

Fall 2005 TeamWerk

THE OFFICIAL NEWSLETTER OF WERK THOROUGHBRED CONSULTANTS

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Waiting to Exhale

BY JACK WERK

Outcrosses dominate the Triple Crown and Breeders' Cup

An almost unimaginable 48.3% of the 541 hips during the first two days of the 2005 Keeneland September sale are inbred within four generations

During the late 80's and throughout the 90's, inbreeding was the fashion in thoroughbred breeding and was often successful. As a legacy of that time, many pedigree advisors still base their approaches to pedigree entirely on an analysis of inbreeding, focusing on sex-opposite inbreeding, inbreeding through closely related strains, inbreeding to females, and all manner of terms to describe patterns of duplicated ancestors that show up on pedigree print-outs. Even nicks, many of them believe, can all be explained in terms of inbreeding. Inbreeding was the fashion then and still is.

Through his columns in *Daily Racing Form* and later in *OwnerBreeder*, Leon Rasmussen was a strong proponent of inbreeding in general, and especially through females. In one of his many articles in *OwnerBreeder* dedicated to the virtues of inbreeding, Rasmussen writes in the June, 1990 issue, "We breathe in (inbreed) and we breathe out (outcross). Right now, intelligent Thoroughbred breeding should be in a 'breathing in' mode." Rasmussen believed that the thoroughbred population goes through cycles of intense inbreeding followed by the necessity to outcross.

Even without considering the role close inbreeding may play in the unsoundness plaguing racehorses today, it has become clear that the breed is long overdue to breathe out! Pedigrees today are overwhelmingly dominated by two primary sire lines—Mr. Prospector and Northern Dancer—and the extent of their dominance makes it increasingly more difficult to avoid close inbreeding.

The problem is exacerbated by an industry driven by the commercial market. This is best illustrated by the fact that an almost unimaginable 48.3% of the 541 hips during the first two days of the 2005 Keeneland September sale are inbred within four generations (see Roger Lyons' analysis of commercial pedigrees in this issue). This level of inbreeding would have been inconceivable in 1990.

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Through August 21, 13 stallions in North America have each sired seven or more unrestricted stakes winners in 2005. Nine of the 13 descend directly from either Mr. Prospector or Northern Dancer. Of the remaining four, Pulpit is out of a Mr. Prospector mare and has Northern Dancer in his pedigree as well, and Indian Charlie is out of a Northern Dancer-line mare. The only two stallions free of Mr. Prospector and Northern Dancer are A.P. Indy and Wild Rush. Wild Rush was sold to Japan last year.

There are 12 broodmare sires whose daughters have each produced eight or more unrestricted stakes winners in 2005. Ten of the 12, including the top seven, are direct descendants of either Mr. Prospector or Northern Dancer. The other two are Shirley Heights and Kris S., and only Kris S. stood in America.

While the problem of inbreeding is not confined to Mr. Prospector and Northern Dancer (Secretariat and Raise a Native also account for a significant number of inbred horses today), it is certainly the most dramatic. Not only has inbreeding to one or the other become commonplace, but now inbreeding to both is becoming unavoidable. I want to make it clear that I'm not suggesting inbreeding to Mr. Prospector or Northern Dancer, or both, will not produce a good racehorse. Over a nine-day period between July 30 and August 7, for example, Flower Alley (Mr. Prospector 3x3 and Northern Dancer 4x4x5) won the G2 Jim Dandy Stakes; Commentator (Mr. Prospector 3x4 and Northern Dancer 4x3) won the G1 Whitney Stakes; and Roman Ruler (Mr. Prospector 2x4 and Northern Dancer 4x5), won the G1 Haskell Stakes. In fact, Roman Ruler was a WTC 3-Star 'Best of Sale' recommendation to our clients at the Keeneland September sale in 2003.

What I am suggesting, rather, is that the breed is being painted into a corner. Consider three top stallion prospects for 2006, the aforementioned Roman Ruler and Flower Alley, and G2 Brooklyn H. winner Limehouse (Mr. Prospector 3x3 and Northern Dancer 4x3). An ever-growing number of mares that would normally be available to stallions going to stud with similar stud fees have pedigrees with Mr. Prospector or Northern Dancer, and in many cases both, close up. The question becomes 'what effect will three strains of Mr. Prospector and/or three strains of Northern Dancer within four or five generations have on the progeny of these matings?' The problem is compounded by the fact that Native Dancer is grandsire to both Mr. Prospector and Northern Dancer. It's time to exhale!

The dream of most owners and breeders is to win the Kentucky Derby, if not the Triple Crown. So, let's take a look at

...of the nine winners of the eight Breeders' Cup races for 2003, eight have *no* inbreeding within four generations and four have *no* inbreeding within five generations.

the pedigrees of the winners of the Triple Crown races over the past six years. Giacomo won the 2005 Kentucky Derby. Giacomo (Holy Bull-Set Them Free, by Stop the Music) has *no* inbreeding within five generations. Afleet Alex after finishing third in the Derby, came back convincingly to win the Preakness and Belmont. Afleet Alex has *no* inbreeding within five generations.

In 2004, perhaps the most exciting 3-year-old since Seattle Slew was Smarty Jones (Elusive Quality-I'll Get Along, by Smile), who entered the starting gate at Churchill Downs

undefeated in seven lifetime starts. He won the Kentucky Derby and Preakness before his surprising loss to Birdstone in the Belmont Stakes. Smarty Jones has *no* inbreeding within four generations. (He is inbred 5x5x5 to Bold Ruler). Birdstone (Grindstone-Dear Birdie, by Storm Bird), the horse that ended Smarty Jones quest for the Triple Crown, has *no* inbreeding within five generations.

In 2003, Funny Cide (Distorted Humor-Belle's Good Cide, by Slewacide) also won the Kentucky Derby and Preakness Stakes. Funny Cide has *no* inbreeding within four generations. (He is inbred 5x5 to Ribot). Empire Maker (Unbridled-Toussaud, by El Gran Senor) closed the door on Funny Cide's Triple Crown bid with his victory in the Belmont Stakes. (Empire Maker is inbred 4x3 to In Reality).

In 2002, War Emblem (Mr. Prospector-Sweetest Lady), had the Triple Crown in his sights after capturing the Kentucky Derby and Preakness. War Emblem has *no* inbreeding within five generations. Sarava (Wild Again-Rhythm of Life) ended War Emblem's bid with a victory in the Belmont Stakes. Sarava has *no* inbreeding within four generations. (He is inbred 3x5 to Nearctic).

In 2001, Monarchos (Maria's Mon-Regal Band, by Dixieland Band) ran the second-fastest Kentucky Derby ever. Monarchos has *no* inbreeding within four generations. (He is inbred 5x5 to Ribot). Point Given (Thunder Gulch-Turko's Turn, by Turkoman) finished 5th in the Derby, but came back to win the Preakness and Belmont Stakes. Point Given is inbred 4x4 to Raise a Native. In 2000, the Triple Crown was shared by three horses. Fusaichi Pegasus (Mr. Prospector-Angel Fever, by Danzig) won the Kentucky Derby. Fusaichi Pegasus has *no* inbreeding within four generations. (He is inbred 3x5 to Native Dancer and 5x5 to Nearco). The Preakness went to Red Bullet (Unbridled-Cargo, by Caro). Red Bullet has *no* inbreeding within

five generations. The Belmont was won by Commendable (Gone West-Bought Twice, by In Reality). Commendable has *no* inbreeding within four generations. (He is inbred 5x5 to Princequillo).

To summarize, 15 of the 18 Triple Crown races over the last six years have been won by horses with *no* inbreeding within four generations and 11 of the 18 races have been won by horses with *no* inbreeding within five generations.

From a prestige standpoint, the Breeders' Cup rivals the Triple Crown in its importance. Consider this:

- The 2005 BC Distaff was won by Ashado (Saint Ballado-Goulash, by Mari's Book). Ashado has *no* inbreeding within four generations. (She is inbred 4x5 to Almahmoud and 3x5 to Cosmah).
- The BC Juvenile Fillies was won by Sweet Catomine (Storm Cat-Sweet Life, by Kris S.). Sweet Catomine has *no* inbreeding within four generations. (She is inbred 5x4 to Princequillo).
- The BC mile was won by Singletary (Sultry Song-Joiski's Star). Singletary has *no* inbreeding within four generations. (He is inbred 5x5 to Princequillo).
- The BC Sprint was won by Speightstown (Gone West-Silken Cat, by Storm Cat). Speightstown is inbred 3x4 to Secretariat, 4x4x5 to Bold Ruler, 5x5x5 to Nasrullah, and 5x5 to Tom Fool.
- The BC Filly and Mare Turf was won by Ouija Board (Cape Cross-Selection Board, by Welsh Pageant). Ouija Board has *no* inbreeding within five generations.
- The BC Juvenile was won by Wilko (Awesome Again-Native Roots, by Indian Ridge). Wilko has *no* inbreeding within five generations.
- The BC Turf was won by Better Talk Now (Talkin Man-Bendita, by Baldski). Better Talk Now has *no* inbreeding within four generations. (He is inbred 5x4 to Northern Dancer).
- The BC Classic winner and 2004 Horse of the Year was Ghostzapper (Awesome Again-Baby Zip, by Relaunch). Ghostzapper has *no* inbreeding within five generations.
- Of the eight winners of the 2004 Breeders' Cup races, seven have *no* inbreeding within four generations and three have *no* inbreeding within five generations.

In view of the current level of inbreeding in the commercial market, the results of the 2003 Breeders' Cup are all the more disquieting.

- The winner of the BC Distaff was Adoration (Honor Grades-Sewing Lady, by Key to the Mint). Adoration has *no* inbreeding within four generations. (She is inbred 5x4 to Princequillo).
- The winner of the BC Juvenile Fillies was Halfbridged (Unbridled-Half Queen, by Deputy Minister). Halfbridged is inbred 3x4 to Mr. Prospector, and 5x5 to Buckpasser.
- The winner of the BC Mile was Six Perfections (Celtic Swing-Yogya, by Riverman). Six Perfections has *no* inbreeding within four generations. (She is inbred 5x5 to Roman).
- The BC Sprint was won by Cajun Beat (Grand Slam-Becky's Shirt, by Cure the Blues). Cajun Beat has *no* inbreeding within four generations. (He is inbred 5x5x5 to Bold Ruler).
- The BC Filly and Mare Turf was won by Islington (Sadler's Wells-Hellenic, by Darshaan). Islington has *no* inbreeding within five generations.
- The BC Juvenile was won by Action This Day (Kris S.-Najecam, by Trempolino). Action This Day has *no* inbreeding within five generations.
- The BC Turf was a dead heat between High Chaparral (Sadler's Wells-Kasor, by Darshaan) and Johar (Gone West-Windsharp, by Lear Fan). High Chaparral has *no* inbreeding within five generations and Johar has *no* inbreeding within four generations. (He is inbred 4x5 to Native Dancer, 4x5 to Nashua, 4x5 to Somethingroyal, and 4x5 to Mixed Marriage).
- Finally, the BC Classic winner was Pleasantly Perfect (Pleasant Colony-Regal State, by Affirmed). Pleasantly Perfect has *no* inbreeding within five generations.
- (2003 Horse of Year was Mineshaft was not a Breeder's Cup participant. Mineshaft has *no* inbreeding within four generations. He is inbred 5x5 to Nasrullah).

To recap, of the nine winners of the eight Breeders' Cup races for 2003, eight have *no* inbreeding within four generations and four have *no* inbreeding within five generations. Here is the box score of the last two Breeders' Cups: 17 winners, 15 of whom have *no* inbreeding within four generations and seven with *no* inbreeding within five generations.

Even though inbreeding is rampant, especially in the commercial market, the outcrosses are dominating the American classics and championship races. 🏆

Werk Thoroughbred Consultants' popular eNicks website (www.enicks.com), which passed its 100,000 eNicks milestone last Spring after only one year of operation, has just announced a new feature, one that will vastly increase the appeal of the site. Auction eNicks, launched in time for the 2005 Fasig-Tipton Kentucky July sale, now provides auction buyers with conven-

WTC Launches Auction eNicks

Another advantage of sponsorship is that the participating farms can use the facility for their own mare selection and day-to-day, in-house stallion promotion efforts without any additional cost beyond the fee for enrollment.

The new Auction eNicks feature extends the promotional value of sponsorship to foals and yearlings by the stallion.

New Feature Increases Value of Stallion Sponsorship

ient on-line assistance in evaluating prospective purchases for most North American sales.

The eNicks site is organized around the reputation of the company's Werk Nick Rating, widely accepted as the industry-standard measure of the effectiveness of any given sire-line cross. Visitors to the site can open an account, sign in, and immediately begin retrieving ratings for selected prospective matings or purchases, along with the company's distinctive five-generation pedigree.

What makes the facility especially attractive to breeders and buyers is the stallion sponsorship program. Ratings for stallions whose farms have enrolled them in the sponsorship program can be retrieved for any mare without any charge for the service. Many of the participating stallion farms also have links to the eNicks site at their own websites. When entering the eNicks site from one of those links, prospective clients of the farm's stallions can then select from a list of that farm's stallions only, thus increasing the visibility of the farm's stallions. Judging from the impressive list of participating farms, the site is enjoying broad acceptance as an important stallion promotion tool.

When retrieving a rating for a cross involving a stallion that does not participate in the stallion sponsorship program, the breeder or buyer using the service must pay for the report. While the report ranges in price from only \$10-\$20, depending on the number of eNicks for which secure credit card pre-payment is made, sponsoring stallions have an enormous advantage in the competition to get noticed by breeders and buyers.

For any given sale, the site provides a "free" list of all entries, in hip number order, by participating stallions. This important new dimension of value related to stallion sponsorship is especially effective at drawing the attention of prospective buyers to the foals and yearlings of participating stallions.

The principle is simple. Thoroughbred owners, breeders, and buyers are more aware than the average person that what they don't know can hurt them, and the convenience with which they can obtain information that matters to them makes a big difference in their decisions. Broad accessibility to valued information, therefore, is what makes stallion sponsorship such an attractive promotional opportunity for stallion farms. ■



Best of Sale

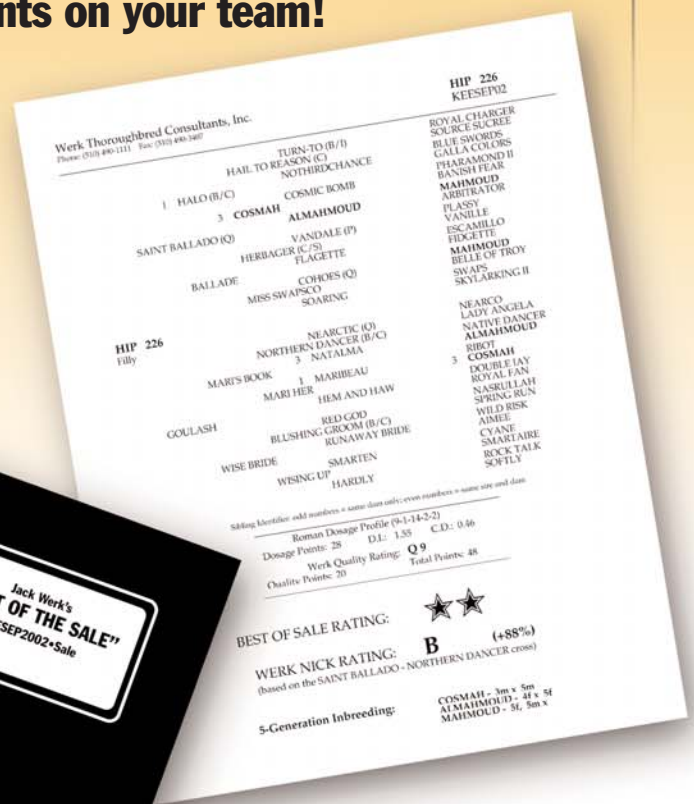
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Champion Ashado, winner of six GI races and \$3.3 million to date, was a 2-Star Best of Sale selection at the KEESEP02 sale where she was purchased for \$170,000



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Another Look at Inbreeding

Close inbreeding in top commercial tier rapidly increasing

BY ROGER LYONS

From birth, it takes about 30 years for an ancestor to come up twice in pedigrees on anything like a systematic basis. In the early 1990s, inbreeding to Northern Dancer, born in 1961, began its rapid increase in frequency. During the mid-to-late 1990s, inbreeding to In Reality and Dr. Fager, both born in 1964, was being embraced though with somewhat less fanfare. It had all gone so well for so long that inbreeding to Mr. Prospector and Secretariat began right on schedule. The 1999 Keeneland September sale catalogue contained 55 yearlings inbred to Mr. Prospector and 29 inbred to Secretariat, both born in 1970.

As is shown in the accompanying table, major auctions are generally a little bit ahead of the curve when it comes to close inbreeding. In any given year—and this was the case at least during the last 20 years—you could expect somewhere around 24% of unrestricted North American stakes winners to be inbred within four generations while close inbreds at major auctions accounted for 26-28% or so of everything catalogued. Since these levels were constant throughout the period, there really wasn't a curve, but now there is, as the table shows, and major auctions have probably gone way out ahead of it.

Another thing you could count on during the last century was that the frequency of close inbreeding remained fairly constant across the major commercial market. That, too, has changed. To reflect that, the table compares the frequency of close inbreds among the first 600 yearlings catalogued and the last 600 catalogued at Keeneland September, and for those years when there was a Keeneland July sale, yearlings catalogued in them are included among the first 600. That's a very rough adjustment, but it didn't really matter, anyway, until after 2002, as the table shows, when the frequency of close inbreds began to increase in the top tier. For previous years, the fluctuations really do look random.

However, there is no mistaking the trend that began in 2003. There was a dramatic increase in the frequency of close inbreds, from highs of around 30% to an unprecedented 35.3% among the first 600 catalogued. And, instead of following that increase, the last 600 catalogued stayed just about where it had been. That is to say, the very yearlings from breeding stock with the most to contribute to racing had, for the first time, significantly more close inbreeding than the rest of the major commercial yearlings.

The frequencies in the 2005 catalogues are conclusive in one respect, not necessarily in the other. Clearly, close inbreeding among the top 600—and we're talking about 4x4 or closer—has risen to such a level—we're talking about 45.8%—and at such a pace that we haven't the history to comprehend the limits or consequences. The numbers are inconclusive in the sense that we don't know how far the last 600 catalogued will go in pursuit, but in the years ahead it will probably give chase.

Close inbreds among the first and last 600 in the Keeneland September Yearling Sale (July sale contributes to first 600 in years when that sale was held)

Percent inbred 4x4 or closer

Year	First 600	Last 600
1995	27.8	26.0
1996	31.0	24.3
1997	30.8	26.2
1998	27.3	27.2
1999	26.8	28.3
2000	24.8	33.3
2001	30.5	30.5
2002	30.8	28.8
2003	35.3	29.2
2004	39.8	30.7
2005	45.8	31.2

Commerce and diversity

Factors that contribute to an overall increase in inbreeding are not difficult to identify. The increasing distribution of Mr. Prospector and Northern Dancer influence, the ascendance of sire lines founded by sires out of Secretariat mares (Gone West, Storm Cat, and A.P. Indy), a sharpening focus by the commercial market on the physical individual, the expansion of stallion books, which in recent years have proven remarkably elastic, and the almost unreflective promotion of inbreeding by many pedigree pundits and advisors. All of these factors add up to an increase in inbreeding.

But all of these factors apply almost as readily to the last 600 yearlings as they do to the first 600. Why does the top tier have so much more close inbreeding than the rest of the major commercial market?

Continued on page 8

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concentrated, or, more precisely, commercial value was more diffuse than were the industry's relations to power.

The industrial development of thoroughbred breeding began in the late 18th century with the founding of the General Stud Book and the establishment of the English Classics. Never mind the lofty motives celebrated by historical accounts of racing and breeding written since then. The purpose was to organize and concentrate market value within certain genealogical parameters, so as to valorize the small population of breeding stock that were owned by the titled classes.

Population growth within established genealogical parameters, no matter how narrow they may be, always causes dissolution of market value, so it's an endemic problem. Outside of re-writing the stud book from time to time, the only way to maintain an adequate concentration of commercial value is to establish a top tier that at any given time is at least somewhat more narrowly defined genealogically than the rest of the population. The evolution of the thoroughbred population is characterized by successive periods of population growth within the genealogical parameters of the top tier, followed by contractions in its genealogical constitution. And, of course, each successive genealogical contraction at the top does trickle down eventually to the rest of the population, but not immediately.

This on-going process of genealogical contraction is a structural imperative that has directed and organized the evolution of the thoroughbred population, by means of mechanisms too varied to mention here, since the late 18th century. "Excess" genealogical resources at the margins are winnowed out, not necessarily because they have less inherent genetic merit, but because sacrificing them restores the concentration of commercial value. And, as a result, 45.8% of the first 600 yearlings catalogued in the 2005 Keeneland September sale are closely inbred.

In years past, major commercial yearlings had more inbreeding in the fifth and sixth generations than minor commercial yearlings, but the most recent genealogical contraction has been so obtrusive that the difference is evident even in the frequency of close inbreeding within the major commercial market itself.

Back in the early 1980s when I made my first efforts to understand this industry, it was a major step forward for me when I realized what was meant by the term overproduction, and there was a lot of talk of it then. It didn't mean simply that there were too many horses bred. More fundamentally, it meant that commercial value was not sufficiently con-

We can't yet know what this means, but it is precisely what one might expect a tipping point in the course of otherwise gradually declining diversity to look like. The industry's power relations have changed since the late 18th century and are certainly not easy to rationalize with interests in conserving genealogical resources, which was the last thing on the 18th-century mind.

How inbreeding works

But the 21st-century mind might be inclined to take account of the close inbreeding that is being done in the top tier, especially since it lies in wait for the rest of the population. Some of the increase in inbreeding at the top in 2004 was accountable to Northern Dancer, and he has been remarkably reliable as a target of inbreeding. But the frequency of close inbreeding to Northern Dancer in 2005 was just about the same as in 2004. Most of the increase in 2005 has to do with the assumption on the part of breeders that inbreeding to Mr. Prospector, Secretariat, Seattle Slew, Danzig, Storm Bird and others—ancestors born after the mid-1960s—will have the same effects as inbreeding to the ancestors that preceded them. But will they?

In part, inbreeding works, when it works, because it controls for phenotype, the physical structure of the individual. But there's a catch. Because of the nature of thoroughbred performance and the way different capacities are inherited more or less discretely from different ancestors, you also have to mix those different capacities. You can inbreed to Northern Dancer and very often get a well-conformed individual, and, often enough, you can also get a mix of the different capacities required for well-rounded performance, precisely because of the wide range of typological variation in that regard among the different breeding offspring of Northern Dancer.

This kind of effect could be expected of ancestors that were born during the period of the international outcross, roughly from the beginning of the last century until the mid-1960s, with the births of In Reality and Dr. Fager in 1964. Outcrossing yields more highly variable offspring than inbreeding. Breeders of the last 30 years could inbreed to an ancestor like Nasrullah, Native Dancer, Turn-to, Bold Ruler, or Northern Dancer and control for phenotype, at the same time combining different strains that contributed contrasting capacities to the new individual. In other words, they could get a well-balanced physical individual that also had well-rounded racing ability.

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portant ancestors
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Now, consider that 42% of Mr. Prospector's offspring were inbred 4x4 or closer (61% counting 3x5), mainly to Nasrullah or Native Dancer, and in many cases both. What are the chances, then, compared with sires and dams born during the period of the international outcross, that crossing any two of Mr. Prospector's strains, though the individual may look perfectly balanced, will cross sufficiently differing capacities? The sheer quantity of closely inbred horses guarantees the occasional Limehouse, Roman Ruler, or Flower Alley. And, to be sure, some stallions and mares can sustain this kind of inbreeding much better than others. But, my conclusion must be that close inbreeding to most of the important ancestors born since 1964 is going to yield very highly specialized individuals on a system-

atic populational basis. Many of them are going to be dazzling individuals that are too specialized for the world of racing as we know it.

In any event, the frequency of close inbreds among North American stakes winners of 2005 stands at 24.3% so far, more or less the same as always, compared with a 2001 first-600 yearling frequency of 30.5%. So much more depends on the stakes results of 2008. If the frequency of close inbreds among those stakes winners doesn't increase significantly, then we'll be pretty sure that the process of genealogical contraction is in a very late stage indeed. In the meantime, the wildly increasing frequency of close inbreeding among the best breeding stock must give pause for reasonable disquiet. 🐾

Werk Thoroughbred Consultants

BROODMARE REPORTS

Broodmare Compatibility Analysis *Plus*

Our highly regarded BCA *Plus* has become the industry standard. This analysis is presented in an attractively bound book that contains up to ten stallion recommendations for your mare ranked in order of preference. Each stallion selection is represented by the Pedigree Profile with the Werk Nick Rating.™ Numerous additional "prospective matings" are represented with their individual Pedigree Profile sheets. Also included are: four-generation prospective matings, with the nick rating for all stallions in the given geographic location; four-generation pedigrees of all the unrestricted stakes winners produced from the mare's immediate broodmare sire line; a listing of all sire-lines that yield at least a "B" nick with the mare's broodmare sire-line; Dosage Profiles for all stallions in the specified geographic location; a current catalog-style pedigree of your mare; and a ten-generation female family table, with all stakes winners from the mare's female family highlighted. This analysis includes phone consultation with the WTC staff.

PRICE: \$495

Annual Update

The Annual Update option is included with the purchase of a BCA *Plus* only. It is available beginning with the subsequent breeding season and continuing

for the life of the mare, provided that the Update is ordered each year.

The Update provides revised stallion recommendations that reflect changes in the stallion population, changes in the Werk Nick Rating, as well as new developments within the female family of the mare.

PRICE: \$250



Broodmare Compatibility Analysis *Basic*

The BCA *Basic* provides some of the information found in our BCA *Plus*. The recommendations are, however, provided in alphabetical order, instead of listed in order of preference by the WTC staff, and this package does not include the Annual Update option.

PRICE: \$395

Broodmare Sire-line Nicks Report

This report lists the sire lines that yield "A" or "B" Werk Nick Ratings with the sire line of the mare. This report is particularly useful to breeders who are well-acquainted with the stallions in their region but would like to incorporate our nick rating into their decision-making process.

PRICE: \$195

2 0 0 6 FRESHMAN SIRE SELECTIONS

As the fall sales approach each year, there is always increased interest in the sires of yearlings whose first crop will be two-year-olds the following year. With no produce record to go by, buyers are left with a stallions' pedigree, race record, and the conformation of his yearlings to decipher his potential. Vincent P. D'Angelo, vice-president of Werk Thoroughbred Consultants, and Zack Dalton, WTC's East Coast representative, have put together some of their selections from this group they feel have potential for long-term success.

Vincent P. D'Angelo

No. 1 – The impressive resumé **Johannesburg** brought to the Breeders' Cup Juvenile (G1) at Belmont Park in 2001 was nothing short of sensational. Not many juveniles win three Group 1 races over three different tracks in a span of just eight weeks. Johannesburg did it and was able to whip the best North American-based juveniles while racing beyond six furlongs and on dirt for the first time. His dominating win wrapped up champion juvenile honors for him in the UK, Ireland, France, and the US. A son of Hennessy, a very successful juvenile in his own right, Johannesburg is a grandson of the ubiquitous Storm Cat, whose sons and grandsons are standing all over the continental US and even abroad. Johannesburg is out of a daughter of three-time G1 winner Ogygian, and she is out of Yarn, the dam of successful young stallion Tale of the Cat, and also a full-sister to the dam of high-profile stallion Pulpit. Johannesburg is well represented with a large first crop of yearlings to choose from. He is definitely one to watch and a potential star in the making at stud.

No. 2 – **Yonaguska** is a flashy son of successful stallion Cherokee Run. As a runner, he was a G1 winner at two and a multiple graded SW at three. He won or placed in 12 of 18 starts, including 11 stakes. Out of the Silver Ghost mare Marital Spook, already the dam of three SWs, Yonaguska's female family boasts ten SWs under her first three dams. A rarity among today's young stallions, Yonaguska is a five-generation outcross and carries a pedigree free of Northern Dancer, Bold Ruler, and Seattle Slew, among others. He offers a blend of speed, precocity, and looks which should make his progeny very appealing at the yearling sales and beyond.

No. 3 – **Street Cry** is the first high-profile son of the Mr. Prospector stallion Machiavellian to stand in North America. Street Cry was prepped in Dubai and brought to Southern California where he became an early candidate for the 2001 Kentucky Derby (G1). With a pair of 2nd-place finishes to his rival Flame Thrower in the Del Mar Futurity (G2) and Norfolk Stakes (G2), Street Cry was talented enough to run third to Macho Uno and Point Given in the Breeders' Cup Juvenile (G1). While his three-year-old form only netted him a pair of placings in the UAE Derby (G3) and Discovery H. (G3), he turned into a monster at four with smashing wins in the Dubai World Cup and Stephen Foster H. He is out of a Troy mare, who herself is out of a Riverman mare, making Street Cry a desirable outcross to a variety of North American strains. His full sister Helsinki is the dam of multiple group 1 winner Shamardal, suggesting a strong family. Street Cry's excellent turn of foot on the dirt makes him an exciting stallion prospect for North American breeders.

TOP REGIONAL PICK – While the Buckpasser sire line was seemingly near the end of the road just a few years ago, it awakened with a vengeance in 1997 when Silver Charm (grandson of Buckpasser) nearly won the triple crown, and by the summer of 1998 a little-known sprinter named Montbrook, was garnering respect as his first crop of juveniles came out running. Now Florida's leading sire, Montbrook has started a new branch for the rejuvenated Buckpasser line. One of his first sons at stud is **Outofthebox**, who was a top-class racehorse, placing in two stakes as a juvenile, including the What a Pleasure Stakes (G3), and went on to capture the Super Derby (G1) after placings in the Florida Derby (G1) and Fountain of Youth Stakes (G1) at three. He, like his sire, is free of Raise a Native and Northern Dancer, making him an appealing outcross to Florida breeders. He should sire early-maturing juveniles who will be able to compete at longer distances.

Zachary J. Dalton

With the upcoming yearling sales in mind, I have selected four stallions whose first yearlings are to be offered at auction. These stallions all enjoyed success on the race track and possess excellent pedigrees, two key factors that bode well for their progeny as they begin their racing careers as two-year-olds in 2006. With stud fees ranging from \$7,500 to \$30,000, these stallions also offer thoroughbred breeders value at various levels of the market.

No. 1 – Johannesburg It takes a truly exceptional racehorse to be honored as Champion in four different countries simultaneously: Johannesburg is one such animal. As a juvenile, the Hennessy colt tallied Grade/Group One scores in America, England, Ireland and France en route to being named Champion two-year-old colt in all four. On the racetrack, he was versatile: his Group One victories in Europe were at six furlongs on the turf while his win in the Breeder's Cup Juvenile (G1) at Belmont Park was at 1-1/16 miles on the dirt. Although Johannesburg failed to maintain his juvenile competitiveness as a three-year-old, he does hail from a line that produces quality sires. In addition, he boasts a nice female family: his dam is a half-sister to stakes winners and successful sires Tale of the Cat and Minardi. Other promising sons of Hennessy now standing at stud include Cactus Ridge, winner of the Arlington-Washington Futurity (G3), West Virginia Derby (G3) hero Wiseman's Ferry, and Keats, winner of the Coolmore Lexington S. (G2). On paper, Johannesburg is a clear choice to be successful in the breeding shed.

No. 2 – Yonaguska One of the most exciting finishes in racing during the 2000 season occurred in the Hopeful Stakes (G1) at Saratoga when Yonaguska and City Zip deadheaded for the win after a stirring stretch drive. Yonaguska finished his juvenile season with three wins in seven starts and earnings of

nearly \$250,000. The son of Cherokee Run went on to enjoy a successful three-year-old campaign, highlighted by wins in the Hutcheson S. (G2), Fall Highweight H. (G2), and the Sport Page H. (G3). Yonaguska's win in the Highweight came against older horses. He hails from a quality female family and is himself a half-brother to stakes winners Halo Homewrecker and Call It Off. With Kafwain, During, and Sir Cherokee now standing at stud, Yonaguska should provide thoroughbred breeders with a glimpse of what might be in store from the other promising sons of Cherokee Run. And, if he passes on his own precocity, Yonaguska's progeny will hit the ground running as two-year-olds.

No. 3 – Graeme Hall Graeme Hall won nearly a third of his 22 career starts and competed in multiple graded stakes events. At three, he won the Arkansas Derby (G2) and the Jim Dandy S. (G2) at Saratoga. As a four-year-old, he continued to be a fixture at the graded stakes level, winning the Eclipse Handicap (G2) and the Stuyvesant Handicap (G3) and finishing second in the Cigar Mile (G1). Although Dehere's status as a sire of sires is as yet undetermined, he has been a decent stallion in his own right, siring champion Australian two-year-old filly Belle Du Jour, multiple G1 winner Take Charge Lady, and current stallions Soto (G2 winner) and Millions (G3 winner). The strength of Graeme Hall's female family also makes him an attractive stallion prospect. Out of a Grade 3-winning mare, Graeme Hall is a half-brother to two stakes winners, including Ballerina H. (G1) winner Harmony Lodge, a multiple-graded stakes winner who earned over \$850,000 during her career. With a stud fee of \$7,500 and some weanlings that have sold for \$50,000 and up, Graeme Hall is an attractive option to breeders.

DARKHORSE – Millennium Wind Millennium Wind's 5-1/4 length victory in the 2001 Blue Grass Stakes (G1) remains one of the most visually impressive performances by a three-year-old in a derby prep, where he registered a 114 Beyer Speed Figure. In addition, the son of Cryptoclearance won the Santa Catalina S. (G2) at Santa Anita and finished second in the Louisiana Derby (G2). Millennium Wind flashed ability as a juvenile as well, finishing second to Point Given in the Hollywood Futurity (G1) in just his second career start. A half-brother to graded stakes winners Charismatic and Tossofthecoin, Millennium Wind has the family to match his race record. Charismatic was Horse of the Year and Champion three-year-old colt and has enjoyed success in the breeding shed, most recently with 2005 Triple Crown veteran and multiple G3 winner Sun King. The Cryptoclearance sire line is gaining momentum with successful starts at stud by sons Victory Gallop and Ride the Rails. Also, Breeder's Cup Classic hero Volponi, currently standing in Kentucky, welcomed his first crop this year, and the brilliant Candy Ride is receiving a great deal of attention from breeders. ■

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The Werk Rating and its Critics

A good system thrives on the constructive use of criticism

BY ROGER LYONS

Werk Thoroughbred Consultants' nick rating, with its familiar letter-graded scale, has gained a wide popularity. Still, criticisms do arise from time to time. Having had a role in the on-going development, maintenance, and delivery of this rating since 1992 when I began what has been for me a fortunate association with Jack Werk and WTC in a variety of ventures, I have been especially attentive to such criticisms.

One of the aspects of the thoroughbred industry that I've always enjoyed—and at times, perhaps, shamelessly exploited—is that all can find in it a forum for their views and opinions. One who benefits from an industry that thrives on individual expression can well afford a democratic spirit, even when one's own work becomes an object of criticism. But, beyond the question of tolerance, criticism has an important functional relation to the work one does.

The single, most important criticism of the Werk rating is that it assumes, at least provisionally, a principle of sire-line continuity that does not apply uniformly from one generation to the next. The nicks established by a certain sire, such as Storm Bird, it is argued, do not necessarily pass on to a next-generation sire, such as Storm Cat. Quite true. That is why, at a certain point in Storm Cat's career, we established a structural discontinuity between those two sire lines, so that Storm Cat-line ratings not refer to Storm Bird line. By virtue of that process, older sire lines are eventually superseded by their descendants. Within a few years, the greater Northern Dancer line will almost cease to exist for operational purposes.

Discontinuities must be found out on the basis of evidence, and we regularly conduct comprehensive reviews of our sire-line analysis in order to accommodate our system to them as they are discovered. But, in the meantime, a methodology that is inherently historical must wrap itself around a certain baseline assumption regarding the continuity of events. The usefulness of the methodology depends upon keeping this assumption of continuity constantly under critical scrutiny.

Some criticisms are valid, but miss the point. That the nick rating does not take into account the female line is a perennial complaint. But repudiating a method of evaluating sire-line crosses because it doesn't take into account the female line is like renouncing one's dentist for refusing to perform brain surgery. Even though the criticism is factually correct, it is not pertinent to the scope of the nick rating. Still, this criticism has value. It

is a reminder that what the Werk rating evaluates is only a part of the whole.

Another criticism that often arises is that the Werk rating does not take into account actual opportunity as represented by all foals representing a cross. Not only is this criticism factually correct and pertinent, but, to the statistically minded among us, it also seems like the right thing to do. But, even criticisms that are valid and pertinent can go wrong on empirical grounds. As Bill Oppenheim writes in his March 23, 2005 *TDN* column on the matter of evaluating sire-line crosses, "measuring the ratio of success against opportunity yields statistics that sound better in theory than they actually work in fact." The empirical problem to which he adverts has far-reaching implications for thoroughbred population research and is well worth a careful analysis.

Apples and Oranges?

In a contribution to *Racehorse Breeding Theories* (Russell Meerdinck, Ltd., 2004) titled "Nicking," Rommy Faversham takes issue with the statistical approach that happens to be used for calculating the Werk rating. He bases his critique on claims made in "a frequently run ad" in an "international breeding journal" he chooses not to name. It is not clear that he actually means the Werk rating and *The Australian Bloodhorse Review*, respectively, but both shoes fit. The vagaries of his citation notwithstanding, the critique itself is clear enough.

He takes issue with the statistical comparison from which this anonymous nick rating is derived, focusing on the Northern Dancer-Noholme II cross. His description of that comparison is correct and can be represented by the following ratio:

$$\frac{\text{SWs bred from Northern Dancer-Noholme II cross}}{\text{All SWs out of Noholme II-linemales}} \bigg/ \frac{\text{All Northern Dancer-line SWs}}{\text{All SWs}}$$

This ratio reflects how much the frequency of stakes winners bred from the Northern Dancer-Noholme II cross, among all stakes winners out of Noholme II-line mares, is greater or less than how frequently stakes winners in general descend from Northern Dancer line.

Unaccountably, Faversham regards this approach as "a classic case of mixing apples and oranges." In his view, the correct approach is to compare the percentage of stakes winners bred from the Northern Dancer-Noholme II cross with the percentage of all foals bred from it. Or:

$$\frac{\text{SWs from the Northern Dancer-Noholme II cross}}{\text{All SWs}} \bigg/ \frac{\text{Foals from the Northern Dancer-Noholme II cross}}{\text{All foals}}$$

Continued on page 14

The comparison used for the Werk rating is by no means “a classic case of mixing apples and oranges.” In statistical analysis, comparative groups always differ from one another. The important question is whether or not their differences are sufficiently dependent upon the variable they are intended to measure.

Both of the Werk groups consist of stakes winners, but differ as to the sire-line cross involved. Inversely, Faversham’s approach would involve comparing two groups that differ as to performance (stakes winners and all foals), but that are bred from the same sire-line cross. Relatively speaking, then, which approach is more likely to be damaged by uncontrolled differences between the comparative groups? Had Faversham done the research, he might have discovered that in actual practice the relationship between the two groups he proposes to compare is controlled by a variable that he has not even anticipated.

He does not tell us what percentage of foals (worldwide, presumably) are bred from the Northern Dancer-Noholme II cross, but demurs, instead, that finding out would be “not at all an easy assignment, even with today’s cutting-edge computer software.”

This assessment vastly over-estimates the difficulty. Back in the mid-1980s using a first-generation PC and homemade software, I took large foal-crop samples from successive volumes of the relevant stud books, a perfectly sound approach to the problem. My sample was intended for use in connection with a QGH (“quite good horse”) database compiled by English bloodstock analyst, Alex Scrope. It took weeks to compile the sample, but the work itself I found quite easy, especially while enjoying the famed ambiance of the late Sissy Woolums’ Pedigree Associates. Time seemed so much more expendable in those days.

The idea that Faversham now proposes made perfect sense to me then, so much so that I was willing to do whatever was necessary, learning a valuable lesson from the effort. My survey dipped deeply into the foal population, randomly encompassing large numbers of foals whose sires and broodmare sires rarely or never contributed to the population of QGHs. Representation by such breeding stock was so substantial, in fact, that, when I began to tabulate various crosses, I got results that too often did not square with the most obvious facts.

...inferior breeding stock contribute to the frequency of the cross among foals, but not to its frequency in the stakes population.

Unequal opportunity

I was trying to measure success against opportunity. The problem was that opportunity for that level of success is not evenly distributed across the population. The mainstream sire-line crosses that contribute to the stakes population tend to flow downward for replication by inferior representatives of the main branches. For the average stallion in descent of a major sire, the standard of success is lower than what Faversham otherwise correctly identifies as the “gold standard” of stakes production.

While foals bred from inferior breeding stock representing an otherwise good cross may have a high rate of success by a lower standard (say, restricted stakes or open allowance races), that level of success is not registered as such for comparative purposes, nor should it be. The point is that inferior breeding stock contribute to the frequency of the cross among foals, but not to its frequency in the stakes population.

What this means is that the relationship between the two frequencies, instead of being controlled by the value of crosses, as Faversham expects, is actually controlled by their popularity. In general, the more popular a cross, the greater would be its representation in the foal sample, relative to the stakes population, and, consequently, the lower its rating would be. The cross of Mr. Prospector and Northern Dancer lines would have a low rating precisely because it is highly popular. Crosses that had not achieved broad popularity (in part because they have not been successful) would have inflated ratings because they would be under-represented in the foal population. In short, the ratings for crosses would be inversely related to their popularity, rather than directly related to their value.

Now, comparing a percentage of stakes winners with a percentage of foals works better when assessing specific sire and broodmare sire combinations since the sire or broodmare sire controls for the quality of breeding stock. Some of the data required for this approach are found in *Blood-Horse Nicks* and in the figures shown elsewhere in Faversham’s account, wherever they came from—again, no citation. These reports provide an important perspective on the crosses they cover, but they do not constitute systematic assessments of sire-line crosses as such, as the Werk method does. Otherwise, the assessment for a given cross would take into account foals from breeding stock in comprehensive descent from the cross, and, of course, would be subject to the absurdity described above.

Both perspectives provide useful insight, but mixing the salient features of both, as Faversham in effect proposes, simply does not work, as I discovered just before consigning the survival of my precious foal sample to a stack of five-and-a-quarter-inch floppy disks. The quality of the breeding stock comprising it differed too significantly from that of the QGH population—in short, apples and oranges.

I might not have so readily caught onto the problem, though, had I not been properly initiated into thoroughbred

research by Bill Oppenheim while working for his publication, *Racing Update* (now owned by Mike Brown). Virtually all aspects of our research and reporting were in significant ways affected by the tiered structure of the thoroughbred population. In the course of working out his plan for the APEX stallion rating now featured in *TDN*, Bill concluded that the baseline average to which the ratings would be indexed should exclude stallions that rarely, if ever, contributed to the population of qualifying runners, and he was right.

The effect is to establish a standard of “average” achievement that accords with the meritocratic structure of the population. “Let everybody compete with the best,” Bill decreed. What could be more democratic than that?

When I look at the Werk method, as I often do, I do not see apples and oranges. I see one group of stakes winners compared with another, both of which I am sufficiently certain are similar enough in all but that one respect at issue—the frequency with which certain combinations of sire lines are represented. How frequently do Northern Dancer-line stallions contribute to stakes winners out of Noholme II-line mares? And, by comparison, how frequently do Northern Dancer-line stallions contribute to the stakes population as a whole? Given the special

There can be no profit in picking and choosing among one's critics.

empirical challenges of an intractably meritocratic population, this comparison is the best evaluative mechanism for a comprehensive sire-line analysis.

Even so, on the matter of methodological commitment, Kenneth Burke, the Canadian cultural critic, warned, “A way of seeing is a way of not seeing.” Only a fully democratic exchange of criticism can show us what our perspective conceals from us. That is to say, we can benefit from any source of criticism only if we learn from all sources—those who put us to work solving problems, those who compel us to admit the limits of our reach, and, yes, even those who would lead us down the wrong path. There can be no profit in picking and choosing among one's critics.

Freedom of speech is easy to come by if nobody is listening, and, in any event, constitutions and courts confer on us nothing more than the right to publish any nonsense that might come to mind. A liberation much more profound and much more difficult to achieve derives from striving to understand a criticism, seeing how it applies or does not apply, and responding to it with a correct discernment of its merit. Painful and onerous though it may be, that is the only defense one has against the most formidable of all threats to personal liberty: the tyranny of one's own perspective. ■

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