HEART AND STRIDE:
The Scientific Quest of EQB

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Finding the right formula

EQB’s Jeff Seder and Patti Miller hit their stride with two champions and a top 3-year-old. by Don Clippinger

Jeffrey A. Seder and Patrice M. (Patti) Miller form one of the oddest partnerships among the Thoroughbred business’s many odd couples. They are east and west, sun and moon, Mars and Venus, Felix and Oscar.

They are highly intelligent, and both possess horsemanship skills, but they apply those talents in different proportions. Seder, the brainiac Harvard-educated tinkerer, is always probing at the edges, looking for new aspects of the Thoroughbred race horse to dump into his computer. Miller is the professional horsewoman with her feet planted firmly on the ground.

If they were aboard an airplane preparing for takeoff, Miller said, “Jeff would be looking at the dials and gauges, and I’m the one saying, ‘We’re still on the ground.’”

But their partnership has endured for more than three decades, and EQB Inc., the West Grove, Pa.-based company created by Seder in 1978, has hit its stride.

Boy, has it ever. EQB-selected Informed Decision and Forever Together earned Eclipse Awards for client George Strawbridge Jr.’s Augustin Stable in each of the business’s many odd couples last two years, and Eskendereya, West Grove, Pa.-based company created by Seder in 1978, has hit its stride.

Their tinkering and mechanical skills extended to things larger than watches. At age 13, he built a go-cart complete with an engine and transmission. (His father laughed at him when the go-cart was too big to get out of the basement.) While attending Harvard, he graduated from the General Motors Institute, where he learned the intricacies of internal-combustion engines. That unlikely specialty led him into the horse world. In Africa, of all places.

After completing his undergraduate degree in 1970, Seder worked on a Rotary International project in conjunction with the Peace Corps in Africa. His specialty was truck engines, but his recreation was horses, specifically an indigenous pony that a local veterinarian lent to him.

Seder learned to ride by reading a book written by an Austrian cavalry officer. The book skipped over the intricacies of staying in the saddle. “Never once did I make it back on the horse,” he said.

Back in the U.S., Seder returned to Harvard to pursue a joint program that yielded a master’s of business administration and a law degree in 1976, again with high honors. He would make time in the afternoons to take riding lessons and became sufficiently proficient to gallop race horses.

In June 1976, he went to work for Citibank’s international banking division, where he was working on loans to African nations. It was a great opportunity but a bad fit. At noon each day, he walked past a glass-encased cafeteria with a huge mural of countryside and horses. Seder imagined it was the rolling hills of Pennsylvania and wondered why he was in the canyons of Manhattan when he wanted to be in the pastures of his native state.

He quit Citibank, rented a farm in Valley Forge, and supported himself and his first horse, Tony, by working as director of the Association for the Advancement of Sports Potential (AASP), chartered to do sports medicine research and consulting to U.S. Olympic Teams.

That work and Seder’s other interests led to EQB, or Equine Biomechanics and Exercise Physiology Inc. But he also needed a lucky break.
SUCCESSFUL TRAINER

Patti Miller was practically born on the back of a horse. Her father, a Scott Paper Co. executive and avid foxhunter in the countryside to the west of Philadelphia, taught her how to read the Daily Racing Form before she could handle Dr. Seuss. She grew up competing in just about anything involving a horse and was an accomplished point-to-point rider by the time she was 16. She trained at the Fair Hill Training Center in its early years and became a highly successful trainer with what she described as her “limpers and bleeders.”

She was a leading trainer at Delaware Park in the 1980s with the imperfect specimens that she turned into runners. Along the way, she developed the skills and instincts of the Thoroughbred professional, the ability to discriminate between the imperfection that you can live with and the flaw that means sure disaster.

She did some freelance work to supplement her income, and a friend referred her to this guy in Valley Forge who needed someone to break a young horse for him. Seder had tried to break the horse himself and ended up on the ground with a broken wrist.

Miller broke his youngster, but it was a very peculiar exercise. Seder, ever the mad scientist, would ask her to stop frequently during the process so that he could take the horse’s temperature.

“I thought he was crazy,” Miller said, and she wasn’t referring to the horse.

Seder soon realized that Miller had skills that he did not possess. “We’re very different personalities, and that makes for conflicts,” he said. “But sand and an oyster make a pearl, and we’ve really come to respect each other.” Miller added diplomatically: “The early days were interesting.”

Indeed, Miller’s insights have been crucial to EQB’s success, helping to make it a successful business enterprise rather than a money-losing operation with lots of data and little else. As much as anything, she instilled a respect for the training process. “You have to realize that people have been training these horses in a certain way for a reason,” she said.

She also imparted an insight that remains a cornerstone of EQB’s approach. From race riding and galloping horses, Miller observed that “they lengthen. They don’t quicken.” Thus, the emphasis on stride length.

Together, Seder and Miller embarked on a journey that sought to find the characteristics that differentiate the great from the ordinary. In the process, EQB developed a database encompassing more than 50,000 Thoroughbreds, each of them measured and evaluated to find that special characteristic that defines the perfect horse.

In truth, the beast does not exist.

“There’s no one great horse,” Seder said. “The perfect horse is one that knows where the finish line is and speaks Spanish.” They also found that the bad points are more impor-
EQB's buying power was conspicuous at this year's late-season 2-year-olds in training auctions.

With Miller signing the tickets, EQB was the leading buyer by gross at the Fasig-Tipton Midlantic sale of 2-year-olds in training, purchasing seven 2-year-olds for $756,000, a $108,000 average, topped by an Indian Charlie colt for $200,000 and a Stormy Atlantic filly for $180,000.

The EQB team subsequently was the leading buyer at the Ocala Breeders' Sales Company's June sale of 2-year-olds and horses in training with three purchases for $255,000, including a Sharp humor filly who worked the sale's fastest funnel and sold for $170,000.

When Willingham said the good points. "It's an orderly search for revealed information. It also looked at a bunch of other factors, including nos
till size, and found few that meant much to performance. "Things that were important in humans weren't important in horses," Seder said.

But good science, if indeed it was good science, certainly was not good business. "The first 20 years were a mess," Seder said. "In the early days it didn't go very well, probably because I didn't know enough about horse racing and race horses."

He also did not receive much help or encouragement from the academic community and thus could not defray those costs with grants or research assistance.

"I was always branded as commercial, but I was losing my ass," Seder said. EQB's research papers on echocardiographic measurements and gait variables were published in May 2003 in a 112-page supplement to the Journal of Equine Veterinary Science.

Then things changed. "The science got good," he said.

"Patti Miller was another turning point. She got interested in the technology, and we supported her."

Miller recalls with a laugh some of the early technology. She was sent out to gallop a horse with a bulky telemetric backpack, complete with an antenna, to measure heart rate and other data. When a horse once dumped her, she was not certain whether the science folks who rushed over to her were more interested in her well-being or the condition of the data pack.

Another important breakthrough occurred when major clients such as Strawbridge and Zayat came to trust EQB's approach and allowed the company to apply its principles to the sales arena.

The science improved in large part because it concentrated on the current keystones of EQB's analysis, stride length and heart size. For all of its expenditures on the latest technologies, the principal piece of equipment for its stride analysis was bought off the shelf. Of course, only Seder knew where to find the shelf.

The instrument is a high-speed camera, and it is widely used in the textile industry to capture the actions of needles piercing cloth thousands of times per minute. Craftex was in that business, and Seder made some minor adaptations to convert the camera for use at 2-year-olds in training sales or on farms.

Veteran horsemen know what a good stride looks like, but Seder suggests they are not seeing everything that they need to observe in a stride, even when they slow down a standard video image of a pre-sale workout.

He pushes away from his desk at EQB's office, where a computer monitor perches precariously atop a pile of books, and moves a few feet to a DVD player attached to another monitor.

He runs a tape of a pre-sale workout of a highly regarded youngster. The stride looks great, surely money in the bank for the consignor. But Seder then plays the output of his high-speed camera, and the youngster's near foreleg slaps at the ground, causing the knee to arc inward. "This horse will never stay sound," he said. The horse sold for big money, but EQB was not in the bidding.

The Green Monkey, who sold for a world-record $16 million at the 2006 Fasig-Tipton Calder sale of selected 2-year-olds in training, was another example, Seder said. "He had a beautiful gallop, but he was using too much energy, and it wasn't a racing gait."

Stride length has been measured for a century or more, but a long stride does not always translate into high speed.

"Stride length is important if you know at what velocity the horse is running. You have to know precisely," Seder said. "Some horses race exactly like Secretariat. But they are not going as fast as Secretariat. If it has the same velocity as Secretariat, I may be interested. You always have to be in context."

Heart size is the variable that Miller has measured over and over again. As with stride length, the context is important.

"Some people think a big heart is a big heart," she said. "But it's relative to the size of the horse."

This heart-size metric also was one where the science improved as more and more measurements—in excess of
Trio of champions belonging to George Strawbridge: Flanking homebred Rainbow View (center) are Informed Decision and Forever Together, auction buys purchased upon the recommendation of EQB.

EARLY SUCCESS

Seder identifies Informed Decision as the breakthrough horse for EQB, but in fact the company began having success in identifying top horses in the mid-1990s. Its public shortlists of sales prospects included Kentucky Derby-G1 winners Thunder Gulch (1995), Silver Charm (97), Fusaichi Pegasus (’00), Monarchos (’01) and Funny Cide (’03).

Of course, EQB purchased none of those classic winners, but it was becoming a player at the top level, starting with Madcap Escapade. For client Bruce Lunsford, EQB selected Madcap Escapade out of the 2002 Keeneland September Yearling sale, where agent/trainer Frank Brothers signed the $160,000 sales ticket. The Hennessy filly won the 2004 Ashland Stakes-G1 and retired with career earnings of $1,052,852. In 2006, she was sold for $6 million at the Keeneland November sale.

EQB also picked out Bowman’s Band, a $260,000 purchase at the 2000 Keeneland April sale of 2-year-olds in training who earned $1.3 million for Martin Schwartz and launched a promising stud career before his premature death at age 10.

EQB rightly can be described as the company that got George Strawbridge into the sales arena. Previously, most of Strawbridge’s runners had been homebreds, largely out of mares he bred or bought as racing and breeding prospects. EQB had advised the Augustin Stable owner on the career of With Anticipation, a homebred Relaunch gelding who won five Grade 1 races and $2,660,543.

Seder and Miller both describe Strawbridge as the ideal client. After initially spending several days at their offices to learn about their technology and philosophy, he now gives them a budget and tells them to find the best horse in the sale. Their first home run for their Chester County neighbor was Forever Together, a Belong to Me filly who sold for $240,000 at the Ocala Breeders’ Sales Co. 2006 sale of selected 2-year-olds in training.

Miller conducts most of EQB’s pre-sale inspections, and she was not impressed with Forever Together at first glance.

“She was a smaller filly when I saw her. I didn’t think I was going to like her,” she said. “But her cardiac was spectacular.”

A three-time Grade 1 winner in 2008, including the Breeders’ Cup Filly and Mare Turf, Forever Together was voted an Eclipse Award as champion turf female that year. Trained by Racing Hall of Fame member Jonathan Sheppard, she returned in 2009...


\[\text{He didn't look like a champion, but he had a champion's heart,} \]

\text{Seder said of Eskendereya, shown winning the Grade 1 Wood Memorial Stakes.}


to win the Diana Stakes-G1 for a second time and remains active this year at the highest level with a second-place finish in the Gamine Stakes-G1 at Hollywood Park on May 29. She has nearly $2.9 million in earnings.

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\item Forever Together excels at longer distances, while Informed Decision is pure speed. Miller joked that Sheppard asked her not to send him any more horses that are quite so fast.
\item “I never had a trainer complain about that before,” she said.
\item Informed Decision’s work out before the 2007 Pegasus-Winter Million sale of 2-year-olds in training was not especially fast, “but the gait analysis nabbed her anyway,” Seder said.
\item “I had trained myself to watch horses’ workouts, and it was perfect. Patti said, ‘We have to have this horse.’” It would not be easy. The EQB team had to ask Strawbridge to increase his budget and then went over that amount before getting her for $320,000.
\item It was a lot of money, but well worth it. To date, Informed Decision has earned $1,892,759. Her 2009 campaign included three Grade 1 victories, culminating with a victory in the Breeders’ Cup Filly and Mare Sprint at Santa Anita Park. In January, Strawbridge collected his second Eclipse Award in two years after the Monarchos filly was voted champion female sprinter.
\item That one brought it all together,” Seder said.
\item Ahmed Zayat is a very different type of client for EQB. Unlike Strawbridge, he is heavily involved in the selection process and signs his own sales tickets.
\item “I have to watch what I say around him,” Seder said.
\item “He’s a very smart guy, and he remembers everything that you say. He understood what we were doing, and we did it together.”
\item Of the purchases for Zayat, 21.5 percent have become stakes winners and 5.9 percent are graded stakes winners, far above the respective industry norms of 3.1 percent for stakes winners and 0.6 percent for graded winners. Seder said the percentage of Zayat’s graded winners that passed all of EQB’s tests was much higher, above 20 percent. With horses such as Zenonational and Z Humor earning in the high six figures, the Egyptian-born New Jersey businessman became one of the sport’s leading owners within a few years.
\item Zenonational was a sensational sprinter last year, when the 3-year-old won three consecutive Grade 1 races against older competitors, but Eskendereya looked to be headed toward classic glory.
\item After a disappointing effort in the 2009 Breeders’ Cup Juvenile-G1, the Giant’s Causeway colt matured over the winter into a dominant Grade 1 winner. He blew away the
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\[\text{Fountain of Youth Stakes-G2 by eight and a half lengths and widened to a nine and three-quarter-length victory in the Wood Memorial Stakes-G1 at Aqueduct. A soft-tissue injury ended his racing career shortly before the Kentucky Derby, and he will stand at stud in 2011.}

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\item Patti Miller was struck by the athlete lurking under a bit too much flesh when she first saw Eskendereya, who ultimately was named for Zayat’s hometown, known in the English-speaking world as Alexandria.
\item “He was turned out by himself, and he caught my eye,” she said. “He was a leggy, immature colt when we looked at him.”
\item His looks may have turned off some buyers at the 2008 Keeneland September Yearling sale, but Seder was hoping that no one with a fat wallet was interested in him.
\item “His heart was off the scale. We hoped he wouldn’t go for a million dollars,” he said. “He didn’t look like a champion, but he had a champion’s heart.” Zayat bought him for $250,000.
\item After the lean years, EQB has hit its stride. It moved into its current office five years ago; Miller and her constant canine companion, Sallie, live in the classic Chester County stone farmhouse. Seder, who shares the office with an affectionate foundling pit bull named Herbie, resides two miles away on his 150-acre Houyhnhnm Farm, named for the perfectly reasonable horses in Jonathan Swift’s Gulliver’s Travels.
\item But Seder has no illusions that he and Miller have arrived at a perfectly reasonable understanding of the horse, even though their harmonizing skills now have yielded two champions and a few near-champions. The search for the unknowable is a lifelong journey and ultimately is destined to fall short of its goal.
\item “We try to improve the odds for our clients,” Seder said. “No one system is going to pick out every top horse.”
\item Also confounding the search for certainty is the very nature of the champion race horse.
\item “A great horse is rarely predictable. There’s something off the scale about them,” he said.
\item “You’re going to miss a lot of great horses because they are off the scale.”
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