



Welfare and Safety of the Racehorse Summit V

July 8 – 9, 2014

821 Corporate Drive

Lexington, Kentucky 40503-2794

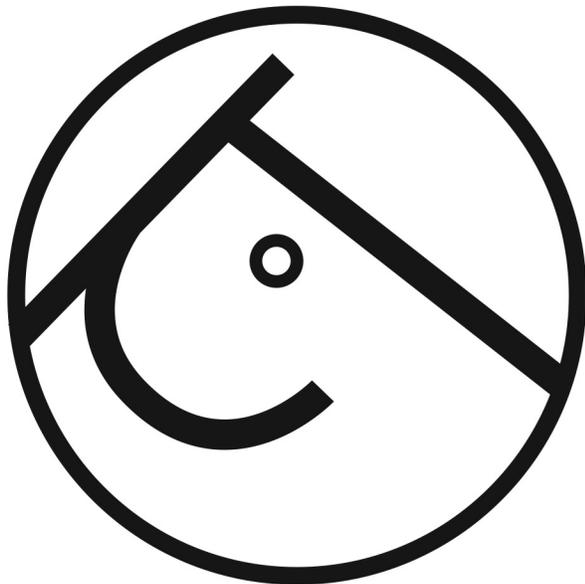
Telephone: (859) 224-2700

grayson-jockeyclub.org/WelfareSafety/default.asp



Join us for a unique opportunity to attend a first-class educational and entertaining experience for current and prospective owners in the sport of Thoroughbred racing.

- Keynote address from Hall of Fame golfer and Thoroughbred owner **Gary Player**
- VIP day of racing at **Keeneland Race Course**
- Private reception at **Adena Springs Farm**
- **First-hand learning** from racing's leading owners and trainers
- **Insights** from sales and bloodstock professionals on finding athletes



THOROUGHBRED OWNER OCTOBER 13-16 2014 CONFERENCE

Keeneland Race Course ■ Lexington, Kentucky

Visit **OwnerView.com** for more information & registration details.

Hosted by OwnerView, a joint venture between The Jockey Club and Thoroughbred Owners and Breeders Association.

Presented by Del Mar, Keeneland, NYRA and The Stronach Group.



Dear Guests:

Welcome to the fifth Welfare and Safety of the Racehorse Summit, which again is presented by The Jockey Club and the Grayson-Jockey Club Research Foundation.

We all owe Keeneland a debt of gratitude for once again hosting this conference and helping us develop the program.

This summit brings together some of the most knowledgeable stakeholders in the racing industry, all of whom share a devotion to one of the industry's most important subjects: the safety of our athletes.

Although we can't change rules, we can effect change in the way individuals, racetracks, horsemen, commissions, and other organizations approach equine safety and, ultimately, jockey safety.

Our past summits have served as the impetus for initiatives such as the Equine Injury Database, the Racetrack Surfaces Testing Laboratory, and the Jockey Injury Database. These initiatives have provided invaluable safety data to the industry and enhanced the safety of our human and equine athletes.

Past editions of our summit have also generated or helped facilitate numerous changes in the safety aspects of our sport in many states, including the elimination of toe grabs, the creation of safety helmet and vest standards, the introduction of safety crops, and the voiding of claims where injury or fatality occurs.

I hope you find this summit as informative and productive as those in the past and are encouraged by the progress that is being made in our industry.

Sincerely,

A handwritten signature in black ink that reads "Edward L. Bowen". The signature is written in a cursive, flowing style.

Edward L. Bowen
President
Grayson-Jockey Club Research Foundation

**Tuesday, July 8:**

9:00 – 9:15 a.m.	Introduction and Objectives
9:15 – Noon	Using Data to Keep Horses Safe
Noon – 1:15 p.m.	Lunch
1:15 – 2:30 p.m.	Today's Thoroughbred — What Animal Are We Dealing With?
2:30 – 2:45 p.m.	National Uniform Medication Program Update
2:45 – 3:00 p.m.	Break
3:00 – 3:15 p.m.	Grayson-Jockey Club Research Foundation Update
3:15 – 4:30 p.m.	Training and Bone Development in Racehorses

Wednesday, July 9:

9:00 – 10:00 a.m.	Making Safety a Priority in Your Racing Company
10:00 – 10:15 a.m.	Break
10:15 – 11:45 a.m.	Intra-Articular Joint Therapies
11:45 – 12:15 p.m.	Jockey Injury Database
12:15 – 1:15 p.m.	Lunch
1:15 – 2:15 p.m.	Racetrack Surfaces and Technology Integrations
2:15 – 2:45 p.m.	Advanced Horsemanship



Tuesday, July 8:
Keeneland Sales Pavilion

9:00 – 9:15 a.m. Introduction and Objectives

Edward L. Bowen
President
Grayson-Jockey Club Research Foundation

NOTES:



9:15 – Noon Using Data to Keep Horses Safe

This session will focus on the importance of data in promoting equine safety through pre-race inspections and post-mortem and mortality reviews. It will also provide insight from the perspectives of both racetrack and regulating officials.

Moderator:

Mike Ziegler
Executive Director of the Safety and Integrity Alliance
National Thoroughbred Racing Association

Presenters:

Dr. Lisa Hanelt
Examining Veterinarian
Finger Lakes

Stephen Koch
Vice President of Thoroughbred Racing
Woodbine Entertainment

Dr. Mary Scollay
Equine Medical Director
Kentucky Horse Racing Commission

Dr. Jennifer Durenberger
Director of Racing
Massachusetts Gaming Commission

NOTES:



Noon – 1:15 p.m.

Lunch

1:15 – 2:30 p.m.

Today's Thoroughbred — What Animal Are We Dealing With?

These panelists will discuss the status of the modern Thoroughbred and its perceived increased fragility. Is it true that today's racehorses are unable to race as frequently as in the past, and if so, why?

Moderator:

Edward L. Bowen
President
Grayson-Jockey Club Research Foundation

Panelists:

Dr. Rick Arthur
Equine Medical Director
California Horse Racing Board

Dr. Larry Bramlage
Surgeon and Partner
Rood & Riddle Equine Hospital

Todd Pletcher
Trainer

Dr. Rick Sams
Director
LGC Sport Science

Dr. Mary Scollay
Equine Medical Director
Kentucky Horse Racing Commission

NOTES:



2:30 – 2:45 p.m. National Uniform Medication Program Update

Founded in 2001, the Racing Medication and Testing Consortium was developed to create, promote, and organize medication, research, and policy reforms at the national level. Since its inception, the RMTTC has been successful in multiple areas, including the development of uniform model policies, procedures, and standards, in addition to educating and presenting such information to the public and industry leaders.

Dr. Dionne Benson
Executive Director and Chief Operating Officer
Racing Medication and Testing Consortium

2:45 – 3:00 p.m. Break

NOTES:



3:00 – 3:15 p.m.

Grayson-Jockey Club Research Foundation Update

The Grayson-Jockey Club Research Foundation is a leading non-profit organization that was established to help all horses by distributing money to fund veterinary research at universities throughout North America and around the world. Since 1983, Grayson-Jockey Club Research Foundation has individually provided more than \$20.9 million to fund 310 projects at 41 universities in North America and overseas.

Edward L. Bowen

President

Grayson-Jockey Club Research Foundation

NOTES:



3:15 – 4:30 p.m. Training and Bone Development in Racehorses

The musculoskeletal system of the horse is dynamic, responding to exercise and recovery from racing and training in a continual active process of repair. Dr. Bramlage will give a presentation on condylar fractures in the Thoroughbred racehorse and how occasional clockwise exercise may be of physical benefit to the horse's musculoskeletal system.

Dr. Larry Bramlage
Surgeon and Partner
Rood & Riddle Equine Hospital

NOTES:



Wednesday, July 9

9:00 – 10:00 a.m. Making Safety a Priority in Your Racing Company

If an owner, trainer, and veterinarian are able to develop and maintain a relationship built on trust and shared philosophies, it will result in the best possible decisions being made for the horse. These panelists will outline the necessary components of a desirable veterinarian/trainer/owner relationship.

Moderator:

Dr. Scott Palmer
Equine Medical Director
New York State Gaming Commission

Panelists:

Clifford Barry
General Manager
Pin Oak Stud

Bill Casner
Owner

Gary Contessa
Trainer

Dr. Foster Northrop
Veterinarian

Rick Violette Jr.
Trainer

10:00 – 10:15 a.m. Break

NOTES:



10:15 – 11:45 a.m. Intra-Articular Joint Therapies

These veterinarians will discuss current changes in the regulation of corticosteroids, including threshold levels, new information pertaining to toxicity, and beneficial effects when used properly.

Dr. Heather Knych
Assistant Professor of Clinical Molecular Biosciences
UC Davis

Dr. James N. MacLeod
Professor
Department of Veterinary Sciences
University of Kentucky Gluck Equine Research Center

Dr. C. Wayne McIlwraith
Professor of Surgery and Director
Gail Holmes Equine Orthopedic Research Center
Department of Clinical Sciences at the College of Veterinary Medicine
and Biomedical Sciences
Colorado State University

NOTES:



11:45 – 12:15 p.m. Jockey Injury Database

Created by The Jockeys' Guild in 2012, the Jockey Injury Database strives to prevent rider injuries through the collection and analysis of injury data from tracks across the country.

Dr. Carl Mattacola
Division Director and Assistant Professor of Athletic Training
University of Kentucky

NOTES:



12:15 – 1:15 p.m. Lunch

1:15 – 2:15 p.m. Racetrack Surfaces and Technology Integrations

The Racing Surfaces Testing Laboratory has performed tests on samples collected from more than 80 surfaces, and it is currently developing a comprehensive database of surfaces and environmental characteristics to provide further insight into the factors affecting racing surfaces. In New York, Glen Kozak maintains uniform, safe racing surfaces year-round through his use of innovative technologies, thus allowing for the proper upkeep of three unique tracks (Aqueduct, Belmont, and Saratoga) that are exposed to a wide array of environmental conditions.

Dr. Mick Peterson
Executive Director
Racing Surfaces Testing Laboratory
Libra Foundation Professor
College of Engineering at the University of Maine

Glen Kozak
Vice President of Facilities and Racing Surfaces
New York Racing Association

NOTES:



2:15 – 2:45 p.m. Advanced Horsemanship

Education has been a core component of every prior Welfare and Safety Summit. Since the Association of Racing Commissioners International passed regulations to mandate four hours of continuing education for trainers, a handful of states have taken steps to require trainer continuing education, while others have indicated the lack of online content and the logistics of tracking such education as the biggest hurdles to passing this regulation.

Cathy O'Meara
Coordinator
The Jockey Club Industry Initiatives
Racing Officials Accreditation Program

Dixie Hayes
Academic Coordinator and Instructor
North American Racing Academy

NOTES:



Biographies

Dr. Rick M. Arthur Equine Medical Director California Horse Racing Board

Dr. Rick Arthur is the Equine Medical Director at the School of Veterinary Medicine, University of California, Davis, and in that role and on a full-time basis, he advises the California Horse Racing Board (CHRB) on drug testing, veterinary practice and the health and safety of horses at CHRB-licensed facilities.

Arthur is a 1976 graduate of the UC Davis School of Veterinary Medicine and was a private racetrack practitioner for more than 30 years on the Southern California Thoroughbred circuit. He is a past president of the American Association of Equine Practitioners and serves as a director for the Oak Tree Racing Association, the Racing Medication and Testing Consortium (RMTTC), and the Grayson-Jockey Club Research Foundation. He is also co-chairman of the RMTTC Scientific Advisory Committee and serves on the International Federation of Horseracing Authorities' Prohibited Substances Committee.

Dr. Arthur has been involved with medication, drug testing and regulatory issues in Thoroughbred racing for more than 30 years. He is a member of The Jockey Club.

Clifford Barry General Manager Pin Oak Stud

Clifford Barry worked at Kildangan Stud under the care of Michael Osborne. He came to Pin Oak in 1988 and in 1994 became its General Manager. Clifford has handled the careers of prominent Pin Oak stallions Maria's Mon (sire of two Kentucky Derby winners), Broken Vow (sire of multiple graded stakes winners), and champion Sky Classic (sire of six champions). He supervised the racing careers of notable homebreds Peaks and Valleys, Canadian Horse of the Year and Champion 3-year-old Male, and Hasten to Add, champion grass horse in Canada, earning Pin Oak national and state breeder of the year titles in 1995.

In the current racing stable, Clifford oversees Alternation, the farm's second million dollar earner. He has served as president of the KTA/KTOB board of directors and as a member of the TOBA board of trustees, having been an invited guest of the American Graded Stakes Committee in 2012. He has been a member of the Kentucky Thoroughbred Farm Managers' Club since 1991 and has served two terms as Director and Treasurer. He was honored as "2007 Farm Manager of the Year." He is a member of the Grayson-Jockey Club Research Foundation and a member and past director of the Thoroughbred Club. Furthermore, Clifford and his wife, Elizabeth, privately own and breed horses under the name of Brookfield Stud, which has been successful in producing Louisiana Derby winner High Limit and Florida Derby winner Soldat.



Dr. Dionne Benson
Executive Director and Chief Operating Officer
Racing Medication and Testing Consortium

Dr. Dionne Benson has been the executive officer and chief operating officer of the Racing Medication and Testing Consortium since July 2012.

Prior to her pursuits in veterinary medicine, Dr. Benson practiced law for eight years, serving as an adjunct faculty member at the William Mitchell College of Law and as an attorney for the National Arbitration Forum and at Larkin, Hoffman, Daly and Lindgren, Ltd. in Minneapolis, Minnesota.

Dr. Benson received her B.S. and D.V.M. from the University of Minnesota, and J.D. from the William Mitchell College of Law. She has worked as a veterinary assistant to Dr. V. Don Newcomb at Canterbury Park and as a detention barn technician for the Minnesota State Veterinarian's office.

Edward L. Bowen
President
Grayson-Jockey Club Research Foundation

Ed Bowen oversees the Grayson-Jockey Club Research Foundation Inc., a charitable organization that funds research on matters of the health and soundness of horses. Prior to accepting this post in March 1994, Bowen had been a Thoroughbred racing journalist since 1963. He previously served as editor-in-chief of *Thoroughbred Times* and the *Canadian Horse* magazines and was the editor-in-chief of *The Blood-Horse* from 1987 through 1991.

He is the author of 19 books on racing, including biographies of Man o' War and Nashua, *The Jockey Club's Illustrated History of Thoroughbred Racing in America*, and *Masters of the Turf*. Bowen is the chairman of the National Museum of Racing and Hall of Fame's Nominating Committee and president of the American Academy of Equine Art.

He is a recipient of an Eclipse Award for magazine writing, the Kentucky Thoroughbred Association's Charles Engelhard Award, the National Turf Writers Association's Walter Haight Award and the Maryland Jockey Club's Old Hilltop Award. He is also a past president of the Thoroughbred Club of America.

Bowen attended the University of Florida and the University of Kentucky.



Dr. Larry Bramlage
Surgeon and Partner
Rood & Riddle Equine Hospital

Dr. Larry Bramlage is an internationally recognized equine orthopedic surgeon and a partner at Rood and Riddle Equine Hospital in Lexington, Kentucky.

Dr. Bramlage, a 1975 graduate of Kansas State University, received a Master of Science from The Ohio State University College of Veterinary Medicine where his master's thesis focused on the study of bone grafts and bone plating.

Prior to joining Rood and Riddle Equine Hospital, Dr. Bramlage was an associate professor of equine surgery at The Ohio State University.

Dr. Bramlage has served as an American Association of Equine Practitioners On Call veterinarian since 1993, covering the Triple Crown races and the Breeders' Cup World Championships.

Dr. Bramlage is a member of The Jockey Club and the recipient of both the Special Award of Merit from the British Equine Veterinary Association and The Jockey Club Gold Medal from The Jockey Club.

Bill Casner
Owner

Bill Casner has been a lifelong member of the Thoroughbred racing community. Initially, he trained horses at tracks in the Southwest. After founding Excel Communications with former partner Kenny Trout in 1988, Casner and Trout first ventured into Thoroughbred ownership in 2000 with the purchase of Prestonwood Farm, which was renamed WinStar.

As partners, Casner and Trout bred Grade I winners such as Funny Cide, Da'Tara, and Super Saver, and they raced Belmont Stakes winner Drosselmeyer.

Casner, who now operates independently as Casner Racing, is a past chairman of the Thoroughbred Owners and Breeders Association and a founding director of the Race for Education and Kentucky Equine Education Program (KEEP). He has many other roles in racing, including chairmanship of the Welfare and Safety of the Racehorse Summit's Shoeing and Hoof Care Committee and a member of the board of trustees for Breeders' Cup Limited.



Gary Contessa
Trainer

Gary Contessa has maintained his status near the top of the trainer's standings at New York racetracks for many years. Contessa was NYRA's leading trainer by wins for four consecutive years (2006 - 2009), averaging more than 150 NYRA wins during those four campaigns, with 12 training titles for individual NYRA meets over that same span. In 2007, he set a NYRA record of saddling 159 winners, eclipsing mentor Frank Martin's mark of 156 set in 1974. That year, Contessa had 183 total winners at all tracks with \$7.9 million in earnings.

Contessa is known for getting the most out of modestly priced horses. In a 2012 ranking in MarketWatch, published by The Blood-Horse, Contessa placed second among all Thoroughbred trainers in the world over the last 15 years in return on investment for Thoroughbreds purchased at 2-year-old in training sales. In addition to training, Contessa has served as president of the Exceller Fund, an organization devoted to caring for and rehoming retired racehorses, since 2008.

Dr. Jennifer Durenberger
Director of Racing
Massachusetts Gaming Commission

Dr. Durenberger serves as the operational head of the Racing Division of the Massachusetts Gaming Commission. In that capacity, she oversees and is the responsible regulatory authority for all pari-mutuel and racing-related activities at the Commonwealth's Standardbred, Thoroughbred, and simulcasting facilities.

She began working on the racetrack in 1991 as a veterinary assistant at what was then Canterbury Downs in Shakopee, Minnesota. She received her veterinary degree from Cornell University in 2002. Following an internship at Rood and Riddle Equine Hospital in Lexington, Kentucky, and a short time in private practice, she worked as an association veterinarian for the New York Racing Association from 2003 to 2008. She left New York for California in 2008, working for the California Horse Racing Board from 2008 to 2010 while completing a law degree. Dr. Durenberger accepted her current position in October 2012.

Dr. Durenberger is an accredited steward and member of the Racing Officials Accreditation Program Education Committee. She serves on the American Association of Equine Practitioners Ethics and Professional Conduct Committee, the Welfare and Safety of the Racehorse Summit's Racing Equipment and Safety Committee, and the Model Rules Committee and Drug Testing Standards and Practices Committees of the Association of Racing Commissioners International, where she was also recently elected to the executive board.

She also works closely with the National Thoroughbred Racing Association's Safety and Integrity Alliance.



Dr. Lisa Hanelt
Examining Veterinarian
Finger Lakes Racetrack

Dr. Lisa Hanelt has been a full-time examining veterinarian for Finger Lakes Gaming and Racetrack in Farmington, New York, since 2013. She began practice in Massachusetts then spent nine years as a solo equine ambulatory veterinarian based in southern New Hampshire.

Over the years she has treated horses competing in diverse disciplines, from Grand Prix dressage to heavyweight drafts. She practiced on the backstretch of Rockingham Park during the summer harness meets until the track ceased live racing in 2010.

In addition to maintaining her private practice, Dr. Hanelt continued to work as a private and examining veterinarian at both flat and harness racetracks in Massachusetts until she accepted a position working full-time for Finger Lakes Gaming and Racetrack.

She has served as a consultant for the New York Equine Drug Testing Research Program and as an official and treatment veterinarian for 50- and 100-mile endurance rides. She also strongly supports second careers for racehorses of all breeds.

Dixie Hayes
Academic Coordinator and Instructor
North American Racing Academy

Dixie Hayes is the current program coordinator and lead instructor at the North American Racing Academy (NARA), a position she has held since 2011. A part of Bluegrass Community and Technical College, NARA trains its students to be successful in various professions in the racing industry, including jockeys, exercise riders, grooms, and trainers.

Hayes is responsible for developing and teaching the Horseman's Pathway curriculum at NARA. This study option caters to individuals interested in focusing on the hands-on care of Thoroughbreds.

Hayes is a graduate of Midway College, where she received a bachelor's degree in Arts with a concentration in Equine Management. Prior to joining NARA, she had managing roles at Linhaven and Frankfort Park farms. She was also a licensed trainer from 2007 - 2010.



Dr. Heather Knych
Assistant Professor of Clinical Molecular Biosciences
UC Davis

Dr. Heather Knych is an Associate Professor of Clinical Veterinary Pharmacology at the University of California, Davis, School of Veterinary Medicine. She received her veterinary degree and PhD in Pharmacology from the University of California, Davis. She is a Diplomate of the American College of Veterinary Clinical Pharmacology.

Dr. Knych's pharmacology laboratory is part of the K.L. Maddy Equine Analytical Chemistry Laboratory. She maintains an active research laboratory where her primary focus is equine pharmacology, specifically drug metabolism and pharmacokinetic/pharmacodynamic relationships. Dr. Knych's lab has played a large role in the RMTTC's establishment of uniform regulatory recommendations (Model Rules) for a number of drugs, including triamcinolone acetonide and methylprednisolone acetate.

Over the last two years, Dr. Knych has received two Grayson-Jockey Club Research Foundation grants. In 2013, she received funding to study the effects of genetic polymorphisms in drug metabolizing enzymes on the clearance of drugs in horses. Most recently, she received support to continue to study the effects of corticosteroids by assessing their effects on biomarkers of inflammation.

Stephen Koch
Vice President of Thoroughbred Racing
Woodbine Entertainment

Stephen Koch has been the vice president of Racing, Stables, and Grounds, Fleet at Woodbine Entertainment Group in Ontario, Canada, since 2008. His other roles at Woodbine have included director of racing, director and manager of Backstretch Operations, and projects manager. Prior to working at Woodbine, Koch was an administrator at Keeneland Sales for two years.

Koch grew up as a horseman at Claiborne Farm and worked at his family's Mt. Carmel Farm in Paris, Kentucky. He also gained experience as a veterinary and reproductive specialist technician under the tutelage of Dr. Hardy Dungan.

Koch served as a graduate research assistant at the University of Kentucky en route to receiving a Master of Science degree.



Glen Kozak
Vice President of Facilities and Racing Surfaces
New York Racing Association

Glen Kozak joined the New York Racing Association (NYRA) in 2008 as the director of Racing Surfaces and was promoted to his current role, vice president of Facilities and Racing Surfaces, in 2011. Over the last six years Glen has improved nearly every aspect of NYRA facility and racing surface operations. Overall costs have been reduced, while significant progress has been achieved to facilities that have suffered from decades of deferred maintenance.

Before joining NYRA Kozak was the vice president of Facilities & Racing Surfaces at Maryland Jockey Club (MJC), consisting of Laurel Park, Pimlico Racecourse and Bowie Training Center. During his time at MJC, Kozak oversaw the completion of a \$30 million track renovation, which included the installation of a new turf course and the rising and widening of the main dirt course. Prior to his MJC tenure, Kozak served as the track superintendent at Suffolk Downs in Boston, Massachusetts, and was the owner/operator of a bulk petroleum transport company with a fleet of five trucks, annually hauling over 22 million gallons of liquid petroleum gas across the northeast.

Kozak has spent his entire life within the equine industry. He is the son of a veterinarian and grew up on a 200-acre family-owned hunter breeding farm in Milford, New Jersey. Kozak serves on several industry committees, including the Grayson-Jockey Club Research Foundation's Welfare & Safety (WSS) Committee and the WSS Environment & Training Committee.

Dr. James N. MacLeod
Professor
Department of Veterinary Sciences
University of Kentucky Gluck Equine Research Center

Dr. MacLeod is a veterinarian and PhD scientist at the University of Kentucky, with joint appointments in the Gluck Equine Research Center and the College of Medicine. He holds the John and Elizabeth Knight Chair in musculoskeletal sciences.

Dr. MacLeod has been a leader in developing genomic strategies to study equine gene expression. He conducts research on synovial joints, with a focus on osteoarthritis, articular cartilage repair, intra-articular medications, and Wobbler Syndrome. Dr. MacLeod's research has been widely published in leading scientific journals and is funded by the National Institutes of Health, the National Science Foundation, the Grayson-Jockey Club Research Foundation, the Morris Animal Foundation, the Kentucky Horse Racing Commission, and the Lourie Foundation.



Dr. C. Wayne McIlwraith
Professor of Surgery and Director
Gail Holmes Equine Orthopedic Research Center
Department of Clinical Sciences at the College of Veterinary Medicine and Biomedical
Sciences
Colorado State University

Dr. C. Wayne McIlwraith is a pioneer in the field of equine orthopaedic research and surgery and consults worldwide, treating some of the world's most prized horses, including past Kentucky Derby winners. He led the veterinary profession in the development of its most important tools for treating joint disease.

Dr. McIlwraith is a Colorado State professor in Clinical Sciences, holder of the Barbara Cox Anthony University Endowed Chair, and Director of the Orthopaedic Research Center, which leads the world as a center of comparative orthopaedic research.

He received his veterinary degree from Massey University, New Zealand; his M.S. and Ph.D. degrees in the area of joint disease research at Purdue University; and the Dr. med. vet. (h.c.) degree from the University of Vienna.

Dr. McIlwraith is a diplomate in the American College of Veterinary Surgeons and the European College of Veterinary Surgeons.

Dr. Foster Northrop
Veterinarian

Dr. Foster Northrop is an equine veterinarian practicing primarily on Thoroughbred racehorses at Churchill Downs, Keeneland and Palm Meadows. Dr. Northrop spent 16 years practicing with Dr. Mark Cheney before starting his own practice in December 2008.

Dr. Northrop is a graduate of The University of Georgia where he was a member of the football team from 1980 - 1984. After graduating from the UGA College of Veterinary Medicine in 1988, he spent time in Africa doing big-game research while working for the television show Wild Kingdom before spending a period of time at the National Zoo in Washington, D.C.

Dr. Northrop got his start in the equine industry in 1989 working under Dr. John R. Steele, primarily on Standardbred racehorses but additionally on world-renowned show horses in Wellington, Florida. Dr. Northrop served four years on the Grayson-Jockey Club Research Foundation's Research Advisory Committee and in 2008 was appointed by Governor Steven Beshear of Kentucky to the Kentucky Horse Racing Commission, where he still serves.



Cathy O'Meara
Coordinator
The Jockey Club Industry Initiatives
Racing Officials Accreditation Program

Cathy O'Meara is currently The Jockey Club Industry Initiatives and Racing Officials Accreditation Program (ROAP) Coordinator and is a graduate of Virginia Tech with a bachelor's degree in Animal and Poultry Sciences and Sullivan University with a MBA in Management Information Systems.

O'Meara coordinates the day-to-day operations of ROAP in addition to coordinating the Welfare and Safety of the Racehorse Summit (WSS) committees in all aspects of horse and personnel safety at the racetrack. O'Meara represents the WSS at the American Society for Testing and Materials International to keep current with standards affecting our industry and provide valuable input from the committees. Originally drawn to the Thoroughbred industry by the Kentucky Equine Management Internship, upon completion she has held various positions throughout the industry including trainer/owner, exercise rider, and farm and office manager.

Dr. Scott Palmer
Equine Medical Director
New York State Gaming Commission

Dr. Scott Palmer's appointment as the first Equine Medical Director of the New York State Gaming Commission demonstrates yet another example of Dr. Palmer's commitment to the health and welfare of the equine athlete.

Since his graduation from the University of Pennsylvania School of Veterinary Medicine in 1976, Dr. Palmer has worked as a staff clinician at the New Jersey Equine Clinic, serving as the hospital director since 1997. He was the recipient of the AAEP President's Award in 2009 and the AAEP Distinguished Service Award in 2010. Dr. Palmer is board certified in equine practice by the American Board of Veterinary Practitioners. He has authored dozens of peer-reviewed publications and is a featured speaker at veterinary conferences worldwide.

Dr. Palmer chaired the New York Task Force on Racehorse Health and Safety, which was formed at the request of Governor Andrew M. Cuomo in 2012 in the wake of 21 equine fatalities during Aqueduct's 2011-12 Winter Meet. The New York State Equine Medical Director position was established last year as a key recommendation of that task force.

Dr. Palmer serves as a board member for the NTRA Safety and Integrity Alliance Advisory Board and the Thoroughbred Charities of America. He previously served on the ARCI Special Task Force on Medication and chaired the International Summit on Race Day Medication as well as the Ad-Hoc RMTTC Committee on Race Day Security and served two terms as member of the Grayson-Jockey Club Research Advisory Committee.



Dr. Mick Peterson
Executive Director
Racing Surfaces Testing Laboratory
Libra Foundation Professor
College of Engineering at the University of Maine

Dr. Peterson's research links traditional understanding of engineering mechanics and materials to the biomechanics of animals. His research centers on the manner in which dynamic response can be used to characterize materials. This research is applicable to a wide range of materials from carbon composites used in the space shuttle to biological materials and granular materials in playing fields.

Dr. Peterson is an affiliate faculty member in the School of Marine Sciences, Civil Engineering and the Animal and Veterinary Sciences Department at the University of Maine. He has been collaborating with the faculty in the College of Veterinary Medicine and Biomedical Sciences at Colorado State University for more than a decade.

During this time he has worked on a range of equine and animal biomechanics topics including the impact of exercise on bone density, the development of biomechanical models, durability of cetacean epidermis, the measurement of inertial properties of the equine forelimb, biomechanics of whale interaction with fishing gear, and the kinematics of equine gait on treadmills and tracks. In this work he has collaborated with a wide range of experts in kinematics, orthopedics and pathology.

Dr. Peterson collaborated with Dr. C. Wayne McIlwraith at Colorado State University to found the Racing Surfaces Testing Laboratory. The laboratory is a non-profit organization supported by the horse racing industry that is providing research, testing and materials characterization services for the industry.

Todd Pletcher
Trainer

Todd Pletcher began hot walking horses for his father at age 7 in the Southwest, and he continued to work for his father through high school. During the summers in between his college years at the University of Arizona Race Track Industry Program, Pletcher worked for hall of fame trainers D. Wayne Lukas and Charlie Whittingham. Upon graduation in 1989, he continued to work for Lukas until taking out his trainer's license at the end of 1995.

Since going out on his own, Pletcher has won a record six Eclipse Awards for outstanding trainer, and in May of this year, he passed Lukas for the all-time earnings record. He won the Kentucky Derby with Super Saver in 2010 and has trained two winners of the Belmont Stakes, including the filly Rags to Riches. Pletcher's résumé includes six Breeders' Cup winners, 10 Eclipse Award winners, and newly elected Hall of Famer Ashado.



Dr. Richard Sams
Director
LGC Sport Science

Dr. Richard Sams is director of LGC Science Inc. in Lexington, Kentucky. LGC is the official laboratory of the Kentucky Horse Racing Commission, the Virginia Racing Commission, the Thoroughbred Racing Authority of Puerto Rico, the Maine Harness Racing Commission, the Trinidad & Tobago Racing Authority, the Indiana Horse Racing Commission, and the Delaware Thoroughbred Racing Commission.

Dr. Sams served as director of the Analytical Toxicology Laboratory at The Ohio State University from 1978 to 2006 and the Florida Racing Laboratory at the University of Florida from 2006 to 2010. He was a member of the veterinary medicine faculty at OSU from 1976 to 2006 and at UF from 2006 to 2010, where he had responsibility for teaching veterinary pharmacology to veterinary and graduate students. He has mentored numerous graduate students and has pursued an active research program with emphasis on the pharmacokinetics of drugs in animals, particularly horses.

He has served as a consultant to the Drug Testing Standards and Practices Committee of the Association of Racing Commissioners International and has been a technical advisor to the Racing Medication and Testing Consortium since its inception. Dr. Sams is a member of the American Society of Mass Spectrometry, the International Association of Forensic Toxicologists, American Association of Pharmaceutical Scientists, and the American Academy of Veterinary Pharmacology and Therapeutics. He is a professional member of the Association of Official Racing Chemists. Dr. Sams has authored more than 120 peer-reviewed scientific articles and is a qualified expert in the field of veterinary pharmacology.

Dr. Mary Scollay
Equine Medical Director
Kentucky Horse Racing Commission

Dr. Mary Scollay is a 1984 graduate of the University of Illinois College of Veterinary Medicine. For over 20 years she served as a racing regulatory veterinarian, first in Illinois and later in South Florida. During that time she developed the pilot injury-reporting program that evolved into The Jockey Club's Equine Injury Database, and she continues to serve as a consultant to the program. In 2008, she was named equine medical director to the Kentucky Horse Racing Commission. She was a member of the New York Task Force on Racehorse Health and Safety.

Dr. Scollay is an active member of the American Association of Equine Practitioners and was editor and co-author of the guidelines on the Management of Equine Infectious Disease and Vaccination Guidelines. She currently serves on its Racing and Professional Conduct and Ethics committees. She is a member of the International Group of Specialist Racing Veterinarians and an associate member of the European Horseracing Scientific Liaison Committee.



Rick Violette Jr.
Trainer

Rick Violette started showing hunters and jumpers on the East Coast circuit. He first started galloping racehorses part-time but eventually chose racing over show horses.

Violette graduated from Lowell University in Massachusetts and began working on the backstretch at Suffolk Downs. He was assistant to Emile Allain at Woodbine Race Track in Canada for two years and then went to New York to be an assistant to David Whiteley. He started his own public stable in 1983.

Violette is the president of the National Thoroughbred Horsemen's Association and a member of the board of directors of the New York Thoroughbred Horsemen's Association (NYTHA). He has also served as chairman of the New York Jockey Injury Compensation Fund for more than a decade. He has been instrumental in the formation of several NYTHA programs benefitting backstretch employees.

On the training front, he has developed many New York and graded stakes winners including Read the Footnotes, Man from Wicklow, March Magic, Dream Rush, High Finance, and Samraat.

Michael Ziegler
Executive Director
NTRA Safety & Integrity Alliance

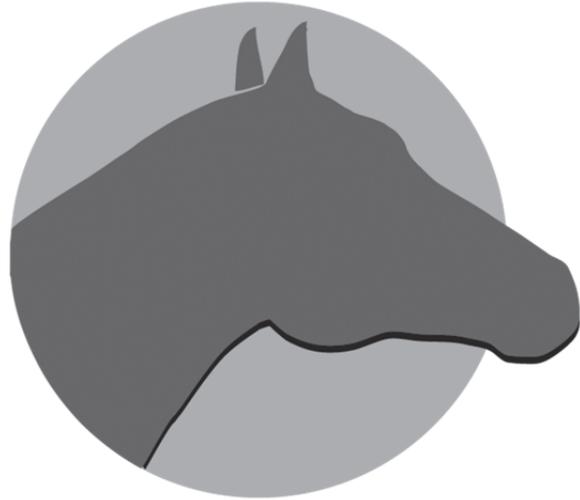
Michael Ziegler is executive director of the NTRA Safety & Integrity Alliance, which was created in late 2008 to implement changes and enhance safety and integrity in Thoroughbred racing. He also guided the Thoroughbred Aftercare Alliance (TAA) through its formative stages when it was created to accredit and provide funding to organizations that care for horses when their careers are over.

Prior to joining NTRA and TAA, Ziegler worked as senior vice president at Youbet.com and in various executive positions at Hollywood Park, Santa Anita Park, Bay Meadows, and Golden Gate Fields. Ziegler holds a Bachelor of Science in Economics from Cal Poly San Luis Obispo and a master's degree in Business Administration from Loyola Marymount University.



Related Materials

Using Data to Keep Horses Safe.....	1
Massachusetts Gaming Commission Documents.....	2
Excerpt from the “New York Task Force On Racehorse Health and Safety Executive Summary”	9
Excerpt from the “National Thoroughbred Racing Association Safety and Integrity Alliance 2014 Code of Standards”	15
Today’s Thoroughbred	30
Chart of Average Starts and Average Field Size	31
Racing Surfaces Testing Laboratory Bulletins	32



Using Data to Keep Horses Safe



Division of Racing

A message from Jennifer Durenberger, Director of Racing for the Massachusetts Gaming Commission

On January 1, 2013, the Massachusetts Gaming Commission assumed from the Division of Professional Licensure the day-to-day regulatory oversight of all pari-mutuel operations in the Bay State. The Division of Racing was charged with strengthening the existing racing regulatory structure in anticipation and advance of expanded gaming in the commonwealth. We're pleased to share with you an overview of what we've done since that time.

We saw no reason to re-invent the wheel, and much of what you'll see is a combination of RCI Model Rules and the key components of the Uniform Medication Initiative. We also brought in some best practices we learned about through the NTRA Safety and Integrity Alliance and the experience of other jurisdictions. And we weren't afraid to try out a few new things, too.

We've included in these materials an excerpt from a recent memo to our Commissioners highlighting most of our major regulatory and operational initiatives and requesting that they consider endorsing a set of welfare guidelines (they did), a copy of our Horses First statement, and a blog post announcing some website enhancements that we're pretty proud of for your review. Enjoy!



Massachusetts Gaming Commission

MEMORANDUM

To: Stephen Crosby, Chairman
Gayle Cameron, Commissioner
Jim McHugh, Commissioner
Bruce Stebbins, Commissioner
Enrique Zuniga, Commissioner

From: Jennifer Durenberger, Director of Racing

Date: 17 April, 2014

Re: **Horses First.**

Commissioners:

Immediately after taking the reins from its predecessor State Racing Commission, this Commission engaged a consultant to review the existing state of the commonwealth's live racing and simulcast operations. The resultant report ("Review of Massachusetts State Racing Commission and Industry," dated July 12, 2012) and the recommendations it contained were used as a roadmap for many of the major changes made to our racing regulatory structure in 2013. Change can sometimes prove difficult, particularly for an industry with a proud 78-year tradition and history. Insulated cultures – and make no mistake that horse racing is an insulated culture – which evolve over the course of decades sometimes fail to appreciate the need for change in the absence of a significant precipitating event or catalyst. Sweeping reform often proves even more challenging.

Starting in the late 2000s, the horse racing industry in North America began to make great strides in the area of uniform medication regulation. This important reform initiative had not yet reached the shores of the Bay State when this Commission was charged with industry oversight, a fact which was reflected front and center in the consultant's 2012 report.

The Racing Division approached the 2013 live racing season with an eye toward phased-in, incremental change designed to maximize stakeholder buy-in and participation and



Massachusetts Gaming Commission

minimize disruption to operations, while at the same time establishing a solid foundation of effective regulation that reflects the reality of today's racing business model. And the reality of today's racing business model is that change is imperative.

I'd like to first recap for the Commission the changes we introduced in 2013. While incremental, I think you will agree that these reforms were far from insignificant.

They included:

- **The Commission's resolution in support of the Mid-Atlantic and Northeast regional uniform medication initiative;**
- **The Commission's adoption of a comprehensive set of uniform model rules governing medication, veterinary practices, and safety standards;**
- **Elimination of the administration of raceday phenylbutazone (the last state to do so), thereby removing an important asterisk from the national industry;**
- **Providing manuals for trainers and veterinary practitioners outlining our significant medication changes and offering guidelines for compliance;**
- **Contracting with an accredited drug testing laboratory;**
- **Drug testing of all horses working to get off the veterinarians' list, with raceday penalties in effect for violations;**
- **Collecting and reviewing treatment sheets from private practitioners;**
- **Submitting all horses which died on licensed facility grounds to Tufts Veterinary Hospital for necropsy and other testing; and**
- **Enhancing the professional resume of Racing Division staff.**

But our work was far from done. Following last year's live racing season, the Commission adopted the Association of Racing Commissioners International ("RCI") Controlled Therapeutic Substance Schedule and Multiple Medication Violation model rules, two additional key pieces of the national uniform medication initiative.



Massachusetts Gaming Commission

For the 2014 live racing season, Racing Division staff will be implementing the following operational changes:

- **Commencement of Commission-controlled furosemide administration;**
- **Implementation of a blood gas testing (TCO₂) program;**
- **Posting of TCO₂ and non-steroidal anti-inflammatory (NSAID) test results levels on the MGC website;**
- **Posting of stewards' and judges' rulings and daily reports on the MGC website;**
- **Forming a catastrophic injury review committee;**
- **Hiring a safety/field steward;**
- **Hosting educational forums for occupational licensees throughout the year;**
and
- **Launching the Racing Division's "Horses First" commitment to the safety and welfare of our equine athletes.**

The "Horses First" initiative is a guiding principle and letter to stakeholders affirming the Racing Division's commitment to protecting the safety and welfare of our equine athletes. While its tenets were discussed verbally at new employee orientations and meetings with racing officials last year, this year we put it in writing. The document labeled "Appendix A" appears in our 2014 seasonal employee training manuals, in the 2014 manuals we provide to occupational licensees, and is posted and available in our racetrack commission offices. Commissioners, it is with great pride I tell you that, while the adoption of uniform medication regulations were extremely well received by our stakeholders, *no single action we've undertaken has been the target of more compliments* than the sharing of this document with our occupational licensees.

But we'd like to do more.

Racing Division staff has been assembling the next phase of model rule change recommendations, which will address key sections on the duties of licensees – both occupational licensees and racetrack operators – and their obligation to contribute to the safety and welfare of racing's participants and the integrity of the betting product.



Massachusetts Gaming Commission

The Racing Division is confident that the Commission's veterinary programs, as evidenced above, are among the most comprehensive in the country. We use science and regulation to help us document and maintain the healthiness of our racehorses, and we're not afraid to step in if intervention becomes necessary. But that's not enough. **We believe we should also be at the forefront of the movement to demonstrate, through actions and through words, our understanding of the important role we play as stewards of our industry.**

The Racing Division asks the Commission's help on this important initiative. We ask that, among other things, the Commission consider passing a resolution in support of welfare guidelines to be applied to racing in the commonwealth.

On May 29, 2014, the Massachusetts Gaming Commission voted unanimously to endorse the Welfare Guidelines published by the International Group of Racing Specialist Veterinarians. Those guidelines are as follows:

- At all stages during the preparation and presentation of horses for racing their welfare should take precedence over all other demands.
- Horses should be in a fit and healthy condition before being allowed to compete.
- Conditions at race meetings should not prejudice horse welfare.
- Every effort should be made to ensure that horses receive proper attention after they have raced, and that they are treated humanely when their careers are over.



Massachusetts Gaming Commission



Division of Racing

Horses first. That's how our Racing Division staff is trained.

It sounds simple, but what starts as a simple premise goes to the core of our industry. Happy, healthy horses perform to the best of their ability. They run truer to form for our pari-mutuel customers, they maximize return on investment for their breeders and owners, they help create a safer training and racing environment for those who work around them, and they retire from the racetrack to productive second careers.

Ensuring the happiness and healthiness of our equine athletes is a big job, and it's where our knowledge about welfare and science intersects. The Racing Division's veterinary program is among the most comprehensive in the country. We use science and regulation to help us document and maintain the healthiness of our racehorses, and we're not afraid to step in if intervention becomes necessary. But that's not enough.

Equine welfare, by definition, addresses psychological as well as physiological well-being. Psychological well-being is dependent largely on housing, nutrition, health care, environment, and handling. While the Racing Division is committed to ensuring the happiness of our racehorses, we must rely heavily on their caregivers for this task.

The Racing Division of the Massachusetts Gaming Commission is proud to partner with our hard-working, dedicated horsemen and women and our racetrack operators for another successful year of live racing in the commonwealth. We take very seriously our shared role as stewards of our industry, and we know you do, too. Together, we must hold each other accountable for putting the horse first in everything we do.

Because when we do right by the horse, all the rest follows.



Massachusetts Gaming Commission



Division of Racing

Division of Racing reveals enhancements to MassGaming.com

May 28, 2014

The following is a blog post from Director of Racing Dr. Jennifer Durenberger:

The Massachusetts Gaming Commission Division of Racing is excited to reveal our enhanced website, one full of features designed to provide a clearinghouse of information for occupational licensees and horse racing fans alike.

From our [Division of Racing page](#), users will find portals to “[MGC at Plainridge Racecourse](#)” and “[MGC at Suffolk Downs](#).” From there, you will be able to read about our “Horses First” initiative, download license applications, access racing regulations, keep up on the latest MGC judges’ racing reports and administrative rulings in the Plainridge Racecourse Judges Corner, do the same over at the Suffolk Downs Stewards Corner, and browse through our veterinary manuals and medication advisories in the Veterinary Corner.

But what we’re most excited about is a first-of-its-kind repository of equine drug testing information. Did you know that, on any given day, approximately 25% of the horses that race in Massachusetts are tested for a virtual cornucopia of prohibited and regulated substances? The Commission contracts with a state-of-the-art laboratory that is ISO-17025 accredited (an international standard) and which recently achieved industry recognition as one of five equine drug testing laboratories accredited by the Racing Medication and Testing Consortium. Blood and urine samples are collected by our dedicated team of veterinarians and their assistants and screened for over 1,900 substances using instrumental analysis and ELISA testing. By far the largest piece of our operating budget – well over one-third – is devoted solely to the drug testing of our equine athletes. In our Veterinary Corner, you’ll be able to look at test results for regulated substances like anti-inflammatory medications and total carbon dioxide.

As always, we invite you take a look around. We welcome your comments, questions and feedback on our many regulatory initiatives and programs.

**Excerpt from the
“New York Task Force
On Racehorse Health and Safety
Executive Summary”**

Recommendations of the Task Force

The Task Force developed the following 38 recommendations designed to reduce injuries to horses and riders. The Task Force believes that implementation of these recommendations will reduce injuries to horses and riders and provide an opportunity for NYRA to assume a leadership role in promoting health and safety of riders and horses throughout the racing industry.

1. Regulatory Veterinary Practices and Procedures

- **Veterinary oversight of racing at NYRA's tracks should be the function of the State regulatory body and not NYRA. The veterinarians responsible for pre-race and other examinations and all other racing related responsibilities should be employed by the State and under the supervision of an Equine Medical Director.**
- **The protocol requiring the NYRA Veterinary Department to report directly to the NYRA Racing Office is an unacceptable conflict of interest that must be changed immediately. Whether or not the State assumes responsibility for veterinary oversight, the NYRA Veterinary Department must report directly to the Stewards.**
- **Veterinary Department practices and procedures must be developed and documented in a Standard Operating Procedures Manual. (See Exhibit H)**
- **A standardized protocol for the initiation of scratches at the time of the pre-race examination must be developed, documented and implemented.**
- **A standardized protocol for the initiation of gate or post-parade scratch recommendations must be developed, documented and implemented.**
- **A standardized protocol for the assignment of a horse to the Veterinarian's List must be developed, documented and implemented.**
- **The use of a Restricted List should be abandoned.**
- **Protocols for the management and review of horses sustaining non-fatal conditions during a race must be developed, documented and implemented.**

- **Protocols for the management of horses sustaining fatal conditions during a race must be developed, documented and implemented.**
- **In the event of an increased occurrence of musculoskeletal injuries during a race meeting, the Veterinary Department should meet to review existing practices, develop strategies to reduce or mitigate injury occurrence, and to enhance identification of horses for which intervention is warranted.**
- **The Veterinary Department should develop and implement strategies intended to identify “horses of interest” that warrant increased scrutiny. (See Exhibit G).**
- **Veterinary Department employees should undergo a structured training program and regular reviews.**

2. Necropsy; Review Board; and Post-Mortem Investigation

- **The NYSRWB should require a complete necropsy at a veterinary diagnostic laboratory of all horses fatally injured at NYRA’s racetracks.**
- **A NYRA Mortality Review Board should be created and convened to review any and all training and racing (exercise-related) fatalities. (See Exhibit I)**
- **The NYSRWB should improve the documentation of findings included in the investigation reports of fatal injuries.**

3. Claiming Rules and Policies

- **The NYSRWB should amend, on an emergency basis, its recently amended Rule 4038.5 to provide that a claim is voidable for a horse that is vanned off the track, within one hour of the race, at the discretion of the claimant.**
- **The NYSRWB should amend, on an emergency basis, Rule 4038 to provide that the claimant of a horse shall be notified, within 48 hours after the claim is finalized, of any intra-articular corticosteroid administrations to the horse within 30 days of the race.**

- In order to ensure that the purses for claiming races more appropriately reflect the value of the horses entered in such races, the NYSRWB should modify its recently amended Rule 4038.2 so that the purse to claim price ratio should be no greater than 1.6, in which the value of the horse is approximately equal to the winner's share of the purse.

4. Medication, Testing and Regulation

- The NYSRWB should, on an emergency basis, amend Rule 4043.2 to prohibit: (1) the intra - articular administration of methylprednisolone (DepoMedrol®) within 15 days of the date of the race; (2) the administration of all other intra - articular corticosteroids within seven days of the date of the race; and (3) the administration of all systemic corticosteroids within five days of the date of the race.
- The NYSRWB should amend Rule 4043.2 (i), on an emergency basis, to require that a trainer must notify the Stewards in writing, within 48 hours, of all intra-articular corticosteroid administrations. The NYSRWB must ensure compliance with, and the enforcement of Rule 4043.2(i).
- The NYSRWB should amend Rule 4043.2, on an emergency basis, to prevent the administration of clenbuterol to a horse within 21 days of the date of the race.
- The NYSRWB should expand its recently enacted out-of-competition testing rule for the Thoroughbred industry to include testing for compliance with the corticosteroid and clenbuterol recommended rule changes in this Report.
- The NYSRWB should perform a comprehensive review of the sample collection and Laboratory testing protocols and procedures to ensure that these protocols meet its regulatory requirements and priorities, including the collection and proper identification of urine and blood samples from all non-fatal and fatally injured horses and the comprehensive testing of such samples. The Laboratory should be required to notify the NYSWB of any sample that was insufficient for full screening for prohibited substances.
- The Laboratory should be required to: 1) complete the ISO 17025 accreditation process as soon as possible; 2) complete RMTC Code accreditation; and 3) participate in any ARCI/RMTC quality assurance program. In the absence of an ARCI/RMTC quality assurance program,

the laboratory should participate in a passed-sample exchange program with another ISO 17025 accredited laboratory.

5. Medical Records

- **Veterinarians should be required to use practice management software for recording of all veterinary services provided. This software should include user name and time and date stamps for all entries and any subsequent changes so that records cannot be amended or redacted without user accountability.**
- **The NYSRWB should amend Rule 4032 to require practicing veterinarians to record dose and route of administration of any medication administered to a horse.**
- **The NYSRWB should require that a record of all intra-articular corticosteroid injections of a horse within 30 days of a race should be made available to the successful claimant of a horse within 48 hours from the time the claim is finalized (see Recommendation #4 above).**
- **The NYSRWB should require that trainers keep a treatment log, including the time, dose and route of administration of all medications administered to horses under their care by the trainer and that the log be made available to the NYSRWB on request.**
- **The NYSRWB should perform regular and random compliance audits. A compliance audit should be required for any positive drug test reported by the Laboratory.**

6. Extracorporeal Shockwave Therapy

- **The NYSRWB should adopt a regulation strictly regulating the use of ESWT consistent with the ARCI Model Rule, but limit the scope of the regulation to racing (and breeding) and not general training.**

7. Equine Medical Director

- **The NYSRWB should hire an Equine Medical Director.**

8. NYRA Governance

- **Create an executive-level position to oversee and coordinate all aspects of the racing operation, including but not limited to the Racing Office, backstretch, horsemen's relations, stakes coordination, racing surfaces, and pari-mutuels.**
- **Create a NYRA Health and Safety Committee**
- **Incorporate the health and safety of riders and horses in the NYRA Mission Statement.**
- **Empower and protect jockeys to express concerns regarding the condition of their horse prior to the race by promoting a culture of trust.**
- **Educate trainers on the use of risk factors and intervention strategies to reduce injury.**
- **Increase the awareness and transparency of NYRA house rules.**

9. Racing Surface and Weather Monitoring

- **Establish an advanced comprehensive racetrack and weather monitoring program, using electronic monitoring, reporting and record-keeping systems and build a data base to include factors that control track consistency and are thus most likely to influence the safety of the racetrack.**
- **NYRA should perform due diligence and reconsider whether the installation of a synthetic surface on the inner track at Aqueduct would reduce the number of fatalities on that surface.**

Recommendations of the Task Force is discussed on pages 87-96 of the Report

**Excerpt from the
“National Thoroughbred
Racing Association
Safety and Integrity Alliance
2014 Code of Standards”**

Code of Standards

1. Injury and Fatality Reporting and Prevention. Timely and accurate reporting of injuries and fatalities is critical to the creation and maintenance of a national database concerning horse injuries and fatalities. This national database will be invaluable to the epidemiological study of the causes of horse injuries and fatalities as well as the determination of precautions necessary to lessen the incidence and severity of horse injuries. The individual participation in the database will be kept confidential but nationwide statistics will be made available publicly from time to time for the purpose of promoting public confidence in the injury reporting process. Injury prevention must also be accomplished by thorough pre- and post-race exams conducted by qualified Official or Association Veterinarians with the authority to keep horses from running in any race until that horse is determined to be medically fit to run. In furtherance of these important objectives, each Alliance Member shall be required to do the following:

A. Reporting of Injuries and Fatalities

Member shall participate in The Jockey Club's Equine Injury Database ("EID"). Upon adoption of this Code, Member shall immediately commence reporting injuries sustained and fatalities suffered during any Race Period and any fatalities suffered during any Non-Race Period at a Racetrack Member's racetrack(s).

B. Pre-Race Veterinary Examinations

Pre-race veterinary examinations shall be performed by Official Veterinarians on all horses entered at Racetrack Members' racetrack(s). Regulators shall be petitioned to adopt a mandatory protocol for pre-race veterinary examinations of horses substantially similar, in form and substance, to the RCI model rule identified as **ARCI-011-030(A)**. In addition, so long as such model rule has not been adopted in any racing jurisdiction, Racetrack Members in such jurisdictions shall adopt a House Rule substantially similar, in form and substance, to **ARCI-011-030(A)** and make provision for an Official Veterinarian to perform such pre-race examinations, record the examination information in the electronic database that is available from InCompass Solutions, and promptly submit the information to the racing commission and/or the stewards. If, however, after a reasonable period of time, a Member's advocacy fails to achieve passage of the amendment necessary to bring the contrary legislative or regulatory enactment into conformity with the Code, such failure shall result in revocation of current Accreditation, awarding of Provisional Accreditation or denial of future Accreditation.

C. Post-Race Veterinary Inspections

Post-race inspections shall be performed by Official Veterinarians on all horses at the conclusion of every race run at Racetrack Members' racetrack(s) to determine if horses are injured or return lame or unsound. To the extent the regulatory authorities do not so regulate post-race veterinary inspections, Members shall advocate the adoption of a mandatory protocol for post-race veterinary inspections. In addition, where such a rule has not been adopted in a racing jurisdiction, Racetrack Members shall adopt a House Rule and make provision for an Official Veterinarian to perform such post-race inspections, record the examination information, and promptly submit the information to the racing commission and/or the stewards.

D. Post-Mortem Veterinary Examinations

To facilitate accurate and complete reporting as part of EID, Post-Mortem Veterinary Examinations shall be performed on all horses that die or are euthanized during a Race Period or a Non-Race Period at Racetrack Members' racetrack(s), based on the protocols detailed in the *AAEP Guidelines for Necropsy of Racehorses*.

So long as such protocols have not been adopted in any racing jurisdiction, Racetrack Members in such jurisdictions shall adopt a House Rule and provide appropriate veterinary personnel to perform such Post-Mortem Veterinary Examinations, record the examination information, and promptly submit the information to the EID. Racetrack Members are to establish relationships with, and mechanism for transportation to, a veterinary diagnostic laboratory to perform these examinations.

E. Veterinarians' List

Racetrack Members shall maintain a Veterinarians' List under guidelines established by the RCI Model Rule **ARCI-011-030(B), Veterinarians' List**, which states that the Official Veterinarian shall maintain the Veterinarians' List of all horses that are determined to be unfit to compete in a race due to illness, physical distress, unsoundness, infirmity, non-permitted medication or any other medical condition. Members must adhere to ARCI model rules, which state that a horse may be removed from the Veterinarians' List when, in the opinion of the Official Veterinarian, (1) the condition which caused the horse to be placed on the Veterinarians' List is resolved and (2) the horse's status is returned to that of racing soundness.

Further, Members shall require Official Veterinarian participation in InCompass Solutions' Veterinarians' List Module. Members participating in the Veterinarians' List module shall share their Veterinarians Lists with other jurisdictions participating in the module. Participating Members will honor each other's list through a system of reciprocity. All lists of horses ineligible to race for medical reasons shall be shared among jurisdictions.

F. Injury Review

Racetrack Members shall establish protocols to monitor all injuries and fatalities suffered by horses while racing or training at each Racetrack Members' racetrack. The process shall include, but not be limited to, discussions with representatives of the following stakeholder groups: The Official Veterinarian, Track Management and Horsemen. The process shall include a review of findings from Pre-Race Examinations, Post-Parade Observations, Post Mortem Examinations (in fatal cases), and any other horse-related information and shall conduct interviews with personnel associated with the horse. There shall be case follow up with the trainer and practicing veterinarian(s) involved.

In the event of an increased occurrence of musculoskeletal injuries during a Racetrack Member's race meeting, the Injury Review Committee shall meet to review existing practices, develop strategies to reduce or mitigate injury occurrence and to enhance identification of horses for which intervention is warranted.

2. Safety Equipment and Safer Racing Environment. The horseracing industry as a whole must collectively invest in an infrastructure that is needed to make a safer racing environment. Alliance Members shall adopt the following safety measures:

A. Safety of Horses

Regulators shall be petitioned to adopt the ARCI Model Rule **ARCI-008-010(G)**, pertaining to safety of racehorses:

(1) Each person licensed by the Commission shall do all that is reasonable and within his/her power and scope of duty to guard against and prevent the administration of any drug, medication or other substance, including permissible medication in excess of the maximum allowable level, to any horse entered or to be entered in an official workout or race, as prohibited by these rules.

(2) No licensee or other person under the jurisdiction of the Commission shall subject or permit any animal under his/her control, custody or supervision to be subjected to or to incur any form of cruelty, mistreatment, neglect or abuse or abandon, injure, maim or kill or administer any noxious substance to or deprive any animal of necessary care or sustenance, shelter or veterinary care.

Racetrack Members shall establish a reporting mechanism, such as a toll free hotline, by which licensees or employees can report instances of mistreatment.

B. Shoes and Hoof Care

Racetrack Members shall require the elimination of toe grabs greater than 4mm and other traction devices on front horse shoes in Thoroughbred racing. Where rules have not been adopted in a Member's racing jurisdiction, Members in such jurisdictions shall adopt and/or adhere to a House Rule pertaining to the elimination of toe grabs greater than 4mm and other traction devices on front horse shoes in Thoroughbred racing.

C. Riding Crop

Regulators shall be petitioned to adopt the ARCI Model Rule **ARCI-010-035(E)(7)**, pertaining to the use of crops and the ARCI Model Rule **ARCI-010-035(A)(1)(a-b)**, pertaining to the specifications of crops to be utilized. So long as such rules have not been adopted in a racing jurisdiction, Members in such jurisdictions shall adopt and/or adhere to House Rules consistent with the ARCI Model Rule **ARCI-010-035(E)(7)**, relating to the use of crops and the ARCI Model Rule **ARCI-010-035(A)(1)(a-b)**, pertaining to the specifications of crops to be utilized.

D. Safety Helmet and Safety Vest

Regulators shall be petitioned to adopt the ARCI Model Rules **ARCI-008-010(Z)(1-2)**, pertaining to the wearing of Safety Helmets and Safety Vests. Where such rules have not been adopted in a racing jurisdiction, Members in such jurisdictions shall adopt and/or adhere to House Rules consistent with the ARCI Model Rules **ARCI-008-010(Z)(1-2)**, pertaining to the wearing of Safety Helmets and Safety Vests.

ARCI-008-010(Z)(1) : Any person mounted on a horse or stable pony on association grounds must wear a properly secured safety helmet at all times. Additionally, all members of the starting gate crew must adhere to this regulation at all times while performing their duties or handling a horse. For the purpose of this regulation, a member of the starting crew means any person licensed as an assistant starter or any person who handles a horse in the starting gate. The helmet must comply with one of the following minimum safety standards or later revisions: American Society for Testing and Materials (ASTM 1163); UK Standards (EN-1384 and PAS-015); or, Australian/New Zealand Standard (AS/NZ 3838).

ARCI-008-010(Z)(2): Any person mounted on a horse or stable pony on the association grounds must wear a properly-secured safety vest at all times. Additionally, all members of the starting gate crew must also adhere to this regulation at all times while performing their duties or handling a horse. For the purpose of this regulation, a member of the starting gate crew means any person licensed as an assistant starter or any person who handles a horse at the starting gate. The safety vest must comply with one of the following minimum standards or later revisions:

- (a) British Equestrian Trade Association (BETA):2000 Level 1
- (b) Euro Norm (EN) 13158:2000 Level 1
- (c) American Society for Testing and Materials (ASTM) F2681-08
- (d) Shoe and Allied Trade Research Association (SATRA) Jockey Vest Document M6 Issue 3
- (e) Australian Racing Board (ARB) Standard 1.1998

E. Starting Gate

Regulators shall be petitioned to adopt the ARCI Model Rule **ARCI-007-020(F)(1)**, pertaining to padded starting gates. So long as such rule has not been adopted in any racing jurisdiction, Racetrack Members in such jurisdictions shall adopt a House Rule consistent with the ARCI Model Rule **ARCI-007-020(F)(1)**, relating to padded starting gates.

Racetrack Members shall have standard operating procedures in place for the removal of the starting gate from the racing surface in a safe and timely manner. Such protocols shall include planning for situations when the primary mechanism fails as well as protocols for warning riders on horses in cases when there is a failure to remove the starting gate.

F. Equine Ambulance

Racetrack Members shall adhere to the ARCI Model Rule **ARCI-007-020(I)(1-6)**, pertaining to the provision of a horse ambulance or shall adopt a House Rule consistent with the ARCI Model Rule **ARCI-007-020(I)(1-6)**, pertaining to the provision of a horse ambulance.

G. Substance Abuse and Addiction

Regulators shall be petitioned to adopt the ARCI Model Rule **ARCI-008-010(H)** pertaining to substance abuse and addiction and testing of licensees.

H. Safety Research

Racetrack Members shall participate in and/or fund industry safety research in areas including but not limited to racetrack surface studies, epidemiological studies, and other studies which are designed to promote a safer racing environment for humans and horses.

I. Racing Surface Maintenance

Racetrack members shall have data collection protocols in place to assist in the safe and proper maintenance of all racing surfaces. All racing surface data shall be stored in an electronic format that will facilitate retrospective research studies related to surface consistency, surface performance and other possible safety related outcomes. These data collection protocols shall include, but not be limited to, the following:

- Racetrack members shall have data collection protocols in place to assist in the safe and proper maintenance of all racing surfaces. All racing surface data shall be stored in an electronic format that will facilitate retrospective research studies related to surface consistency, surface performance and other possible safety related objectives.
- These data collection protocols shall include, but not be limited to, the following:
- Weather: log data at 15-minute increments during racing including precipitation, wind speed, wind direction, wind gusts, temperature, relative humidity, track temperature and solar radiation.
- Watering and Moisture Content control: Electronically document all watering and irrigation on main and turf tracks. Include details on the time of application, method of application, amount of water added and area of the racing surface to which the water was applied. For water trucks, also include speed and direction of equipment (see next item on maintenance equipment).
- Maintenance equipment: Document use, repair, and maintenance of all equipment used on all of the racing surfaces. For the track composed of either synthetic or dirt surfaces include time of use, direction around the track, and speed of the equipment including water trucks (related to item above), harrows, conditioners, floats, cultivators, and graders. For the turf surfaces include maintenance equipment used such as rollers, aerators, turf cutters and mowers. Settings of all equipment should be documented as well as methods used to insure that the settings are accurate. For example, how harrow tooth depth is checked and the methods used to adjust the harrow teeth to accommodate for wear should be documented and periodic inspections should be performed.
- Material addition: Document the source, timing, quantity and method of all additions to the surfaces including sand, silt, clay, organic material, or chemicals (i.e. acids) for dirt tracks; wax, other binders, fiber or rubber for synthetic tracks; and top dressing, fertilizer, pesticides, fungicides, seeding and sod replacement for turf tracks.

- Surveying: For dirt and synthetic tracks the method used and measurements obtained should be documented to ensure that the cross-fall in the straights and transitions from the straights to the turns are consistent and within specification. A track survey should be performed at least once per year with the track referenced to survey markers, lasers checks or GPS mapping. Grades should be documented for internal reference as well as to facilitate retrospective studies.
- Turf tracks: Electronically document the turf grass species, areas of re-sodding, and cut lengths.
- Quality control measures: Electronically document any regular measurements of spatial variation of moisture, composition, cushion depth, and other performance measures that are relevant to the mechanics of the horse to enable tracking over time and to help in assessing the effectiveness of these tools for predicting performance and safety of surfaces. Current practices do not need to be expanded until retrospective studies have been performed that relate these measurements to performance, safety or track fairness. Currently no measure of surface performance has been shown to relate to the track characteristic required for a safe surface and therefore should be considered to serve only as guidance for maintenance decisions not as design standards. Data should be stored in an electronic format to facilitate these studies. However, a number of quality control measurements of known critical parameters should be made to properly control the racing surface conditions. Measurements which have an established impact on racing surface consistency should be measured including:
 - Moisture: Quality control measurements of the moisture content should be routinely checked to ensure consistency in the moisture content around a dirt or turf track. This should be measured, typically at least weekly, using a device such as the time domain reflectometry or other similar measurement methods.
 - Cushion depth: Perform periodic, typically at least weekly during racing, cushion depth measurements by using a hand probe over the surface of the track. Depth of cushion should also be verified before and after any large movement of material from either grading or washouts. Data should be stored electronically to allow tracking of results over time to ensure that track grades do not get too far out of tolerance prior to grading.
 - Material composition: Perform testing of track material composition at least once per race meet. For race meets that span seasons with significant weather differences, the composition should be tested before the start of new seasonal weather patterns. For dirt tracks with significant variation of water flow across the track both inside and outside samples should be taken following a regular pattern. For synthetic tracks and dirt tracks in areas of low rainfall typically only four samples are required from four locations on the track. Each sample should

be analyzed separately and not mixed with other samples. Composition should include at least the following tests:

- Dirt tracks: sieve and hydrometer data for all samples; and organic, soil chemistry, X-ray diffraction, bulk density and salinity measurements for a single representative sample.
 - Synthetic tracks: sand sieve and wax and fiber content for all samples; and oil content, gas chromatography and differential scanning calorimetry data for a single representative sample.
 - Turf tracks: soil chemistry panel including soil pH, organic carbon, major nutrients (i.e. phosphorus, potassium, calcium, magnesium, and sulfur) and soluble salts
- To ensure that reviews of maintenance processes can be performed, all protocols for surface preparation, maintenance and quality control measures will be documented electronically outlining procedures and schedules for all of the items above. These electronic records shall be made available for review during accreditation.

J. Safety Training and Continuing Education

Racetrack Members shall provide periodic training to all racetrack employees having direct contact with the horse, including assistant starters concerning safe practices to be followed in the conduct of their jobs. All Members shall provide periodic training to their employees having direct contact with the horse concerning safe practices to be followed in the conduct of their jobs, e.g. Groom Elite Program, Groom Development Program, Racing Officials Accreditation Program, and the NTRA Track Superintendent Field Days.

Regulators shall be petitioned to adopt the RCI Model Rule **ARCI 008-020(4)** requiring at least four (4) hours annual Continuing Education for trainers, beginning no later than January 1, 2015.

Further, Racetrack Members shall adhere to the RCI Model Rule **ARCI 006-015(A)** requiring accreditation of all stewards employed by the racetrack and, where necessary, shall petition regulators to adhere to RCI Model Rule **ARCI 006-015(A)** requiring accreditation of all stewards employed by regulatory bodies.

Racetrack Members shall encourage participation by Racing Officials in the Racing Officials Accreditation Program (ROAP) Certification Program.

Upon application for Accreditation, Racetrack Member shall submit its Training and Continuing Education Plan. Such plan shall include provisions for regular review of rules of racing pertinent to each individual and their particular duties.

K. Uniform National Trainers Test

Racetrack members shall petition their regulatory authority to adopt the use of the Uniform National Trainers Test.

L. Catastrophic Injury Planning and Procedures

Racetrack Members shall plan for and have protocols in place for instances of catastrophic injury to horses during racing and training at Racetrack Members' racetrack(s) and training facilities. Official Veterinarians must be trained, and their proficiency verified, in identifying and stabilizing common musculoskeletal injuries. Protocols should include, but not be limited requiring collection of blood (and urine samples whenever possible), in sufficient volume, to permit comprehensive drug testing. Official veterinarians shall consult with the official testing laboratory to establish sample collection protocols. Planning shall include appropriate means of communication to the public, such as through the AAEP On-Call Program or AAEP trained spokespersons. Further, Racetrack Members shall have an operable on-track warning system and operating protocols in place for incidents occurring during training hours designed to sufficiently alert and provide notice to personnel on the racetrack.

M. Infectious Disease Management

Racetrack members shall plan for and have protocols in place for instances of infectious disease outbreak within their enclosures. Such protocols shall be based on guidelines recommended by AAEP's *Guidelines for the Management of Outbreak of Infectious Disease* or developed in consultation with the State Department of Agriculture Veterinarian

N. Fire Safety Planning and Procedures

Racetrack members shall plan for and have protocols in place for instances of fire within their enclosures. Such protocols shall be based on the RCI Model Rule **ARCI-007-025(B), Fire Prevention**. Fire and life safety inspections are required to be done in accordance with appropriate National Fire Protection Association (NFPA) standards and shall be conducted at the required frequency.

O. Paddock Safety

Racetrack Members shall plan for and have protocols in place to manage the safety of their Saddling Paddocks and Walking Rings. Such protocols should include crowd management policies as well as emergency response procedures for human and equine injuries.

P. Safety Committee

Racetrack Members shall establish a standing racetrack committee known as the Safety Committee. Safety Committees shall include, but not be limited to, representatives of the following stakeholder groups: Track Management, Track Medical Personnel, Jockeys, Horsemen, Veterinarians, Stewards, and Security. Safety Committees shall meet regularly upon commencement of a Member's race meet and as necessary thereafter with the priority of the Safety Committee to establish and maintain a culture of health and safety in all areas of operations at the Racetrack.

Q. Veterinary Care

Racetrack Members shall make certain that a practicing veterinarian is available for treatment at all times during Racing Periods and training hours. An organized rotation among practicing

veterinarians to ensure coverage throughout Racing and training hours shall be considered a best practice.

R. Regulatory Veterinary Practices and Procedures

Oversight of the Official Veterinarian as detailed by the Model Rule **ARCI-006-070** shall be the responsibility of the regulatory authority. To the extent the regulatory authority does not provide oversight of the Official Veterinarian, Members shall advocate the adoption of rules requiring regulatory oversight of the Official Veterinarian's duties. In addition, if such rules have not been adopted in a racing jurisdiction, Racetrack Members shall adopt a House Rule requiring the Official Veterinarian to report to the Board of stewards.

Racetrack Members shall require veterinary staff to develop specific written protocols for all aspects of standard regulatory veterinarian operations including, but not limited to:

- Pre-race examination protocols including requirements for presentation of horses by trainers at time of inspection; procedures for record keeping; and, procedures for scratching of horses
- Protocols for initiation of scratches during post parade and at the starting gate
- Protocols and procedures in case of catastrophic injury during a race
- Protocols for Post Race Observation of horses and follow-up
- Protocols to initiate Post Mortem examinations
- Protocols for adding horses to and removing horses from the Veterinarians' List

S. House Rules

House Rules shall be published in Racetrack Member's Condition Book.

3. Medication and Testing: Without proper pre- and post-race testing and security procedures, horse health and safety can be compromised. The Alliance believes that the regulation of drugs and therapeutic medications should be consistent on a nationwide basis to better facilitate the training and racing of horses in multiple states. Members shall therefore insist on the implementation of consistent rules and penalties regarding medication and testing as follows:

A. Uniform Medication Rules and Penalties

Members shall insist that local regulatory authorities regulate drugs and therapeutic medications consistent with ARCI Model Rules, **ARCI-011-010, ARCI-011-015, and ARCI 011-020** based on RMTC recommendations. Further, Members shall insist that local regulatory authorities adopt uniform minimum penalties consistent with ARCI Model Rules, **ARCI-011-020(B)**, based on RMTC recommendation.

To the extent the regulatory authorities do not so regulate drugs and therapeutic medications in accordance with ARCI Model Rules, **ARCI-011-010, ARCI-011-015, and ARCI 011-020** and adopt minimum penalties consistent with ARCI Model Rules, **ARCI-011-020(B)** the Members shall advocate the adoption of such rules and penalties by the regulatory authority. If, however, after a reasonable period of time, a Member's advocacy fails to achieve passage of the amendment necessary to bring the contrary legislative or regulatory enactment into conformity with the Code, such failure shall result in revocation of current Accreditation, awarding of Provisional Accreditation or denial of future Accreditation.

For local regulatory authorities to proficiently participate in the Multiple Medication Violation Penalty Program, Members shall advocate for their local regulatory authorities to participate in the Racing Regulatory Data Management System.

B. Alkalinizing Substances

Racetrack Member shall prohibit and test for the use of alkalinizing substances in the racing of Thoroughbreds, consistent with RMTC recommendations that establish uniform threshold levels, pre-race sampling protocols, and effective testing procedures to detect prohibited levels of carbon dioxide in Thoroughbred race horses.

To the extent the local regulatory authorities do not so regulate alkalinizing substances, the Members shall advocate the adoption of such rules by the regulatory authority. If, however, after a reasonable period of time, a Member's advocacy fails to achieve passage of the amendment necessary to bring the contrary legislative or regulatory enactment into conformity with the Code, such failure shall result in revocation of current Accreditation, awarding of Provisional Accreditation or denial of future Accreditation.

Upon application for Accreditation, a Racetrack Member shall submit its plan for prohibiting and testing for alkalinizing substances.

C. Exogenous Anabolic Steroids

Racetrack Member shall prohibit the use of exogenous anabolic steroids in training and in competition in a manner consistent with the ARCI model rule **ARCI-011-020(J)**, based on RMTC recommendations.

To the extent the regulatory authorities do not so regulate exogenous steroids, Members shall advocate the adoption of such rules by the regulatory authority. If, however, after a reasonable period of time, a Member's advocacy fails to achieve passage of the amendment necessary to bring the contrary legislative or regulatory enactment into conformity with the Code, such failure shall result in revocation of current Accreditation, awarding of Provisional Accreditation or denial of future Accreditation.

D. Shock Wave Therapy

Member shall ensure that Extracorporeal Shock Wave Therapy be utilized in a manner consistent with the RCI Model Rule **ARCI-011-015(5)**.

To the extent the regulatory authorities do not so regulate Extracorporeal Shock Wave Therapy, Member shall advocate the adoption of such rules by the regulatory authority. If, however, after a reasonable period of time, a Member's advocacy fails to achieve passage of the amendment necessary to bring the contrary legislative or regulatory enactment into conformity with the Code, such failure shall result in revocation of current Accreditation, awarding of Provisional Accreditation or denial of future Accreditation.

E. Out of Competition Testing

Members shall insist that local regulatory authorities institute out of competition testing for blood and/or gene doping agents in a manner consistent with the ARCI model rule **ARCI-011-022**, based on RMTC recommendations.

To the extent the regulatory authorities do not so regulate out of competition testing, Members shall advocate the adoption of such rules by the regulatory authority. If, however, after a reasonable period of time, a Member's advocacy fails to achieve passage of the amendment necessary to bring the contrary legislative or regulatory enactment into conformity with the Code, such failure shall result in revocation of current Accreditation, awarding of Provisional Accreditation or denial of future Accreditation.

F. Frozen Sample Testing

Members shall support and promote the participation by state racing commissions in a program for the frozen storage and retrospective super testing of suspect horse racing plasma and/or urine samples.

G. Laboratory Accreditation

Members shall support and promote the participation by its official testing laboratory in the RMTC's horse testing lab accreditation program. Failure of a Member's official testing laboratory to begin the RMTC horse testing lab accreditation process by January 1, 2015 shall result in revocation of current Accreditation, awarding of Provisional Accreditation or denial of future Accreditation.

H. Security Assessment and Training

1. Racetrack Members shall participate in a security assessment performed by an Alliance approved qualified security assessment organization. A security assessment should include, but not be limited to:

- a. A physical review of the facility's perimeter
- b. Backstretch accessibility review
- c. Licensee authentication review
- d. Review of security personnel procedures (including but not limited to: hiring, training and supervision of backstretch security personnel; and review of general security practices
- e. Security Department integration/liaison with outside law enforcement or industry security regulatory resources

2. Racetrack Members may be subject to random on-site inspection and assessment of medication and drug testing standards and protocols as established by RMTC, to include, at a minimum, examination of test barn and chain of custody procedures.

Racetrack Members shall be required to submit a plan to the Alliance for implementing recommendations made as a result of the security assessment or assessment of medication and drug testing standards and protocols.

3. Racetrack Members shall plan for and have protocols in place for racing security. Such planning and protocols may be based on **Security Recommendations of the RMTC and the NTRA Safety & Integrity Alliance**, which may be found attached as Exhibit 4.

4. Racetrack Members shall require all security staff to periodically participate in a security training program conducted in conformity with training protocols to be provided by the Alliance.

I. Medication and Testing Education

Racetrack Members, in cooperation with their Stewards and/or regulatory authority, shall coordinate periodic communication with their horsemen and practicing veterinarians regarding medication and testing regulations and protocols. Communications shall be in writing and where practical, include information sessions, and shall include current medication and testing regulations and protocols and – when appropriate – highlight proposed or new, regulatory authority-approved changes to medication and testing regulations and protocols.

4. Safety and Health of Jockeys: The health and safety of human athletes is one of the top priorities of the Alliance. Members must take affirmative steps to assure the public and participants that all human athletes are competing at top form with the benefit of the best medical care readily available. Consequently, Members are required as follows:

A. Declaration of Horses

Racetrack Members shall establish protocols for the initiation of scratches in the post parade or at the starting gate. Such declarations require a cooperative effort between the jockey, trainer and veterinarians.

Protocols should include, but not be limited to, conversations between the jockey colony, the trainers, the Board of Stewards, and the veterinarians at the beginning of each race meet to build relationships and emphasize the goal of advocacy for the horse and safety of the rider.

B. Jockey Weights

Members shall adhere to the RCI Model Rule **ARCI-010-035(C)(7)(a-b)** regarding the equipment included when weighing jockeys.

C. Jockey Scale of Weights

Racetrack Member shall petition its regulatory body to adopt the ARCI Model Rule, **ARCI-010-020(D)**, pertaining to the jockey scale of weights.

D. Jockey Health Information System

Members, through cooperative efforts with Jockeys' Guild, Inc., shall require participation by members of their jockey colony in the InCompass Solutions' Jockey Health Information System, to the extent it is consistent with HIPAA guidelines, which allows confidential access to a rider's detailed medical records by authorized medical personnel.

E. Jockey Qualifications

Regulators shall be petitioned to adopt the ARCI Model Rule, **ARCI-008-030(A)(2) and (3)**, pertaining to the qualifications for licensing jockeys.

F. Ambulance Support

Racetrack Member shall adhere to the RCI Model Rule **ARCI-007-020 (A)(6), (8) and (9)** regarding a properly equipped and staffed ambulance on the racetrack during training and racing hours.

G. Medical Care

Racetrack Members shall plan for and have protocols in place for instances of injury to jockeys and other racetrack personnel. Such planning and protocols shall be based on **Medical Care Recommendations of Jockeys' Guild, Inc. and the NTRA Safety and Integrity Alliance Medical Care Committee**, which can be found attached as Exhibit 5.

H. Insurance

In racing states where workers compensation benefits are not afforded jockeys by statute or regulation, Racetrack Members shall maintain a minimum standard of \$1,000,000, per incident, worth of accident medical expense coverage for all jockey participants.

I. Insurance

A Racetrack Member shall petition its regulatory body to adopt the ARCI Model Rule, **ARCI-007-025(H)**, pertaining to the posting of Jockey Insurance coverage in the jockeys' quarters.

J. Jockey Disability Support

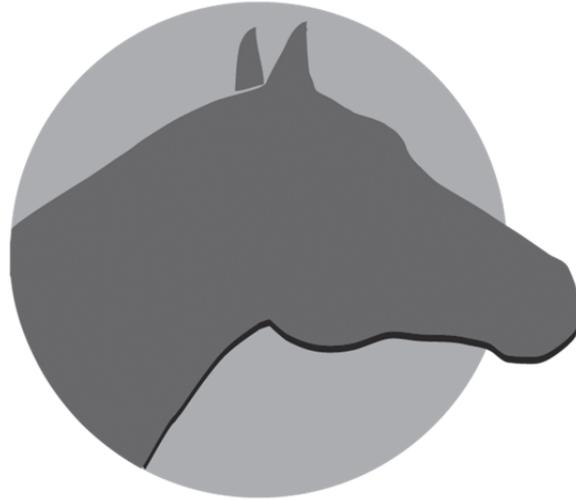
As advocates for jockey health and safety, the Alliance and the horseracing industry as a whole share in the responsibility for providing care for disabled jockeys. Racetrack Members shall encourage participation by all Racing Participants in funding jockey disability support programs such as the Permanently Disabled Jockeys Fund.

K. Jockey Injury Database

In an effort to learn more about injuries sustained by riders on a nation-wide basis, Members shall participate in a program coordinated by the Jockeys' Guild geared toward the collection of data associated with rider injuries sustained at their racetrack.

L. Race Cancellation Policy

Racetrack Members, in conjunction with its Stewards, Jockeys, and Horsemen, shall develop protocols for cancellation of races due to inclement weather or hazardous racing conditions. Such protocols shall take into consideration specific weather conditions and shall include a pre-determined method for determining consensus among stakeholders.



Today's Thoroughbred

The following chart illustrates the changes in average starts per horse and average field size for Thoroughbred racing in the United States and Canada from 1950 through 2013.



Source: The Jockey Club Fact Book / Equibase Company



Racing Surfaces Testing Laboratory Bulletins



The Role of Clay in Racing Surfaces

Christie A. Mahaffey, M.Phil. and Michael “Mick” Peterson, Ph.D.

The risks to horses and riders are the result of many factors. Racing surfaces are only one aspect and likely are not the most critical factor. However, surfaces impact every horse on a day at the track and should be managed to ensure that they help improve the safety of racing.

Introduction

The amount of clay in a dirt racing surface is perhaps the most important composition issue and impacts performance of horse and rider. The effects of clay influence a wide range of performance attributes, including the amount of slide in a surface, the tendency of the surface to compact and get hard, the formation of clods that can fly up at the riders, and the sensitivity of the track to small variations in the moisture content. While the importance of clay is well accepted, the challenge arises in getting an accurate measurement of the amount of clay in a racing surface and in determining what the correct amount of clay should be for a particular surface and its geographic location.

How Clay Works

To understand the function of clay in a material, it is important to realize that while a particle of sand is rounded like a small rock, a particle of clay is typically flat like a sheet of paper. Clay particles can be folded like the image shown in Figure 1. These particle surfaces have very specific characteristics that distinguish them from sand or silt. In fact, while it is possible to create clay from sand and silt, the process takes thousands of years (Targulian 2007).¹ Therefore, the amount of clay in the surface can only be changed by physically adding or removing clay; the sand itself will not turn into clay. Furthermore, the addition or loss of clay is dependent on the local materials interacting with the surface, the maintenance methods used on the surface, and the climate and weather that the surface endures.

The Laboratory Measurement of Clay

To understand data of clay in a racetrack, it is useful to understand the most common methods for testing clay in soils.

Wet sieve

The simplest, least expensive, most common soils test used in civil engineering is called a **wet sieve test**. In this test, the material is soaked and a dispersant (typically the chemical-equivalent of Calgon) may be added to separate the clay particles. The wet material is then washed on a fine mesh with holes of approximately 0.5 mm diameter. The starting weight of the soil minus the weight remaining on the sieve equals the weight of fine particulates that pass through the sieve, thus revealing the percentage of the soil sample that is not sand. Fine particles that pass through the sieve are the very smallest rounded particles (silt), along with the flat clay particles. While this information is useful, the wet sieve test does not distinguish the individual amounts of silt and clay in this finer particulate.



Figure 1 The folding of flat clay particles.

¹ Targulian, V. O. P. V. K. (2007). “Soil system and pedogenic processes: Self-organization, time scales, and environmental significance.” *Catena* 71:373-381.

Hydrometer

The hydrometer test is significantly more complex and less reliable than the wet sieve test. The hydrometer requires a large amount of time to perform properly (approximately 4 days), and repeatability is dependent upon precise temperature control. However, it does have the advantage of being able to grade the finer particles. Like the wet sieve test, the hydrometer test cannot distinguish the shape of the particle, but by making use of the settling rate of fine particles in a cylinder of water, particles as fine as .002 mm can be separated. The hydrometer is the most common method of measuring the amount of clay material in a soil sample. However, the test does not precisely distinguish between clay and silt and the test is influenced by factors other than the mineralogy of the track material. Reliability of this test can be established by repeating the test of a sample material or by comparing the test results to historical, regular test data.

X-ray Diffraction

rently, the only truly effective approach to knowing the amount of clay in a soil sample is the use of **X-ray diffraction**. Details about this technique will be discussed in a later technical bulletin, but it is important to understand that through x-ray diffraction it is possible to know both the percentage and the particular type of clay that exists in a surface. Clay types can differ dramatically in their response to water and loading. Consequently, it is clear that with the safety of the horses and riders at stake, these more sophisticated tools are required for correctly planning and maintaining the properties of a track surface.

Correct Clay Percentage for a Track

Once we have measured the amount of clay in a surface, the next question is, "How much is the correct amount?" Research has demonstrated that the answer depends on a number of factors. For example, if the climate at a particular track is sufficiently dry, more clay may be required to hold the track together during a period of drought. On the other hand, areas with high rainfall need a fast-draining track with less clay. However, two things are clear:

- 1) If the percentage of clay changes over time, watering and other maintenance must be adapted, and
- 2) The percentage of clay throughout the surface material should be consistent around the track.

Making every track the same would be a mistake given the impact of differences in climate at each location. Understanding the type and amount of clay in a surface is the fundamental basis for the development of the best maintenance strategy for a track. To gauge and respond to surface material changes appropriately, regular wet sieve and hydrometer tests provide timely and cost-effective monitoring, while scheduled X-ray diffraction tests provide more detailed information to observe changes. Systematic examination of the clay surface provides the opportunity to respond to changes in the material in order to successfully reduce risk and improve the safety of racing.

Racing Surfaces Testing Laboratory encourages the distribution and use of these bulletins. For further information, contact:

Michael "Mick" Peterson, Ph.D.

Racing Surfaces Testing Laboratory, 2 Summer Street, #1, Orono, Maine 04473
Ph: 207-409-6872 racingsurfaces.org mlpeterson23@gmail.com

This informational report is based on the white paper "Racing Surfaces," available at the Racing Surfaces Testing Laboratory website: racingsurfaces.org/white_papers

and at the Jockey Club website: grayson-jockeyclub.org/resources/White_Paper_final.pdf

*The white paper and report are the result of efforts by The Racing Surfaces Committee that was formed at the inaugural **Welfare and Safety of the Racehorse Summit** in 2006.*

This Racing Surfaces Testing Laboratory Technical Bulletin for Track Surface Education is the first in a series of papers directed toward a general audience with a common interest in developing consistent and reliable track surfaces. This and subsequent bulletins can be found at the Racing Surfaces Testing Laboratory website: racingsurfaces.org/bulletins



Racing Surfaces
Testing Laboratory
Orono Maine USA

Synthetic Racetrack Surfaces Temperature Changes

John Bridge, Ph.D. and Michael "Mick" Peterson, Ph.D.

Introduction

Changing temperatures of synthetic racetracks have been shown to have a marked effect on horse racing performance. In Figure 1, the effect of sunlight on the track is shown for the Del Mar racing surface in California. Over the course of six days in August, the temperature of the track at a 1-inch depth (the blue line) varied between 70°F (21°C) and 125°F (52°C) when the track was not cooled with water. Figure 2 shows that on the same track the 6-furlong Thoroughbred race/work times vary from morning to afternoon with times trending slower with higher temperatures. Clearly, something significant happens with temperature changes on a synthetic racing surface.

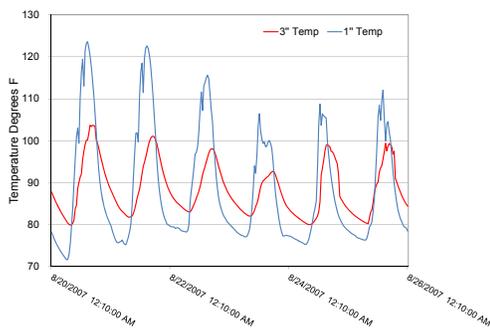


Figure 1 Temperature of a synthetic racetrack surface over a six day period.

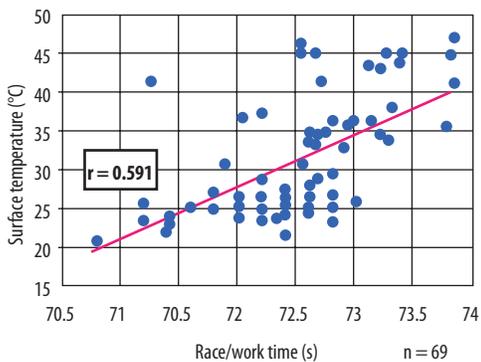


Figure 2 Race and work times are influenced by temperature.

Peterson, M. L., Reiser II, R. F., Kuo, P. H., Radford, D. W. and McIlwraith, C. W. (2010). "The Effect of Temperature on Race Times on a Synthetic Surface", *Equine Vet. J.* 42 (4), 351-357.

The Role of Wax in Racing Surfaces

The function of the wax is to coat and bind together the sand, polymer fiber, and rubber particulate that make up the other components of a synthetic track material. The wax coating makes up between 4% and 9% of the total track mass. The wax consistency and the ability of the wax to coat the sand are influenced by the relative amounts of paraffin and microcrystalline wax solids and the amount of oil present in the wax. Unlike paraffin wax used in candles, these waxes melt over a wide range of temperatures that may include the operational temperatures seen at many racetracks.

Wax Thermal Effects on Mechanical Properties

Wax, in many ways, acts like clay in a dirt track. As with high clay content, wax can lead to clods of material known as "balling up", but also like clay, a desirable proportion of wax is needed to help hold the material together to support the hoof of the horse. Wax has a second very important role in synthetic racing surfaces; the wax coats the sand and other materials and repels water, making the track hydrophobic. This effect is seen most clearly during a period of heavy rain. Initially the rain may pool on the synthetic track due to surface tension, but often a single pass with a harrow will lead to quick drainage of the water from the top of the track. The key is to use a mixture of wax that does not ball up under the hooves of the horse or result in kickback during races, while at the same time, ensuring that the water-repelling characteristics of the surface are retained.

Good Wax

Just as clay must be carefully controlled in a dirt track, wax must be controlled in a synthetic track. The challenge with a synthetic track is that unlike clay, which can only be added or removed by mechanical means, some of the lighter wax components simply evaporate over time. Environmental effects can also change the wax over time.

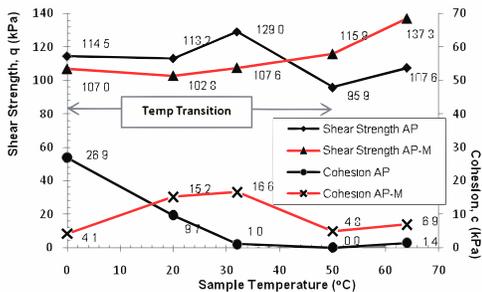


Figure 3 Triaxial shear strength of a synthetic track surface as a function of temperature.

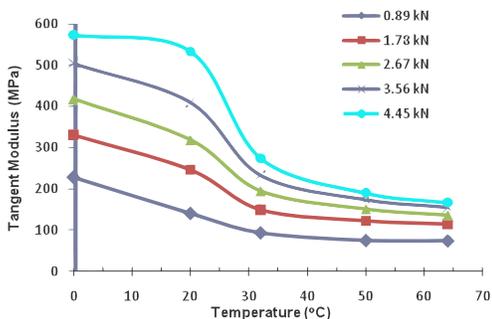


Figure 4 The effect of temperature on the tangent modulus at a range of loads.

Ideally, a wax surface would experience minimal and gradual changes in properties throughout the operational temperature range. A pure wax would have a distinct change in properties over a very narrow temperature range. However, wax modifiers can be added to the surface to help make the changes more gradual over a wider range of temperatures. Additionally, oil can be added to the wax to reduce stickiness. Two standard laboratory tests used for synthetic racing materials are the tangent modulus, which represents the hardness of the surface, and the triaxial shear, which determines the resistance of the surface to slide. Figure 3 shows the effect of temperature on shear strength and cohesion before and after the addition of a wax modifier. In Figure 3, the shear strength (top black line) initially increases as the track wax is melting, but then decreases as the temperature continues to rise. The cohesion or “stickiness” (bottom black line) simply decreases as the temperature increases. The result is a track that is more prone to balling up at lower temperatures. In Figure 3 the red lines show the effect of adding a wax modifier to the track to improve consistency through temperature changes. In Figure 4, the hardness of the track rapidly decreases after the predominant melting temperature is reached at five different loads. Most racing surfaces warm through a couple of common critical temperatures, such as 25°C (77°F), in which potentially significant changes in mechanical properties can occur.

Good Maintenance

While modification of waxes is one way to avoid these sorts of changes, almost any track can be managed with regular monitoring and proper maintenance. Simply watering the track to avoid reaching the temperature at which the changes occur will keep the track more consistent. Similarly, a deep harrowing or a cultivator in the morning can soften the track during the cooler morning hours. Water can also be used to help manage the stickiness that can be a problem on cold winter mornings.

While changes to the wax in synthetic surfaces present challenges, the temperature of the surface is generally the same on the entire surface. In contrast, moisture content of a dirt track can vary between locations. This important distinction makes synthetic surfaces an appealing option for some tracks.

This technical bulletin is based on the white paper “Racing Surfaces,” available at the Racing Surfaces Testing Laboratory website: racingsurfaces.org/bulletins

and at the Jockey Club website: grayson-jockeyclub.org/resources/White_Paper_final.pdf

*The white paper and bulletin are the result of efforts by The Racing Surfaces Committee that was formed at the inaugural **Welfare and Safety of the Racehorse Summit** in 2006.*

This Racing Surfaces Testing Laboratory Technical Bulletin for Track Surface Education is one of a series of papers directed toward a general audience with a common interest in developing consistent and reliable track surfaces. This and other bulletins can be found at the Racing Surfaces Testing Laboratory website: racingsurfaces.org/bulletins

Racing Surfaces Testing Laboratory encourages the distribution of these bulletins. For further information, contact:

Michael “Mick” Peterson, Ph.D.
 Racing Surfaces Testing Laboratory
 2 Summer Street #1, Orono, Maine 04473
 Ph: 207-409-6872
racingsurfaces.org mlpeterson23@gmail.com

Loading of the Hind Hoof Track Loading

Lars Roepstorff BVM, Ph.D. and Michael "Mick" Peterson, Ph.D.



**Racing Surfaces
Testing Laboratory**
Orono, Maine USA

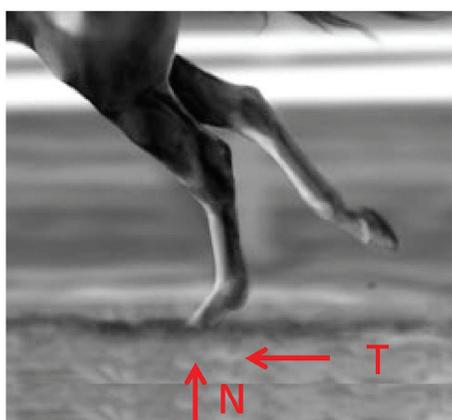


Figure 1: Forces in the tracks due to hind limb loading

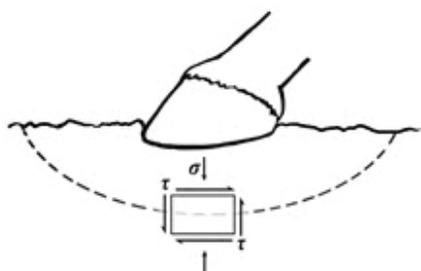


Figure 2: Stress in both axes is load divided by hoof area

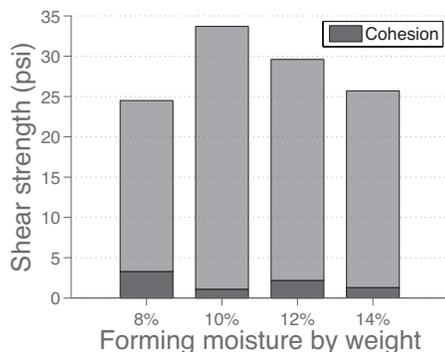


Figure 3: Dirt track material changes with moisture

Introduction

The 2000 pounds of force transferred from the front leg of the horse onto the track is often cited as the most extreme case for the loading of the track surface. However, the loading of the hind limb is also critical and may be more complex than the loading from the front leg. Since a horse primarily propels itself forward using its rear legs, not only does each leg sustain large vertical loads, but the leg, and therefore the surface, must also support propulsive forces or horizontal loading. In fact, when considering the performance of the horse, the hind limbs may be more important than the front limbs. In this technical bulletin, we discuss the force that the track surface must support for the safe performance of the thoroughbred horse at a gallop.

Combined Vertical and Horizontal Loads

The two phases of the gait most relevant to the loading of the track are stance and breakover. During the stance phase of the gait, the hoof loads the soil with the entire dynamic weight of the horse, which may be divided between one or more legs at any moment in time. The track surface provides support for the hoof through normal force in the soil (N in figure 1), which may result in permanent or plastic deformation of the surface in the form of a hoof print as well as an elastic surface deflection that will rebound as soon as the load is removed. The amount of elastic response and the time it takes the surface to respond are sometimes referred to as "the bounce" or "the liveliness" of the track surface.

The other critical phase of the gait for understanding the track surface is the horse's propulsion. During propulsion, the hind legs will push the horse forward with resistance or support provided by the racing surface. This force is horizontal, the shear force T in the figure 1, and is resisted by a supporting resistance to sliding in the track material. The force is applied over the area of the hoof to create a horizontal force per unit area, which is the shear stress, τ in the figure 2, or the vertical load per unit area which is the normal stress, σ , in the track surface. In synthetic, turf, and dirt surfaces, the support provided by the track surface may be measured by the resistance to failure due to shear stress which exceeds the resistance of one layer of the track material to sliding on the adjoining layer. In the case of a highly compacted material, slip may occur on the top surface - similar to friction of a shoe on a hard floor. However, the track is sufficiently soft that the hoof penetrates the top of the surface and the sliding of the material typically occurs below the top surface where the shoe is in contact with the track.

Vertical and Horizontal Load and Soil Strength

The characteristic of the track that is of most interest for the support of the hind limb, both for safety and performance of the horse, is the shear strength. The shear strength is the resistance of material slipping when loaded with the weight of the horse. Loading that is applied to samples of track material tested in the laboratory match these conditions during use. Test materials are loaded vertically (as with the weight of the horse), and then the resistance of the material to sliding is measured. Failure, or sliding of the material, replicates the slide that can occur in the soil beneath

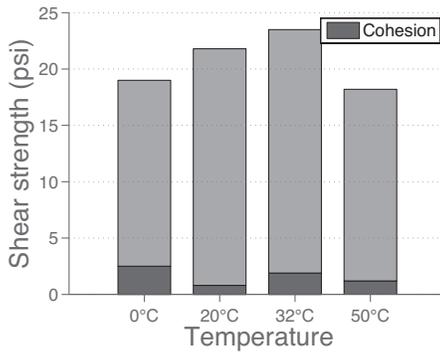


Figure 4: Synthetic track material changes with temperature

This technical bulletin is based on the white paper “Racing Surfaces,” available at the Racing Surfaces Testing Laboratory website: racingsurfaces.org/bulletins and at the Jockey Club website: grayson-jockeyclub.org/resources/White_Paper_final.pdf

The white paper and bulletin are the result of efforts by The Racing Surfaces Committee that was formed at the inaugural Welfare and Safety of the Racehorse Summit in 2006. This Racing Surfaces Testing Laboratory Technical Bulletin for Track Surface Education is one of a series of papers directed toward a general audience with a common interest in developing consistent and reliable track surfaces. This and other bulletins can be found at the Racing Surfaces Testing Laboratory website: racingsurfaces.org/bulletins

the hoof during the propulsion phase. The test used is called the triaxial shear test.

This test has been the subject of a recently published scientific paper that compared the response of several synthetic racing surfaces at different controlled temperatures in the laboratory (Bridge et. al. 2010). It also allows us to understand the effects moisture has on dirt tracks relative to shear strength. It is not unusual for a dirt surface to decrease its ability to support the propulsion of the horse by as much as 25% when only a 4% change in moisture content is exhibited (see figure 3). In synthetic racing surfaces, this effect is mirrored by a similar change of shear strength due to temperature (figure 4). Currently, no one can say that a particular measurement of shear strength leads to a safer surface. However, it is generally accepted that changes in shear strength due to changes in moisture or temperature should not be abrupt. It is also likely that a dramatic change between surfaces varying in shear strength used by a particular horse should be avoided. As more tracks are characterized, it is likely that trends will emerge so that triaxial shear strength will be one more tool used by racetrack superintendents to maintain a consistent surface and owners, trainers, and jockeys may utilize this information to make better choices for their horses. By controlling moisture and avoiding variation due to heating from the midday sun, a consistent track should be achievable for trainers and to help protect the safety of the horses and riders.

Footnote:

J. W. Bridge, M. L. Peterson, C. W. McIlwraith, and R. M. Beaumont, 2010, “Temperature Effects on Triaxial Shear Strength of Granular Composite Sport Surfaces”, *Journal of ASTM International*, Vol. 7, No. 9 DOI: 10.1520/JAI103139

Racing Surfaces Testing Laboratory encourages the distribution of these bulletins. For further information, contact:

Michael “Mick” Peterson, Ph.D.
 Racing Surfaces Testing Laboratory
 2 Summer Street #1 • Orono, Maine 04473
 Ph: 207-409-6872
racingsurfaces.org
mlpeterson23@gmail.com



Racing Surfaces
Testing Laboratory

2 Summer Street #1
Orono, ME 04473



**Racing Surfaces
 Testing Laboratory**
 Orono, Maine USA

Predicting Horse Performance on Turf Using Three Commercially Available Monitoring Tools

Tamara R. Thomson, Christie A. Mahaffey, Ph.D.

Introduction

To accommodate differences in climate conditions and usage, there is variation in grass type, soil conditions and maintenance procedures between turf racetracks across North America and in Europe. On average turf tracks in North America are more heavily used than those in Europe, and the softer turf that is common in Europe likely could not withstand the racing frequency experienced in North America. However, horses will commonly travel to and race on different turf surfaces. Therefore, a standard rating method would be useful to help owners and trainers understand the surface on which a horse is training and racing.

In order to assess the usability of different turf rating methods, this report considers the influence of track conditions measured with three turf evaluation devices on race performance. While the top priority of the Racing Surfaces Testing Laboratory is the safety of the horse and rider, performance data is more readily tested. Over a period of one month, the pace of the winning horse or fastest work time was compared to measurements taken by three devices: a time domain reflectometry moisture meter, a penetrometer similar to those used in France and Australia, and a Going Stick, a device used by British Horse Racing that has also been adopted in a number of other countries. In this bulletin, the relationship between turf track condition measurements and horse performance for a semi-arid coastal climate is explored.

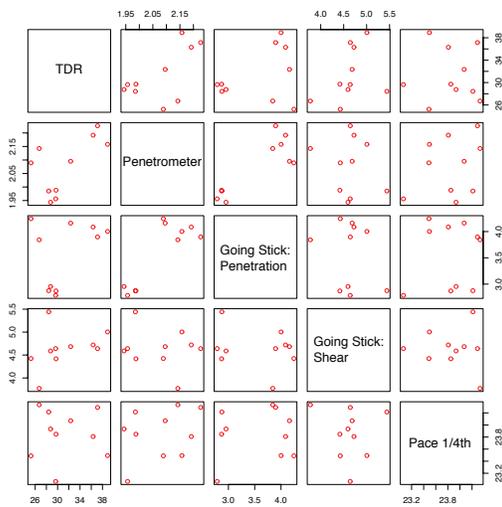


Figure 1 (shown above) is a multiple regression graph of the daily averages of the data.

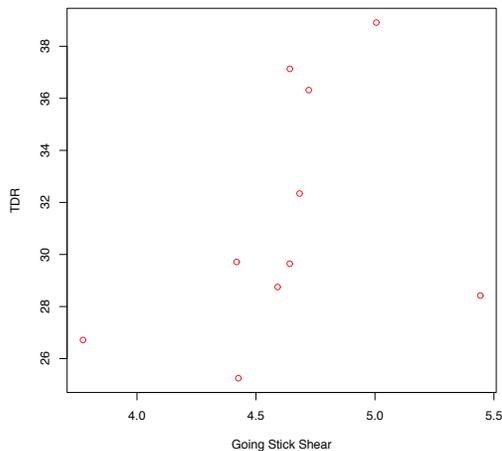


Figure 2 (shown above) is the portion of the grid graph that shows TDR on the Y-axis and shear on the X-axis.

Measurements

Moisture content, shear strength, and penetration resistance measurements were taken over a period of 23 days on a North American turf Thoroughbred racetrack.

Measurements were taken with three devices. The Going Stick measures both penetration resistance and shear strength by plunging a probe into the surface and then rotating about the base. The Time Domain Reflectometry (TDR) probe measures moisture content. The device consists of two spikes that are pushed into the surface and the moisture content is measured based on the transit time of the electromagnetic wave over the length of the spikes. The penetrometer measures penetration resistance. This device consists of a weight dropped onto a 1-cm² rod, which penetrates into the surface. The depth of penetration is read off of the shaft.

All data collection began in the chute of the turf track. Data locations were spaced evenly in the chute and around the oval. The locations consisted of three individual data points taken at 3 ft, 7 ft, and 12 ft from the rail. With 51

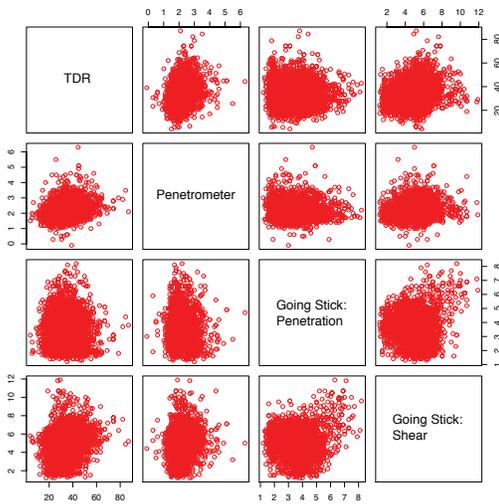


Figure 3 (shown above) is a multiple regression graph of the data.

locations around the track, a total of 153 data points were measured daily with each device. Each device was used with a consistent technique to minimize variation in the data collection. The Going Stick was pushed into the surface by a foot on the device and then pulled back to a 45 degree angle. The TDR probe was pushed into the surface with the one hand and then the data collection button was pressed. The penetrometer data was collected by pushing the plate onto the surface by foot and then triggering the weight to fall. Over the same period, the winning sprint times for all races 8.5 furlongs or shorter were recorded, as well as the fast work times for each day with the pace of each horse determined.

Statistical Analysis

Using these measurements and times, a correlation matrix was built using the averages of the measurements and times for each day. This showed that there was no correlation between the pace and the measurements. In addition, the test showed that there was no correlation among any of the measurement variables. A multiple regression was also run on the data. In this test, the pace was the dependent variable and the various measurements were independent variables. This test showed no linear or quadratic relationship between any of the variables and the pace.

Matrix graphs provided a visual check for these findings. Figure 1 is a matrix of graphs based on average values for each day. Each individual graph is the intersection of the two variables of interest. Figure 2 is an enlarged version of the graph located at the intersection of TDR moisture data and Going Stick shear strength data. The graphs below the diagonal are duplicates of those above the diagonal. Figure 3 is a grid of graphs that displays all of the measurement data. From these graphs no relationship is evident between the measurements. The data points form blotches with no discernible connection or dependence.

Conclusion

Based on the statistical analyses, horse performance cannot be predicted from these measurements of track conditions. While track conditions impact horse performance, most of these changes are related to moisture content. With data collected over 23 days from a racetrack in a semi-arid region with no rainfall, there is no evidence of a link between track condition and horse performance. It is likely that this result would not apply to areas with regular rainfall, but in this particular case, the predictions of performance are not supported.

This technical bulletin is based on the white paper "Racing Surfaces," available at the Racing Surfaces Testing Laboratory website: racingsurfaces.org/white_papers and at the Jockey Club website: grayson-jockeyclub.org/resources/White_Paper_final.pdf

*The white paper and report are the result of efforts by The Racing Surfaces Committee that was formed at the inaugural **Welfare and Safety of the Racehorse Summit** in 2006.*

This Racing Surfaces Testing Laboratory Technical Bulletin for Track Surface Education is one in a series of papers directed toward a general audience with a common interest in developing consistent and reliable track surfaces. This and subsequent bulletins can be found at the Racing Surfaces Testing Laboratory website: racingsurfaces.org/bulletins

Racing Surfaces Testing Laboratory encourages the distribution and use of these bulletins. For further information, contact:

Michael "Mick" Peterson, Ph.D.

Racing Surfaces Testing Laboratory, 2 Summer Street #1, Orono, Maine 04473
Ph: 207-409-6872 racingsurfaces.org mick@bioappeng.com

Be There!

panamnyc2015.com



**PAN AMERICAN
CONFERENCE**
NYC, JUNE 3-6, 2015



Wednesday, June 3

Welcome Reception at The United Nations

Thursday, June 4

Conference Day 1, Grand Hyatt New York
Accompanying Persons' Private Tour of MOMA and Lunch at The Modern
Dinner & Boat Tour of Manhattan

Friday, June 5

Conference Day 2, Grand Hyatt New York
Gala Dinner & Belmont Stakes Charity Celebration / Grayson-Jockey Club Event at Cipriani 42nd Street

Saturday, June 6

The 147th Belmont Stakes, Belmont Park, New York



A list of T.I.P.-sponsored horse shows
and events is available at
tjctip.com.

Show us your Thoroughbred at
facebook.com/tjctip.

