

**IMPROVING SECURITY IN THE  
UNITED STATES PARI-MUTUEL WAGERING SYSTEM:  
STATUS REPORT AND RECOMMENDATIONS**

**Presented by  
The NTRA Wagering Technology Working Group  
in conjunction with Giuliani Partners LLC**

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## PREFACE

On October 26, 2002, an attempted \$3 million wagering fraud occurred in connection with the Breeders' Cup Ultra Pick Six, a multi-race wager on the Breeders' Cup World Thoroughbred Championships, the richest day of horseracing in North America.

Officials at the New York Racing Association discovered the incident within hours. Breeders' Cup and NTRA officials immediately froze all Pick Six funds and payouts and formally requested a full-scale investigation by regulatory authorities. The perpetrators subsequently were arrested, convicted and incarcerated, and all relevant wagering monies, with interest, were distributed in accordance with the applicable state and Breeders' Cup rules.

Shortly after the security lapse and attempted fraud were exposed, the NTRA Wagering Technology Working Group was formed and began an in-depth, nine-month review of the pari-mutuel wagering system. This report summarizes the current status of that system and makes recommendations designed to ensure that security measures will continue to be emphasized and enhanced and to evolve along with the wagering system itself.

We acknowledge and appreciate the cooperation of numerous racetracks, various account wagering operators, state regulators and also the totalisator companies AmTote, Autotote, Las Vegas Dissemination Company and United Tote during this process.

We also wish to thank our loyal fans and customers, who continued to support horseracing with enthusiasm, even in the unfortunate aftermath of the Pick Six incident.

Respectfully,

The Members of the Wagering Technology Working Group:

Paul Berube	Ron Nichol
Gary Carpenter	Lonny Powell
Dan Fick	Jim Quinn
Jim Gallagher	Chris Scherf
Ed Hannah	Michael Shagan
Jay Hickey	Tim Smith
Frank Lamb	David Sweazy
Alan Marzelli	D.G. Van Clief, Jr.



## FOREWORD BY RUDOLPH W. GIULIANI

Ensuring the security and honesty of pari-mutuel wagering systems in horseracing falls upon the leaders of the horseracing industry. Those leaders are responsible for both the reliability of the technology behind the system and for preserving the industry's reputation. This effort will require constant emphasis on technological vigilance as well as a continued commitment of funds.

The report that follows, authored by the Wagering Technology Working Group of the NTRA, is both timely and comprehensive. It outlines the steps that the racing industry has already taken in technological security to prevent the flaws that enabled the Breeders' Cup incident to occur. It addresses many other critical security issues facing the horseracing industry today. The horseracing industry's stakeholders must continue to drive through necessary reforms to ensure that the industry remains a model of integrity.

The NTRA brought together leaders from within the racing industry as well as outside experts to review how the incident occurred and to analyze and develop new and improved safeguards for one of America's most popular sports. The NTRA and the entire horseracing industry deserve recognition for uniting and dedicating themselves to meeting this challenge. It should be noted that perpetrators of the Breeders' Cup incident were quickly apprehended without a single fraudulent dollar paid out. Yet rather than seeking short-term quick fixes, the mission of the industry was simple but overarching: improve all aspects of security in today's technology-based wagering system.

This Working Group Report is indicative of the industry's commitment to ongoing improvement. The industry's investigation of previous pari-mutuel wagering and preparations for institutional and technological reform are the actions of a group committed to making sure that all bets are secure.

This is good news for the thousands of horseracing fans who wager every day across the country. More than ever, they can be confident that their wagers are being handled by a secure and honest betting system.

As the global economy conducts more and more business electronically, crime through technological means has become more lucrative and thus poses a real threat to the businesses and institutions that drive our economy and way of life. Several industries have taken the lead in investing in their future security by implementing a modern IT infrastructure, complete with safeguards and redundant systems that can catch errors or fraud in many different ways. While it appears that the Breeders' Cup incident was an isolated event, the horseracing industry must join other leading businesses in securing its electronic systems. This requires proper leadership, which includes careful preparation, thoughtful experimentation and determined follow-through.

As a devoted horseracing fan, I am pleased to see that institutional reforms are being made and that the NTRA is committed to making pari-mutuel wagering safer and more secure.



# INTRODUCTION

The National Thoroughbred Racing Association (NTRA) and Breeders' Cup Limited convened the Wagering Technology Working Group (WTWG) on November 1, 2002, a few days after an attempted fraud involving the Breeders' Cup Ultra Pick Six wager.<sup>1</sup>

The Pick Six incident resulted in the arrest and conviction of the three perpetrators, Chris Harn, Derrick Davis and Glen DaSilva, and subsequently the payout of the full Pick Six pool with accrued interest to the 43 patrons making five of six correct selections.

As important, the Pick Six incident served as the catalyst for a comprehensive review of the security infrastructure of the totalisator system and of multi-race wagers placed in 2002 that are similar in format to the Ultra Pick Six. In addition, a number of initial reforms were adopted pending conclusion of the review. The review has demonstrated the need for further improvements that are comprehensive, systemic and designed to evolve as needs change.

The WTWG was assisted throughout its review by the Technology and Security Risk Services practice of Ernst & Young (E&Y), which helped to assess the totalisator system and identify potential security risks. The review encompassed tote systems as well as procedures that support the processing and reporting of pari-mutuel wagering. The International Standards Organization's Code of Practice for Information Security Management (ISO 17799) served as a reference for the totalisator review.<sup>2</sup> The review encompassed interviews, on-site visits and a thorough review of documentation, regulatory guidelines, policies, procedures and plans, conducted by the WTWG or on its behalf.

The Working Group also assembled three task forces to address legal, technology and communications issues in connection with the Ultra Pick Six criminal investigation as well as the tote review process. The members of those task forces, whose participation and contributions are greatly appreciated, are listed in Appendix A.

Throughout the review, members of Giuliani Partners LLC, led by former New York City Mayor Rudolph W. Giuliani, provided crisis management advice and counsel on crime and security issues and helped to ensure the independence and confidentiality of the multi-race wager review process. Giuliani Partners has helped to prepare this report and assisted the WTWG in formulating its recommendations for improvements to the wagering system.

## **Wagering Integrity Alliance**

A related group, the Wagering Integrity Alliance (WIA), was formed on November 20, 2002 to broaden industry participation and provide financial support for initiatives in connection with the tote review and the investigation into the Pick Six fraud, including public surveys, communications and additional legal, legislative and technical consulting projects.

In April 2003, the WIA appointed Jim Quinn, a noted authority on horseracing and pari-mutuel wagering, to the newly established position of Players' Representative. Quinn serves as the official NTRA liaison to the horseplaying community and is available to the general public regarding any issues related to wagering. In his ombudsman role, Quinn also oversees a Players' Panel, which, among other activities, advises the WIA on player issues. A list of Players' Panel members appears in Appendix A.

NTRA and Breeders' Cup Limited together pledged an initial \$1 million to the WIA, matched col-

lectively by Churchill Downs Incorporated, Magna Entertainment Corp. and the New York Racing Association. The Jockey Club and TVG Network each contributed \$250,000 and American Quarter Horse Association contributed \$100,000. With other pledges and contributions, WIA expects to meet its funding goal of \$3 million. The complete list of WIA contributors includes:

### **Founding Members**

National Thoroughbred Racing Association  
Breeders' Cup Limited  
Churchill Downs Incorporated  
Magna Entertainment Corp.

New York Racing Association  
Oak Tree Racing Association  
The Jockey Club  
TVG Network

### **Supporters**

American Association of Equine  
Practitioners  
American Quarter Horse Association  
*Daily Racing Form*  
Del Mar Thoroughbred Club  
Emerald Downs  
Fairplex Park  
Fasig-Tipton  
Horsemen's Benevolent and Protective  
Association

Keeneland  
Los Alamitos Racecourse  
New Jersey Sports & Exposition Authority  
Retama Park  
Ruidoso Downs  
Thoroughbred Horsemen's Association  
Thoroughbred Owners and Breeders  
Association  
Thoroughbred Owners of California  
Winnercomm

### **The NTRA Wagering Technology Working Group's members are:**

- Paul Berube, president, Thoroughbred Racing Protective Bureau
- Gary Carpenter, executive director of racing, American Quarter Horse Association
- Dan Fick, executive director and executive vice president, The Jockey Club
- Jim Gallagher, vice president of regulatory compliance, New York Racing Association
- Ed Hannah, executive vice president, corporate development and general counsel, Magna Entertainment Corp.
- Jay Hickey, president, American Horse Council
- Frank Lamb, executive director, North American Pari-Mutuel Regulators Association
- Alan Marzelli, president, The Jockey Club
- Ron Nichol, director – program coordination and national standards, Canadian Pari-Mutuel Agency
- Lonny Powell, president, Association of Racing Commissioners International
- Jim Quinn, Thoroughbred racing fan ombudsman
- Chris Scherf, executive vice president, Thoroughbred Racing Associations
- Michael Shagan, pari-mutuel industry consultant
- Tim Smith, NTRA Commissioner
- David Sweazy, vice president of operations, Churchill Downs Incorporated
- D.G. Van Clief, Jr., president, Breeders' Cup Limited

The views of the WTWG members reflected in this report are those members' individual views and may not be reflective of the views of the entities for whom they work or with whom they are associated.

Greg Avioli, NTRA Deputy Commissioner and COO, and Peggy Hendershot, NTRA Vice President – Corporate Communications, served as the principal staff members for the Working Group and, with substantial input from its members and key consultants, co-authored the WTWG Report in conjunction with Giuliani Partners.

Keith Chamblin, NTRA Senior Vice President – Marketing and Industry Relations, coordinated Task Force activities and programs. Ken Kirchner, NTRA Senior Vice President – Product Development, served as project director for the pari-mutuel ticket review.

Curtis Linnell of Linnell Business Ventures and James Coil, David Haydon and Bobby Burch of The Jockey Club family of technology companies provided technical assistance on this project.

Linda Manning, Ragan Montemayor, Nick Nicholson, Jr., Allison Rogers and McKay Smith also provided assistance in the preparation of this report.



# CHAPTER 1

## The Pari-Mutuel Industry

Horseracing began in the United States in 1665. It is one of the country's oldest organized sports and its most famous race, the Kentucky Derby, is the nation's oldest continuously run sporting event. With its roots in horse breeding, U.S. horseracing sustains a complex infrastructure of farms, training centers and racetracks as well as a \$34 billion agri-business offering full-time employment for more than 470,000 individuals. Worldwide, horseracing attracts \$100 billion in legal pari-mutuel wagers annually and operates in 53 countries.<sup>3</sup>

Like any present-day industry, horseracing has been affected by rapid technological change and now relies heavily on an electronic infrastructure as well as a physical one, chiefly in the area of pari-mutuel wagering. This report outlines how technology has changed the pari-mutuel wagering system and the ways in which the pari-mutuel industry has addressed the security, technological and operational issues associated with that transformation.

Pari-mutuel wagering has been in existence for some 125 years.<sup>4</sup> Pari-mutuel wagering is now legal in 43 states, with approximately \$20 billion wagered (or "handled") annually on horses, Greyhounds and the game of jai alai. Three-quarters of all U.S. pari-mutuel handle (\$15 billion) comes from wagering on Thoroughbred racing. For purposes of this report, the pari-mutuel activities described here reflect Thoroughbred racing only.

### Interstate Wagering

Up through the 1960s, pari-mutuel wagers were placed exclusively at racetracks, with bettors watching and wagering on live races and mutuel clerks transacting each wager. Beginning in 1971, however, New York City Off-Track Betting (OTB) began offering off-track wagering on New York racing. Other wagering service providers adopted the practice of intrastate wagering in their respective jurisdictions. The process soon expanded to include intertrack and interstate wagering.

By 1990, interstate wagering also included "commingled" wagering, in which wagering pool totals from betting sites in multiple jurisdictions (known as "guest sites" or "guests") were combined electronically across state lines at the "host" track conducting the live race being bet on in order to calculate winning prices and payoff distribution. By the middle of the decade, North American racetracks also were accepting commingled wagers on their races from bettors in other countries.<sup>5</sup>

Account wagering also has fueled the growth of interstate betting. In recent years, legislation or regulations explicitly enabling "account wagering" or "advance deposit wagering" (ADW) has been passed in 17 states.<sup>6</sup> More than 23 licensed service providers now offer ADW,<sup>7</sup> which accounts for an estimated 10 percent of all pari-mutuel handle.<sup>8</sup>

Through the growth of interstate and account wagering, the business paradigm for pari-mutuel wagering now encompasses a network of more than 1,000 known wagering sites nationwide, including racetracks and off-track wagering facilities, with bets also being placed via phone, personal computer, Screen-Activated

Machines (SAMs), hand-held wagering devices and digital TV set-top boxes. Overall, racetracks – including all breeds of horse as well as Greyhounds – now account for approximately 20 percent of the facilities that accept pari-mutuel wagers.

## **Simulcasting**

To increase the distribution of their product, racetracks in the late 1970s and early 1980s inaugurated simulcasting, the simultaneous transmission of live races to multiple facilities via closed-circuit television for purposes of conducting pari-mutuel wagering.

By the mid-1980s, the related practices of simulcasting and intertrack wagering – both within and between states – were established, and racetracks began regularly to import television signals for races from multiple facilities while exporting their own live signals in exchange. OTB facilities and most tracks that are closed for live racing now offer simulcasting year-round.

Pari-mutuel service providers in the last decade also have imported a limited number of international simulcasts for betting purposes to and from countries such as the United Kingdom, United Arab Emirates, France, Singapore, Hong Kong, New Zealand, Argentina, Australia and Canada.

Racetracks, whose daily programs formerly consisted of only five hours of live racing, have expanded their hours of operation to enable the importation of multiple simulcast signals from numerous tracks across several domestic and international time zones. Account wagering service providers can offer still more racing through the use of both consecutive and concurrent simulcasts from racetracks across multiple time zones.

The expansion of the distribution of horseracing has transformed pari-mutuel operations. Simulcast wagering on the Kentucky Derby, for example, has gone from \$455,163 in 1981 to \$87 million in 2003, while simulcast handle on the Breeders' Cup World Thoroughbred Championships has grown from \$8 million in 1984 to more than \$102 million in 2002. In total, all but about 15 percent of the \$15 billion wagered annually on Thoroughbred racing in the United States is bet on simulcast races.<sup>9</sup>

## **Changes in Wager Types**

Until the 1970s, pari-mutuel wagering consisted mostly of win, place and show bets. In subsequent decades, however, a number of new multi-race or multi-horse wagers were introduced (see Appendix B). For example, the Superfecta and Trifecta were introduced in the 1970s, and, in the following decade, the Pick Six was inaugurated. In the 1990s, “rolling” Pick Threes were introduced.

These so-called exotic wagers,<sup>10</sup> which challenge the bettor to select winners in several consecutive races or to correctly identify the order of finish for a group of horses within a given race, carry complex series of numeric combinations, with most bettors selecting several horses in each finish position to hedge their bets.

Exotic wagers not only require more data to express, but also necessitate more processing by the totalisator, which must scan all the wagering patterns present in the system to find those that correctly identify a series of finishes by a group of horses.

The popularity of exotic wagers is such that total “straight” wagering (win, place or show) now accounts for only 33 percent of the pari-mutuel handle. “Intra-race” exotics (e.g., Trifecta, Superfecta, Exacta) account for 58 percent of all wagering, and “inter-race” exotics (e.g., Daily Double, Pick Three, Pick Six, etc.) account for nine percent.<sup>11</sup>

## CHAPTER 2

### The Pari-Mutuel Wagering System

Totalisator companies function as technology suppliers (hardware and software) for pari-mutuel operators, who in turn transact pari-mutuel wagers and transmit racing images and information via simulcast. Among U.S. pari-mutuel service providers, Autotote has the largest market share, followed by AmTote and United Tote. Las Vegas Dissemination Company primarily serves Nevada-based casinos and Indian gaming facilities that offer pari-mutuel wagering on horseracing. A list of NTRA member racetracks and OTBs and their affiliated tote operators appears as Appendix D.

#### Tote Communications

The totalisator system consists of a network of computers and wagering terminals linked by modems and a frame-relay system, which electronically combines wagers into “pools.” Based on pool totals, the totes record and display changes in betting patterns and recalculate pari-mutuel odds and projected payoffs in timed intervals. Odds are established based on the proportion of money wagered into the pool on each horse. Odds change throughout the course of the wagering cycle and become final when the wagering pool is closed at the start of a race. When the results of a race are official, the tote calculates payoffs on all winning wagers and bettors can collect their winnings.

The current totalisator system operates on the Inter-Tote System Protocol (ITSP), which has been adapted from its original use in *intratrack*, *intratote* wagering on live races at individual facilities to support extensive *intertrack*, *interstate* and *intertote* wagering on simulcasts.

ITSP has two main functions: translation of wagering data into uniform computer language and data transportation. It supports a summation of bets per wagering combination on a per pool, per race basis and enables post-event analysis of wagering data; however, records must be retrieved manually from backup tapes, when the system is in a non-wagering mode, for data to be examined. It does not enable the transfer of the wagers themselves to the host site or the combination of actual data across systems, which would aid in the real-time detection of wagering irregularities.<sup>12</sup>

ITSP transmits wagering data serially, so that each bit of electronic data must remain in precise order throughout the transfer process in order for the data to be received successfully. If transmission interruptions occur or data is lost, manual procedures must be implemented to merge wagering information back into the data stream.<sup>13</sup>

The ITSP system functions on bandwidth that sustains data transmission speeds ranging from 2,400 to 19,200 bits per second (2.4Kbps to 19.2Kbps), with 9,600 bits per second (9.6Kbps) considered average. In contrast, available telecommunications technology supports “slow” speeds of 128,000 bits per second (128Kbps) and rapid transmission at a rate of 45,000,000 bits per second (45Mbps).<sup>14</sup>

The delay now observed in the posting of final odds – the amount of time it takes for the totes to collect, process and merge data from hundreds of sources into the host betting pools and trigger a new round of pari-mutuel odds – largely is a function of ITSP and limited bandwidth.<sup>15</sup>

## **Security Controls for the Pari-Mutuel Wagering System**

In the pari-mutuel system, the primary control for wagering security exists at the level of the totalisator company. Within each company, proprietary security programs, policies, response procedures and managerial controls exist to respond to security incidents. Those policies, however, are not uniform across all companies. For example, each company may have a different definition of what constitutes a security incident and an appropriate response. Cross-company agreement on security standards is achieved in the contracts for tote services and for simulcasting. These contracts (e.g., between a racetrack and its tote company or between pari-mutuel operators) can be used to update, expand and add security rules.<sup>16</sup>

Regulatory control of pari-mutuel wagering largely takes place at the state level. Racing commissions are the licensing entities for horseracing and are statutorily authorized to promulgate and enforce the rules of pari-mutuel racing and wagering. Similar to the business controls for wagering, regulations may vary between jurisdictions, as do levels of regulatory control. For example, an estimated 88 percent of the members of the North American Pari-Mutuel Regulators Association (NAPRA) and Association of Racing Commissioners International (RCI) license totalisator company employees, and 63 percent license tote companies.<sup>17</sup>

Historically, regulators have focused on overseeing racetrack operations, with little direct control over the totalisator companies. State regulatory associations, however, have expressed an interest in expanding their oversight role in wagering security. For example, Joint Model Rules of Racing developed by NAPRA and RCI could be used to incorporate enhanced guidelines for wagering security.

## CHAPTER 3

### The Pick Six Incident and Security Enhancements

The circumstances of the Breeders' Cup Ultra Pick Six incident have been well documented in the media (see Bibliography). Briefly, an Autotote employee, Chris Harn, electronically altered the wagering record of a bet made through the Catskill [N.Y.] Off-Track Betting Corporation (OTB) account wagering system.

Harn altered the selections after the first four races of the Ultra Pick Six had been run. Using an advance deposit wagering account set up with Catskill OTB by one of his accomplices, Harn placed wagers using one horse in each of the first four races with all runners in the two final races. After the first four races were complete, Harn corrected his selections based on the race results. Doing this ensured a winning wager regardless of the outcome of the final two races.

Harn's wagering pattern, showing no alternate selections in the first four races and all possible combinations in the last two, was highly unusual. That, coupled with the fact that Harn's accomplice ultimately held all six of the winning tickets on the event, provoked immediate scrutiny by authorities at the New York Racing Association, New York State wagering regulators, and NTRA and Breeders' Cup officials.

Harn and his accomplices had previously tested their system for altering wagers. On October 3, 2002, they altered a Pick Four wager from Balmoral Park, a harness facility in Chicago. On October 5, they altered wagers on a Pick Six at Belmont Park, collecting more than \$100,000 from Catskill OTB. In both cases, Harn was able to alter a ticket after results of the initial few races involved in his wager were official.<sup>18</sup>

Had Harn's betting scheme on the Breeders' Cup Ultra Pick Six been successful, it would have netted more than \$3 million. Instead, he and his accomplices – who held all six perfect tickets (6-of-6 winners) as well as 108 “consolation” tickets (5-of-6 winners) – were arrested, convicted and imprisoned. The Pick Six pool ultimately was paid out, with accrued interest, to 43 bettors whose wagers were placed legally (for more detailed information, see Appendix C for a timeline of events).

#### Security Gaps

The Pick Six incident was made possible by Harn's status as an Autotote “superuser” as well as his insider knowledge of several security gaps in the wagering system that existed as of October 2002:

**1) Data Cross-Checks/IVR Technology:** The Pick Six incident involved the use of a telephone wagering account at Catskill OTB, which was selected specifically by Harn because it did not have an audio recording system on all wagers. Most Interactive Voice Response (IVR) systems record and code the tones that sound when a digit is entered on a telephone keypad, providing an audio record of a wager (including the precise time at which it was made) to complement the computer-generated record. With no IVR recording as a cross-check, an altered ticket would be more difficult to detect.

**2) Bandwidth Limitations:** Partially due to bandwidth limitations, totes at the time of the incident routinely transmitted betting information only on wagers that were still “live” after completion of the first five races of any Pick Six wager. Since only a record of wagering dollars was transferred to the host track hub prior to the first race of the Pick Six (while the actual betting details remained at the remote wagering

hub where the bet was placed until after the fifth race was complete), Harn knew that he could alter a bet to substitute winning horses in each of the first four races.

**3) Software Limitations:** Harn's alteration of the wager could go undetected because there was no software in place that enabled the host facility to compare the data sent before and after each race leg to verify that it remained consistent from race to race (i.e., that no bets were added or subtracted).

**4) Managerial Control:** Although Harn was not scheduled to work on Breeders' Cup day, he nonetheless was permitted access to the tote system. Harn knew that Autotote did not then have an incident reporting system in place that would detect the alteration of betting details by a superuser such as himself.

### **Additional Security Measures**

Since the Pick Six incident, the pari-mutuel industry as a whole has added several security measures to ensure that the circumstances that led to the attempted fraud cannot be replicated. These new operational and system controls were put into place within weeks after the October 26 incident and involved considerable cooperation between the totalisator companies and all the major pari-mutuel wagering service providers to ensure their timely, full implementation. The new or improved security measures included:

- Tightened physical security for areas housing tote systems;
- Immediate review and tightening of access rules for authenticated systems users;
- Industry-wide use of IVR recording equipment or similar technology to provide a back-up record of wagers made through the account wagering network. By the end of 2002, all sites accepting account wagers had installed IVR recording systems;
- Development and implementation of "progressive scanning" software at all relevant U.S. wagering outlets. Progressive scanning software enables each outlet to detect in real time – after any leg of a Pick Six or other multi-leg wager – any attempted change to wagering selections after the fact;
- Review of multi-race wagers placed in 2002 to detect the presence of unusual wagering patterns (see Chapter 4 for the findings of the Wagering Technology Working Group Ticket Review Subcommittee); and
- Routine review of winning Pick Six wagers at major racing facilities by mutuel officials.

Individual totalisator companies also acted to improve their security through self-assessment, the hiring of security consulting firms and the adoption of programs and procedures to increase internal security, including improved monitoring of the access and activities of programmers performing support and maintenance functions in the tote system, background investigation checks and the clarification of security roles and responsibilities for tote system employees. The cost of these and other new security procedures is estimated at more than \$2.3 million, with additional annual costs for maintenance of new standards and protocols estimated at more than \$500,000.

Additionally, Autotote, where the Pick Six fraud occurred, is in the process of installing e-Success Incorporated's Integrity Automated Pari-Mutuel Monitoring System (IAPMMS) software at all 20 of its wagering hubs. Full implementation is expected by the fall 2003. IAPMMS independently monitors every wagering transaction flowing through the tote system in real time. The system checks the validity of each transaction, compiles pool totals, checks pay-out prices and confirms winning tickets. The system also provides tools for detecting and analyzing potentially fraudulent activity as it occurs and produces a variety of reports that provide independent audit results for all betting conducted. When the system detects an anomaly, it immediately notifies appropriate personnel who can investigate and take action.<sup>19</sup>

## **Conclusion**

The additional security measures put into place after the Pick Six incident – particularly the scanning software for multi-race wagers – have been effective means for improving wagering security and providing deterrence against similar types of computer crime. The process of security development, however, is just that: a process. The industry must continue to develop strategies and programs that will enable it to identify and rebuff other attempts at wagering fraud.



## CHAPTER 4

### WTWG Ticket Review

In several respects, the WTWG's ticket review represents a microcosm of the complex, multi-layered set of legal and business issues facing every industry that holds confidential consumer information such as social security numbers or proprietary data. In response to the WTWG's requests for information on Pick Six and Pick Four wagers, some entities provided complete data and others did not, citing a desire to protect their bettors' identities as proprietary information.

Thus far, more than 30 entities have provided information. The ticket review process remains ongoing, with final results expected in fall 2003.

In some cases, account wagering providers raised various legal objections to releasing names and/or social security numbers of the customers/bettors under certain federal and state statutes. While there are certain exceptions to each of these statutory prohibitions that may be applicable to future reviews and analysis of wagers for security purposes, these issues will need to be reviewed more closely by counsel before a final determination can be made.

The oversight of the ticket review process by Giuliani Partners did facilitate the participation of several associations (including New York City Off-Track Betting Corp.), which initially cited consumer privacy concerns when asked to provide wager information.

The Ticket Review Subcommittee's ticket review was focused on the 161 Pick Four and 382 Pick Six wagering events in 2002 with payoffs of at least \$10,000, which included "consolation" winners such as those picking five of six winners correctly in connection with the Breeders' Cup Ultra Pick Six.

After initial attempts to obtain all tickets in connection with the Pick Six and Pick Four events proved extremely challenging based on the sheer volume of tickets as well as legal, technical and privacy issues already outlined, the subcommittee narrowed its scope to focus on wagers with payoffs of at least \$10,000 that were placed on California and New York races. Those events accounted for 68 percent of all such multi-race wagers.

Each of the wagering events selected for review, plus others chosen at random, involved a number of winning tickets (e.g., 1-50), with some of these occurring through legal telephone or account wagering services on a paperless basis.

In some cases, paperless wagers may have been made at remote locations, within or outside the United States, so that verification of the wagering specifics (e.g., via audio or digital tapes) involved the cooperation of multiple parties (e.g., host track, its tote company, a U.S. wagering hub, its tote company, and an OTB or account wagering service and its tote company).

Using data supplied by Equibase Company LLC, the industry's official database of racing information, the subcommittee contacted the host tracks in California and New York and – as necessary – each tote company, wagering hub and wagering service involved. Data tapes were pulled and reviewed by the relevant staff for each wagering event.

To date, 70 percent of the Pick Four and Pick Six tickets (1,100 of 1,600) have been reviewed, including more than 220 paperless tickets, i.e., wagers made using account wagering service providers who do not

print traditional pari-mutuel tickets when a wager is placed. This percentage, it should be noted, while not yet 100 percent, is nevertheless considerably larger than a normal audit, where a smaller random sample would typically be used.

The subcommittee's review of the 2002 Breeders' Cup 5-of-6 winners found no irregularities. The review did encompass Harn's wagering fraud in connection with a race at Belmont Park but did not extend to a review of the transaction in connection with the incident at Balmoral Park, which is a Standardbred facility and as such was outside the purview of the study.

## **Conclusion**

While the subcommittee did not have access to complete information regarding every large-payoff, multi-leg wagering event over the relevant period, it has examined a broad selection of these and found no evidence of prior manipulation or fraud in connection with Pick Four or Pick Six wagering beyond those incidents already known and publicly disclosed.

## CHAPTER 5

### Recommendations for Improved Wagering Security

Like any technology-dependent industry, the pari-mutuel wagering industry must ensure that its cyber security measures are continually enhanced to meet current and future challenges. The recommendations of the WTWG, by design, offer strategies that will enable the industry to adapt to the changing environment for cyber security both in the near and long term while maintaining consumer confidence in the integrity of the wagering system.

#### **Recommendation 1**

**Create a National Office of Wagering Security.**

#### **Rationale**

With a single authority having stewardship responsibility for wagering security, the industry can more effectively manage a concerted response to potential security threats and develop proactive programs to enhance security. Centralization also will ensure that the industry has minimum, uniform standards for the use of consumer data, can develop new pari-mutuel wagering products in response to consumer wagering habits and can improve its customer interface.

The office of wagering security would be responsible for:

- Formulation of uniform, minimum standards for totalisators and wagering service providers, in consultation with relevant industry and regulatory agencies (see Recommendation 2, below);
- Oversight of security audits at pari-mutuel entities, including the recommendation or approval of third-party auditors, management of the security audit process and ensuring audit compliance;
- Monitoring of a central database of wagering information, similar in function to Compstat or Stock Watch,<sup>20</sup> created to identify potential security threats in real time (see Recommendation 3, below). With state agencies and pari-mutuel entities, the Office of Wagering Security would determine whether a pervasive threat to the pari-mutuel system existed and prescribe a course of remedial action;
- Sharing information industry-wide regarding security innovations or “best practices,” security threats that may be present across jurisdictions or the status of investigations into possible security breaches; and
- Receiving and responding to consumer queries about perceived or actual wagering irregularities.

## **Actions**

- Establish a funding mechanism for a national wagering security office for horseracing;
- Recruit a Chief Security Officer with cyber-security expertise; and
- Develop a centralized Consumer Ombudsman program for addressing consumer/industry queries regarding wagering security or perceived security lapses.

## **Industry Benefits**

- Defines governing entity for the pari-mutuel industry's collective wagering security policies and functions;
- Offers continuous deterrence to wagering fraud and protects the integrity of the pari-mutuel wagering system;
- Demonstrates proactive self-policing;
- Reinforces consumer confidence in the integrity of the wagering system;
- Accelerates the security investigative process; and
- Establishes a consistent, centralized mechanism for consumer interface regarding pari-mutuel issues.

## **Recommendation 2**

**Establish minimum, uniform security standards for all entities in the pari-mutuel system.**

## **Rationale**

The establishment of minimum uniform security standards and standardized incident reporting programs for all entities in the pari-mutuel system will help to ensure the continued integrity of the wagering system, as will a system of subsequent regular audits to gauge compliance with those standards. Adoption of minimum uniform standards by both domestic and offshore wagering entities will allow only "trusted users" (as defined by cyber security experts) to have access to the pari-mutuel system.<sup>21</sup>

## **Actions**

- In concert with representatives of the RCI/NAPRA Joint Model Rules Committee, the RCI Tote Standards Committee, the TRA 2020 Committee and other industry stakeholders, produce Model Rules for security (e.g., tote system access, incident response protocols, retention of wagering records, etc.), to be adopted by each racing jurisdiction;
- Prioritize security programs and procedures and establish a timeframe for phase in of each;
- Ensure adoption of and continued compliance with each phase of minimum standards through incorporation into and enforcement of client/vendor contracts between tote and pari-mutuel operators or via regulatory control or NTRA membership protocols; and
- Engage state regulators, tote operators and wagering services providers in ongoing security awareness programs to ensure compliance.

## **Industry Benefits**

- Establishes a consistent level of security and minimum service levels across jurisdictions and providers;

- Reinforces accountability for security measures by both tote and pari-mutuel operators;
- Reduces liability and potential for litigation against tote and pari-mutuel operators; and
- Establishes foundation for international tote protocols.

### **Recommendation 3**

**In consultation with relevant vendors and industry stakeholders, develop an industry action plan to facilitate an upgrade of the current wagering system infrastructure in order to further automate security enhancement functions and produce other efficiency gains related to simulcasting.**

#### **Rationale**

As outlined in previous chapters, the current tote system “works” in the sense that it is currently capable, at relatively low cost, of processing millions of dollars in daily pari-mutuel transactions on a dependable basis. However, looking forward to the anticipated continued growth in electronic wagering on horseracing, and directly linked to the goal of achieving “best practices” in security standards, it is clear that further improvements and upgrades to the underlying wagering system infrastructure are feasible, necessary and should be pursued by the industry through an expedited and thorough planning process.

Such a process and resulting technology upgrade would improve security by enabling the incorporation of cyber-security software similar to Compstat or Stock Watch, which on an automated basis, bring unusual patterns or suspicious activities to the immediate attention of the appropriate parties. Transmitting wagering information to a central database would provide the capability to automate critical business-to-business processes and transactions related to simulcasting, thus achieving efficiency gains and reducing the cost of doing business. Technology permitting the databasing of end-of-day wagering information also would enhance efficiency in a variety of business operations (e.g., simulcast reconciliation and other electronic banking functions). The greater bandwidth that would be part of such an upgrade also would increase the speed of the processing of pari-mutuel wagering, reducing customer concerns with late odds changes now caused by the time required to pool wagers from multiple sites and totes.

#### **Actions**

- Identify and recommend changes to current Inter-Tote System Protocol-based infrastructure;
- Identify potential technology solution providers; and
- In consultation with relevant vendors and industry stakeholders, formulate a business model to support an improved, scalable technology platform, a phase-in program for new technologies and the development of a centralized database of wagering information.

#### **Industry Benefits**

- Allows for proactive monitoring of transactions in real time for detection of irregular or suspicious betting patterns, along with other possible security threats;
- Speeds the processing of transactions, greatly reducing late odds changes (and addressing a confidence/perception issue among some current customers); and
- Ensures that security technology continues to develop to meet growing demand.

## Next Steps

The WTWG suggests the following timeline for implementation of its recommendations. The WTWG and NTRA staff are in the process of preparing a detailed proposal for the structure, development, governance and funding of a National Office of Wagering Security, to be presented to the NTRA Board of Directors at its September 2003 meeting, and, pending Board approval, to be presented to relevant industry groups for further review in the fall of 2003.

### *August – November 2003*

- Complete ticket review process and supplemental report as necessary;

### *August – December 2003*

- In concert with representatives of the RCI/NAPRA Joint Model Rules Committee, the RCI Tote Standards Committee, the TRA 2020 Committee and other industry stakeholders, draft uniform standards and proposed Model Rules;

### *September – December 2003*

- Complete Business Plan for proposed National Office of Wagering Security;

### *September 2003 – May 2004*

- Address related security/technology issues with relevant consultants and industry stakeholders;  
and

### *January – May 2004*

- Adopt Model Rules and open National Office of Wagering Security.

## CONCLUSION

The Breeders' Cup Ultra Pick Six incident was a catalyst for the development of improved wagering security. Not only did it help bring about additional security measures, it has reinforced the importance of security to the many organizations that are partners in the conducting of pari-mutuel wagering, including totalisator companies, regulators, racetrack operators and account wagering service providers.

Most important, it brought home two critical points:

- Security is not a goal, but a process. The pari-mutuel industry must always be vigilant against potential cyber security threats and proactive in reducing its risk of attack; and
- Responsibility for wagering security must be shared by all partners in the pari-mutuel industry.

Complex issues of cyber and physical security for the wagering system remain and will evolve over time. Judiciously managed through a series of planned steps, they can and must be addressed if the wagering industry is to retain the confidence of the betting public and avoid undue government intervention in its central business practices.

In the short term, the industry may suffer loss of some revenue by not accepting wagers from tote hubs that fail to meet minimal, uniform security standards. These losses, in the opinion of the WTWG, are small compared to those the industry could sustain if it loses public support by failing to enforce, improve and sustain safeguards for the wagering system.

At the same time, the pari-mutuel industry must work proactively to develop a long-term business strategy that encompasses not just security and improved wagering technology, but international marketing of the U.S. racing and wagering product, new wagers, expanded wagering services and a much-improved consumer interface if it is to grow to its full potential.

As with other industries engaged in electronic commerce, proactive and expert concern with system security will need to be a major priority in planning and achieving this potential growth.



## ENDNOTES

<sup>1</sup>The Breeders' Cup Ultra Pick Six wager was offered on six Breeders' Cup World Thoroughbred Championships races run at Arlington Park, Arlington Heights, Ill., on Saturday, October 26, 2002. The World Thoroughbred Championships are conducted by Breeders' Cup Limited and the National Thoroughbred Racing Association.

<sup>2</sup>ISO 17799 is an international standard used by companies as a benchmark in evaluating the effective management of information security risks. It is intended as a broad standard to provide guidance as to how companies should manage risks related to information and data.

<sup>3</sup>The Jockey Club, *2003 Fact Book: A Guide to the Thoroughbred Industry in North America* (New York: The Jockey Club, 2003), p. 36.

<sup>4</sup>For a general discussion on the origins of pari-mutuel wagering in the United States see *Down the Stretch: The Story of Colonel Matt J. Winn*, as told to Frank G. Menke (New York: Smith & Durrell, 1945), pp. 69-77.

<sup>5</sup>General Accounting Office, *Internet Gambling: An Overview of the Issues* (Washington, D.C.: United States General Accounting Office, 2002), p. 42. The Interstate Horseracing Act (IHA) stipulated that no entity could accept an interstate, off-track wager without the consent of, among others, the "host" track holding the live horse race, the host track's regulating entity (racing commission), and the entity regulating the establishment accepting the wager. The first United States commingled pool wagering took place in 1990 between Santa Anita Park and Wyoming Off-Track Betting. See "How the Horse Racing Industry Got from 'There' to 'Here,'" Michael Shagan, presentation to the American Horse Council, June 16, 1997. A 2000 Amendment to the IHA confirmed the legality of interstate electronic wagering on state-regulated horseracing and clarified that its provisions extended to telephone and electronic wagering where legal in the states involved.

<sup>6</sup>Marc Falcone, Eric Hausler and Jason Ader, *The Global Account Wagering Industry: What Treasures Does It Hold?* (New York: Bear, Stearns & Co., Inc., 2002), p. 10. Legislation or regulations enabling account wagering has been passed in California, Connecticut, Idaho, Kentucky, Louisiana, Maryland, Massachusetts, Nevada, New Hampshire, New Jersey, New York, North Dakota, Ohio, Oregon, Pennsylvania, Wyoming and Virginia.

<sup>7</sup>*Ibid.*, p. 64. Some account service providers are affiliated with racetracks while others are stand-alone entities. While requirements vary from company to company, bettors usually must make a cash deposit with the account service provider and establish proof of their identity, age and legal residence to activate a telephone account. Once the account is activated, bets can be telephoned in to a pari-mutuel clerk, punched

in via a touch-tone phone or recorded through an interactive voice-response (IVR) system. Similarly, pari-mutuel wagers can be placed via personal computer on a closed-loop, subscriber-based system. For a full discussion of account wagering service providers in North America see *The Global Account Wagering Industry*, pp. 64-89.

<sup>8</sup>Ibid., introduction. The Bear, Sterns report placed the market share for account wagering at four to six percent. With the increasing popularity of account wagering in major jurisdictions such as California, that share is now estimated at 10 percent.

<sup>9</sup>*The Jockey Club Fact Book*, p.16.

<sup>10</sup>“Exotic” wagers generally involve three or more horses and incorporate Boolean logic, a computer search process based on the Boolean operators **OR**, **AND**. The following example of a typical Pick Six wager uses Boolean operators to express a series of possible combinations:

Race 1	Horses 1 <u>or</u> 2 <u>or</u> 3
	<b>and</b>
Race 2	Horses 4 <u>or</u> 5 <u>or</u> 6
	<b>and</b>
Race 3	Horses 9 <u>or</u> 10 <u>or</u> 11 <u>or</u> 12
	<b>and</b>
Race 4	Horses 7 <u>or</u> 8 <u>or</u> 14
	<b>and</b>
Race 5	Horses 1 <u>or</u> 3 <u>or</u> 7
	<b>and</b>
Race 6	Horses 1 <u>or</u> 2 <u>or</u> 3 <u>or</u> 4 <u>or</u> 5 <u>or</u> 6 <u>or</u> 7 <u>or</u> 8 <u>or</u> 10

The above example represents a total of 2,916 possible combinations (3 x 3 x 4 x 3 x 3 x 9).

<sup>11</sup>Information courtesy of Equibase Company, June 27, 2003.

<sup>12</sup>J. Curtis Linnell, “Observations on Totalizator Security and Recommendations for Standards,” November 19, 2002, p. 3.

<sup>13</sup>Thoroughbred Racing Associations, *Simulcast Procedures Manual*, (Elkton, Md.: Thoroughbred Racing Associations), pp. 2.6-2.8

<sup>14</sup>Ibid., p. 2.1.

<sup>15</sup>Late odds changes occur when odds take a significant drop after the horses have left the starting gate, even though all wagering pools are already locked for betting. Delays in the transmission of wagering data – caused by bottlenecks to the system near posttime, when too much data has queued to be sent in a single cycle or because a wagering pool has been missed in the information sweep and must be late merged – largely are a result of ITSP and bandwidth issues.

To reduce the incidence of late odds changes, the 2020 Committee of the Thoroughbred Racing

Associations (TRA) has recommended the following procedural changes, which are endorsed by the WTWG:

- **Implement a zero-seconds-to-post cancel delay time for pari-mutuel tickets.** This would prevent late-cancelled tickets from delaying the reporting of final pools and the posting of final odds. The 2020 Committee anticipates full implementation of this recommendation in the fall of 2003.
- **Transmit odds data in cycles of no more than 45 seconds.** The system has been improved by several totes, with the current range for transmission cycles now 30-60 seconds. Forty-five seconds is considered average.
- **Transmit “simple” wager information first.** The transfer of win, place and show bets to wagering hubs ahead of “complex” wagering information (i.e., exotic wagers) would reduce delays in the posting of final odds by up to 30 seconds. This procedure has been implemented in certain jurisdictions.

The 2020 Committee also has undertaken a review of wagering sites requiring a “double jump.” A “double jump” is a totalisator term for a wagering site with a core tote system (i.e., one taking wagers from one or more sites) that connects to another core tote system before transmitting data to a host track. Double-jump sites can extend the time delay for pool odds calculations by up to 45 seconds. Under the current tote framework, bandwidth issues may delay the implementation of this proposed change.

<sup>16</sup>All wagering hubs that accept bets on a simulcast race contract with a tote service provider for the processing of wagers. Although it is not party to the hub-tote contract, the live-event racetrack is affected by tote performance at each hub insofar as data transmission from the hub sites affects the posting of wagering information for the live event.

The Thoroughbred Racing Associations (TRA), whose membership includes 43 racing associations conducting racing at 41 racetracks in the United States and Canada, has developed a standard simulcast contract, the Racing Industry Uniform Simulcast Wagering Agreement, which is used by host and guest wagering sites. The totalisator vendor is not a party to the simulcast agreement. The simulcast contract is one instrument for mutual assurances between host, guest(s) and secondary recipient(s) that each subscribes to uniform, minimum standards for wagering security and is a trusted user. The TRA also produces the Simulcast Procedures Manual, which covers the technical aspects of simulcasting, including mutuels, program production, simulcast signals, accounting, information delivery, legal issues, tote standards and marketing.

<sup>17</sup>Association of Racing Commissioners International (RCI) and North American Pari-Mutuel Regulators Association (NAPRA), “Membership Survey,” December 19, 2002. The regular membership of the RCI comprises 17 states and six neighboring territories or countries. NAPRA represents 20 states as well as Canada and three individual provinces. RCI and NAPRA have formulated Joint Model Rules of Racing, and RCI has produced Inter-Tote Standards Protocol, the operations manual for inter-tote communications.

<sup>18</sup>Chris Harn also engaged in another form of wagering-related fraud by developing a system to cash escheats – unclaimed pari-mutuel tickets commonly known as “outs.” Serial numbers for each uncashed wager remain in the tote system until winnings are claimed (up to a year, depending upon the state’s regulations). Using his status as an Autotote authorized user, Harn accessed the database with the “outs” serial numbers and grafted their corresponding bar codes on to Autotote “test” pari-mutuel tickets that by themselves were useless. Harn and his accomplice inserted the grafted tickets into Screen-Activated Machines (SAMs) at racetracks in New York, New Jersey and Pennsylvania, noted their credit balance, placed a few wagers and then requested SAM-issued vouchers for the remaining funds. They then cashed their SAM vouchers at pari-

mutuel betting windows. Harn's scheme netted nearly \$100,000 over several months.

Each year, millions of dollars in uncashed winnings fund state and other public programs, charities, and racing-related expenditures such as equine drug testing, operations, purses, etc. RCI and NAPRA have expressed interest in revising their Model Rules for the handling and cashing of outs to build in additional safeguards against fraud.

<sup>19</sup>IAPMMS technology also is utilized in monitoring numerous lottery systems in the United States and abroad, including all lottery systems supplied by Scientific Games through Scientific Games International, its lottery subsidiary. Scientific Games is the parent company of Autotote.

<sup>20</sup>Compstat was developed in 1994, under the leadership of Mayor Rudolph W. Giuliani, to combat crime in New York City. The system collects and analyzes crime statistics on a daily basis, looking for patterns and potential crime threats. The system maps geographical concentrations of criminal activity, sorting them by time of day, type of crime and day of week. Periodic summaries display trends over a variety of periods such as week to date, month to date or year to date. For a detailed description of Compstat see Rudolph W. Giuliani, *Leadership*, (New York: Hyperion), pp. 72-97.

NASDAQ's Stock Watch surveillance system is used to review press releases issued by NASDAQ-listed companies and monitor activity components such as volume and price volatility in real time for unusual transaction patterns. If Stock Watch flags a stock for unusual activity, a NASDAQ Market Surveillance analyst contacts the issuing firm to determine the cause. Issuing firms must provide Stock Watch with a press release at least 15 minutes prior to public notification for news that could have a large effect on the issuer's stock price. Stock Watch can subsequently halt trading on that stock to allow the dissemination of information to investors and to return the market to normal trading activity. All noted suspicious activity is immediately referred to NASD Regulation for further review and investigation.

<sup>21</sup>In a business-to-business application, a trusted user is broadly defined as one who

- Demonstrates the values and business practices that enhance the overall brand and customer relationships of its business partners;
- Consistently demonstrates capabilities to provide services at an agreed-to level of quality;
- Appropriately uses its business partner's brand and image with the industry and customers;
- Demonstrates leading practices and management know-how in all areas of the business relationship as well as support of the partner's business model and operating standards; and
- Demonstrates integrity and high ethical standards with regard to its business operations and functions, business transactions and business associations.

# APPENDIX A

## WTWG Subcommittees and Task Forces

### WTWG Communications Task Force

Keith Chamblin, National Thoroughbred Racing Association, Task Force Coordinator  
Bob Curran, The Jockey Club  
Sue Floyd, Magna Entertainment Corp.  
Ben Haggin, National Thoroughbred Racing Association  
Glen Mathes, New York Racing Association  
Mike Mooney, Hollywood Park  
Bill Nader, New York Racing Association  
Jody Powell, Powell Tate  
Chris Scherf, Thoroughbred Racing Associations  
Karl Schmitt, Churchill Downs Incorporated  
Mike Tanner, Gulfstream Park  
Chip Tuttle, Conover Tuttle  
Eric Wing, National Thoroughbred Racing Association  
Stuart Zanville, Santa Anita Park

### WTWG Technology Task Force

Ken Kirchner, National Thoroughbred Racing Association, Task Force Coordinator  
Paul Berube, Thoroughbred Racing Protective Bureau  
Bob Bork, Sam Houston Race Park  
Bobby Burch, The Jockey Club Information Systems  
Tom Casaregola, New York State Racing and Wagering Board  
Jim Gallagher, New York Racing Association  
George Haines, Magna Entertainment Corp.  
David Haydon, InCompass  
Pat Mahony, New York Racing Association  
Rich McNutt, Television Games Network  
Ron Nichol, Canadian Pari-Mutuel Agency  
John Reagan, California Horse Racing Board  
David Sweazy, Churchill Downs Incorporated  
John Walzak, Ontario Harness Horse Association

## **WTWG Legal Task Force**

Greg Avioli, National Thoroughbred Racing Association, Task Force Coordinator  
Alan Foreman, Thoroughbred Horsemen's Association  
Ed Hannah, Magna Entertainment Corp.  
Pat Kehoe, New York Racing Association  
Roger Licht, California Horse Racing Board  
Becky Reed, Churchill Downs Incorporated  
John Roark, National Horsemen's Benevolent and Protective Association  
Michael Shagan, Pari-Mutuel Industry Consultant  
John Van de Kamp, Thoroughbred Owners of California  
Harvie Wilkinson, Keeneland Association

## **WTWG Ticket Review Subcommittee**

Ken Kirchner, National Thoroughbred Racing Association, Project Coordinator  
Greg Avioli, National Thoroughbred Racing Association  
Paul Berube, Thoroughbred Racing Protective Bureau  
Jim Gallagher, New York Racing Association  
Ed Hannah, Magna Entertainment Corp.  
Alan Marzelli, The Jockey Club  
Jim Quinn, Thoroughbred Racing Fan Ombudsman  
Chris Scherf, Thoroughbred Racing Associations  
Michael Shagan, Pari-Mutuel Industry Consultant  
David Sweazy, Churchill Downs Incorporated

## **NTRA Players' Panel**

### *California*

Andy Cylke  
Barry Meadow

### *Florida*

Dave Cuscuna  
Jim Mineo

### *Illinois*

David Gutfreund

### *Kentucky*

Mike Maloney

### *Maryland*

Maury Wolff

### *New York*

Paul Cornman  
Cary Fotias

### *Texas*

Ponti Compagna

### *NTRA At-Large Representatives*

Ken Kirchner  
Jim Quinn

## APPENDIX B

### Glossary of Pari-Mutuel Wagers

**Box:** A method of wagering by which all possible combinations of the designated betting interests are covered. A three-horse Trifecta box, for example, would comprise six wagers covering these potential orders of finish: 1-2-3, 1-3-2, 2-3-1, 2-1-3, 3-2-1 and 3-1-2. For any box, the total number of combinations can be calculated according to the formula  $x^2-x$ , where  $x$  equals the amount of the betting interests in the box. For example, a four-horse box equals 12 combinations ( $4^2-4$  or  $16-4$ ).

**Daily Double:** Wager in which the winners of two consecutive races must be picked. The Daily Double was introduced in the United States in 1931, after becoming popular in Canada.

**Exacta:** Wager in which the first two finishers in a race, in exact order of finish, must be picked (also known as Perfecta, or, in Canada, as the Exactor).

**Exotic Wagers:** Generally involving three or more horses and incorporating Boolean logic, a computer search process based on the Boolean operators OR, AND.

**Head2Head:** A wager in which one horse must be correctly selected to finish ahead of another in a particular race. Introduced at the 2002 Breeders' Cup World Thoroughbred Championships.

**Over/Under:** A proposition wager based on the cumulative total of saddlecloth numbers that finish in the first, second or third positions (also called a Hi/Lo).

**Parlay:** A method of wagering by which the payout from a winning wager is reinvested into a subsequent wager.

**Pick Four:** A multi-race wager in which the winners of all four included races must be selected (known as Win Four in Canada). Introduced to Thoroughbred racing during the 2000 Breeders' Cup World Thoroughbred Championships.

**Pick Six:** A multi-race wager in which the winners of all the six included races must be selected (also called Super Six, Classix, Sweep Six). The Breeders' Cup Ultra Pick Six encompasses six of the eight Breeders' Cup World Thoroughbred Championships races.

**Pick Three:** A multi-race wager in which the winners of all three included races must be selected (also called a Win Three, Bet Three or Triple). In 1993, California adopted "Rolling" Pick Threes, in which each event on a day's racing card is linked with the next two to make up a Pick Three (e.g., on a nine-race card, there are seven possible Pick Three events).

**Place Pick:** Selection of the first- or second-place finisher in each of a designated group of races.

**Place Wager:** Selection of a horse to finish first or second in a race.

**Quinella:** Wager in which the first two finishers in a race must be picked in either order. Introduced in 1958.

**Quinella Double:** Selection of the first two finishers, irrespective of order, in two specified races.

**Show Quinella:** Selection of two of the first three finishers, irrespective of order, for a single event (also called Omni).

**Show Wager:** Selection of a horse to finish first, second or third in a race.

**Superfecta:** Wager picking the first four finishers in a race in exact order.

**Trifecta:** Wager picking the first three finishers in a race in exact order (known as the Triactor in Canada). Arlington Park introduced Trifecta wagering in 1971.

**Triple:** Depending upon local usage, can mean either “Trifecta” or “Pick Three.”

**Tri-Superfecta:** Selection of the first three finishers (in exact order) in a designated race, linked to the selection of the first four finishers (in exact order) in a subsequent designated race.

**Twin Quinella:** Selection of the first two finishers, irrespective of order, in each of two designated races.

**Twin Superfecta:** Selection of the first four finishers, in their exact order, in each of two designated races.

**Twin Trifecta:** Selection of the first three finishers, in their exact order, in each of two designated races.

**Wheel:** A method of wagering in which a single betting interest is combined with some or all other betting interests in a race.

**Win Wager:** Selection of a horse to finish first in a race.

## APPENDIX C

### Breeders' Cup Ultra Pick Six Timeline

Oct. 26, 2002, 2:14 p.m. ET – Derrick Davis, owner of a computer service business, makes a \$12 Ultra Pick Six wager on the Breeders' Cup World Thoroughbred Championships to Catskill [N.Y.] OTB via his telephone keypad. The wager, costing a total of \$1,152, carries single selections in the first four legs of the Pick Six and uses all horses in the final two legs. It is the first time he has wagered through this recently opened account.

Oct. 26, 2:37 p.m. – The field is sent off in the NetJets Breeders' Cup Mile, the first leg in the Pick Six wager.

Oct. 26, 5:37 p.m. – At odds of 43-1, Volponi wins the Breeders' Cup Classic. The winner of the first leg of the Pick Six, the NetJets Breeders' Cup Mile, is Domedriver, who pays \$54. The second leg, the NAPA Breeders' Cup Sprint, is won by the favorite, Orientate (\$7.40), and the third leg, the Breeders' Cup Filly and Mare Turf, is won by Starine (FR), paying \$28.40. The winner of the fourth leg, the Bessemer Trust Breeders' Cup Juvenile, is Vindication, who pays \$10.20. In the last two races, the Pick Six is completed by High Chaparral (IRE), the 4-5 favorite in the John Deere Breeders' Cup Turf, and by Classic winner Volponi. The Pick Six returns \$428,392 for each \$2 wagered, with six winning tickets sold in all. All six tickets belong to Davis. There are 186 tickets sold with five of six winners. Each returns \$4,606.20. Davis holds 108 of the 186 winning consolation payoffs and stands to collect a total of just over \$3 million. Shortly after the Breeders' Cup is concluded, New York Racing Association officials alert representatives of the NTRA, Breeders' Cup and Arlington Park of the suspicious nature of the winning bet.

Oct. 27 – Breeders' Cup and Arlington Park officials meet and decide to freeze the payout pool for the Pick Six and withhold a wire transfer of funds to Catskill OTB.

Oct. 28 – Breeders' Cup and National Thoroughbred Racing Association officials formally request the New York State Racing and Wagering Board (NYSRWB) to conduct an investigation into unusual circumstances surrounding the Pick Six wager. Davis is identified in print by first name only. He claims he meant to play a \$2 base bet in the Pick Six and mistakenly played it for a \$12 base.

Oct. 29 – *The New York Times* identifies the winning bettor as Derrick Davis of Baltimore. *Daily Racing Form* (DRF) reports that due to bandwidth constraints, only the amounts of all Pick Six wagers are transferred from the tote companies to the host site immediately. Actual betting information such as numbers, combinations, etc. are transferred only after several legs of the Pick Six have run and only for tickets that are still alive for a payoff. Multiple published reports indicate that the New York Racing Association (NYRA) has asked the NYSRWB to investigate Pick Six payoffs at Saratoga on Aug. 4 and Aug. 17, 2002.

Oct. 31 – After an internal investigation, Autotote announces that it has fired a “rogue software engineer” who had apparently altered Derrick Davis' original wager. Autotote also turns over evidence to the NYSRWB in connection with the Breeders' Cup Pick Six investigation.

Nov. 1 – *The New York Times* reports that the fired Autotote employee is Chris Harn, a college classmate and fraternity brother of Derrick Davis at Drexel University in Philadelphia. The NTRA announces the formation of the NTRA Wagering Technology Working Group (WTWG) to review computer security in con-

nection with wagering on horseracing and, working with other industry groups, to assure ongoing customer confidence in the integrity of all procedures and technology involved.

Nov. 2 – Churchill Downs, the New York Racing Association, and Magna Entertainment announce that they are putting in place new security measures in totalisator rooms at all their tracks. The audits also are being performed for the companies' off-track betting sites and account-wagering operations.

Nov. 4 – The Wagering Technology Working Group meets for the first time and identifies an electronic data security firm to be hired pending approval by the NTRA Board of Directors. Members of the Working Group's three task forces (Legal, Technical and Communications) also are announced.

Nov. 5 – *Thoroughbred Times* reports that Catskill OTB has turned over to NYSRWB investigators the identity of a third person who may be involved in the Pick Six incident.

Nov. 7 – Glen DaSilva, a fraternity brother of Davis and Harn, is identified as the third suspect. It is discovered that DaSilva had completed a "dry run" by wagering on a Pick Four at Balmoral Park on Oct. 3 and a Pick Six at Belmont Park on Oct. 5. Both of these winning wagers had the same format as the Ultra Pick Six wager, i.e., of individual horses selected in the first few races with the entire field selected in the final races.

Nov. 7 – The National Thoroughbred Racing Association hires the Technology and Security Risk Services practice of Ernst & Young to assess the totes' wagering security systems.

Nov. 10 – The FBI joins with the NYSRWB and state police in the Pick Six investigation.

Nov 13 – Derrick Davis, Chris Harn and Glen DaSilva are charged in federal court with conspiring to fix the Breeders' Cup Ultra Pick Six. Their arraignment is scheduled for Dec. 11. Earlier in the day, Davis and DaSilva test positive for cocaine use. Each plead not guilty to the charges against them.

Nov. 20 – In U.S. District Court, Harn pleads guilty to fixing the Breeders' Cup Ultra Pick Six. He describes to Judge Lisa Margaret Smith how, as a senior programmer at Autotote, he used his work computer to rig three sets of bets – including a \$3 million Breeders' Cup Pick Six pay-off – made on the accounts of his former Drexel University fraternity brothers. He also acknowledges he masterminded and carried out a scheme with the same two men of counterfeiting uncashed betting tickets and vouchers that netted more than \$92,500 during the past year.

Nov. 20 – The NTRA announces that it has hired the security consulting firm headed by former New York City Mayor Rudolph Giuliani, Giuliani Partners LLC, to assist the WTWG on matters relating to its systematic review of the totalisator system.

Feb. 13, 2003 – The NTRA's Wagering Technology Working Group, in conjunction with Giuliani Partners, releases an interim report on steps the horseracing industry has taken to enhance wagering system security and related measures since last October's Breeders' Cup World Thoroughbred Championships. The report includes updates on software installation to improve security processes, including progressive scanning and time-stamping software; the Wagering Technology Working Group's review of Pick Four and Pick Six wagers from 2002; Ernst & Young's system security review of totalisator companies and related system security; customer outreach and public opinion; support for these various initiatives by the Wagering Integrity Alliance; and other related issues.

March 20, 2003 – Chris Harn, admitted mastermind of the Pick Six scheme, is sentenced to one year and one day for his involvement. Co-defendant Glen DaSilva is sentenced to two years in prison and Derrick Davis receives three years.

March 20, 2003 – Arlington Park racetrack, host site of the 2002 Breeders' Cup World Thoroughbred Championships, is authorized to distribute the winning pool monies from the Breeders' Cup Ultra Pick Six wager to the customers who correctly selected five of the six winning horses and hold a total of 78 valid winning tickets. Those bettors receive close to \$39,000 in extra winnings. The original payout would have been \$4,606.20 for each consolation ticket.

## APPENDIX D

### Totalisator Companies and Their Affiliated Pari-Mutuel Outlets

#### AmTote

##### **NTRA Member Tracks/OTBs**

Arlington Park  
Calder Race Course  
Colonial Downs  
Columbus Races  
Gulfstream Park  
Horsemen's Park  
Laurel Park  
Oaklawn Park  
Pimlico Race Course  
Retama Park  
Suffolk Downs  
Tampa Bay Downs

##### **Non-NTRA Tracks**

Beulah Park  
Charles Town Races  
Fairmount Park  
Louisiana Downs  
Rockingham Park  
SunRay Park  
Timonium

## **Autotote**

### **NTRA Member Tracks/OTBs**

Bay Meadows  
Belmont Park  
Calif. Authority of Racing Fairs (8)  
Canterbury Park  
Connecticut OTB  
Del Mar Thoroughbred Club  
Delaware Park  
Emerald Downs  
Fair Grounds  
Fairplex Park  
Fonner Park  
Golden Gate Fields  
Great Lakes Downs  
Hawthorne National  
Hollywood Park  
Hoosier Park  
Los Alamitos  
The Meadows  
Meadowlands  
Monmouth Park  
Mountaineer Park  
Nebraska State Fair Park  
New York City OTB  
Oak Tree at Santa Anita  
Portland Meadows  
Remington Park  
River Downs  
Ruidoso Downs  
Sam Houston Race Park  
Santa Anita Park  
Saratoga Race Course  
Thistledown  
Turf Paradise  
Woodbine

### **Non-NTRA Tracks**

Atlantic City Race Course  
Penn National Race Course  
Philadelphia Park  
Rillito Park  
Yavapai Downs

## **United Tote**

### **NTRA Member Tracks/OTBs**

Aqueduct  
Bettor Racing  
Churchill Downs  
Ellis Park  
Evangeline Downs  
Fair Meadows  
Keeneland Race Course  
Kentucky Downs  
Les Bois Park  
Lone Star Park  
Montana Simulcast Partners  
Prairie Meadows  
Sunland Park  
Turfway Park

### **Non-NTRA Tracks**

Arapahoe Park  
Blue Ribbon Downs  
Delta Downs  
Eureka Downs  
Finger Lakes  
The Woodlands  
Wyoming Downs

## Las Vegas Dissemination Company

### Nevada

Aladdin Resort Casino  
Arizona Charlie's Hotel and Casino  
Arizona Charlie's Hotel and Casino – East  
Bally's Las Vegas (NTRA member)  
Barbary Coast Hotel and Casino  
Bellagio  
Binion's Horseshoe Hotel and Casino  
Boardwalk Casino  
Boulder Station Hotel and Casino  
Buffalo Bill's Casino  
Caesars Palace  
Caesars Tahoe  
Casablanca Resort & Casino  
Castaways Hotel, Casino and Bowling Center  
Circus Circus – Las Vegas  
Circus Circus – Reno  
Edgewater Hotel and Casino  
Excalibur Hotel and Casino  
Fiesta Hotel and Casino  
Flamingo – Las Vegas  
Flamingo – Laughlin  
Fremont Hotel  
Gold Coast Hotel and Casino  
Golden Nugget Hotel and Casino – Las Vegas  
Golden Nugget Hotel and Casino – Laughlin  
Green Valley Ranch Station Casino  
Hard Rock Hotel and Casino  
Harrah's Hotel and Casino – Las Vegas  
Harrah's Hotel and Casino – Laughlin  
Harrah's Hotel and Casino – Reno  
Harvey's Resort & Casino  
Imperial Palace Hotel and Casino  
Jerry's Nugget  
Lakeside Inn  
Las Vegas Club Hotel and Casino  
Las Vegas Hilton  
Luxor Hotel and Casino  
Mandalay Bay Hotel & Casino  
MGM Grand Hotel and Casino  
Mirage Hotel and Casino  
Monte Carlo Hotel and Casino  
New Frontier Hotel and Casino  
New York New York Hotel & Casino  
Oasis Resort & Casino  
Orleans Hotel & Casino  
Palace Station Hotel and Casino

Palms Casino Hotel  
Paris Hotel and Casino  
Peppermill Hotel Casino – Reno  
Poker Palace Casino  
Primm Valley Hotel and Casino  
Rainbow Casino  
Rampart Casino  
Reno Hilton (NTRA member)  
Rio Suites Hotel and Casino  
River Palms Resort Casino  
Riverside Resort Hotel & Casino  
Riviera Hotel  
Sahara Hotel and Casino  
Sam's Town Hotel and Gambling Hall  
Santa Fe Hotel and Casino  
Silver Legacy Resort and Casino  
Stardust Hotel and Casino  
Stratosphere Hotel & Casino  
Suncoast Hotel and Casino  
Sunset Station Hotel & Casino  
Terrible's Hotel & Casino  
Terrible's Town Casino  
Texas Gambling Hall and Casino  
Treasure Island Hotel and Casino  
Union Plaza Hotel and Casino  
Venetian Resort Hotel & Casino  
Virgin River Casino  
Whiskey Pete's Casino

### Outside of Nevada

Foxwoods Casino, CT  
Fire Lake Entertainment Center, OK  
Meskwaki Casino, IA  
The Stables, OK  
Cities of Gold, NM  
Tonkawa Bingo, OK  
Comanche Nation Games, OK  
Red River Casino, OK  
Spirit Mountain Casino, OR  
Holiday Beach Hotel & Casino,  
Curacao Netherlands Antilles

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