

# GROUND MATTERS: GOD'S DIRT VERSUS MAN-MADE SYNTHETIC

Researched and Written by JANE ALLIN

## PART 1: THE GREAT SURFACE DEBATE—WEIGHING THE CONTROVERSY

IN PURSUIT OF REDUCING the number of catastrophic breakdowns that occur in Thoroughbred horse racing, the North American induction of synthetic track surfaces has spawned a malevolent discord amongst players in the game, rife with both heated dispute and caustic reproach between those at polar ends of the enduring debate.

What spurred the progressive introduction of synthetic over the time-tested dirt surface was the high visibility of cataclysmic breakdowns most notably that of Barbaro's in the 2006 Preakness.

Fatal breakdowns in the Sport of Kings and the angst of Barbaro's demise are regrettably a demonstrated part of the game. More so perhaps as a result of the degree of inbreeding that has occurred over the last few decades and the inherent unsoundness that continues to progressively plague the breed. This coupled with the superfluous and widespread administration of race day and other medications spells a recipe for disaster.

That said, one cannot single out Barbaro as there are many exalted horses (e.g. Ruffian, Go For Wand, George Washington, Pine Island, Eight Belles) that met the same fate just as there are those who race in lower grade stakes who are equally worthy; all fiercely competitive and all dedicating their heart and soul to the humans they service and entertain.

Almost certainly the climax of the surface debate can be attributed to the horrific collapse of Eight Belles in the 2008 Kentucky Derby.

Suffering compound fractures of both front ankles Eight Belles died in agony on the track, a victim of a sport obsessed with greed and apparently without dedicated consideration for the very beings that sustain its life despite the ostensibly good intent of owners and trainers alike.

Two days after Big Brown blazed across the finish line, the snapshot of Eight Belles down on the dirt set off a raging debate that extended far beyond the Kentucky Derby: Is horse racing now facing an image crisis?

"With the memory of Barbaro still fresh, Eight Belles' catastrophic breakdown Saturday put increasing focus on a sport already trying to overcome a decline in popularity.

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"Her death has raised thorny issues about the whole thoroughbred industry, including track safety, whether fillies should be allowed to run against colts, and whether horses are bred too much for speed and not for soundness." [1]

The shocked and dismayed reaction of the public audience bode pessimistically for a sport already burdened with a diminishing fan base and questionable moral code.

Therein lies the question as to the degree to which a track surface contributes to these deadly incidents and how traditional dirt and synthetic surfaces differ in terms of propagating such events.

That said, perhaps it is time to unmask the truth and work toward a munificent clarification to safeguard a most engaging and exhilarating sport. More importantly there is no doubt that the horses who grace us with their splendor are more than deserving of such resolution.

*"Controversy is only dreaded by the advocates of error." ~ Benjamin Rush*

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[1] <http://www.cbsnews.com/stories/2008/05/05/national/main4069876.shtml>

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## PART 2: THE NORTH AMERICAN SWITCH

MUCH OF THE HYPE stemmed from the inauspicious fate of Barbaro during the 2006 Preakness at Pimlico in Maryland.

Apart from the running of the second leg of the Triple Crown, the meet itself was fraught with peril and delivered fatal sentences to no less than fourteen of these magnificent creatures as a result of training or racing accidents – one of the deadliest in the track's lengthy history. [1]

Soon thereafter, Richard Shapiro, at that time chairman of the California Horse Racing Board (CHRB), mandated that all major racetracks in the state of California convert to synthetic surfaces by the end of 2007. [2]

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While horses were dropping like flies at Del Mar a similar story was playing out at Arlington Park in Chicago.

During the first two months of the season 14 horses were euthanized many laying blame on the condition of the track surface at both venues. [3] However not all in the racing world agreed with this conclusion.

“But this explanation is a dubious one. The construction and maintenance of racetracks today is much more sophisticated than it was decades ago - when breakdowns were rarer. Moreover, a look at the Del Mar casualty list casts doubt on the theory that dirt was the culprit. Three of the 12 horses injured themselves on the turf. Two or three were horses whose records contained red flags suggesting that something was wrong; one of them, Ugotadewhatugotado, had run well in \$62,500 claiming company and was entered for the bargain-basement price of \$16,000 on the last day of her life”. [4]

Irrefutably it is all too common and convenient to hold accountable the surface for what many believe is the lack of accountability on the part of breeders and trainers.

Modern Thoroughbreds are bred for speed rather than soundness and durability; with each generation the gene pool narrows and fragility develops ever more insidiously. This inherent frailty together with the introduction of permissive medicine has all but ruined the breed.

One need only look at the declining number of starts the average American racehorse makes during their career over the last few decades – from a high of 11.3 in 1960 prior to the advent of liberal drug use to a trifling 6.1 in 2010. [5]

In any case, in no way was the Del Mar incident the only mitigating factor in the decision to switch. Over the course of three years prior to this sobering meet, California race tracks had experienced a 40% increase in equine fatalities which many in the racing industry thought attributable to dirt surfaces.

What further spurred this movement by the CHRB was the significant 85% reduction in catastrophic fatalities observed at Turfway Park in Northern Kentucky after the installation of a synthetic track in 2005. [6]

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Indeed these striking figures solicited legitimate consideration and categorically placed immense scrutiny and concerted focus on track surfaces with their inception in North America in the mid-2000s.

Undeniably the other incentive and reassuring justification for the conversion was the impressive success of these “all-weather” tracks in Europe and other international racing jurisdictions. By and large, as data will verify, fatal breakdowns in other parts of the world where horses compete on grass or synthetics are significantly lower than in North America.

Nonetheless a cautionary word is necessarily warranted.

In consigning such prominent emphasis on the type of track surface without accounting for the decline in soundness of the NA Thoroughbred as a result of inbreeding together with the ubiquitous and exploited use of race-day and other medications the issue is subject to uncertainty.

Even today there is only just enough data to statistically validate the positive trends associated with synthetic tracks. As data continues to be collected more information will emerge which ultimately will provide enhanced insight into the complex variables that interact to generate fatality risk.

Moreover, as a white paper published by the Jockey Club's Racing Surfaces Committee in June of 2011 clearly emphasizes:

“Injury, in particular catastrophic injury, is a multi-factorial event that involves the complex interaction of a number of risk factors including but not limited to medication, genetics and training.... Given that the overwhelming majority of catastrophic injuries show clear evidence of preexisting disease, (Norddin et al. 1998, Stover 2003) improved racing surfaces have the potential to result in an improvement in the safety of horse racing for both riders and horses.” [7]

In any case, despite the principled objective of what was intended to establish more forgiving track surfaces with the prospect of improving safety and reducing fatal breakdowns, to this day Shapiro is tagged a much maligned renegade of the NA horse racing world.

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This objectionable perception is honored by breeders, owners, trainers, bettors and fans alike where intense controversy rages at the surface of the debate.

One may ask why such dissonance exists when ostensibly the underlying goal of synthetic surfaces is for the benefit of the horse, the racing world's star performer. Seemingly the answer is cloaked in tradition and resistance to change with undercurrents of monetary gain.

## RACEHORSE FATALITIES: JULY 2006 — 2009 AT DEL MAR

2006 (JULY 19-26) Main track surface: Dirt Fatalities: 8 Main track: Morning (workouts) 1, afternoon (racing) 5 Turf course: Morning 1, afternoon 1

2007 (JULY 18-29) Main track surface: Polytrack Fatalities: 4 Main track: Morning 0, afternoon 0 Turf course: Morning 1, afternoon 3

2008 (JULY 18-20) Main track surface: Polytrack Fatalities: 2 Main track: Morning 2, afternoon 0 Turf course: Morning 0, afternoon 0

2009 (JULY 19-30) Main track surface: Polytrack Fatalities: 7 Main track: Morning 4, afternoon 2 Turf course: Morning 0, afternoon 1

SOURCE: Del Mar Thoroughbred Club – HANK WESCH [8]

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[1] <http://www.calracing.com/pdf/ground-control.pdf>

[2] Ibid.

[3] <http://www.drf.com/news/no-lone-cause-breakdowns>

[4] Ibid.

[5] <http://www.jockeyclub.com/factbook.asp?section=10>

[6] <http://www.thehorse.com/ViewArticle.aspx?ID=17466>

[7] [http://grayson-jockeyclub.org/resources/White\\_Paper\\_final.pdf](http://grayson-jockeyclub.org/resources/White_Paper_final.pdf)

[8] <http://m.utsandiego.com/news/2009/aug/01/1n1horses232019-racehorse-breakdowns-big-concern-d/>

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## PART 3 — SYNTHETICS VERSUS DIRT — THE PROS AND CONS

THE ADVENT OF synthetic or “all-weather” track surfaces first appeared in Europe where they have long been used for training purposes as well as selected racing events.

Ironically, in North America the first synthetic track to be used for thoroughbred racing was not a replacement for traditional dirt but rather turf (grass) in 1966 at Tropical Park in Miami Fla.

[1]

Over the ensuing years and up until the 2006 directive of the CHRB (California Horse Racing Board) only a single track in NA was converted from dirt to synthetic.

In 1988 Remington Park in Oklahoma City installed a surface called “Equitrack” yet this proved to be unsatisfactory and was replaced with a conventional dirt surface in 1991 due to maintenance issues and criticism from those in the racing circuit. [2]

In less than three years the polymer-based Equitrack began to disintegrate or “melt” creating considerable maintenance difficulties while the loosened track base was easily kicked up during races and subsequently inhaled by the horses causing respiratory illnesses. [3]

While there are many notable races held on turf (grass) tracks in NA the heated topic of traditional dirt versus synthetic all-weather track surfaces is the focal point of much controversy amongst disgruntled players in the industry.

Despite the fact that a synthetic track is alleged to confer a more forgiving surface in the interest of equine safety, many believe this is simply a hoax to divert suspicion away from the causal rationalization for the unacceptably high number of catastrophic breakdowns witnessed on NA tracks each and every year; most notably inbreeding and drugs.

Then again some are fervently convinced of their attributes and still others simply despise them as they factor into how a horse runs and ultimately displace customary betting methodologies.

Insofar as the number of tracks in NA that have installed synthetic surfaces it is, to date, only a scant handful compared to the total number of tracks in the whole of North America. A

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search on the Internet of the estimated 100 or more tracks in NA in operation pins the number of synthetic tracks at a paltry nine.

Moreover, one of these tracks (Santa Anita) has returned to dirt after issues encountered with two different types of synthetics. How representative or enabling of a true assessment of positive contributions is this given that these tracks characteristically are noted for “prominent” racing events?

TABLE 1. NORTH AMERICAN RACE TRACKS WITH SYNTHETIC SURFACES

[http://en.wikipedia.org/wiki/Synthetic\\_racetrack\\_surfaces\\_for\\_horse\\_racing](http://en.wikipedia.org/wiki/Synthetic_racetrack_surfaces_for_horse_racing)

Type of Synthetic	Track Name	Location	Installation Date
Polytrack	Arlington Park	Chicago IL	2007
Polytrack	Del Mar Racetrack	Del Mar CA	2007
Polytrack	Keeneland Race Course	Lexington KY	2006
Polytrack	Turfway Park	Florence KY	2005
Polytrack	Woodbine Race Track	Toronto ON Canada	2006
Tapeta Footings	Golden Gate Fields	Albany/Berkeley CA	2007
Tapeta Footings	Presque Isle Downs	Erie PA	2007
Cushion Track	Hollywood Park	Inglewood CA	2006
Cushion Track	Santa Anita Park	Arcadia CA	2007-2008
Pro Ride	Santa Anita Park	Arcadia	2008-2010
<i>Note: Santa Anita Park returned to a conventional dirt surface in December 2010</i>			

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Potentially it follows that because they are under the microscope, and the whole racing world is watching, the efforts to maintain these tracks may surpass those taken for their dirt counterparts at other racing venues.

In consideration of the propaganda surrounding catastrophic injuries and the stigma attached to the perceived inability of the racing industry to address the concerns of the public's opinion and overall negative assessment of the integrity of its intentions this only adds to the complexity of sifting out the pros and cons of synthetic over dirt surfaces. In any case, differences between the two surfaces are numerous from a consistency perspective as well as the mechanics and interaction of the horse's hoof with the track.

Overall dirt tracks are the preferred economic option, relatively easy to maintain and provide more slip and slide such that races tend to be faster compared to a turf or synthetic surface which tends to "grab". In other words dirt equates to speed.

The negative aspect of dirt lies in its failure to "give" and subsequent lack of shock absorption which puts tremendous stress and strain on a horse's legs. Given that horses can reach speeds of up to almost 40 mph during a race together with the fragile structure of their distal limbs any stress exceeding a critical threshold may result in catastrophic injury. Apart from acute overload which results in abrupt traumatic failure, injuries can also occur as a result of chronic repeated minor overload. [4]

However, as the Jockey Club "Racing Surfaces" White Paper clearly underscores, the factors contributing to risk of injury are numerous, complicated and span across several intervening categories as shown in Figure 1.

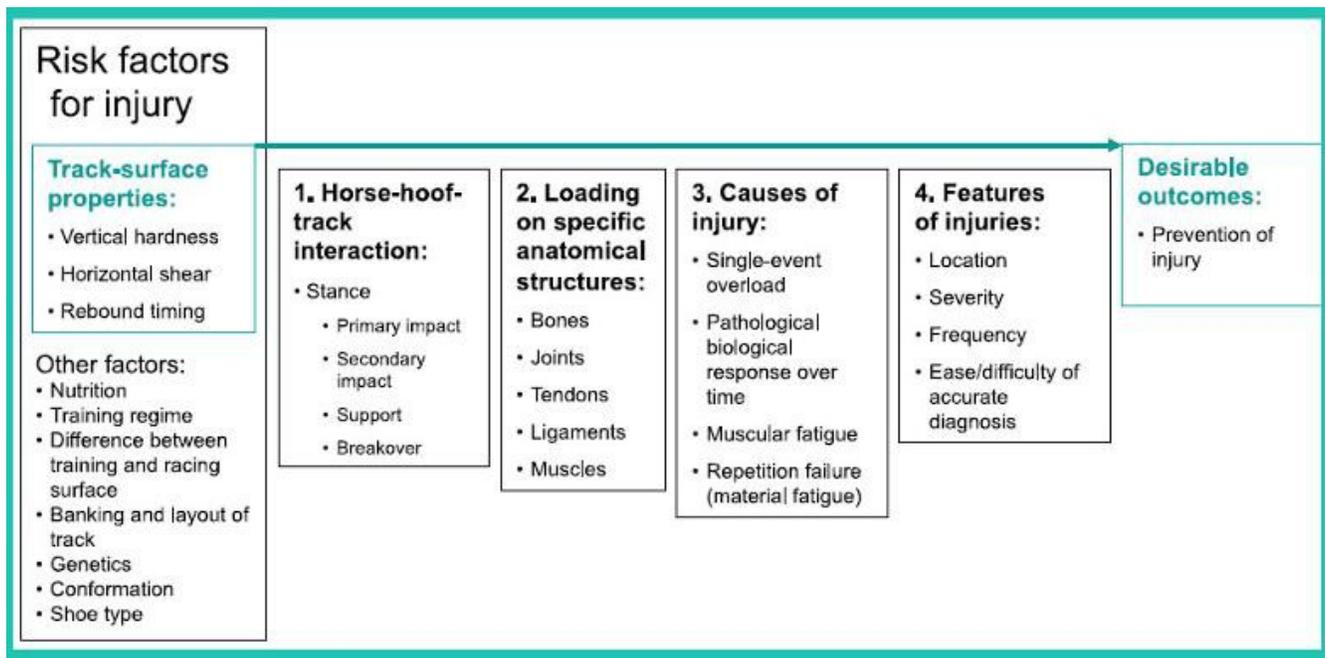
FIGURE 1: Risk Factors for Injury

[http://www.grayson-jockeyclub.org/resources/White\\_Paper\\_final.pdf](http://www.grayson-jockeyclub.org/resources/White_Paper_final.pdf)

A pathway from track properties as a risk factor to the desirable outcome of prevention of injury, via the postulated mechanical underpinnings of the causes of injury, and relevant feature of injuries once they occur.

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“Optimization of surfaces alone will never eliminate catastrophic injuries, and may not even be a primary factor in most injuries. However, the absence of well accepted characterization methods and basic science of racing surfaces is a significant obstacle to improved performance and safety. A critical aspect of the effort to improve surfaces is looking at the factors of which control the performance of racing surfaces in the context of the relevant biomechanics, the different types of surfaces, and potential testing and maintenance strategies.” [5]

In contrast to dirt, synthetic tracks or “engineered surfaces” were designed to allow for improved shock absorption and “give” which in theory translates to diminished trauma to the distal limbs and overall reduction in catastrophic injuries. Apart from the objective of decreasing the risk of injury, synthetics were also predicted to eradicate some of the persistent issues that beleaguer dirt surfaces such as compaction, inadequate drainage, irregular surfaces and variations involving weather and temperature.

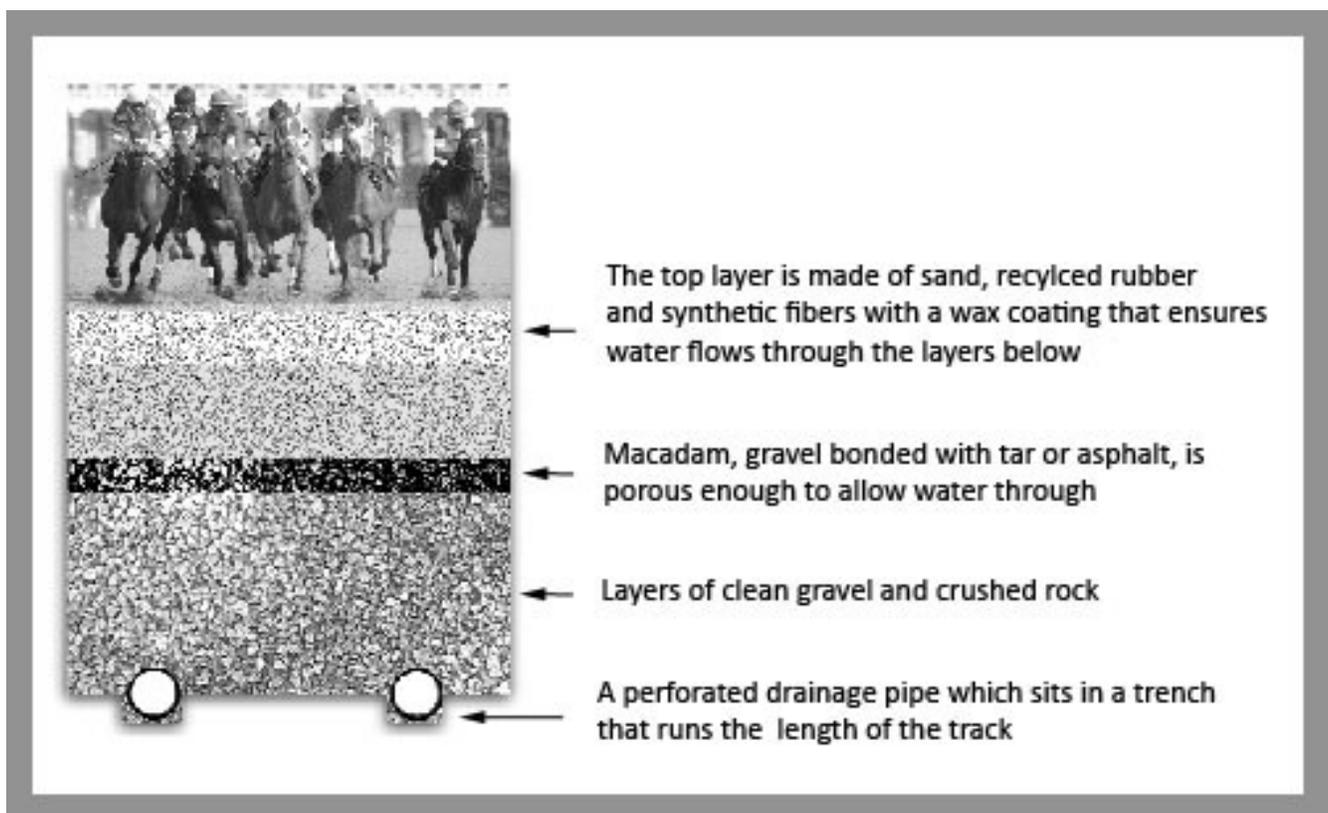
Currently there are several types of synthetic surface materials (refer to Table 1) all essentially combinations of sand, polymer oils, plastics in various forms, fibers of varying types, rubber compounds as well as waxes and binding agents. [6]

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Designed with a base of gravel and porous asphalt the drainage system helps repel water and decreases the amount of rainwater held within the track surface which typically plagues dirt tracks during intense periods of rain. A cross section of a typical synthetic track surface and drainage system is shown in Figure 2.

FIGURE 2: Cross Section of Typical Synthetic Track Surface  
<http://ag.arizona.edu/rtip/students/nightschool/study040411.pdf>



There appears to be no skepticism that synthetic tracks have a clear advantage in terms of drainage. Since water is drained vertically downward from the surface, sloppy conditions are avoided allowing the track to remain open for scheduled training and racing venues. Consequently field size and handle are largely unaffected. By contrast it is often necessary to “seal” conventional dirt tracks by packing the surface down with heavy rolling equipment to prevent water from penetrating the surface. [7] This influences track consistency and has the potential to decrease field size which affects the betting handle negatively. The norm is that

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more money is wagered on races when the field size is larger hence the dryer synthetic surfaces decrease the number of horses scratched under inclement weather and track conditions.

“California racing figures to be the biggest benefactor of increased field sizes, because of anemic numbers over the past decade, seasonal considerations, and the artificial surfaces that now make it a much more attractive winter destination for East Coast trainers, who previously shunned sending horses out west because of California’s reputation for hard, fast racing surfaces.” [8]

However, whatever positives the dryness factor contributes, synthetic surfaces are not without other climate–related issues, principally temperature fluctuations.

## *The cold . . .*

“But as we got to October and cool weather, we started to see some separation of the sand away from the rubber and fiber, and the wax away from the sand. The fiber began balling up and the surface could not be compressed. It was like pushing down on a bag of feathers. We had trouble working the track, and it began behaving like a cuppy dirt track, which was not as advertised.”

## *The heat . . .*

“Then, in the hot weather, we had to fight it from being too hard. The wax seems to get more viscous in hot weather and the track presses down, and you have to dig it up and roto-till it enough to keep some give in it.

## *Changing seasons . . .*

“It requires attention to the elements, especially temperature and moisture. We race in 95-degree weather with 90% humidity in September, and in five-degree weather with blowing winds in the winter, so you must take steps to anticipate what’s coming and keep track of how the surface behaves. We’ve had to modify the surface from its original mix toward that end, laying down more of an oil-based wax” to keep the ingredients from sticking, or balling up, in horses’ hooves.” [9]

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Clearly synthetic tracks are a work in progress nevertheless the anathema expressed by some in the industry often defies logic.

Synthetics are also proving to be a steep learning curve for many track superintendents where promise of less maintenance and consistency was originally acknowledged. Not only are these engineered surfaces prone to seasonal changes in the quality of the surfaces but also daily fluctuations in temperatures. [10]

Disparities in surface conditions between morning training and work-out sessions and races in the afternoon can negatively alter a horse's performance simply due to the fact that essentially they are running on two different tracks – horses thrive on consistency just as their owners, trainers, jockeys, bettors and fans do.

Furthermore, many believe that a properly maintained dirt track can be equally as safe and consistent as the synthetics and vehemently communicate this conviction in their eagerness to convert back to conventional dirt. The conversion of Santa Anita's dirt to Cushion Track to ProRide then back to dirt in late 2010 serves as a prime example.

"The study indicated the Pro-Ride surface in three years had developed a hard pan layer on top and that rocks were protruding the upper layer. The track also lost 16 days of racing over the last two winters because the synthetic surface didn't properly drain.

"Worse, the synthetic track became a polarizing subject in the industry. Owners and trainers with talented horses refused to train or race their horses on it. Hollywood Park and Del Mar will continue racing on their synthetic tracks, but the return to dirt — actually 86 percent sand, 8 percent clay and 6 percent silt — at Santa Anita has owners, trainers and jockeys excited. They're all hoping the betting public embraces it."  
[11]

The new dirt track at Santa Anita consists of less clay than the original "hard" surface that races took place on prior to the installation of the synthetics and very similar to the dirt tracks at venues such as Churchill Downs, Gulfstream, and Saratoga giving rise to greater safety for the horses.

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Dr. Mick Peterson and Santa Anita Park track superintendent Richard Tedesco both suggest that consistency and maintenance are of greater consequence than the type of surface.

“Injuries to horses can be reduced on dirt and synthetic surfaces, they said, if tracks can use data to assess their surfaces and keep them consistent through weather changes and amount of traffic.” [12]

Other recurring issues with synthetics are the tendency to wear out very quickly and the difficulties related to restoring them to their original condition. Besides the high price tag of initial installation, the outlay of upkeep over the longer haul may prove costlier than traditional dirt. Moreover, how does a degrading synthetic track bode in terms of safety to both horse and jockey alike?

“The problem is that the early promises of minimal maintenance have proved to be a little too rosy, and the cost of \$6 million to \$10 million for tearing out dirt and replacing it with the artificial surface can be prohibitive.” [13]

In the end, as with anything novel, there is a wealth of information regarding the shortcomings of these all-weather tracks as a result of the North American insular mindedness and steadfast conviction that dirt tracks are paramount to maintaining tradition. Or perhaps more intuitively it is fear of the unknown.

And, while it is true that synthetics were promoted as the panacea for the NA horse racing industry's woes but have not lived up to this lofty claim, recent data from the NA Equine Injury Database show promising trends. The question is whether these data are statistically significant, whether they are collected without bias and whether they are free of confounding factors that may host a flawed representation of the facts.

A look at the latest safety statistics, methods of collection and current opinions from those within the North American racing community will offer some compelling insight.

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[1] [http://www.bloodhorse.com/pdf/synthetic\\_surfaces\\_special\\_report\\_120807.pdf](http://www.bloodhorse.com/pdf/synthetic_surfaces_special_report_120807.pdf)

[2] Ibid.

[3] <http://ezinearticles.com/?Ready-Or-Not-The-First-Breeders-Cup-on-a-Synthetic-Track&id=1508213>

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- [4] [http://www.grayson-jockeyclub.org/resources/White\\_Paper\\_final.pdf](http://www.grayson-jockeyclub.org/resources/White_Paper_final.pdf)
- [5] Ibid.
- [6] <http://www.horseracingintfed.com/infoDisplay.asp?section=1>
- [7] [http://www.bloodhorse.com/pdf/synthetic\\_surfaces\\_special\\_report\\_120807.pdf](http://www.bloodhorse.com/pdf/synthetic_surfaces_special_report_120807.pdf)
- [8] Ibid.
- [9] Ibid.
- [10] <http://www.highbeam.com/doc/1P3-1996866071.html>
- [11] <http://www.signonsandiego.com/news/2010/dec/24/horses-race-new-dirt-track-santa-anita/>
- [12] <http://www.bloodhorse.com/horse-racing/articles/55903/officials-track-consistency-maintenance-key#ixzz1cC9uPcMf>
- [13] [http://www.grayson-jockeyclub.org/newsimages/CJ\\_SYN.pdf](http://www.grayson-jockeyclub.org/newsimages/CJ_SYN.pdf)

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## PART 4 — STATISTICS AND SAFETY: THE FACTS?

THE EARLIEST RESOLUTE undertaking to gather safety statistics with a specific focus on track surfaces in relation to equine fatalities entailed an assessment of four California racetracks: Del Mar, Golden Gate Fields, Hollywood Park and Santa Anita.

The study contemplating past information was initiated by Rick Arthur, DVM, as a means of providing a comparison in fatality rates prior to and after the installation of synthetic surfaces as mandated by the CHRB in 2006 after identifying dirt surfaces as problematic.

Data was collected between January 1, 2004 to December 31, 2009 for all three types of track surfaces in use at the four tracks - dirt, turf and synthetics - and the findings presented at the 56th annual convention of the American Association of Equine Practitioners (AAEP) held in Baltimore on December 4-8, 2010. [1]

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Overall the study revealed an average of 37% decline in the fatality rate on artificial tracks under study when compared to the former dirt equivalents. [2]

“Dirt surface fatality rates at four prominent California tracks (Del Mar, Golden Gate Fields, Hollywood Park and Santa Anita) were 3.05 per 1,000 starts, Arthur adds. Upon switching to synthetic surfaces four years ago, the number dropped to 1.93 per 1,000 starts. The number, Arthur adds, represents 60 to 70 less racing fatalities overall.” [3]

Apart from these general conclusions what also emerged from the study was the fact that these rates on synthetics during races were even lower than those observed on turf. [4] Given the deplorable fatality statistics over the prior three years on the dirt surfaces this was regarded as outstanding. However synthetics had no effect on the number of fatalities occurring during training sessions. Given that these training statistics were not included in the racing fatality data what does this imply and exactly how many horses were dying while training?

In spite of this, Arthur and other veterinarians involved in a panel discussion of race track surfaces also called attention to the statistic that 90 percent to 95 percent of fatalities routinely have undetected pre-existing stress fractures.

In other words, this intimates that a great majority of these fatal breakdowns can potentially be avoided regardless of the track surface.

Does it follow that pre-race track veterinarians are missing these critical flaws? And how does this factor into the track surface equation? Yet another caveat is the endurance and wear of synthetics tracks.

“However, Arthur also discussed the fact there is a general nationwide trend that after

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the changeover and initial reduction in catastrophic injuries sustained on the synthetic track, there tends to be a slight and gradual rise in the number of fatalities. He attributes this to the synthetic material wearing out very quickly and difficulty in maintenance of synthetic tracks.

"This was a novel technology," he said. "It's very difficult and expensive to maintain a synthetic surface, and it also sees a very (high volume of horses working and training on the surface)." [5]

Predictably these findings for the California tracks were not met without opposition and to this day generate much discord within the industry. To begin with the results are somewhat perplexing since the types of synthetic surfaces at the Southern California tracks are different raising the question as to the common foundation for comparison. Secondly, many critics cite the 37-day Del Mar 2011 summer meet where a total of 12 horses were euthanized because of injuries incurred on the Polytrack, 8 of which occurred during training sessions in the morning. [6]

Lastly and perhaps even more compelling is the question as to the validity of this study. Is this justifiably an unbiased and accurate comparison of dirt versus synthetic track surfaces?

One must take into account the condition of the dirt prior to the inauguration of synthetics at these tracks. As many are quick to point out the dirt surfaces at all of these tracks were poorly maintained and consisted of decades-old bases. In essence what this boils down to is a comparison of the worst years of racing on dirt with the first three years of synthetics – all brand-spanking new and presumably in optimum condition.

As dirt-loving and longtime trainer Bob Baffert quips, "California's dirt tracks 'were in such poor condition...they hadn't been done since Seabiscuit'". [7]

Can one call this a fair and unbiased comparison? Indeed it is a somewhat flawed approach to base tangible answers upon. Yet, in no way is this intended to dispute the findings of the study or malign Arthur and the group of panelists involved but rather to emphasize the complexities of analysis and the need for on-going compilation of data to validate or deny the findings. It was and is unquestionably a step in the right direction.

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## THE JOCKEY CLUB STUDY

On the heels of the California study another more comprehensive effort to resolve the track surface debate in the name of equine welfare was undertaken by the Jockey Club through their Equine Injury Database enterprise.

As a service to the horse racing industry, the Jockey Club and two of its for-profit subsidiaries – InCompass and The Jockey Club Technology Services Inc. – have financed the development and operation of the Equine Injury Database which collects select summary statistics from participating North American racetracks. [8] A list of participating tracks and associations can be found here at <http://www.jockeyclub.com/initiatives.asp?section=2>.

Over the course of two years from November 1, 2008 to October 31, 2010 analysis based on a total of 754,932 starts demonstrated lower fatalities on both synthetic and turf surfaces compared with conventional dirt. Table 1 presents the comparable fatality rates by surface type for the one-year and cumulative two-year periods beginning November 1, 2008 (fatalities per 1000 starts). [9]

Table 1. Equine Injury Database Fatality Rates by Surface Type

See <http://www.jockeyclub.com/mediaCenter.asp?story=470>

SURFACE TYPE	NOV 1, 2008 – OCT 31, 2009*	NOV 1, 2009 – OCT 31, 2010*
All	2.04	2
Dirt	2.14	2.14
Synthetic	1.78	1.55
Turf	1.78	1.74
*Fatalities per 1000 starts		

Clarification of the results and other trends noted in the data were presented by Dr. Tim Parkin, a veterinarian and epidemiologist from the University of Glasgow, who serves as a consultant on the Equine Injury Database and performed the analysis. [10] The first year of data collection only allowed for observation of the trends in the data due to insufficient sample size to statistically verify the results.

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With the addition of 376,000 starts to the database in year 2 of the study they were able to statistically validate certain trends observed; a statistically significant difference in the prevalence of fatality on both turf and synthetic surfaces versus dirt was confirmed. Moreover, the difference in the prevalence of fatality between synthetic and turf surfaces was not statistically significant.

The prevalence of fatality in 2-year-olds continued to be significantly lower than older horses racing on dirt surfaces. However, on synthetic or turf surfaces, there was no statistically significant difference in the prevalence of fatality between 2-year-olds and older horses. The prevalence of fatality continued to be unaffected by distance, weight carried and movement of races off the turf.

Fillies and mares competing in races that were open to horses of all sexes were not at an increased risk of fatality compared to those competing in races restricted to fillies and mares. The bottom line seems clear – synthetic tracks are safer than dirt.

Keep in mind also that this initiative is on-going and will prove to be long-term. Dr. Rick Arthur, the Equine Medical Director for the CHRB, has indicated that they will be examining many other risk factors to develop strategies that will make racing safer.

“Arthur indicated the next steps for the Equine Injury Database is a peer-reviewed study by Parkin that could examine many other risk factors: class drops, pedigree, workout patterns, the distribution of injuries, the correlation between injuries and bumping or clipping heels during a race, whether or not horses injured during a race were on a vet’s list.” [11]

What’s more, this scientifically-sanctioned study is in agreement with another convincing, yet non-scientific, analysis performed by Equibase at the request of the Thoroughbred Owners and Breeders Association (TOBA):

“...the percentage of “career-ending did-not-finish” incidents (CEDNF) was about twice as high on dirt than synthetic surfaces in 2009.” [12]

This survey was somewhat broader in scope in terms of injury category since it included not

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only catastrophic fatal breakdowns but also the so-called “CEDNF” stats which incorporates horses that didn’t finish their last races in 2009 and didn’t yet return to work out or start in 2010.

The end result: career-ending-did-not-finish incidents of 3.9 starts per 1,000 on dirt compared to 1.9 starts per 1,000 on all weather.

Table 2. CEDNF Statistics for 2009  
Comparing Dirt, All Weather and Turf Surfaces

[http://www.bloodhorse.com/pdf/NATB\\_CED\\_FinalDocument.pdf](http://www.bloodhorse.com/pdf/NATB_CED_FinalDocument.pdf)

SURFACE	ALL STARTS	% OF ALL STARTS	% CEDNFs/ STARTS
Dirt	339,022	76.2	0.39
All Weather	57,185	12.9	0.19
Turf	48,641	10.9	0.26
TOTAL	444,818	Average	0.35

The bottom line again – synthetics are safer than dirt.

Seemingly so the data clearly support the benefits of synthetics over dirt surfaces in regard to fatal breakdowns and/or career-ending incidents during racing events. Why then the stigma of synthetic tracks, the dissonance amongst participants and the irresponsible and categorically insular behavior in the horse racing industry?

The reasons are myriad but the rationale always returns to that of tradition, resistance to change and of course the long-established root of all evil – money.

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[1] <http://www.thehorse.com/ViewArticle.aspx?ID=17466>

[2] <http://veterinarynews.dvm360.com/dvm/Veterinary+Equine/Track-surfaces-consume-recent-summit/ArticleStandard/Article/detail/662771>

[3] Ibid.

[4] Ibid.

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[5] <http://www.thehorse.com/ViewArticle.aspx?ID=17466>

[6] <http://articles.latimes.com/2009/nov/06/sports/sp-breeders-synthetics6>

[7] [http://www.grayson-jockeyclub.org/newsimages/CJ\\_SYN.pdf](http://www.grayson-jockeyclub.org/newsimages/CJ_SYN.pdf)

[8] <http://www.jockeyclub.com/mediaCenter.asp?story=470>

[9] Ibid.

[10] Ibid.

[11] <http://www.paulickreport.com/news/ray-s-paddock/synthetics-safer-than-dirt-yeah-but>

[12] <http://www.bloodhorse.com/horse-racing/articles/57670/study-looks-at-number-of-dnfs-by-surface#ixzz1cTPntpOS>

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## PART 5 - OPPOSING FORCES

WHILE THE CONVERSION to synthetic surfaces was well-intentioned and driven by a desire to improve safety and reduce injuries to both horses and jockeys, there is anything but consensus on their merits, and reactions for those in the industry have been mixed.

Currently the evidence, although at times somewhat conflicting, does indeed favor synthetic surfaces. Still, there many underlying issues that fuel the debate - some perhaps of great significance and others conceivably at odds with the facts.

### INJURY DATA COLLECTION

Much controversy has arisen over the methods of data collection and what is and isn't included or revealed in the analysis of these data.

Have these statistics been properly interpreted given the many deaths that go unaccounted for?

Or is it simply fodder for the surface partisans as a means of endorsing the safety aspect of synthetics to justify the hasty decision to move to "all-weather" tracks without sufficient monitoring prior to the switch?

These are some of the questions that repeatedly surface.

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On the other hand the fatality statistics out of North American horse racing are despondently sobering compared to other major international jurisdictions.

“Going back seven years on all surfaces according to the TOBA study, the rate of CEDNFs (career-ending did not finish) is 0.34%, or 34 starters per thousand. Those numbers do not include horses that are injured in morning workouts, or finish a race and do not race again due to an injury. Those numbers are the highest in the world, and are totally unacceptable.” [1]

With this in mind a significant undertaking as such is necessary in providing a concerted effort to resolve the dilemma of unwarranted catastrophic breakdowns and other fatal injuries. Perhaps only one of the many inter-related and complex elements that comprise the sport of horse racing but nonetheless an important one if the NA industry is to compete with international repute. More importantly it is vital to preserving the safety and welfare of the horses who race on each and every track regardless of rank and reputation.

Part of the negativity and skepticism surrounding the statistics and ardent denial of acceptance is a result of the lack of data on injuries that aren't catastrophic in nature.

Specifically, there are many deaths that go unaccounted for simply because the horse is taken off the track and later euthanized if the injuries are deemed life-threatening or alternatively the horse is fatally injured during training sessions – statistics that are not included in the studies. This blame is primarily directed at the Jockey Club's analysis stemming from the Equine Injury Database although work is in progress to include such information to further develop the understanding of injury risk as it applies to synthetics versus dirt. [2]

“And since racetrack-fatality reporting isn't just an inexact science, it's absolute fiction (only horses who die on-track, count, those that are hauled off the racing surface and are put down even minutes later do not), I don't yet trust that fewer horses are actually dying. Perhaps fewer need to be euthanized on-track due to broken bones, but if they're being vanned-off only to be put down when it's discovered that their hind suspensory is so blown they'll never walk right again, let alone race, what is the practical difference in horse safety?” [3]

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There is undeniably no question that the data collected must extend beyond catastrophic racing breakdowns to clearly delineate the benefits or downfalls of either surface. Furthermore the issue of under-reporting weighs heavily on fatal breakdowns during training sessions in the morning where the vast majority of these incidents take place. [4]

Subsequently data sets collected to statistically prove out the risk factor do not necessarily reflect reality. Additionally many catastrophic injuries have little to do with the track surface yet the convenience of blaming the surface for fatalities or alternatively crediting it for lack thereof seems all too common.

In the early days of synthetic tracks in NA statistics often misrepresented the truth and/or were manipulated to justify the switch. Most notably the failure to include fatal breakdowns during training sessions was and to this day is a bottleneck in unraveling the truth. While California tracks saw great strides in fatality rates over the synthetics likely due to the extremely poor condition of the age-old dirt tracks prior to their installation, other tracks did not fare as well. [5]

For example:

- At Woodbine in Toronto, ON Canada where a Polytrack surface was installed in 2006 there were 4 racing fatalities in 2006 and 2 in 2007... seemingly an impressive record over a two year period. In reality the total number of fatal breakdowns during training sessions and racing events was 31 in 2006 and 38 in 2007, with the overwhelming majority over the Polytrack – an order of magnitude higher than reported.
- Arlington Park had a disastrous 2006 season over dirt with a total of 22 fatalities with an improvement in 2007 of 13 on Polytrack. However this was the same number (13) of catastrophic breakdowns that occurred in 2004 on the dirt track and more than the total combined fatalities for the 2002 and 2005 seasons over dirt.
- During the Keeneland fall meet there were 4 fatal breakdowns on Polytrack which was equal to the number of breakdowns in total from the 2005 fall and 2006 spring meets on dirt.

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Another component that has attributed to the raging debate is the release of misinformation by the press and media. In one incident a March 2008 article in the Daily Racing Form (DRF) a claim was made that data collected for the first six months of 2007 revealed no significant difference in fatality rates between the two surfaces. [6] In fact, the truth was that synthetics came out on top.

Another arose when a commentary in the LA Times reported that Thoroughbreds suffer a higher number of fatalities on synthetics versus dirt. This inaccuracy was simply ignorance on the part of the misinformed reporter. As Bill Finley points out in his excellent piece "Ground Control: The (REAL) Truth About Synthetic Surfaces":

"It included the information that there were 19 deaths in 2008 at California tracks on synthetics that were directly related to hind-end injuries, and just one death on dirt surfaces related to a hind-end injury. That led the reporter to conclude that when it came to hind-end injuries, synthetic surfaces were much more dangerous than dirt. What the reporter apparently didn't understand was that the vast majority of all main track races in California are run on synthetic tracks. With only Fairplex and the Northern California fair tracks still racing on the dirt, it was hardly a surprise that synthetic surfaces produced more fatal hind end injuries than dirt surfaces. The entire article was based on a badly flawed premise." [7]

It is this kind of propaganda that distorts the facts and makes for great difficulty in providing a clear picture to both the public and the racing world especially given the state of infancy in which the collection of relevant data currently exists.

Some activists go even further when it comes to painting a sinister picture of the data collection methods and the lack of transparency, but is it warranted? Often it seems it is easier to deny than to embrace a change that may prove to better the state of NA racing. One such individual branded as a relentless activist against the inception of synthetic surfaces — Andy Asaro — has posed unremitting and condemning questions as to the legitimacy of the claims in favor of synthetic tracks. [8]

Most of the accusations embrace the honesty factor of said statistics and the implications of the motives behind the initiative ranging from monetary reward to inconsistency in data collection and reporting. [9]

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"Asaro sent two requests to the CHRB asking whether they had knowledge that Dr. Arthur had any financial relationship with the Keeneland/Polytrack/Martin Collins International consortium. He never received a reply.

"Asaro's contention is that the statistics compiled by Arthur were both misleading and reckless.....comparing the last three years of a dirt surface with a 10-year-old base to a surface made of new synthetic materials and a new base was deceptive, yet Dr. Arthur continued to do so and the CHRB endorsed the findings without additional study.

".....since the middle of 2008, the beginning of the run-up to Breeders' Cup, morning and afternoon veterinary inspections have been stepped up dramatically. He points to the fact that there have been many more program and gate scratches during this period. He challenged the CHRB to disprove his assertions."

Some may think this to be the diatribe of an enraged horseman obsessed with dirt tracks on a mission to obliterate synthetics altogether. Still others are in clear agreement with the notion that there is something amiss in the venture's entirety. Veteran trainer — Darell Vienna also a member of the California Bar — who serves as vice-president of the SoCal chapter of the California Thoroughbred Trainers group had this to say:

"Horsemen have been unable to reconcile their experiences on the synthetic surfaces with Dr. Arthur's conclusions. As you know Dr. Arthur has refused to provide the raw data underlying his conclusionary reports. As evidence of Dr. Arthur's incompetence or misfeasance, I direct your attention to his summary found on page 36 of the CHRB Annual Report, Fiscal Year 2007-2008."

([http://chrb.ca.gov/annual\\_reports/2008\\_annual\\_reports.pdf](http://chrb.ca.gov/annual_reports/2008_annual_reports.pdf)). [10]

What this refers to is the fact that Arthur, in his quest to prove synthetics safer, incorporates fatality data from Los Alamos, which includes Quarter Horse Racing.

Of the total 77 fatalities reported on dirt, 50 of these occurred at Los Alamos. If these statistics are removed from the study the end result gives evidence of precisely the opposite conclusion

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where 27 fatalities occurred on dirt and 43 on synthetics – in other words, synthetics are more harmful than dirt. [11]

Again, the question arises as to whether these are valid arguments or simply frustrated players in a racing jurisdiction where synthetic tracks were mandated looking for answers to contradict the growing database that tends to validate the lower fatality risk associated with synthetic over dirt surfaces. These examples of the kinds of controversy that exist over the benefits of synthetic surfaces serve to highlight the complexity of the situation and the need for an honest accounting of racehorse injuries during both training and racing venues. What the statistics do not show are the many underlying factors that can lead to catastrophic breakdown.

It is unscientific to focus only on the surface to explain differences in fatality rates. In fact some of the safest tracks in North America are dirt. In the analysis of career-ending injuries in NA for 2009 compiled by Equibase for tracks with more than 1,000 starts, 4 of the 12 safest tracks were dirt.

TABLE 1. TOP 12 TRACKS IN THE CEDNF STUDY (2009)

<http://www.keeneland.com/lists/copy/copy.aspx?Page=Career%20Ending>

RANKING	RACE TRACK	MAIN SURFACE	% CEDNFs/STARTS
1	Keeneland	AWS	0.07
2	Saratoga	Dirt	0.13
3	Pimlico	Dirt	0.13
4	Indiana Downs	Dirt	0.15
5	Santa Anita	AWS	0.15
6	Woodbine	AWS	0.18
7	Presque Isle Down	AWS	0.18

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8	Belmont	Dirt	0.18
9	Arlington Park	AWS	0.19
10	Golden Gate	AWS	0.19
11	Hollywood	AWS	0.20
12	Turfway Park	AWS	0.20

*AWS = All Weather Surface; CEDNF = Career Ending Did Not Finish*

This complicates the ongoing debate yet further.

Is it a question of consistency and maintenance? Moreover, is it also related to the proportionately larger number of less prominent dirt racetracks where much older and cheaper horses race?

It is obvious that the synthetic surfaces are only installed at racing's "big" tracks where many high end graded stakes occur. How do these factors contribute? Are they important?

In the end the number one priority is safety. With time and diligent attention to the intricacies of rigorous data collection with any luck there will be an unambiguous answer.

## THE BETTOR, THE BUCK AND THE SPEED

No doubt one of the most widespread complaints regarding synthetic tracks is the effect they have on handicapping and the betting contingent.

Until synthetics were installed, the handicappers had only dirt and turf ratings to consider which played out according to how a particular horse handled the surface.

Due to considerable differences between the two surfaces this was a relatively easy task seeing as some horses are bred to run on turf and others on dirt.

With the introduction of the all-weather tracks, which are not wholly akin to either dirt or turf, this adds yet another element to the bettor's assessment particularly since these tracks are

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used interchangeably with conventional dirt surfaces.

Central to the issue is the fact that synthetics change a horse's gait due to increased grab and less kickback which is more analogous to racing on a turf surface rather than dirt. Given that the majority of races are run on traditional dirt tracks this not only makes it difficult for horses to switch between incongruent surfaces but also renders time veteran handicapping information ineffectual. This excerpt from an article written by Edward McClelland pretty much sums it up:

“Earlier this year, I watched a Polytrack race and a dirt race side by side at a Las Vegas sports book. They looked like they had been beamed from different planets. At Aqueduct, a Queens, N.Y., racetrack that has so far refused to go plastic, the deep brown dirt was scored with long hoof divots. The Turfway surface, by contrast, looked as sterile as sawdust. On the dirt, freewheeling frontrunners could not be caught in the stretch. Turfway's plasticized races were still up for grabs an eighth of a mile from the wire. Dirt races are won with speed from the gate; Polytrack seems to reward stamina.”  
[12]

One can certainly understand the dedicated bettor's dilemma when speed ratings are one of the major factors in dirt competitions and where it is difficult enough what with the ability of some horses to adapt to different running styles and/or track surfaces together with the jockey's skill in strategic placement during the race. Some have gone so far as to claim betting handles are down at tracks that have adopted the all-weather surfaces.

These allegations are for the most part erroneous and anchored in skepticism of synthetics particularly among big bettors. The contention of declining handles on synthetics due to reluctance to wager on unfamiliar surfaces can be readily countered given the economic situation in NA in recent years.

“The horse racing business is bad most everywhere. According to Equibase, \$15.5 billion was wagered in North America in 2006. In 2009, the final number dipped to \$12.3 billion. That's a 20.6-percent decrease. Some tracks with synthetic surfaces may be down in handle, but they aren't down nearly as much as the North American average. If anything, synthetic surfaces seem to have helped tracks prevent the type of devastating handle decreases that are plaguing the rest of the industry.” [13]

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Many see these tracks as unpredictable where unwelcome surprises arise and long-shot victories are becoming more prevalent. While there is some truth to this, simply put, they do not favor speed horses, the basis of North American handicapping methodology. If synthetics are here to stay which it so appears in terms of the recent optimistic safety statistics then handicappers will clearly have to catch up. It's like anything else – the predictability will improve with time as a horse gains experience with increasing lifetime races on synthetic surfaces.

But is this speed versus endurance tradeoff necessarily bad?

Perhaps this is foremost from the handicapper's perspective but what about the horse? If anything this would be a welcome change from what currently exists in North America where horses are bred for speed, not stamina. Over the last few decades, the breeding industry has invested millions, if not billions, of dollars "breeding for speed" all at the expenditure of rampant inbreeding and increasing unsoundness in the NA Thoroughbred.

While it is laudable and necessary to evaluate the attributes of these novel tracks in their ability to reduce fatality rates the real underlying problems in North American racing are shrouded in rhetoric and denial. Unsoundness and manifest fragility in consequence of the racing industry's zeal to continuously narrow the gene pool all in the name of speed combined with the fanatical use of race day medication and other pain-masking drugs will undeniably beget fatalities regardless of the track surface.

Forget about the handicapping and the bettor's quandary. Realistically, with these confounding factors how can a reliable assessment of track surfaces be established? Almost certainly, the carnage will continue.

## INJURIES: FEWER OR SIMPLY DIFFERENT?

Continuing to plague the synthetic-dirt debate is the contentious issue of the change in the type and location of injuries that are specific to all-weather tracks.

Time and again both anecdotal and empirical evidence has identified an increase in soft tissue injuries on synthetic tracks particularly those involving the hindquarters.

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Additional findings have also been documented.

“There may also be a trend toward injuries moving higher on the horses’ legs and bodies: Dirt tracks tend to produce injuries at or below the knees and hocks, while horses running on synthetic surfaces show more problems with shoulders, stifles, hips, necks, and backs. Some veterinarians have reported a higher incidence of sore hoof soles on the artificial tracks, despite the fact that the surface is generally softer and less slippery than dirt tracks.” [14]

Many also contend that apart from a decline in catastrophic breakdowns, there are as many injuries, significantly different but equally as devastating in some cases.

“The most common is a body soreness that seems to stiffen up some horses and cause longer periods of rest between races. Some horses never seem to recover from this. Some vets are now treating more joints than were ever treated before the change to try to relieve the soreness, including the treatment of more shoulder, stifle and hip joints. Trainers have reported new types of injuries that seem to negate the premise that the synthetic surface is kinder to horses for training and racing. A prominent leading trainer only trains on the dirt training track to reduce the stress on the horses of training on the synthetic track. Even the fractures that sometimes caused catastrophic breakdowns in training and racing shifted location from the fragile front legs to other bones.” [15]

And some even go so far as to intimate that they are more dangerous than traditional dirt. Consider the statement by the successful yet retiring Southern California Trainer, Mel Stute, during an interview with the Daily Racing Form (DRF) on his reasons for leaving the industry:

“I blame it on the tracks. They broke me. I owe the feed man. I owe here, I owe there. I don’t know how many tibias and sesamoids I’ve had since the new tracks came in. In my career, the first 55 years, I put down four horses. Since they put in the new tracks, I put down 13.” [16]

Despite this negative feedback regarding the safety component of artificial track surfaces the consensus among most track veterinarians is that although there has been an increase in soft

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tissue injuries attributable to synthetic surfaces there are, by and large, fewer true concussion-type injuries.

Moreover most agree that artificial tracks are safer and have had a positive impact on the overall well-being of the Thoroughbred where injuries are for the most part not as devastating nor create as many career-ending scenarios. [17] Hyped as one of the key features to the wider variety of injuries associated with artificial tracks is the ability of the horse to recover more easily, especially hind-end related. Typically front-end injuries are more damaging and recovery is less than optimistic.

It is widely believed that the California mandate for synthetic tracks was well before its time in consequence of their desperate search to improve the dismal fatality rates and appease discontented fans. Based on the accolades synthetics had received in Europe the CHRB moved quickly and recklessly into unknown territory without familiarity on a number of critical factors inherent to success (e.g. maintenance, impact on racing style) – undeniably a monumental task. [18]

Regrettably what followed was a campaign to promote the synthetic surfaces as the solution to all of North American racing problems, regardless of track location. This declaration of their unsurpassed superiority has caused much antipathy since their inception.

What is important to realize is that injuries for horses running over synthetics have not been eliminated but rather have shifted. This kindles much criticism from the naysayers within the industry principally as a result of the high expectations when first installed.

Unfortunately these tracks were marketed as the cure-all that would significantly reduce injuries, provide maintenance-free consistent surfaces while at the same time allow horses to run faster with less stress and soreness.

This may have lulled trainers into a false sense of security especially given that synthetics have a propensity to mask a horse's soreness. [19]

“You have a tendency to think the horse is doing better than he actually is on synthetics,” Ferraro said.

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“And combining synthetics with (non-steroidal medication) is a lethal combination. That tends to make you think your horse is better than he is, and they get hurt.” [20]

Adding to this common grievance is the highly respected John Shirreffs, trainer of the great mare Zenyatta, who contends, along with others, that problems with unsound horses increased significantly with the installment of the synthetic surfaces in California. [21]

“Shirreffs said he’s never had more problems keeping his horses healthy.

‘I find the attrition rate is very high on synthetics,’ he said. “There are a lot of injuries in the mornings and those horses don’t even reach the races in the afternoons. It seems the problem is always the hind end. It’s very difficult because on a dirt track, if you’re diligent and paying attention to your horses, you’ll find a little heat or filling. You can adjust the area right away. On a synthetic track, you don’t get that heat or filling. By the time the horse is noticeably off, it’s a much greater problem than it would have been had you found out earlier.’ ” [22]

Many blame the lack of consistency and maintenance issues on pervasive injuries that continue to dog the synthetics.

With fluctuating conditions throughout the day coupled with the learning curve that is required of most horses, there is without question a defined risk of injury.

Moreover, given the fact that the hoof movement on a synthetic track differs from what a horse experiences on dirt together with the change in stride and shift in the bio-mechanics of motion raises the question of whether NA horses are properly bred for these types of surfaces.

While the battle rages on, several individuals have been conducting experiments to better understand the dynamics of racing surfaces – dirt and synthetic alike.

One of these is Dr. Mick Peterson, the Executive Director of the Racing Surfaces Testing Laboratory and the Libra Foundation Professor for the College of Engineering at the University of Maine, probably the most prominent authority on racing surfaces in the world.

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The Racing Surfaces Committee was formed at the inaugural Welfare and Safety of the Racehorse Summit in 2006 while the testing laboratory was established in the spring of 2009 by means of financial support of a wide-ranging industry partnership to enhance surface safety for horses and riders. [23]

In June of 2011, a "Racing Surfaces White Paper" [24] was released to participants at the 10th Annual Track Superintendents' Field Day Conference (June 14-16), hosted by Parx Racing in Bensalem, Penn.

"The fundamental issue behind doing this white paper was the fact that there has been limited academic study of racetracks," Peterson said. "Veterinarians, engineers and soil scientists have all studied racing surfaces but it has been a modest body of study. This paper will tell researchers and scientists what we don't know and confirm once again that actions taken to improve safety should be based on sound science and published research." [25]

The reaction from those in the industry has been extremely positive. Through scientific knowledge transfer, track maintenance practices that translate to improvements in safety, affirmative measures have been realized. With the goal of optimizing surfaces at a variety of track surfaces at different locations much progress is being made to remedy the longstanding problems of track consistency and uniformity while improving the maintenance skills and judgment of those responsible on a daily basis.

"The Racing Surfaces Testing Laboratory conducts 24 different tests at its lab and in collaboration with supporting labs. These tests have been performed for 50 different clients inside and outside of the U.S., with some of the racetracks now in their third year of a comprehensive testing program. The result is that thousands of tests have been conducted for these tracks, which allow surfaces to be compared over time and between racetracks with similar climate and design.

"In addition to the testing, the lab is focusing on evaluating which tests are related to track consistency when evaluated over time as well as developing new tests and the reliability of testing. Procedures are also being developed that will lead to ISO certification." [26]

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A long time coming perhaps but nonetheless a most instructive and progressive collaborative effort in support of equine welfare.

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Researched and Written by JANE ALLIN

## PART 6 - TODAY AND BEYOND

IT HAS NOW been almost four years since the primary launch of artificial tracks in North America and although the industry is making progress in its quest to convince both the public and the players of the merits of synthetics there still exists apprehension and opposition to the initiative. Moreover, controversy and perplexity continue to vex the consensus that synthetics are superior to their dirt counterparts.

Following Santa Anita's return to dirt in 2010 after three years of headaches with two different synthetic tracks the report of 12 racing and 7 training fatalities during its winter-spring meet unleashed a tirade against God's earth from the pro-synthetic advocates.

"I know that what I'm about to say is not politically popular in the industry right now," Nick Nicholson, the president and chief executive of Keeneland, said, "but when Santa Anita goes to dirt, and as many horses lose their life on that racetrack in three months as have on this racetrack in five years, you just can't sit back in good conscience and be satisfied with the status quo." [1]

While these fatalities are indeed tragic and cause one to reflect upon the situation at hand, what is necessary for consideration are other mitigating factors that may have contributed to these deaths. Can these all be ascribed to the track surface or are the breakdowns a complex balance of the many risk factors for injury? Bad luck perhaps? Just as some may scoff at the notion of luck having even the remotest thing to do with these losses this is precisely the reason given for the recent fatalities at Del Mar's Polytrack.

During the 37-day Del Mar Thoroughbred Club meeting that opened on July 20 this summer a total of 12 horses succumbed to fatal injuries much to the dismay of Del Mar's turf and landscape superintendent Leif Dickinson. Eight of these occurred on the synthetic Polytrack – two as a result of racing and six occurring in morning workouts when there are no state veterinarians checking horses. [2]

No one is placing blame on the track surface and all are in consensus that the fatalities are simply "bad luck". As Madeline Auerbach, owner and breeder of 3-year-old colt Burn who fractured his right foreleg before the first turn of the 1 1/8 mile Del Mar Derby acknowledges:

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"Horses can be on the most perfect surface, but they'll land funny, and that's all it is," said Auerbach, who was elected to the prestigious Jockey Club this summer. "People like to blame this, that and the other, but there is no blame. It's just one of those things we don't have any control over. I sent out a perfectly healthy horse with no problems on a perfectly good track, and it happened. There is no blame. It's just the racing gods."  
[3]

As the Devil's Advocate I would ask:— Is this fair to place blame on the Santa Anita dirt track for the fatalities while at the same time sanctioning the breakdowns on the Polytrack by way of "bad luck"? Perhaps from pro-synthetic champions it is, but on the other hand others are not so quick to judge. A spate of fatalities also occurred during Santa Anita's 24-day autumn meet where trainer Barry Adams expressed dismay and rancor with the tracks' new dirt surface.

"For Southern California trainer Barry Abrams, the end of Santa Anita's fall meet couldn't come soon enough. Barry Abrams voiced his anger about the dirt surface, saying he had eight horses injured, including two that were euthanized from injuries suffered during morning gallops.

"I'm very angry," trainer Barry Abrams told the LA Times. "I think it's the worst it's ever been. It's very dangerous. I'm not venting. This is the truth." [4]

Then again others disagreed with Abrams assessment: no less the very person who lost horses during the catastrophic 37-day Del Mar Thoroughbred Club meeting dilemma:

"Madeline Auerbach, who owns horses with Abrams and is on the board of directors of Thoroughbred Owners of California, said she doesn't blame the track for her stable's injuries.

"Unfortunately, we've had a real rough patch," Auerbach said. "Sometimes people get frustrated and look for any explanation why things have gone south. We're having a difficult time, but I don't think it's the track's fault. [5]

"Said Auerbach: 'We've had a perfect storm of injuries, and I wish I could snap my fingers and make it better. If I felt this track was causing the death of my horses, I

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would say, 'Don't run here' " [6]

By and large, a key feature factoring into the controversy is the realization that North American racing is very much different from racing in the UK and Europe. For example, where courses are intrinsically greater in distance, have more sweeping turns and are overall less demanding – not, by any means, from an endurance aspect but rather an acute and critical risk perspective.

NA races are primarily sprints where speed dominates and when coupled with treacherous course design present unquestionable risk and imperil the horses that compete. Dirt is synonymous with speed and this, unfortunately, is what North America racing is all about.

Ceremoniously the Triple Crown is the undisputed model of North American racing – a grueling three-race event on fast dirt tracks over an unrelenting time schedule where speed is key and competition is fierce – all-American as they say. In contrast, the Breeder's Cup, although hosted by the US, has international flavor and attracts horses from around the world.

Many of the Breeder's Cup events, but not all as there are turf races as well, take place over conventional dirt which hinders the ability of grass and synthetic track bred horses to compete against NA dirt racers time and again. Sadly this tarnishes NA racing yet further. Simply put, from an international perspective a level playing field is required – normalize the game for equitable and robust competition. In the end this means switching to turf and/or synthetics, allaying the breeding for speed, eliminating race day medication and quelling the unwarranted and ubiquitous use of pain-masking drugs.

What this clearly demonstrates is that comparing North American racing and the rest of the racing world is, like the cliché goes, comparing apples to oranges. No one is condoning the high attrition rate of the NA Thoroughbred, the indisputable elevated number of catastrophic breakdowns compared to the rest of the world, the fatality rates, the inbreeding and ultimately the prohibitive allowance of race day and other medications that add to the swill of its reputation.

Regardless of the pro-synthetic or pro-dirt posture it seems the industry is at a standstill. For/against whatever!

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In the end it should not be a matter of blame but rather an honest approach to benefiting the horse — that is and should be the only meaningful objective in preserving this “Sport of Kings”. After all, track surfaces seem to be a “Red Herring” to some degree — something decidedly convenient in the attempt to divert attention from the causal dogma of the state of North American racing in contrast to the rest of the racing world.

It is time that North America wake up to the intolerable exploitation it has delivered these magnificent creatures who ceaselessly instill awe in us all. Most disconcerting is the fact that North America is the derelict of the horse racing world and desperately needs to dismount its soap box in the name of equine welfare.

“Where is there dignity unless there is honesty?” ~ Cicero (106-43 BC)

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[1] <http://www.nytimes.com/2011/06/05/sports/horse-racing-reviving-debate-on-synthetic-tracks.html?pagewanted=all>

[2] [http://www.nctimes.com/sports/equestrian/racing/article\\_75466b36-d5f0-5713-822e-a8ef688fce18.html#ixzz1XpvC9Vjt](http://www.nctimes.com/sports/equestrian/racing/article_75466b36-d5f0-5713-822e-a8ef688fce18.html#ixzz1XpvC9Vjt)

[3] <http://www.signonsandiego.com/news/2011/sep/05/consensus-del-mars-turf-course-not-fault-horse-dea/>

[4] <http://www.paulickreport.com/news/the-biz/trainer-abrams-rails-against-santa-anita-dirt-surface/>

[5] <http://www.paulickreport.com/news/the-biz/trainer-abrams-rails-against-santa-anita-dirt-surface>

[6] <http://www.latimes.com/sports/la-sp-santa-anita-20111107,0,1008413,print.column>

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[https://thehorsefund.files.wordpress.com/2019/09/thf\\_ground\\_matters.pdf](https://thehorsefund.files.wordpress.com/2019/09/thf_ground_matters.pdf)

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