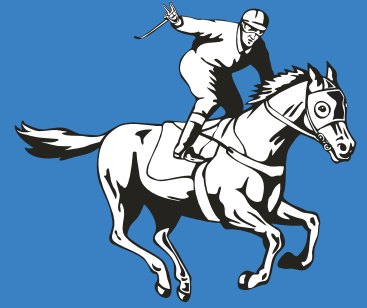
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where experiences are being valued more highly, the Derby is a bucket list experience not to be missed.

My father owned racehorses for part of my childhood and was my inspiration for this annual write-up. He taught me how to handicap a race and that experience served as the beginning of my journey in using data analytics at a young age to make better decisions. One of the first lessons I learned from him in analyzing a race is to remember the goal is not to figure out who will win but who can win and then look for value. Remember, the final odds are set by the crowd of bettors and comparing your handicapping view of where the odds should be versus the crowd allows you to find value.

For a race like the Derby, that approach is even more necessary given the size of the field and the inexperience of the horses. Recently, favorites have dominated but historically this race offers value. Using that mindset, I attack the Derby analysis each year by breaking it down into five categories and use historical statistics to look to eliminate horses that appear too slow, lack the necessary experience, or don't appear to have the endurance for the grueling journey. Then I look at the horses that are remaining and look for value based on the odds. The five categories are: 1) Style 2) Stamina/Pedigree 3) Experience 4) Current Form and 5) Speed.

Unfortunately, as a handicapper looking for value, 2013-2018 had six consecutive favorites win the race. Given historically 33% of the Derby winners are favorites and that the probability of the favorite winning any horse race is about 33%, you know from your statistics class how unlikely that streak was before 2018. There had only been one other time the favorite won five times in a row and it was while Benjamin Harris and Grover Cleveland were President. In 2019, I picked Maximum Security in this writeup when the program odds were 8-1 as the 4th choice. He was bet down to the second choice at 9/2. He actually won but was disqualified leaving longshot Country house as the winner. Last year Authentic won the Derby at 8-1.



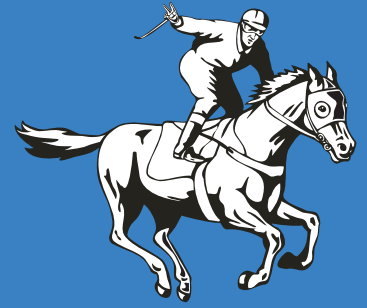
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Hopefully, we will see a few more years of the favorites not winning so we can find some value in the race.

To highlight the point I made in 2019 on normal value for the winner, which includes the last six years dominated by the favorites and eight winning favorites over the last 20 years, the average payout on the winner has been about 24 dollars so it does pay in this race historically to look for value. When you go back further you see in the 1980s and 1990s, that amazingly NOT ONE favorite won the race and only three times during that period did the favorite even come in second. Before the recent string of favorites, only four won in the 33 years from 1980 to 2012 so although we have seen more favorites winning recently, history tells us you can find value in the Derby.

To start the analysis each year, I focus on the likely early pace of the race. The early pace and the overall expected shape of the race is always a big part of race handicapping. For the Derby, given its distance and the bunching of horses, many will lose the race by the half-mile pole depending on how fast or slow it has been run. The first quarter is a pinball-like dash by 20 horses to get into position by the first turn. Historically, horses have benefitted from being away from the early pace. Before the last seven years where the eventual winners sat close to the pace, from 2004-2013, at the half-mile, the eventual winner was no closer than 4th place with the average being in 11th. Four of the eleven winners were 16th or worse at the half. Over the last 32 years of the Derby, a total of 11 of the eventual 32 winners were more than eight lengths behind the leader at the ½ mile mark. The point being, don't be fooled by using the last seven years of speed holding up as a given because normally it does not work.

This year the early pace is complicated. Caddo River was the only real true consistent speed horse entered but over the weekend the trainer pulled him from the race. There are about 5 or 6 horses who have been successful being out on the lead or second in the preps so it will likely be a battle for position with those horses into the first turn. Given the recent success for



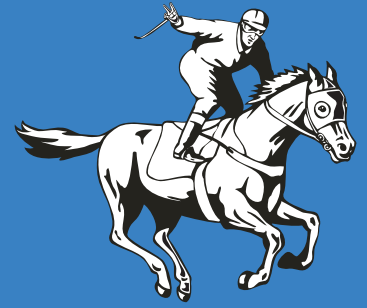
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Derby winners to be near the lead and no clear horse to be in front early, I expect a fast, early contested pace.

The second factor which historically has been important is the experience factor. 77 of the last 86 winners of the Derby have at least six starts coming into the Derby. This year, ten of the twenty have had fewer than six starts and four have only had three starts. The average starts for the horses in the race is just over five. This lack of experience has been a trend lately and although we have seen winners with fewer than six races, these have been horses near the lead not needing to navigate much traffic.

There is usually at least one major theme each year that stands out and this year it is the lack of speed in their final prep races. As of now, partly due to injuries to some of the other leading horses, this Derby field looks competitive which should create a good betting race. From 2000-2020, using Brisnet speed ratings, 95 has been the minimum level you want to see to have a chance to win. During those 21 years, 57 of the 63 (90%) horses that finished in the money had a final prep speed rating of at least 95. 51 of the 63 (81%) had a rating of at least 98. During those 21 years, the average number of horses for each Derby field had eleven horses with at least 98 and fourteen with at least 95. This year only six had a rating of at least 98 and only nine of 95 or higher. This is the second-lowest of at least 98 and the lowest of 95 or higher during that time period.

Therefore, given the lack of clear early speed in the race, the lack of experience, and the lack of historical winners' speed ratings, I want to find horses who have the ability to get out of the gate clear and be near the lead by the first turn. I am looking for value with horses that are capable of relaxing, able to save ground into the 3/4 pole, have displayed the tactical speed necessary to get into position by the final quarter pole (55 of the last 58 Kentucky Derby winners have been first or second with a furlong to run) and have displayed the stamina for the long Churchill Downs



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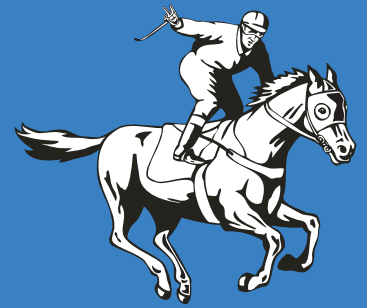
stretch run of the extra 1/8 of a mile. The best historical statistical measure for stamina based on the last 20 years is looking for horses that finished their final 3/8s of the final prep of nine furlongs in under 38 seconds combined with a sire who was a descendant of Mr. Prospector. Over the last 26 years, fifteen of the winners and eighteen of the last 35 were Mr. Prospectors and when including the Preakness and Belmont it is an amazing 43 of 76. This has led to an extremely positive return on investment for betting on horses with these combined facts. This year, the Mr. Prospector's are Known Agenda, Lion the King, King Fury, Rock Your World, and Helium. Lion King and Known Agenda are the two who also met the final 1/8 and 3/8s requirements.

Before I go category by category to eliminate horses, let's start the elimination using seven stats that have helped identify the winner in past years. 48 of the last 52 winners had a win as a 2-year old. 33 of the last 40 winners had a win as a 2-year old at a distance of at least a mile. 34 of the last 43 winners had a 3-year old stakes win. 57 of the last 63 winners had at least one stakes race win before the Derby. 77 of the last 86 winners had six or more starts before the Derby. 19 of the last 21 and 24 of the last 30 winners had a final 1/8 in final prep of fewer than thirteen seconds and 22 of the last 29 winners had a final 3/8 of fewer than 38 seconds in final prep. When you combine missing these with not having shown the speed necessary to finish in the money I will start by throwing out Hidden Stash and Dynamic One.

The rest of the elimination will be based on the categories that follow.

STYLE:

As I mentioned above, STYLE is very important for the Derby. It is a grueling race with a huge field filled with inexperienced and unqualified horses. There are always traffic problems which most of these horses have not seen. Many of them have never had horses in front of them with dirt being



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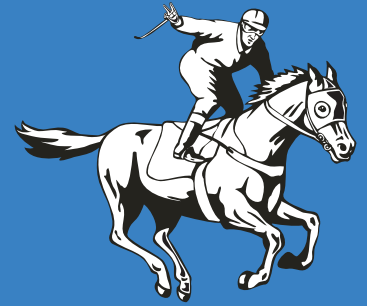
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kicked up in their face. You want to avoid horses likely to get into a speed duel and, on the other side, deep closers who are grinders without tactical speed. Being near the lead at the first turn has been an important factor since the points system was put in place in 2013 which helped to reduce the number of pure sprinters who previously qualified for the race when it was based on earnings. The last seven winners, including Maximum Security, were no worse than 3rd at the first quarter. For style, I will eliminate Bourbonic. Bourbonic has not shown the early pace to be near the lead at the first quarter pole and in the final prep was not able to show the necessary closing speed for the final 1/8 and 3/8s and his final Brisnet speed rating was below the historical level of success.

STAMINA:

Because of the length and grueling nature of the race, STAMINA is a necessity. Pedigree and late speed have always been important for the winner. For STAMINA, we will use the final furlong and final three-furlong times in their last preps and compare them with the pedigree. As already mentioned, one of the best analytics for finding horses that will be able to handle the mile and a quarter Derby is to see how they closed in their final prep. The important levels have been under thirteen seconds for the final 1/8 and less than 38 seconds for the final 3/8s. In addition, there is one statistic that has worked for the last 29 winners which means there is a data analytics measurement you could have used to even pick the longshots Mine That Bird, Giacomo, and Country House. This is a velocity measure I created to see how much a horse is slowing at the very end of the final prep race by measuring the rate of change within the final 3/8s. For this, I take the final furlong time and subtract the average of the final three furlongs to see how much the horse slowed in the final 1/8. The last 29 winners all had a difference of no more than .40 seconds. You are looking for stamina and being able to finish fast but also at a consistent speed again suggesting the extra 1/8 will



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not be a problem. 50 of the last 57 in-the money-horses also meet this requirement. The 2020 race is not included in this historical calculation because it took place in September, not May. For stamina, I will toss Soup and Sandwich. He ran a nice race in the Florida Derby, finishing second, but the final 1/8 was above 13 seconds and his velocity showed he was slowing so the extra 1/8 should be difficult for him.

EXPERIENCE/CLASS:

This has always been very important for the winner. Horses historically have needed to have raced as a 2-year old, had at least three starts as a 3-year old and six overall to statistically have a chance. In terms of class, you want to see that they have been racing against good horses and did not just get into the race. You also need to look at experience racing on dirt. You also want horses that have raced in at least one race with a field of 10 or more horses. As all of you have seen, the start of the Derby is a 20 horse-wide chaotic run into the first turn. Many horses lose the race before the first turn so historically the experience of racing in a large field has helped. Only seven of 63 Derby horses that finished in the money in the last 21 years had not raced in a race with ten+ horses. As has been the case in recent years, this field is very light on experienced horses with only ten of the twenty horses having at least six lifetime starts. Many of them are still showing signs of being green. As an example, in watching the videos of the prep races this year, I cannot remember a year where horses were having so much trouble with lead changes in the final stretch. For those of you new to horse racing, a lead change is simply the act of the horse switching which leg he or she will reach farther forward within stride. As an important example, I think Highly Motivated would have won the Blue Grass except for his difficulty switching leads. This caused him to lose his pace briefly which allowed Essential Quality to get the lead. For experience, I will toss Helium who has only raced three times, did not make the final 1/8 and 3/8s time, and has the

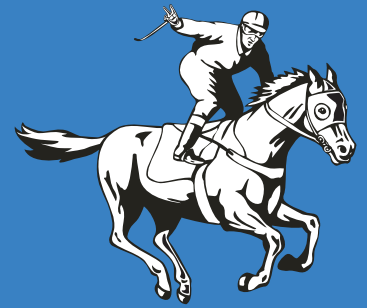


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second-lowest Beyer speed rating. I will also toss King Fury. This will only be his second race as a 3-year old and although he has won three of six races including his final prep, the three losses against some of the horses in this race were by an average of over 9 lengths. Brooklyn Strong will also be tossed as this is only his second race as a 3-year old and he finished 5th in his final prep and was tired at the end missing the necessary closing times.

CURRENT FORM:

This is an often-overlooked part of Derby analysis. It has historically been important as you want to find a horse that is peaking at the right time. This involves their progression up to the race including the results of most recent preps and their workouts over Churchill Downs preparing for the race. Since most of these horses have raced fewer than eight times in their career, they are still improving, and recently improving horses with their speed numbers rising as the distances get longer has been a good factor to follow. You also do not want too much of an improvement in their final prep suggesting they could regress or bounce. 44 of the last 45 Derby winners (including Maximum Security) finished their final prep in the money or at least within 3 lengths on the winner. For current form, I will throw out Keepmeinmind. This horse had a good 2-year old campaign but in his two races as a 3-year old he did not finish in the money, lost by a combined 24 lengths, and had two very low-speed ratings. I will also toss Mandaloun. Outside of his last race, this horse would have been one of the top choices but in the last prep, his form dropped for whatever reason. He has looked great in his workouts leading up to the Derby, but history says do not ignore the final prep, so he is tossed.



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SPEED

If there is one factor to go with in the Derby, it should not be surprising for it to be SPEED. Over the years, breeding has changed as tactical speed has become a more important part of Derby-winning. Being a stalker or a closer used to be enough but now being a stalker with an ability to have a quick burst for positioning has become critical. Using Brisnet speed figures since 1992, horses with a final prep speed figure of 95 or less are 2-for-154 in the Kentucky Derby (the disqualification of Maximum Security caused the 2nd). 57 of the last 63 horses that finished in the money had a final prep speed rating of 95 or higher. 51 of the last 63 had a rating above 98. Using Beyer figures, 26 of the last 29 winners had a final prep speed of 95 or higher (the disqualification of Maximum Security impacted this as well). Only two winners since 1990 did not have at least one 95 or higher Beyer in their prep races. In the last 22 Kentucky Derby's, only 6 of the 66 horses that finished in the money did not have a better Beyers speed figure as a 3-year old than their best 2-year old speed figure. For speed, I will throw out Super Stock, Sainthood, and Like the King.

After the statistical elimination round, we are left with Essential Quality, Hot Rod Charlie, Known Agenda, Rock Your World, Medina Spirit, Midnight Bourbon, Highly Motivated, and O Besos. To work the remaining horses down, I will start by throwing out Medina Spirit. Medina Spirit has finished first or second in all five of his races against quality horses and is trained by Bob Baffert. His progression coming into the Derby has been flat on all his speed ratings and his most recent Beyer in his final prep was 94. In his final prep he did not make the final 1/8 and 3/8s time which suggests to me he is better suited to mile races.

Every year there is a horse that did not win a prep race but finished his final prep with a big run which gives you that comfort that the extra 1/8 of a mile will serve



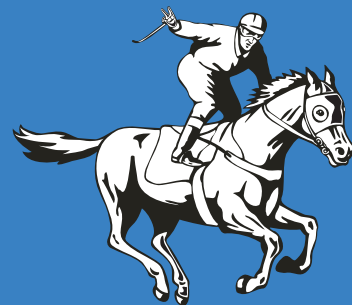
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them well. This year that horse is O Besos. His progression has all the looks of a horse that is improving at the right time. It took him until the end of 2020 to break his maiden and then after an allowance win joined the stakes races finishing 4th place and third in two races. His speed times have moved up each race as the races got longer. In his last race in the Louisiana Derby at one 3/16th distance, he posted the fastest final 1/8 mile of all the Derby horses in their final. Based on the velocity measure, his final 1/8 was faster than the average of his final 3/8s so he was still accelerating and that showed in his gallop out as he passed the second-place horse and the winner Hot Rod Charlie not long after the finish. I don't think he can win but using Beyer or Thoro-graph speed ratings combined with his progression and he is a live candidate to finish in the money at very attractive odds. Don't ignore him on your tickets.

Next, I will move to one of the favorites. From an analytical basis, Known Agenda has the look of a horse ready to win the Derby. He had a good 2-year old season finishing in the money all three starts and beating former Derby favorite Greatest Honour. He started his 3-year old campaign with a flat performance in the Sam Davis. After that, trainer Todd Pletcher added blinkers and Lasix and the horse responded with two dominating winning performances. The progression in his speed ratings suggests he could make another move higher in the Derby. I think this horse is best suited for the Belmont Stakes because of one problem which has been a challenge for the Derby. He has yet to show the necessary early speed to get into a position without traffic and, given he has drawn post position one, he will likely have traffic to navigate. Although he has responded well since the changes, I cannot ignore the inability to get out quickly for this race. He has shown that he can run all day, but the 20-horse field will likely make this tough trip. In the Sam Davis, he was out of the race early as he left the gate and in the Kentucky Derby, that can be the difference for success.

Highly Motivated is an interesting story of how odds

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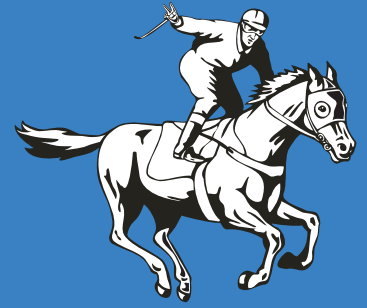
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can change based on the length of a horse's neck. The last time out he lost to favorite Essential Quality by a neck. As mentioned earlier, in watching the race, the horse switched leads near the final 1/8 pole and slowed down in the final furlong which in my opinion cost him the race. If that doesn't occur, we have a very different handicapping narrative with different odds in the race. This is a quality horse whose speed numbers are at the same level as the favorite combined with a loss that should have been a win. That means this horse has betting value. My only issue is I do not think one ¼ mile is the best distance for him but he is a gutsy horse that has been in the money all five starts and I expect him to be involved at the end.

Hot Rod Charlie also meets all the historical statistical requirements of previous winners and horses that finished in the money. He has already raced against seven of the starters in the race and faired well. He finished second to Essential Quality in the Breeder's Cup Juvenile and has already won at the longest distance (one 3/16th) of any horse in the race. His closing time in both the final 1/8 and 3/8s and the velocity of the final 1/8 show he can handle the distance. My only issue with him is he has not had that moment where he wowed me in videos and his speed numbers have flatlined over the last three races.

Midnight Bourbon has finished in-the-money all seven times and like Hot Rod Charlie meets all the historical Derby statistics. So for anyone looking for a horse with value based on history, this is your guy. For me, his issues are the same as Hot Rod Charlie. In terms of progression, all his race ratings are around the same level. As of now, he has not had that improvement from race to race that most Derby winners see. This matches the eye test as I never saw a moment in any of his races that made me go wow. He is a very solid horse that to me is very similar to Hot Rod Charlie but with more attractive odds and should be included on exotic tickets.

The favorite Essential Quality comes into the Derby five for five and the reigning two-year-old champion.



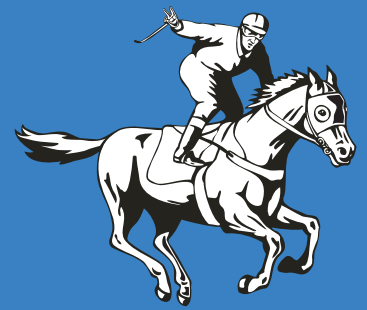
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His trainer has been dominating Graded Stakes races and has won 72% of G1 races where his horse is the favorite! He meets almost every single statistic associated with Kentucky Derby winners and in his last race closed with fast final 1/8 and 3/8 times suggesting the distance will not be an issue. His training pattern from Brad Cox up to this race was very similar to Monomoy Girl in her third year which argues that this will be his best race yet. There is no reason not to like the horse and he is a deserving favorite but again, my father taught me to compare the crowd's odds with my own and for me, the odds will be too low based on his last race. Just the fact that if Highly Motivated does not slow for a few seconds and holds on to win, the odds would already be higher. Plain and simple, with odds at this level in the Derby, I expect to see a clear difference between him and the other horses, and except for the unblemished record I don't. His speed ratings are high enough but are not much better than as a 2-year old. Most importantly to me, in three of his five wins, he was not in the lead at the final furlong call and pulled them out at the finish line. As a comparison, this is where the similarities to Monomoy Girl break down as she was in the lead at the final furlong call in all of her races leading into the Kentucky Oaks, the filly equivalent of the Kentucky Derby.

My selection for 2021 is Rock Your World. Using simple quantitative analytics, this horse does not make much sense. He has only raced three times and would be only the second horse since 1882 to win the Derby without running as a 2-year-old. In his three races, only one was on dirt and he has only raced at Santa Anita Park so far and since he raced from the lead in that race can he handle dirt being kicked up into his face. His final 3/8s time in the Santa Anita Derby was above 38 seconds which does not meet the Derby standards for the winner. You can see all these statistics in the program. I would ignore two of these points above because he missed the cutoff for racing as a 2-year old by one day since his first win was January 1st. Also, the turf to dirt was always a plan from the trainer, his sire was good on both surfaces, and most importantly Rock Your World's speed rating jumped significantly on dirt. This



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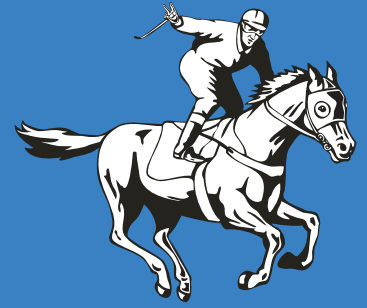
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horse is a reason why analytics should not be used in any sport without some qualitative analytics too. This is where the videos come in to play and are so important. Animal Kingdom is a historical example of this race. What stood out for me above all the other horses in this race is the visual 'wow' factor. In the video of his three races, this horse has shown moments of brilliance in all three. However, it was the Santa Anita Derby where he did something I can't remember seeing in all the years watching prep races. In that race, he showed his engine, racing to the lead out of the gate setting very fast fractions, and then showed it again breaking away from the pack just before the 3/4 pole and again in the final furlong. I went back and looked throughout the database I keep for velocity in that final 3/8s and I can't find a finish like his in a final prep at one 1/8 miles. Seeing a horse that was raced hard for the early lead while setting fast times in the first half of a mile and then still wins is not a big deal. To have to work hard early, then to be able to have his final 1/8 be at 12.90 seconds very near the average of the final 3/8s indicating he was not slowing at the end is what is special. On top of that, he did not pull up after the finish line and galloped out to be over fifteen lengths ahead of all the other horses after the win. This included Medina Spirit, who except for losses to the now-injured Life is Good would have been undefeated in the Santa Anita Derby. His strong gallop outs have been like this in all his races and workouts as this horse never seems to get tired. In my fourteen years watching Derby prep races I have never seen anything like this. The speed rating for his Santa Anita Derby was the only 100 Beyer of these horses. This is the only horse in the race that to me displays the tactical speed to be in position and has the clear pedigree to survive the distance. This combination of speed and stamina is also what his brilliant sire, Candy Ride, (Mr. Prospector sire line) displayed during his undefeated career.

Enjoy Derby Day!

Jordi



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About Jordi

Jordi Visser is the President and CIO of Weiss Multi-Strategy Advisers. He joined the firm in 2005. Previously, Jordi was the founding Managing Partner of Anchor Point Asset Management, a global macro fund. A former Managing Director at Morgan Stanley, he traded various global equity derivative books for nine years. He opened the Morgan Stanley office in Sao Paulo, Brazil, and managed the derivative sales and trading effort there during the 1997-1998 emerging market crisis. Upon his return to New York in 1999, he managed index derivatives and ETF trading and was a member of the Equity Division Risk Committee. Jordi is a magna cum laude graduate of Manhattan College and a board member of the School of Business at Manhattan College.



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