



LEFT TO RIGHT: Greentree Bonniejohn, 1988 Grand National Concourse D'Elegance Carriage Driving Singles Championship winner (photo © Howard Schatzberg); Statesmans Silhouette.

≈ DRESSAGE ≈

SIGNIFICANT SIRE IN THE PEDIGREES OF MORGAN FEI DRESSAGE HORSES

Is dressage talent present in any obvious Morgan families, or do the necessary gifts of athleticism and durability occur randomly in our genepool?

The classic Morgan type, as well as the overall athleticism, trainability and soundness for which the breed has long been noted, naturally lend themselves to the sport of dressage. It is not surprising, therefore, that more Morgans are competing in dressage and doing well at it. A review of United States Dressage Federation (USDF) All Breeds awardees shows that the scores achieved by Morgans compare favorably with those of other breeds.

Although there have been a number of Morgan breeders focused on the sport market, most of the Morgans competing in dressage have not been purpose-bred for the sport. Instead they have been selected from among the general population of Morgan horses by individuals having an interest in the discipline. However,

as more riders become attracted to dressage there is increasing interest in breeding Morgans specifically for the sport.

By Jack Stang

The interest in breeding for dressage begs the question: are there particular Morgan sires or sire lines that stand out as producers of dressage horses? This question can be addressed by examining the pedigrees of Morgans that have successfully competed at the top levels of the sport—the tests established by the FEI (Federation Equestre Internationale). It is important to consider this question in relation to the FEI horses because the horses that compete successfully at this level enhance the reputation and value of a breed within the larger dressage community.

The FEI levels of dressage are particularly demanding tests of a horse's athleticism, trainability, and durability.

This article originally appeared in the newsletter of the Morgan Dressage Association and is reprinted here with permission.

DRESSAGE ≈ SIGNIFICANT SIRES OF DRESSAGE HORSES



LEFT TO RIGHT: Rapidan Imperial on a winning dressage pass (photo © Howard Schatzberg); Blackwood Correll (Red Correll x Lady Rockwood) age 24 (photo from Mary Jean Vasiloff, Courtesy Kristal Homoki).

Exceptional strength, balance, and coordination are required for the collected work and challenging test elements. The demands increase significantly as the horse moves up the four FEI levels from Prix St. Georges through Intermediate I and II to the highest level of dressage, Grand Prix. The requirements of the Grand Prix test include passage, piaffe, canter pirouettes, and fifteen consecutive one tempi lead changes. The increasing physical and mental challenges placed on a horse tax its trainability and willingness to work to an extreme. The many years of work required to prepare a horse for the FEI levels are likely to expose conformational issues leading to unsoundness. Of the many horses that compete in dressage, relatively few of them progress to the lowest FEI level, Prix St. Georges, and only a small proportion of these horses make it to Grand Prix. Some dressage horses with the ability do not make it because they are not afforded the opportunity, many stop progressing short of the FEI levels because they are not well suited to the task. Regardless, horses that can compete successfully at the FEI levels of dressage, especially at Grand Prix, are noteworthy individuals.

As is the case with dressage horses in general, relatively few Morgans that have competed in dressage have progressed to the FEI levels. A review of USDF records indicates that of 57, 16 have continued on to Intermediate I, five to Intermediate II, and 13 have reached Grand Prix. The list includes 11 stallions, ten mares, and 36 geldings, with foaling dates ranging from 1969 to 2005. It is doubtful that many of these horses were bred with upper level dressage in mind. Anecdotal evidence indicates that as is the case with dressage Morgans in general, the FEI horses were selected from the general population of Morgans and their abilities were discovered through a propitious pairing of talented horse with talented rider.

THREE GENERATION SIRE ANALYSIS

The obvious first step in this study was to determine if there are Morgan stallions that have sired multiple FEI level horses. It was found that three stallions have sired two: Greentree Bonniejohn (one Grand Prix and one Intermediate I), Statesman Silhouette (one Intermediate I and one Prix St. Georges), and Rapidan Imperial (two Prix St. Georges). Rapidan Imperial also was the only FEI horse to also sire FEI horses. Although siring two FEI horses is notable, these three stallions only account for six of the fifty-seven FEI horses. The remaining 51 horses were sired by 51 different stallions. The multiplicity of FEI sires, which probably is a manifestation of a general lack of purpose-breeding for dressage, indicated the need to look deeper into the pedigrees of the FEI horses.

When the sire analysis was expanded to include grandsires and great grandsires, it was found that 68 stallions appear on the pedigrees of two or more FEI horses within the first three generations. These 68 sires, the number of descendants they have at each FEI level, and the generations in which they appear in the pedigrees of these descendants are presented in Table 1. In a number of cases, the pedigree of a single FEI horse includes more than one of these 68 sires. Usually this situation occurs because one of the 68 horses is the sire of the other.

Overall, the 68 sires listed in Table 1 account for almost half (190) of the 399 possible three-generation sires. The remaining (209) three-generation sires either appear only once across the 57 pedigrees, or they appear twice but on the same FEI horse. Although these 209 “unique sires” were not included in Table 1, it is important to note that 35 of the 54 FEI sires are “unique sires.” In other words, well over half of the sires of FEI Morgans are not present in the three-generation pedigree of another FEI horse.

A rating system was developed to compare the overall



LEFT TO RIGHT: Bennington; Mansfield.

strengths of the 68 (non-unique) sires as sources of FEI dressage horses. The system takes into account the FEI levels reached by his descendants, the frequency of the sire's occurrence in FEI pedigrees, and the generations at which it is found in the pedigrees. For each Grand Prix, Intermediate II, Intermediate I, and Prix St. Georges horse he produced, a sire received 2.0, 1.75, 1.25 and 1.0 points, respectively. These values reflect the relative difficulty of the four FEI levels. The points for a level were reduced by half for grandsires (generation 2), and by half again for great grandsires (generation 3) to reflect their diminishing contribution to the genetic makeup of a descendant. The points were summed across the four FEI levels and the total for each sire is reported in the far right column of Table 1 (see page 82).

As a group, these sires mirror the overall diversity of the breed and of the preferences and goals of Morgan breeders. Several of the top sires are associated with the working Western Morgan sub-type. Others come from programs noted for the production of show horses. One of the top sires, Statesman Silhouette, comes from a breeding program that explicitly focused on the production of sport horses. An interesting geographic cluster of top-rated sires is centered in northeastern Colorado and western Nebraska. It includes Greentree Bonniejohn, Topside Eager Beaver, Broadwall Brigadier, and Blackwood Correll. Based on foaling dates, none of the highly rated sires are likely to be available for breeding.

LINEBREEDING ANALYSIS

A common feature of many Morgan pedigrees is a significant

degree of linebreeding to one or more sires. Often these sires do not appear on the standard five generation pedigree report, and yet they may contribute more to the genetic makeup of a horse than its great grandsires or even grandsires. The three-generation sire analysis discussed earlier in this article would miss significant genetic contributions of such distant relatives. With this shortcoming in mind, a nine-generation linebreeding study was conducted to identify sire lines that have played significant roles in the breeding of FEI Morgan horses.

The linebreeding analysis was accomplished using the Pedigree Online All Breeds Pedigree Database (<http://www.allbreedpedigree.com/>). The All Breeds Database includes algorithms that calculate a variety of inbreeding statistics including percent blood, additive genetic relationship between horses, and coefficient of inbreeding. The parameter of interest for this report is percent blood, which estimates

the percentage of genes passed down to an individual from an ancestor. In other words, it indicates which horse's genes have been concentrated through linebreeding. The calculation of percent blood uses only those horses duplicated in a pedigree through at least two different offspring. For example, General Gates would not be considered in the calculation of percent blood if his only presence in a pedigree is through his son Bennington; however, he would be included if he occurred through an additional son or daughter. For our purposes, a sire was considered to be a significant source of linebreeding when he contributed at least 10 percent blood to an ancestor. To place this figure in perspective, in

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DRESSAGE SIGNIFICANT SIRES OF DRESSAGE HORSES

Sire	Grand Prix			Intermediate II			Intermediate I			Prix St Georges			Rating
	1st Gen.	2nd Gen.	3rd Gen.	1st Gen.	2nd Gen.	3rd Gen.	1st Gen.	2nd Gen.	3rd Gen.	1st Gen.	2nd Gen.	3rd Gen.	
Greentree Bonniejohn	1						1	1			1		4.375
Blackwood Correll	1		2					1					3.625
Topside Eager Beaver							1	2				2	3.000
HVK Santana		1	1				1						2.750
Broadwall Brigadier			2					1	3				2.560
Rapidan Imperial										2	1		2.500
Statesman Silhouette							1			1			2.250
Upway Ben Don			2						3			1	2.250
Windy Hill Maestro										1	2	1	2.250
Dobson				1		1							2.188
Orcland John Darling		1						1	1			1	2.188
Courage of Equinox											3	2	2.000
Red Correll		1							3				2.000
Sonfield		2											2.000
Edelweiss Magic Man					1					1			1.875
Mr. Breezy Cobra					1				1			2	1.688
Windcrest Ben Davis		1				1						1	1.688
Beamington			1					1				2	1.625
Funquest Monarch									2	1			1.625
Futurity French Command					1			1					1.500
Whippoorwill Duke		1	1										1.500
Windcrest Music Man											2	2	1.500
Wyoming Flyhawk										1	1		1.500
Waseeka's In Command			1					1	1				1.438
Carlyle Command						1		1	1				1.376
Stetson			1						2			1	1.375
Orcland Vigildon		1							1				1.313
Ulendon			2						1				1.313
Kingston			1			1			1				1.251
Applevale Encore		1										1	1.250
Casland Ben Don			2									1	1.250
Equinox Benn Adam											1	3	1.250
Sealect of Windcrest		1										1	1.250
Chief of State								1			1		1.125
Tedwin Topic								1			1		1.125
Waseeka's Thunderbolt								1			1		1.125
The Brown Falcon									1		1	1	1.063
The Statesman									1		1	1	1.063
Waseeka's Nocturne									1			3	1.063
Waseeka's Here Tiz						1			1			1	1.001
Chasley Superman												4	1.000
Lippitt Ethan Don											1	2	1.000
Mansfield			2										1.000
Pecos			1									2	1.000
Flight Commander								1	1				0.938
Suetor's Lendon						1					1		0.938
Westcrest Silver								1	1				0.938
Senator Barr									2			1	0.876
UVM Highlight									2			1	0.876
Oldwick Crusader								1				1	0.875
Easter Vermont									1		1		0.813
Funquest Talstar									1		1		0.813
Parade			1						1				0.813
Bar-T Invader			1									1	0.750
Domino Joe											1	1	0.750
Hans Cobra											1	1	0.750
Red Vermont			1									1	0.750
Triple S Red Wind			1									1	0.750
Trophy						1						1	0.688
Waseeka's Skylark						1						1	0.688
Whispering High Beam						1						1	0.688
Bay State Flintlock									1			1	0.563
Fiddler's Contender									1			1	0.563
Gipsey's Major									1			1	0.563
Warhawk									1			1	0.563
Flyhawk												2	0.500
Funquest Falcon												2	0.500
Payday												2	0.500

TABLE 1. Ratings of Morgan stallions appearing within the first, second, or third generation of multiple FEI dressage Morgans. Based on a review of the United States Dressage Federation results of USDF/USEF approved competitions through the end of 2015.



LEFT TO RIGHT: General Gates (American Morgan Horse Registry, Vol II); Peters' Ethan Allen 2nd.

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a mating of first cousins, the resulting foal would have 12.5 percent blood of the common great grandparent.

The results of the linebreeding analysis are summarized in Table 2. It shows the number of FEI descendants at each level and average percent blood it contributed to these descendants. The table includes only those sires meeting the 10 percent blood minimum for at least two FEI descendants. There were 33 additional sires that were a significant source of linebreeding, but only on a single FEI descendant. These sires are not included in Table 2. Based on the 10 percent standard, only three of the FEI horses lacked significant line breeding. Most were line bred to multiple horses.

To compare sires in terms of their overall significance as sources of linebreeding, a score was computed at each of the four FEI levels using the following formula:

Level Score = # Descendants x Avg. percentage Blood x FEI Level Coefficient.

The FEI level coefficients were the same as those used in the earlier three-generation sire analysis:

Grand Prix = 2.0, Intermediate II = 1.75, Intermediate I = 1.25, and Prix St. Georges = 1.0.

The four level scores were then summed to get a sire's composite score, where

Composite Score = Level Scores (GP + Int II + Int I + PSG)

The composite scores are presented in the far right-hand column of Table 2 (see page 84).

The linebreeding analysis documents the significance of the Government breeding program in the background of the FEI

dressage Morgans. Over half of them have significant linebreeding to Bennington, the average percent blood being well above that of a great grandsire. The principal conduit of Bennington blood to later generations is Mansfield, his son out of Artemisia. Other sires with ties to the government program including General Gates (the sire of Bennington), as well as Ethan Allen 3rd and Ethan Allen 2nd (sire and grandsire, respectively, of Artemisia) are also prominent in backgrounds of numerous FEI horses. Government breeding is dominant at all four FEI levels; however, it is particularly so at Grand Prix.

The preeminence of Government breeding in the population of FEI Morgans, especially at the Grand Prix level, is certainly noteworthy. Although the Government program was not selecting for dressage performance per se, it appears that the qualities for which they selected and the rigorous performance-testing they used to evaluate breeding stock were conducive to the eventual development of upper level Morgan dressage horses. Government lines have been the choice of many programs focused on the production of Morgan sport horses, and the results of the current study strongly support this decision.

Four other sires having a significant presence in the background of the FEI horses are Upwey Ben Don, Red Correll, Waseeka's Nocturne, and Flyhawk. Upwey Ben Don and Flyhawk are prominent in several Prix St. Georges and a few Intermediate I horses; however, so far none of the Intermediate II and Grand Prix horses are linebred to these two sires. Waseeka's Nocturne linebreeding is also mostly found in the lower level FEI Morgans; although he is present, albeit at a relatively low level (12.5 percent), in one Grand Prix and one Intermediate II horse. Among these four sires, Red Correll is preeminent in pedigrees of the Grand Prix level horses; three of them being linebred to him with an average percent blood

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LEFT TO RIGHT: Upwey Ben Don (photo © Savage); Red Correll with W. O. Roberts.

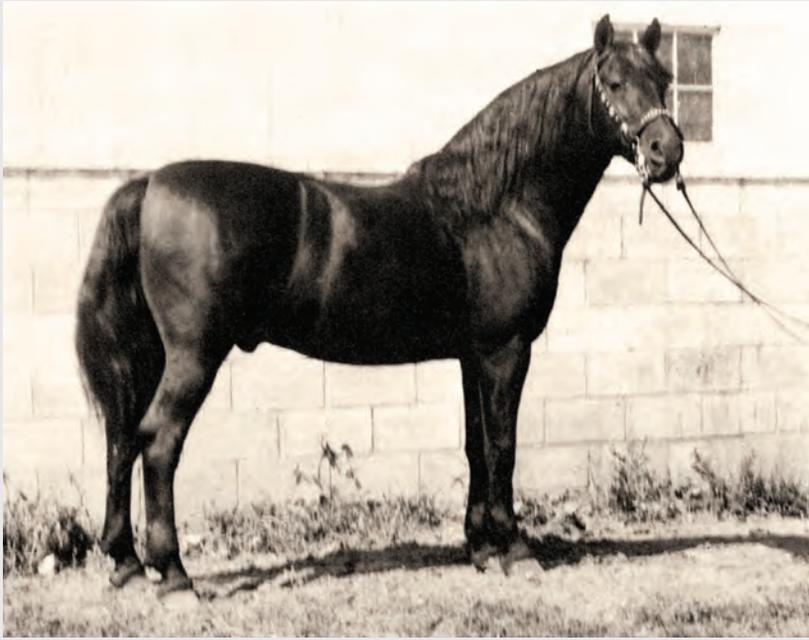
of almost 19 percent. For two of these, the Red Correll comes through his linebred son Blackwood Correll, one of the top-rated sires (Table 1). A high level of Red Correll breeding is also found in three Intermediate I horses.

The fact that government (Bennington and Mansfield), Waseeka's Nocturne, Upwey Ben Don, and Flyhawk breeding are present to a significant degree within the population of FEI dressage Morgans is not particularly surprising. These stallions were among

the breed's most important 20th century sires, having not only sired numerous foals themselves, but also producing stallions that became prolific sires in their own right. Furthermore, horses with their breeding were distributed throughout the country and used in a variety of activities including show, sport, and working Western. It would be interesting to know to what degree their presence in the FEI dressage population simply mirrors their presence in the overall population of Morgan horses. In other words, if we had

Sire	Grand Prix (13)		Intermediate II (5)		Intermediate I (16)		Prix St Georges (23)		Composite Score
	Number	Average % Blood	Number	Average % Blood	Number	Average % Blood	Number	Average % Blood	
Bennington	6	15.82	3	13.15	7	15.90	15	15.40	629.00
Mansfield	5	16.33	1	10.94	4	14.11	13	14.35	439.55
General Gates	4	13.86	1	10.55	5	12.66	3	11.26	242.25
Ethan Allen 3rd	4	13.14	1	10.94	3	12.63	6	11.59	241.17
Upwey Ben Don	-	-	-	-	3	19.27	6	17.19	175.40
Red Correll	3	18.94	-	-	3	16.41	-	-	175.18
Waseeka's Nocturne	1	12.50	1	12.50	3	14.84	4	16.41	168.17
Flyhawk	-	-	-	-	2	19.82	6	18.46	160.31
Ethan Allen 2nd	4	12.40	1	11.33	1	11.33	2	12.99	159.17
The Brown Falcon	-	-	-	-	1	17.19	2	28.12	77.73
Blackwood Correll	2	17.19	-	-	-	-	-	-	68.76
Upwey King Benn	-	-	-	-	1	13.28	4	12.70	67.40
Squire Burger	2	16.02	-	-	-	-	-	-	64.08
Flight Commander	-	-	-	-	2	25.00	-	-	62.50
Senator Graham	-	-	-	-	1	17.97	3	11.20	56.06
Linsley	1	12.50	-	-	1	11.52	1	13.09	52.49
Mentor	1	12.50	1	10.55	-	-	-	-	43.46
Tehachapi Allen	-	-	-	-	1	11.33	2	13.28	40.72
Ashbrook	-	-	-	-	1	17.77	1	15.63	37.84
Jubilee King	1	10.16	-	-	-	-	1	17.19	37.51
Goldfield	-	-	-	-	2	14.90	-	-	37.25
Tutor	-	-	-	-	1	18.75	1	11.72	35.16
Go Hawk	-	-	-	-	2	12.79	-	-	31.98
Croydon Prince	-	-	-	-	1	10.16	1	15.63	28.33

TABLE 2. Ranking of stallions to which multiple FEI Morgan dressage horses have been linebred. "Number" indicates the number of horses with at least 10% blood coming from a sire. Total number of Morgans at each level is shown in parenthesis next to the level name.



LEFT TO RIGHT: Flyhawk (AMHA Archives); Waseeka's Nocturne & John Lydon with Frank B. Hills (photo © Warren Patriquin).

randomly selected 57 Morgan horses having the same range of birth years as the 57 FEI horses and carried out a nine-generation linebreeding analysis would the results from the two populations differ significantly?

In contrast to the other sires having a significant linebreeding presence in FEI horses, Red Correll breeding is fairly uncommon and, until the late 1980's, regional in its distribution. It originally was concentrated on the northern Great Plains and used primarily for working ranch stock—not a background that would foretell its eventual significance in the FEI dressage population.

CONCLUSIONS

This study is an initial attempt to identify sources of FEI level dressage talent in Morgans. It has identified a number of Morgan stallions having a presence in the pedigrees of multiple FEI level dressage horses. The sire ratings in Tables 1 and 2 highlight the Morgan stallions and sire lines having the strongest claims to being sources of qualities needed for the upper levels of dressage. The ratings should be of interest to breeders who aspire to produce FEI level dressage horses, as well as to dressage riders looking for upper level talent in the Morgan breed. Although the top three-generation sires are not available for breeding, it would probably be possible to find horses that are closely related to many of them. Finding horses that are linebred to Bennington, Mansfield, Upwey Ben Don, Waseeka's Nocturne, and Flyhawk should be fairly easy. Finding Red Correll breeding would be more difficult. Although pedigree alone tells a breeder little about the qualities of an individual descendant, and even less about its potential for passing desired qualities on to its progeny, it can be used as a starting point.

However, several caveats should be noted with respect to the sire ratings. First, the ratings are based on a small sample size; the scant 57 Morgans that have reached the FEI level over

a period of about 35 years. Sire ratings will change significantly as additional horses reach the FEI level, or current FEI horses move up to higher levels. Second, it is important to recall that the ratings include only those sires appearing in the pedigrees of at least two FEI horses. Table 1 does not include the 35 stallions that sired an FEI competitor, but did not appear in the three-generation pedigree of another FEI horse. Nor does Table 2 include the 33 sires that were a significant linebreeding source on a single FEI horse. Many sires in addition to those listed in Tables 1 and 2 have been a source of qualities needed for the upper levels of dressage. Finally, it is not clear to what extent the significance of certain popular sire lines in the FEI population is simply a reflection of their sizable presence in the overall population of the breed. In the final analysis, to consider the results of this study to be definitive would be premature and unwarranted.

Over time, the sources of dressage talent in the Morgan breed should become clearer as more breeders focus on the production of horses for dressage, and as more Morgans are campaigned at the higher levels of the sport. At present, perhaps the greatest need with respect to discovering and evaluating sources of dressage talent in the Morgan breed is getting more horses into the hands of riders capable of testing whether a horse truly has the ability to reach the upper levels of dressage. This need is also arguably one of the greatest challenges facing Morgan breeders and others wanting to advance the quality, reputation, and value of the breed in the dressage market. ■

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