CALIFORNIA HORSE RACING BOARD
1010 HURLEY WAY, SUITE 300
SACRAMENTO, CA 95825
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MEDICATION AND TRACK SAFETY COMMITTEE MEETING

of the **California Horse Racing Board** will be held on **Friday, August 6, 2010,** commencing at **10:30 a.m.,** at the **Del Mar Surfside Race Place (Downstairs General Admission Area), 2260 Jimmy Durante Blvd., Del Mar,** California. Non-committee Board members attending the committee meeting may not participate in the public discussion, official committee vote or committee closed session.

The agenda for the meeting will consist of the following matters:

1. Report and discussion regarding the **Jockey Club Welfare and Safety of the Racehorse Summit held June 28 and 29, 2010 at Keeneland Race Course.**

2. Update and discussion regarding the **proposed addition of CHRB Rule 1689.2, Safety Reins Required,** to require the use of safety reins at California racetracks.

3. Update and discussion regarding the **CHRB track safety standards program.**

4. Update and discussion regarding **continuing education for licensees responsible for equine health and welfare to include trainers and veterinarians.**

5. Discussion regarding the **transparency and transferability of veterinary medical records.**

6. Report and discussion regarding **CHRB Rule 1807, Authorized Horse Sales; Rule 1808, Medications Prior to Sale and Rule 1809, Post-Sale Tests and CHRB's responsibilities relative to horse auctions conducted at CHRB inclosures.**

7. Discussion regarding the **feasibility of amending CHRB Rule 1688, Use of Whip; Rule 1721, Driving Rules and Rule 1734, Whipping.**

8. Discussion and update of the **efforts to promote and provide retirement career change/outplacement options for horses retired from racing in California.**

9. Discussion regarding **restricting the use of DMSO (dimethylsulfoxide) prior to racing.**

Additional information regarding this meeting may be obtained from Jacqueline Wagner at the CHRB Administrative Office, 1010 Hurley Way, Suite 300, Sacramento, CA 95825; telephone (916) 263-6000; fax (916) 263-6042. A copy of this agenda can be located on the CHRB website at www.chrb.ca.gov. *Information for requesting disability related accommodation for persons with a disability who require aids or services in order to participate in this public meeting, should contact Jacqueline Wagner.

MEDICATION AND
TRACK SAFETY COMMITTEE
Commissioner Bo Derek, Chairman
Commissioner John C. Harris, Member
Kirk E. Breed, Executive Director

Date: July 27, 2010

STAFF ANALYSIS
REPORT AND DISCUSSION REGARDING THE JOCKEY CLUB WELFARE AND SAFETY OF THE RACEHORSE SUMMIT HELD JUNE 28 AND 29, 2010 AT KEENELAND RACE COURSE

Medication and Track Safety Committee Meeting
August 6, 2010

BACKGROUND

The Jockey Club Welfare and Safety of the Racehorse Summit, coordinated and underwritten by Grayson-Jockey Club Research Foundation and The Jockey Club, was held on June 28 and 29, 2010 at the Keeneland Race Course in Lexington, Kentucky. The two-day summit, involved a wide cross-section of the breeding, racing and veterinary community, and was designed to promote the safety and soundness of thoroughbred racehorses.

RECOMMENDATION

Dr. Rick Arthur, CHRB Equine Medical Director is prepared to speak about the Jockey Club Welfare and Safety of the Race Horse Summit.

Grayson-Jockey Club Research Foundation, Inc.

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Welfare and Safety of the Racehorse Summit

Summit Home | News | Committees | Presentations | Research | Links

2010 Welfare and Safety of the Racehorse Summit Resource Page

Below are links to downloadable files for each of the public sessions held at the summit. **Each video file size is between 150 - 275 MB. Download time depends on your computer's speed and Internet connection.**

To save the files on your local machine, right click the link and select "Save Link As."

Opening Session and Racetrack Surfaces Panel - Video

Presentation Slides
- Ed Bowen, Introduction
- Dr. Peterson, Racing Surfaces Testing Laboratory
- Dr. Stover, Injuries and Racing Surfaces

Updates from RMTC, NTRA, TSC, and EID - Video

Presentation Slides
- Dr. Scot Waterman, Racing Medication and Testing Consortium
- Mike Ziegler, NTRA Saftey and Integrity Alliance
- Dr. Larry Bramlage, Thoroughbred Safety Committee
- Dr. Mary Scollay, EID Introduction
- Dr. Tim Parkin, Equine Injury Database

Racing Equipment and Safety Panel - Video

Presentation Slides
- Nich Nicholson, Keeneland Association
- Dr. Edward Hall, University of Kentucky

Racetrack Environment and Safe Training Practices Panel - Video

Transitioning Thoroughbreds to Second Careers Panel - Video

Work Group Objectives - Video
Presentation Slides - Group presentations

Implementation Panel - Video
Presentation Slides - Panel presentation

The third Welfare and Safety of the Racehorse Summit, held in Lexington, Ky., on June 28 and 29, concluded with the development of objectives in four areas and a discussion of implementation strategies to improve conditions in various facets of the Thoroughbred industry.

The four areas were Racing Equipment and Safety; Racetrack Environment and Training Practices; Education, Licensing and Continuing Education; and Transitioning Thoroughbreds to Second Careers.

The summit, which was coordinated and underwritten by Grayson-Jockey Club Research Foundation and The Jockey Club, and hosted by Keeneland, was held all day Monday and

Welfare and Safety of the Racehorse Summit III
Work Group Objectives

Racing Equipment and Safety

- Process for implementing and tracking standards for racing equipment
- Rider Injury Database
- Implementation of advanced safety equipment on a phased basis based on data
- Safety committees at all tracks to focus on licensing, experience and post-meet lessons

Racetrack Environment and Training Practices

- Formalize reciprocity of veterinarians', stewards', and starters' lists nationally
- Develop best practices documents for
  - Training practices
  - Stable area design
  - Track maintenance
  - Biosecurity / disaster planning
- Develop comprehensive database
  - Track maintenance
  - Training records (including injuries)
  - Vet records
- Re-evaluate traditional practices
  - Veterinary services
  - Racing office operation / condition book
- Restructure claiming regulations

Education, Licensing and Continuing Education

- Create an advisory committee to address and determine content for continuing education as means to accreditation for trainers, grooms, farriers, jockeys
- Endorse a National Trainers Test; find a means to validate the test with a group such as an educational testing service

Transitioning Thoroughbred Racehorses to Second Careers

- Establish Standing Committee
- Create track liaison position at each racetrack
- Publish best practices guidelines: funding, vet care, communications, education, strategies to give incentive for transition to second career
- Cooperate with AAEP to create a vet guideline classifying racing conditions for horses' transition into second careers
- Establish accreditation program for rescues

NEWS RELEASE

June 28, 2010
Contact: Bob Curran Jr. (859) 224-2717

EQUINE INJURY DATABASE STATISTICS DISCUSSED AT THIRD WELFARE AND SAFETY OF THE RACEHORSE SUMMIT

At the third Welfare and Safety of the Racehorse Summit held at Keeneland on June 28 and 29, Dr. Tim Parkin, noted epidemiologist from the University of Glasgow's Faculty of Veterinary Medicine, presented a preliminary analysis of racing fatalities in North America from data compiled in the Equine Injury Database™.

Fatality information was based upon a year's worth of data beginning November 1, 2008, from 378,864 total starts in Thoroughbred flat races at 73 racetracks participating in the Equine Injury Database at that time.

The conclusions presented by Dr. Parkin included:

- The incidence of fatality in 2-year-olds for the one-year period was significantly lower than that of older horses, 3 years of age and up
- The incidence of fatality in fillies, mares and geldings for the one-year period was significantly lower than that of intact males
- The incidence of fatality for the one-year period was not significantly different for horses racing at different distances or carrying different weights
- The incidence of fatality for the one-year period was not significantly different for dirt, synthetic and turf racing surfaces, or condition of the dirt and turf racing surfaces

"This preliminary analysis just scratches the surface," said Parkin, who serves as a consultant on the Equine Injury Database. "As the number of starts recorded in the database continues to grow, more complex statistical analyses can focus upon multiple variables studied in concert to better understand the myriad of factors which may contribute to fatal and non-fatal injuries. In addition, differences that may not have achieved statistical significance after one year of data collection may do so with additional observations recorded in the database."

"The work presented today represents a starting point, not a destination," said Dr. Mary Scollay, equine medical director for the Kentucky Horse Racing Commission and a

consultant on the Equine Injury Database. "This begins to answer the question of what is happening. The 'how' and 'why' remain to be determined."

"The creation and existence of the Equine Injury Database serves as a shining example of what can be achieved when industry stakeholders work together under a shared goal to improve the health and safety of our equine athletes," said Matt Iuliano, the executive vice president and executive director of The Jockey Club. "Dr. Parkin's work illustrates the importance of a database such as the Equine Injury Database, supplemented with other information to support our decision makers with good science for analyzing and solving problems facing our industry. We look forward to the continued development and integration of additional information resources to assist our industry leaders."

The Jockey Club, through two of its for-profit subsidiary companies, InCompass and The Jockey Club Technology Services Inc., has underwritten the cost to develop and operate the Equine Injury Database as a service to the industry. By agreement with the participating racetracks, from time to time The Jockey Club may publish certain summary statistics from the Equine Injury Database, but will not provide statistics that identify specific participants, including racetracks, horses or persons. The Equine Injury Database contains a suite of reports for racetracks to analyze data collected at their respective facilities.

A list of racetracks participating in the Equine Injury Database can be found at *jockeyclub.com/initiatives.asp*.

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Note: A supplemental data sheet is below.

EQUINE INJURY DATABASE
A Safety Initiative of The Jockey Club

Initial Analyses of the Equine Injury Database

Dr. Tim Parkin
Senior Fellow in Clinical Research
University of Glasgow, UK

Results are from fatality data collected in the Equine Injury Database (EID) from November 1, 2008 – October 31, 2009, on Thoroughbred flat racing recorded at 73 racetracks. Included in the data are horses that suffered a fatal injury during a race and immediately after a race, and those that succumbed to a race-related injury subsequent to race day.

The summary statistics that follow represent estimates of prevalence of fatality, calculated using the fatality data contained in the EID and the related starts data for the same time period, stratified in a number of different ways. These calculations are considered estimates of prevalence because they represent a one-year sample of data and not a complete census. The statistics included here do not imply anything about the relative safety of a racing surface or a horse's age or gender. As the data contained in the EID continues to grow, some of the current statistical conclusions may change as a reflection of increased certainty associated with a larger data set.

A "Confidence Interval" (CI) indicates the likely range of values for each prevalence estimate. Values near to the point estimate are much more likely than values at the end of the range. The 95% CI is generally smaller (i.e. there is more certainty about the estimate) when the sample size is larger (i.e., more starts). Overlap of two 95% CI's for different prevalence estimates indicates that it is unlikely that there is a statistically significant difference between them.

Surface Type

No statistically significant difference in the risk of fatality on different surfaces

Surface	All	Turf	Dirt	Synthetic
Incidence	2.04	1.78	2.14	1.78
95% CI	1.90 – 2.19	1.43 – 2.21	1.97 – 2.32	1.47 – 2.16

Mares & Fillies in Open Races

Females were not at increased risk of fatality when racing against males

	Open	Restricted
Incidence	2.14	1.79
95% CI	0.83 – 5.49	1.59 – 2.0

Gender

Starts made by females were less likely to end in fatality than starts made by intact males

Gender	Colt	Filly	Gelding	Horse	Mare
Incidence	3.18	1.84	1.96	4.06	1.66
95% CI	2.62 – 3.86	1.61 – 2.10	1.76 – 2.18	2.93 – 5.61	1.32 – 2.08

Age

Starts made by 2-year-olds were less likely to end in fatality than starts made by older horses

Year of Birth	1993-2002	2003	2004	2005	2006	2007
Incidence	1.87	1.85	2.59	2.09	1.91	1.36
95% CI	1.46 - 2.39	1.46 - 2.35	2.23 - 3.0	1.83 - 2.38	1.67 - 2.18	0.95 - 1.94

Surface Condition

No statistically significant difference in the incidence of fatality on different surface conditions

Turf

	Firm	Good	Yielding	Soft
Incidence	1.99	1.37	0.54	0
95% CI	1.58 – 2.51	0.72 – 2.61	0.10 – 3.07	0 – 2.75

Synthetic

Fast
1.78
1.47 – 2.16

Dirt

	Fast	Wet Fast	Good	Sloppy	Muddy
Incidence	2.07	2.93	2.13	2.68	1.99
95% CI	1.89 – 2.27	1.68 – 5.12	1.53 – 2.96	2.13 – 3.38	1.34 – 2.96

Race Distance (All Surfaces)

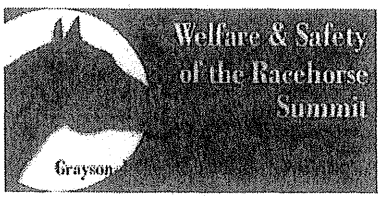
No statistically significant difference in the incidence of fatality in different race distances

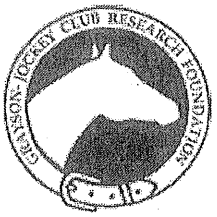
	>2F≤ 4F	>4F≤ 6F	>6F≤ 8F	>8F≤ 10F	>10F≤ 18F
Incidence	3.09	2.10	2.0	1.91	2.24
95% CI	1.42 – 6.73	1.91 – 2.32	1.75 – 2.27	1.62 – 2.26	0.76 – 6.56

Weight Carried

No statistically significant difference in the incidence of fatality in horses carrying different weights

	≤ 115 lb.	116 ≤120 lb.	121 ≤ 125 lb.
Incidence	2.14	1.95	2.17
95% CI	1.74 – 2.63	1.77 – 2.14	1.92 – 2.46





NEWS RELEASE

June 29, 2010
Contact: Bob Curran Jr. (859) 224-2717

WELFARE AND SAFETY SUMMIT III PARTICIPANTS IDENTIFY ISSUES AND OBJECTIVES

The third Welfare and Safety of the Racehorse Summit, held in Lexington, Ky., on June 28 and 29, concluded with the development of objectives in four areas and a discussion of implementation strategies to improve conditions in various facets of the Thoroughbred industry.

The four areas were Racing Equipment and Safety; Racetrack Environment and Training Practices; Education, Licensing and Continuing Education; and Transitioning Thoroughbreds to Second Careers. Among the primary objectives identified were:

- Establishment of a rider injury database to collect data and develop practices that will reduce injuries
- Creation of a track liaison position at each racetrack to coordinate aftercare of retired racehorses
- Formalization of reciprocity of veterinarians', stewards' and starters' lists on a national basis
- Implementation of advanced safety equipment, including starting gates and safety rails, on a phased basis, depending on data
- Development of a comprehensive database of track maintenance, training and veterinary records that could be integrated with existing databases pertaining to human and equine safety
- Creation of veterinary guidelines, in conjunction with the American Association of Equine Practitioners, to determine potential and appropriate second careers for racehorses based on physical condition
- Establishment of a mechanism to encourage continuing education for people working with Thoroughbreds, including trainers, grooms, farriers, and jockeys, to improve horsemanship and as a means to accreditation

"Safety is a process," said Nick Nicholson, president and CEO of Keeneland Association. "There is never a final victory. We must always be fighting for improvements and innovations that will make our sport safer for all concerned. Our fans expect nothing less. This summit – and

the action plans we are drafting this year – has been a catalyst for positive changes and innovation that are making our sport better. It's our job to continue this momentum."

"Like its predecessors, this summit produced a number of safety and soundness objectives that should augment the meaningful changes and reforms that have occurred within the Thoroughbred industry in recent years when they are implemented," said Edward L. Bowen, president of Grayson-Jockey Club Research Foundation.

The summit, which was coordinated and underwritten by Grayson-Jockey Club Research Foundation and The Jockey Club, and hosted by Keeneland, was held all day Monday and Tuesday morning. Both of Monday's sessions and part of Tuesday's session were open to the public and, for the first time, video-streamed live on *keeneland.com*. The video stream of Monday's session received approximately 900 hits from the United States, Canada, Australia, Austria, Germany, Hungary and the United Kingdom.

Monday's morning session included a panel discussion on Racetrack Surfaces, moderated by Ed Bowen, and updates on the following medication and safety initiatives: the Racing Medication and Testing Consortium, by executive director Dr. Scot Waterman; the NTRA Safety and Integrity Alliance, by executive director Mike Ziegler; and the Thoroughbred Safety Committee, by committee member Dr. Larry Bramlage. Dr. Tim Parkin, an epidemiologist with the University of Glasgow, and Dr. Mary Scollay, equine medical director for the Kentucky Horse Racing Commission, provided an update and statistics from one year of data in the Equine Injury Database to conclude the morning session.

Monday's afternoon session was composed of panel discussions on Racing Equipment and Safety, moderated by Dr. Mick Peterson, executive director, Racing Surfaces Testing Laboratory; Racetrack Environment and Safe Training Practices, moderated by Dr. Rick Arthur, equine medical director, California Horse Racing Board; and Transitioning Thoroughbred Racehorses to Second Careers, moderated by Mike Ziegler.

On Tuesday morning, participants assembled into four work groups to focus on specific issues in closed discussions to develop objectives to improve welfare and safety in the industry. There were 68 participants at the summit, representing a prominent cross-section from the Thoroughbred breeding and racing industry.

"Summit participants have provided a roadmap for the future by identifying important areas for further analysis by the industry's stakeholders," said Matt Iuliano, executive director and executive vice president of The Jockey Club. "The Jockey Club and our Thoroughbred Safety Committee will once again strive to collaborate with like-minded organizations to implement the recommendations emanating from the summit in a prompt and comprehensive manner."

The summit concluded with a panel discussion concerning implementation of safety and soundness recommendations, moderated by Jim Gagliano, president and chief operating officer of The Jockey Club.

The implementation panel included representatives of the National HBPA, Keeneland, Association of Racing Commissioners International, the Kentucky Horse Racing Commission and the National Thoroughbred Racing Association. All expressed support for the concept and institution of an interstate racing regulatory compact, which has been discussed within the industry in recent months

"We have demonstrated to those who watch our sport closely that we can make reforms as an industry," said Gagliano. "We should be proud of the steady progress we've made but we need to keep at it. We need to use any mechanism we can, whether it's model rules, a regulatory compact, the NTRA Safety and Integrity Alliance or rules put in place by organizations such as Breeders' Cup or the Graded Stakes Committee of the Thoroughbred Owners and Breeders Association, to effect change."

Grayson-Jockey Club Research Foundation is the nation's leading private source of equine medical research funding. Since 1983, the foundation has underwritten 270 projects at 37 universities for more than $17.1 million. Additional information is available at *grayson-jockeyclub.org*.

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STAFF ANALYSIS
UPDATE AND DISCUSSION REGARDING THE PROPOSED ADDITION OF CHRB RULE 1689.2, SAFETY REINS REQUIRED, TO REQUIRE THE USE OF SAFETY REINS AT CALIFORNIA RACETRACKS

Medication and Track Safety Committee Meeting
August 6, 2010

BACKGROUND

Business and Professions Code section 19504 provides that the Board shall determine whether the use of safety reins would provide jockeys and exercise riders greater protection from accidents and injuries than conventional reins. If the Board determines safety reins provide greater protection, it shall adopt a regulation mandating the use of approved safety reins whenever a racehorse is ridden at a racetrack. The Board shall approve any model of mandatory safety rein, if required, in use at a racetrack. Under Business and Professions Code section 19504(d), safety reins are defined as: "...a type of rein that is reinforced with a wire cable, nylon strap, or other safety device or material that is attached to the bit and designed to maintain control of the horse should the rein break."

Safety reins are essentially a rein within a rein. Typical reins are made of leather or nylon and attach to the bit. Reins provide jockeys and drivers with control of the horse; when reins break, control is lost. With safety reins, a nylon cord is stitched into the traditional leather or nylon reins during the manufacturing process, and the safety cord attaches to the bit independently of the conventional reins. Should the outer leather or nylon reins break, the safety reins allow the jockey or rider to maintain control; however, the safety feature is intended to break if a horse or rider should become entangled in the dangling ends. This is the reason nylon is used instead of wire. Additionally, the nylon only goes as far back as the end of the grip for the same reason. Arthur Gray designed the Sure Lines safety reins. Sure Line reins have a nylon cord that emerges from the outer reins and attaches to the bit using a metal clasp. Brian and Lisa Peck designed a second (loop) type of safety rein (BP Safer Rein). The BP Safer Rein safety reins have a nylon cord that remains inside of the outer reins throughout and can be seen. Both the nylon and outer reins are looped around the bit. It should be noted that while the safety rein designers can provide supporting materials, including laboratory reports on the testing of their reins, there are currently no safety standards established for safety reins.

In late 2007 the Board was informed that the California Horsemen's Safety Alliance (CHSA), which oversees the worker's compensation program at California thoroughbred racetracks, had ordered Sure Line and Peck safety reins to distribute to horsemen to use voluntarily as an experiment to determine their effectiveness and to identify any problems. The Jockeys' Guild endorsed a CHSA request that the Board delay mandating safety reins until after the experiment was completed and evaluated.

The CHSA distributed 209 safety reins to 105 CHSA thoroughbred trainer participants. During the experiment the CHSA received feedback from trainers, which resulted in the modification of the grip and the overall length of the reins. The CHSA reported the response to the reins has been positive. In addition, retired jockey Chris McCarron endorsed the use of safety reins. The CHSA also reported it was working to establish an American Society of Testing Materials International (ASTM) standard for safety reins. This goes a step beyond the Business and Profession Code section 19504 definition of safety reins, and would provide a standard by which all manufacturers of safety reins may be measured.

In June 2008, the Jockeys' Guild requested that the Board adopt a regulation mandating the use of safety reins at California tracks. At the June 27, 2008 regular Board meeting, a proposed text for Rule 1689.2, Safety Reins Required, was discussed. The Board determined the proposed rule should be specific to racehorses and the effective date should be 12 months, as opposed to 18 months. The Board also expressed concern that it did not want the rule to create a single-vendor monopoly; therefore the proposed rule only mandated safety reins generally, without specifying a particular design.

At the June 27, 2008 Regular Board Meeting, Ed Halpern, of the California Thoroughbred Trainers (CTT) and California Horsemen's Safety Alliance (CHSA), provided the Board with the most recent report from its Safety Rein Pilot Study Program. Originally, CHSA provided 105 trainers in California with sample safety reinforced reins from Sure Line Reins and from BP Safer Reins for use during morning workouts and racing. After an 11 month study period, a post follow up survey was conducted with the participating trainers. Seventy six of the 105 trainers participated in the survey. The safety reins received both positive and negative comments from the trainers and two trainers chose not to use the safety reins provided. Additionally, the number of trainers in favor of and the number opposed to mandating the use of safety reins were similar.

The report also contained a summary of independent laboratory test results for both the Sure Line Safety Rein and BP Safer Rein. The tests measured the breaking points of the leather rein and reinforced nylon cord in both models. Quality Inspection Services, Inc. tested the Sure Line Safety Rein. The February 15, 2008 test report indicates the failure load on leather reinforced with attached clip ranged from 498 to 685 lbs causing the leather strap failure. The April 26, 2008 test report shows failure load to the nylon strap of the safety clip assembly at 132 to 155 lbs and nylon strap failure at 478 lbs.

The BP Safer Reins were submitted to Geotechnical Engineering Materials Testing Construction QA/QC for testing. The June 15, 2007 test report states the reinforced rein leather failed at 1145 lbs of pull pressure, with the nylon cord failing at 873 lbs. The conventional un-reinforced reins failed at 400 to 493 lbs of pull pressure.

The proposal to add Rule 1689.2 was subsequently noticed for a 45-day comment period. During the public comment period, the majority of comments received advised the industry to continue testing safety reins to develop industry standards.

At the September 18, 2008 Regular Board Meeting the proposal to add Rule 1689.2 was scheduled for public hearing and action by the Board following the end of the 45-day public comment period; however, the item was deferred pending the results of a trial used reins exchange program organized by the CTT and CHSA.

The CHSA used reins exchange program provided an additional opportunity for CHSA member trainers to try out the different types of safety reins available. Trainers were asked to bring in no more than two sets of used reins in exchange for two sets of safety reins of their choice at a reduced cost of $50 per set. Trainers could choose between Brian Peck's leather loop reins (BP Safer Reins) or Art Gray's leather clip reins and/or the nylon clip reins (Sure Line Safety Rein). Additionally, trainers who participated in this program were asked to sign a release of liability at time of receipt.

The proposal to add Rule 1689.2 was last heard at the January 15, 2009 Regular Board Meeting. In collaboration with the Jockeys' Guild, the CHSA representative stated the process to develop an ASTM standard for safety reins had begun and she hoped to have an established standard in less than one year. A letter from the Jockeys' Guild representative stated: "The CTT has agreed that, once an ASTM standard is in place, it will join the [Jockeys'] Guild in supporting the adoption of a CHRB rule mandating use of an ASTM approved safety rein at California tracks." Until such standards are in place, both the CTT and Jockeys' Guild agreed to recommend the Board defer the adoption of Rule 1689.2. In response to the comments received during the 45-day comment period and the Jockeys' Guild and CTT recommendation, the Board tabled the proposed addition of Rule 1689.2 until an ASTM standard was developed for safety reins.

Subsequent to the January 15, 2009 Regular Board Meeting, a task force including safety rein manufacturers, user groups, trainers, jockeys, and safety professionals was created to discuss the draft ASTM standard for safety reins. Scientific testing on safety reins has also concluded and the draft standard has been submitted to ASTM. As of July 2010, the CHSA expects the ASTM standard for safety reins to be published by August 2010.

The proposed addition of Rule 1689.2, Safety Reins Required, was originally noticed to the public on July 25, 2008. At its January 15, 2009 Regular Board meeting, the Board tabled the item until an ASTM standard was developed for safety reins. Government Code section 11346.4(b) provides that the effective period of a regulatory notice shall not exceed one year from the date thereof. If the adoption, amendment, or repeal of a regulation proposed in the notice is not completed and transmitted to the office within the period of one year, a notice of the proposed action shall again be issued.

Should the Board propose to add Rule 1689.2, to include the ASTM standard on safety reins, it is obligated to start the rulemaking process from the beginning.

Attached for reference:

(A) Proposed CHRB Rule 1689.2, Safety Reins Required, originally noticed July 25, 2008
(B) Business and Professions Code section 19504
(C) Letter of endorsement from the Jockeys' Guild
(D) Letter from CHSA reporting on the safety reins pilot study program
(E) Letter from CHSA summarizing the safety reins pilot study survey
(F) Letter of endorsement from Chris McCarron, retired jockey
(G) Informational packet provided by Art Gray, maker of Sure Lines safety reins
(H) Informational packet provided by Brian and Lisa Peck, makers of BP Safer Reins
(I) Opposition to mandatory safety reins
(J) CHSA Used Reins Exchange Program letter and Release of Liability form
(K) Letter Barry Broad (Jockeys' Guild Representative) requesting the Board defer adoption Rule 1689.2, until an ASTM standard for safety reins has been developed.

RECOMMENDATION

This item is presented to the Committee for discussion. Staff recommends the Committee hear from the CHSA representative regarding the publication status of the ASTM standard for safety reins.

REFERENCE (A)

CALIFORNIA HORSE RACING BOARD
TITLE 4. CALIFORNIA CODE OF REGULATIONS
ARTICLE 8. RUNNING THE RACE
PROPOSED ADDITION OF
RULE 1689.2. SAFETY REINS REQUIRED

1689.2. Safety Reins Required.

(a) No jockey or apprentice jockey shall ride in a race, nor shall any person exercise, gallop, breeze, work out or ride a racehorse on the grounds of a facility under the jurisdiction of the Board unless the racehorse is equipped with safety reins as defined under Business and Professions Code Section 19504(d).

(b) Conventional reins, as defined under Business and Professions Code Section 19504(e), may be used at facilities under the jurisdiction of the Board for a period of 12 months after the effective date of this regulation.

(c) This regulation does not apply to standardbred racehorses.

Authority: Sections 19440 and 19504, Business and Professions Code.
Reference: Section 19504, Business and Professions Code.

REFERENCE (B)

CALIFORNIA HORSE RACING BOARD
DIVISION 8, CHAPTER 4, BUSINESS AND PROFESSIONS CODE
SECTION 19504

19504.

(a) No racehorse shall be ridden at a racetrack unless the rider is equipped with a safety helmet and safety vest.

(b) No later than July 1, 2006, the board shall conduct an investigation, including at least one public hearing, to determine whether the use of safety reins would provide jockeys and exercise riders greater protection from accidents and injuries than conventional reins. Should the board determine that the use of safety reins would provide greater protection for jockeys and exercise riders than conventional reins, it shall adopt a regulation no later than July 1, 2007, mandating the use of approved safety reins whenever a racehorse is ridden at a racetrack. The regulation adopted by the board may phase in the use of safety reins, but in the event safety reins are mandated, the board shall not permit the use of conventional reins in a parimutuel race for longer than 18 months following the adoption of the regulation.

(c) The board shall approve any model of safety helmet, safety vest, and mandatory safety rein, if required, in use at a racetrack.

(d) For the purposes of this section, a ''safety rein'' is a type of rein that is reinforced with a wire cable, nylon strap, or other safety device or material that is attached to the bit and designed to maintain control of the horse should the rein break.

(e) For the purposes of this section, a ''conventional rein'' is any rein other than a safety rein.

REFERENCE (C)

BROAD & GUSMAN, LLP
ATTORNEYS AT LAW

June 5, 2008

Richard Shapiro
Chairperson
California Horse Racing Board
1010 Hurley Way, Suite 300
Sacramento, California 95825

Re: Proposed Safety Rein Regulation

Dear Chairperson Shapiro and Members of the Board:

I am writing on behalf of the Jockeys' Guild to inform the CHRB of our position with regard to the adoption of a regulation mandating the use of safety reins in accordance with the provisions of Business and Professions Code section 19504 (AB 1180, Stats. 2005, Chap. 329).

The Guild supports the adoption of the following language:

> "No jockey, apprentice jockey, exercise rider or any other person shall gallop, breeze, exercise, workout, or otherwise ride a horse on the grounds of a facility under the jurisdiction of the commission unless the horse is equipped with safety reins. A safety rein is a rein with a nylon safety cord stitched into a leather, nylon, or other synthetic rein during the manufacturing process and the nylon safety cord is securely attached to the bit."

We believe that this language adequately defines a safety rein with sufficient specificity to insure that the desired result--preventing reins from breaking—is achieved without favoring a particular brand or manufacturer. The language also assures that safety reins are used whenever horses or ridden at the track, including non-racing periods as well as during races.

We urge the CHRB to adopt this language as soon as possible.

Sincerely,

Barry Broad
Legal Counsel

1127 11TH Street, Suite 501
Sacramento, CA 95814
(916) 442-5999
Fax (916) 442-3209

REFERENCE (D)

CALIFORNIA HORSEMEN'S SAFETY ALLIANCE

Date: November 9, 2007
To: Ed Halpern, CHSA President, CTT General Counsel
From: Sonia Flores Pishehvar, CHSA Administrator
Subject: Safety Reins Pilot Study Program

A 90 day pilot study program was conducted in Del Mar, Santa Anita, Hollywood Park, Pomona, Golden Gate Fields, and Bay Meadows. Two manufacturers participated in this project. They were willing and able to make adjustments to specs given by a sample pool of trainers and jockeys, requesting to increase the grip length by 2 inches and the over all rein length by 3 inches.

Art Grays' Sure Lines provided 109 leather thoroughbred attached clasp nylon strip reinforced safety reins. It should be noted that these reins have not been tested at an ASTM approved testing facility. This Administrator made the recommendations to Mr. Gray to do.

The second manufacturer, Brian Pecks' Safer Reins, provided 100 units of leather loop reins with reinforced nylon parachute cord. This product has been tested at an ASTM approved laboratory in Kentucky by Mr. Matthew A. Dettman, P.E. On his report dated June 15, 2007, page one notes that the purpose of the testing was to perform quality control of the products as well as to compare results between reinforced and un-reinforced reins. The test results showed failure modes for the reinforced rein at two distinct failure points, first being the leather portion of the rein, second being the reinforcement. Failure modes for the un-reinforced rein was one, is at the leather portion of the rein. The reinforced rein leather failed at 1145 lbs of pull pressure, with the exposed reinforcement (nylon cord) failing at 873 lbs. The un-reinforced rein failed at 493 lbs of pull pressure.

The results were positive as it confirmed that the purpose of the reinforced "safety" rein is to provide a backup for the jockey or exercise rider in the event that the leather rein breaks or fails, the reinforced rein will provide the rider something to hold on to in order to continue to control the horse coming to a safe and controlled stop for the safety of both the horse and the rider.

209 safety reins were distributed to 105 CHSA Trainer participants. Release of liability was secured from all the participants. Only two trainers refused to participate in the pilot study; one citing that he only utilizes custom English leather reins an did not want to try any new products, the other trainer stating that he did not want to be bothered with any safety project.

105 trainers in Northern and Southern California were open to the practice and use of safety reinforced reins given the option to select the style and comfort of their choice. Positive feedback was received from all trainer participants and some have placed additional orders on their own. It should be noted that no written national or international standard exist on safety/reinforced reins, thus how to regulate the "safety" reins without a governing approved standard will be difficult to regulate.

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Office: (626) 447-2146 * Fax: (626) 447-2006
www.officialchsa.com

REFERENCE (E)

DATE: June 25, 2008
TO: Ed Halpern, CHSA President, CTT General Counsel
FROM: Sonia Flores Pishehvar, CHSA Administrator
SUBJECT: Safety Reins Survey Summary

Pursuant to the Safety Rein Pilot Study Program report dated 11/9/2007, where it was noted that CHSA provided 105 Trainers in California with sample safety reinforced reins from Sure Line Reins, (reinforced and attached clip) and from BP Reins,(reinforced loop reins) for use during morning workouts and racing. Trainers were to provide feedback and comments on the equipment used.

The purpose of a reinforced "safety" rein is to provide a backup for the jockey and exercise rider in the event that the leather rein fails or breaks, the reinforced rein will provide the rider something to hold on to in order to continue to control the horse coming to a safe and controlled stop for the safety of the horse and rider.

Additionally it was recommended that the Sure Line reins submit the equipment for testing at an independent laboratory and provide the testing results for review. It should be noted that Mr. Art Gray has provided the testing results as requested. According to Quality Inspection Services Report dated 2/15/2008, the failure load on leather reinforced with attached clip ranged from 498 to 685 lbs, causing the Leather strap failure. Test report 4/26/2008 indicated failure load to the nylon strap of the safety clip assembly at 132 to 155 lbs; nylon strap failure at 478 lbs.

The BP Reins test results previously submitted noted that the reinforced rein leather failed at 1145 lbs of pull pressure, with the exposed reinforcement (nylon cord) failing at 873 lbs.

The conventional un-reinforced reins failed at 400 to 493 lbs of pull pressure.

Conventional rein failure is due largely to wear and tear and poor equipment inspection and maintenance practices.

Following please find the summary of a post follow up survey conducted with the Trainers in California that participated in the 11 month CHSA Safety Reins Pilot study.

76 Trainers of the original participants were available to participate in this survey. 2 of the Trainers chose not use the safety reins provided.

74 Trainers used both the reinforced with the attached clip and the reinforced loop reins.

The positive comments received were: "good quality", "safer than conventional reins," "They didn't break", "my riders like them, the oil doesn't penetrate", "good and strong", "felt very safe", "excellent quality", " added sense of security", "long lasting", " seem to last, rubber stays", " they are still intact", " everything about them is good", " strong and sturdy", "durable", "sound for safety", "less risk for injury", "easy to use", " easy to clean", "worked great in the afternoon".

The negative comments received were: "No need for extra clip", " I did not like neither of them, too thick", " Too heavy, too wide, too thick", " the buckle too difficult to clean", " the clip twists on the bit", " I saw no difference than the ones I already use", " ok for morning workouts, too heavy for racing", " I don't like the clip", " the loop is too wide", " a little too thick", " not soft, too hard, too thick", " the clip at times gets stuck on the buckle", " they didn't feel like leather", " could not tie into bit", " too thick to tie knot for riders grip", " a little slippery", " too long", ' the nylon separate attachment is not that good", " clip reins rubber is too far from bridle", " no different then ordinary reins".

Additional comments: " trainers need to take care of their equipment a little better", " I like the one I already use", " good English leather doubled with nylon in the middle would be safer", " we monitor and maintain our equipment and update and change every 2 months", ' make the reins lighter", " I would prefer the use of screws and not a buckle", " I think we should continue looking for safer racing equipment", " riders prefer the reinforced loop", " I would like them to use screws", " I like the product, safety is important", " I want to purchase the clip reins", " I try using quality safety equipment", "I don't know if they are any better than the once I already use", " liked the quality on both, clip reins are more piratical and in my opinion safer", "I purchased reinforced loop and not as good quality than the ones CHSA issued", " If the jockeys are in favor of these it should be their decision", " continue working on safety and safety equipment", " they become slippery when wet, check in rainy days", " reinforced reins are double safe and strong", "loop reins were very good quality", " I will use them in the future", " should not be made mandatory", " I don't like CHRB mandates", " should be left up to the riders and trainers", " I would not like these to be made mandatory", " it should be the trainers choice", " thank you for providing us with the reins", "I am supportive on safety Issues".

31 - Trainers preferred the loop reinforced rein, 22 - preferred the reinforced with attached clip, 19 - liked both styles of reinforced reins, 5 - had no comments, 1- did not like neither of them.

On the issue of making the safety reins mandatory, we had 32 - Trainers indicating that they are not in favor of mandating a rule. 28 - Trainers were in favor. 11- Trainers had no comment and 5 trainers were undecided.

As a result of the Trainers participating in this Pilot study, it brought awareness for the need and implementation of equipment inspection and safe work practices and procedures. Based on the comments made by the trainers contained in the body of this report there is a need for improvement on the reinforced safety reins provided in this study.

REFERENCE (F)

April 9, 2008

In reference to the Sure Lines safety reins;

To Whom It May Concern:

I believe that the *Sure Lines* safety rein is an invaluable tool that will help prevent serious racing or training accidents. The concept and design of the *Sure Lines* safety rein is a good sound one and the product itself is good quality. I acquired 15 sets of the safety reins from Art Gray in September, 2006 and have been using them in my school, the North American Racing Academy, ever since. I do not allow my students to go out on as horse without them.

During the Santa Anita meet in 2002, I escorted Art around the stable area at Santa Anita and introduced him to many trainers offering my endorsement of safety reins. I persuaded Paco Gonzalez to use them and I rode *Came Home* with the safety reins in both the SA Derby and Kentucky Derby.

I personally have had a rein break or come apart during a race or a workout on three separate occasions during my career. I was fortunate that I was able to get my mount pulled up without incident all three times. However, these incidents are pretty scary, as you could imagine, and don't always end the way they did for me. The first time occurred on the grass course at Del Mar going a mile and a sixteenth for Chay Knight. My left rein broke where the rubber grip begins nearest the bit. It happened three strides out of the gate so I had a minute and 42 seconds travelling at 40 mph to consider the consequences. The good news; we finished second. The second time, for Mike Harrington, the rein came apart at the bit because the buckle was not fastened properly. On the third occasion, I was working a three million dollar Seattle Slew two year old for Eoin Harty (Darley) at Del Mar right after the break. I broke the colt off in company at the five-eighth pole and again the rein came apart at the buckle. So picture this; I'm breezing on the outside fence with horses jogging the wrong way. We had to get by two gaps and thread our way through that traffic. The outrider was able to pick me up at the sixteenth pole. A real eye opener, I must say. Since that day, I ALWAYS check my tack to make sure it is assembled properly and placed on the horse correctly. The reason I mentioned the trainers names is because they are all fantastic horseman with top-class outfits. If it can happen to them, it can happen to anyone.

I believe mandating a product that is designed and constructed to improve the safety of riders and horses is the prudent thing to do. Anytime measures are taken to reduce the chances of accident or injury, it simply is common sense.

I personally like the Sure Lines product because I have been using the reins for 20 months now and they have held up well despite the drastic changes in weather here in Kentucky. I have sent two pairs of reins to Darrell Haire for you to examine.

I'd be happy to speak in further detail if anyone wishes to contact me. 859.797.3843

Yours truly,

Chris McCarron, retired jockey

REFERENCE (G)

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Art@Gray-Consulting.net

California Horse Racing Board
1010 Hurley Way
Sacramento, CA 95825

April 9, 2008
Subject: Safety reins

Honorable Chairman Shapiro & Board Members:

The California Horse Racing Boards proactive approach to maximizing the level of safety on the racetrack for our human and equine athletes is greatly appreciated.

Safety reins have been a debated issue for many years. In an effort to assist in determining the type of safety rein best suited to ensure safety on the track we have researched and prepared the following report for your consideration. The factors pertaining to this equipment that have been agreed upon and accepted include:

- This equipment innovation is designed to address one of the most dangerous situations on the racetrack, a failed rein.
- The weakest points of thoroughbred, quarter horse reins and harness lines are at the bit and underneath the grip.
- The safety innovation is applicable to reins made of leather, nylon and beta (biothane coated nylon) material in both the buckle and loop style.
- The additional reinforcement in the rein will increase the life span of the equipment.
- Horsemen initiated the movement to mandate the safety reins.
- In order to ensure complete protection on the training and racetrack this equipment needs to be implemented universally.
- The right to manufacture the safety reins is available to all businesses serving the industry in accordance with regulatory and RCI guidelines.
- Quality control systems are in place for the manufacturers.
  Attached test report #08-65-0125-1 documents eight individual tests of safety reins from various manufacturers. Samples one through six failed to meet the required break loads. Samples seven and eight met the requirements. The instrument used for the testing is also pictured.

- This improvement is cost effective and the patent fees are minimal. With appropriate time allowed for full compliance and financial programs available to assist the horsemen in the transition from conventional reins to the safety equipment the financial hardship is minimized.
- Premium increases for liability, health and equine mortality insurance in the future will be reduced as accidents due to failed reins are eliminated.
- In the last eight years numerous letters supporting the safety reins have been submitted to RCI by industry leading Associations, Racetrack Executives and Hall of Fame horsemen. Additionally, many articles have been published praising this innovation as a potentially life saving improvement whose time has come.
- The public will be protected as their wagers will not be compromised by failed reins altering the outcome of the race.
- Most importantly the level of safety for our jockeys, exercise riders, drivers, trainers, grooms and horses will be enhanced.

The factors still under consideration include:

- The type and style best suited to safely prevent accidents from failed or improperly fastened reins.
- The establishment of standards by an accredited engineering firm or association.
- A maximum break load requirement that will allow the reins to give in exigent circumstances in order to prevent further injury.

Type & Style

The general concensus is that the safety reins with the reserve rein and snap hook providing a secondary backup attachment to the bit provides the best protection. This reserve rein is an integral component. The safety principle is the same for the thoroughbred, quarter horse reins and harness lines. The safety reins have a second nylon rein manufactured inside the original rein with a snap hook attached. The nylon strap extends back through to the far end of the grip away from the bit. The snap hook extends one-half inch beyond the loop and is attached to the bit along with the loop from the rein. There is no pressure on the snap hook. If the original material fails either at the buckle or under the grip; this second attachment to the bit will enable a jockey or exercise rider to maintain control of his/her horse.

It is important to note that other reins submitted to various jurisdictions and the CHRB for approval as safety reins do not have this key component. If the original material fails on these other reins the jockey, exercise rider, the horse and any others nearby are in danger. Without the second attachment to the bit they become passengers without control. These reins have been thoroughly tested and used by trainers in all facets of horse racing since 2003. Ohio, New Mexico and Canada after performing due diligence on the products available mandated the reins and lines with the integral second backup attachment to the bit.

Testing & Standards

The most discussed factor regarding the safety reins is the testing and potential establishment of standards for the equipment. Except for helmets there are no standards available regarding the required strength of horse racing equipment. Determining a standard break load for reins and driving lines would be difficult, very expensive and the result would be a wide range that would take into account the variables of size, strength, demeanor and racing style of both the horsemen and the horses. Additionally the various levels of quality, density and strength of the material used to manufacture the reins will result in a variety of test results. These factors have an equal effect on both conventional and safety reins.

The ASTB and ASTM representatives recommended that we test the conventional reins and utilize that information as a foundation for a required break load. Testing highlighted the weak links in the equipment. Test results dated March 7, 2008 indicated an average break load of five hundred sixty three (563) pounds for the leather reins. (Reference report # 08-65-0125-2) Testing of other manufacturers products averaged as low as four hundred (400) pounds. The deduction from these test results is that conventional reins should have a minimum break load of four hundred (400) pounds.

The original design utilized weather resistant steel cable to anchor the snap hook inside the rein but the break load of both the cable and snap hook were too strong. There were concerns that the steel cable would prevent the rein from breaking in an emergency to prevent further injury. By using a snap hook with a break load of four hundred fifty (450) pounds, replacing the steel cable with nylon and using a square box stitch to attach the snap hook we reduced the strength to a point close to the strength of conventional reins. When tested the snap hook started to open up at approximately four hundred fifty (450) pounds and the nylon material and or stitching started to fail at four hundred (400) pounds. (Reference test # 07-65-0185-1) These improvements result in a safety rein that has comparable strength to conventional reins enabling the equipment to give or be cut under extreme circumstances.

It is important to note that test results for other equipment submitted to various jurisdictions as well as the CHRB as safety reins have a break load of as much as 1100 pounds and do not have a second backup attachment to the bit. These reins do not address industry concerns and will not break at the bit if necessary to prevent further serious injury.

As earlier stated this equipment improvement has been a debated issue for many years. During this time the industry has witnessed numerous incidents due to failed reins, fortunately with only a few serious injuries.

- 2004 Mike Luzzi suffered a broken leg that required surgery in the first race of the meet at Saratoga.
- 2005 Breeders Cup Juvenile John Velazquez aboard Private Vow finished last.
- 2006 Maryland, Edgar Prado finished last in the Black Eyed Susan.
- 2007 John Velazquez finished last in a Grade 3 Stake at Aqueduct.
- 2007 Kent Desormeaux aboard Premium Tap in Dubai had a rein fail fifty yards out of the gate.
- 2008 Arizona, Jockey Ryan Barber suffered a back injury as a result of a failed rein during a morning workout.

These incidents due to failed reins are notable because the jockeys, trainers and horses are prominent members of the horse racing community. There are many more occurrences involving lesser known participants in racing that are as serious but do not receive international attention.

These incidents and injuries could have been averted if a reserve backup rein were available. If any of these jockeys or their horses had succumbed to serious injury this report would not be necessary – the safety reins with the backup attachment would already be mandated in every jurisdiction.

Safety for all participants in horse racing is paramount. Many sports and businesses take a reactive approach to safety until there is a tragedy.

- Dale Earnhardt died in an accident on the racetrack in the Daytona 500.
- A minor league baseball coach was killed last year when he was hit in the head by a line drive.
- Billy Haughton and Dave Dunckley were killed due to serious head trauma suffered in harness racing accidents.
- After these tragedies NASCAR mandated head restraints for all drivers. Major and minor league baseball mandated that all first base and third base coaches wear batting helmets during games and harness racing mandated safety helmets.

As we are all aware we live in litigious times and liability is an ever present concern. If a tragedy occurs due to a failed rein and there is equipment available that could have prevented the accident there may well be legal repercussions. Basing decisions on personal trainer preference will not bode well in court as a factor in mandating safety equipment.

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REPORT No. : 07-65-0185-1 May 2, 2007

Attn: Arthur Gray
Sure Lines, Inc.
19 Naples Dr.
West Seneca, NY 14224

MECHANICAL TEST REPORT

Date Submitted:	4/26/2007	
Sample Submitted:	One (1) thoroughbred horse rein with sewn-in safety clip.	
Objective:	Tensile load test of safety clip assembly.	
Test Methods:	Assemblies were loaded in tension on our Tinius-Olsen Universal Test Machine S/N 88355 and ultimate load recorder.	
Results:	Ultimate Load:	400 lbs.
	Failure Mode:	Safety clip strap stitching

Sincerely,
QUALITY INSPECTION SERVICES, INC.

Michael W. Timmons
Metallurgical Services Manager

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REPORT No. : 07-65-0185-2 May 2, 2007

Attn: Arthur Gray
Sure Lines, Inc.
19 Naples Dr.
West Seneca, NY 14224

MECHANICAL TEST REPORT

Date Submitted: 4/26/2007

Sample Submitted: One (1) thoroughbred horse rein with sewn-in safety clip.

Objective: Tensile load test of safety clip assembly.

Test Methods: Assemblies were loaded in tension on our Tinius-Olsen Universal Test Machine S/N 88355 and ultimate load recorder.

Results: Ultimate Load: 350 lbs.

Failure Mode: Safety clip strap stitching

Sincerely,
QUALITY INSPECTION SERVICES, INC.

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Metallurgical Services Manager

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REPORT No. : 08-65-0125-1 March 7, 2008

Attn: Arthur Gray
Gray & Associates Consulting, Inc.
19 Naples Dr.
West Seneca, NY 14224

MECHANICAL TEST REPORT

Date Submitted: 4/26/2007

Sample Submitted: Eight (8) thoroughbred horse reins with sewn-in safety clip.

Objective: Tensile load test of safety clip assembly.

Test Methods: Assemblies were loaded in tension on our Instron Universal Test Machine S/N 2524 and ultimate load recorded.

Results:

Rein Sample No.	Ultimate Load (lbs.)	Failure Mode
1	145	Nylon strap failure
2	150	Nylon strap failure
3	143	Nylon strap failure
4	155	Nylon strap failure
5	146	Nylon strap failure
6	132	Nylon strap failure
7*	450	Stitching failure
8*	478	Nylon strap failure

* SLI samples

Note: A photograph of the test set-up is attached.

QUALITY INSPECTION SERVICES, INC.

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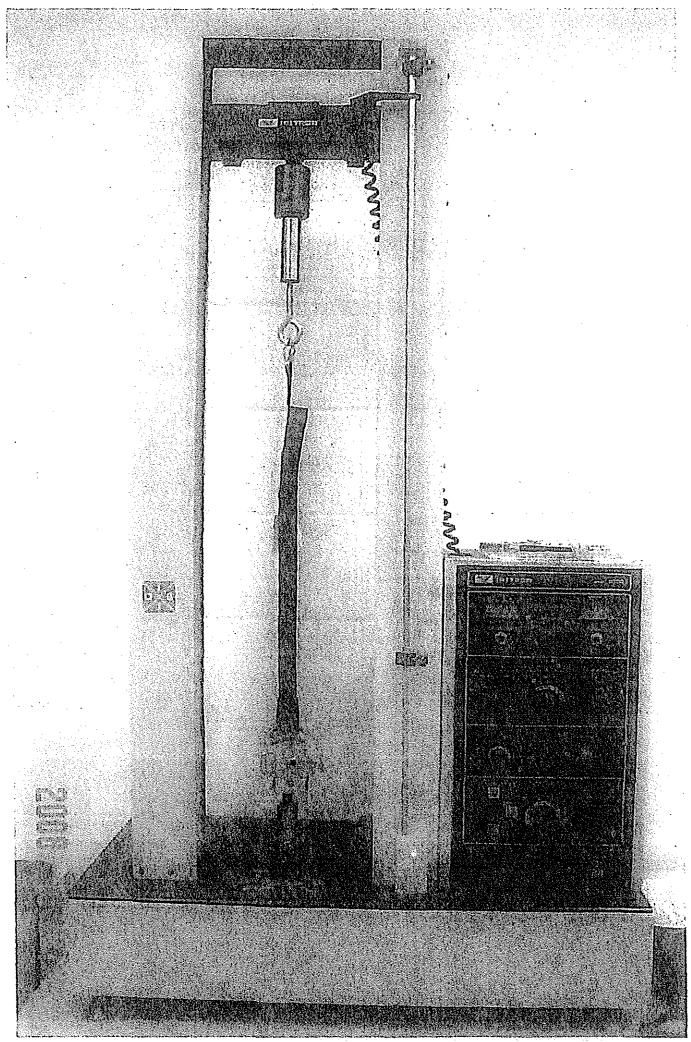
REPORT No. : 08-65-0125-1

March 7, 2008

TEST SET-UP



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REPORT No. : 08-65-0125-2 March 7, 2008

Attn: Arthur Gray
Gray & Associates Consulting, Inc.
19 Naples Dr.
West Seneca, NY 14224

MECHANICAL TEST REPORT

Date Submitted: 2/15/2008

Sample Submitted: Six (6) thoroughbred horse reins with sewn-in safety clip.

Objective: Tensile load test of leather loop assembly.

Test Methods: Assemblies were loaded in tension on our Instron Universal Test Machine S/N 2524 and ultimate load recorded.

Results:

Rein Sample No.	Ultimate Load (lbs.)	Failure Mode
1	530	Leather strap failure
2	685	Leather strap failure
3	597	Leather strap failure
4	537	Leather strap failure
5	526	Leather strap failure
6	498	Leather strap failure

Note: A photograph of the test set-up is attached.

QUALITY INSPECTION SERVICES, INC.

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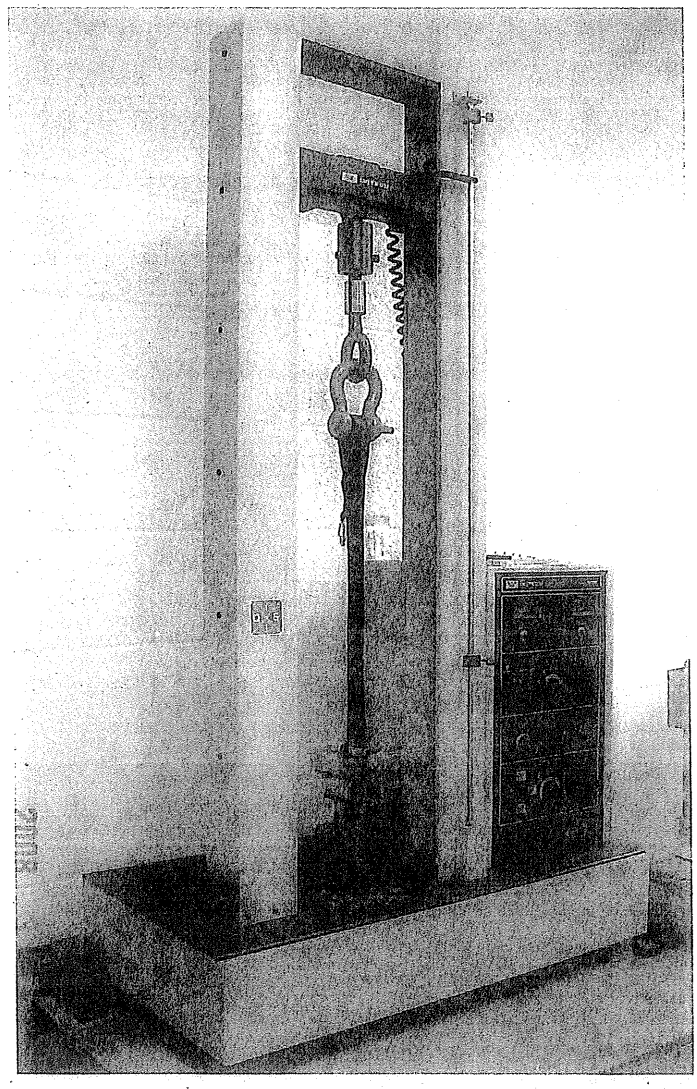
REPORT No. : 08-65-0125-2

March 7, 2008

TEST SET-UP



Sure Lines Inc. Safety Rein Information
Table of Contents

SAFETY REIN RULE DRAFT

No one will be permitted to exercise, gallop, breeze, work out or other wise ride a horse at any time on the premises of a State racetrack unless the horse is equipped with safety reins of a type, style and design approved by the commission and tested to meet the necessary break load requirements.

All safety reins shall be equipped with a second nylon rein and hook originally manufactured inside the rein. The second rein must be anchored inside, emerge from the rein from under the buckle and hook to the bit.

Similar wording can be applied to a harness rule by replacing breeze, gallop, workout and ride with the appropriate harness terminology; jog, train or drive. .

NOTE: It is important to note that the attorneys and insurance companies I talked to recommended that the safety reins should not be mandated for racing only. If there is an injury or fatality on the training track due to a broken rein both the state and racetrack are liable to be found culpable for not implementing the same safety measures for the entire facility. The same applies if there is an injury due to a broken rein at a track in a jurisdiction where the safety reins not required. The fact that the safety reins are available and not mandated also leave the state and racetrack open to liability. The wording specifying a secure secondary attachment to the bit is also important. Most times the rein fails at the bit. It is rare but if the rein should happen to fail at the handholds or at any other section of the rein this wording will protect all from culpability.

Creating a better, safer rein

Sure Line's patented safety rein has been hailed by riders but has encountered resistance from horsemen

by Don Clippinger

IT WAS a death, a horse's death, that propelled Arthur A. Gray to action.

To be sure, the veteran New York harness racing judge had seen plenty of broken leather in his time on the track. As a young man, he was training a horse at Roosevelt Raceway when the right-hand line of the horse and driver outside him broke. Gray remembers the sensation of the horse's head passing over his own as the horse made a sudden left-hand turn toward the rail.

Gray also remembered an incident at Roosevelt in the early 1980s when one of the lines broke on a horse heading for the finish line. The driver quickly stood up on his sulky and jumped on the horse's back so he could control it and protect his fellow drivers. He was disqualified from the victory—the driver must be in the bike when crossing the finish line—but the driver may well have saved himself and other drivers and horses from serious injury.

As a judge, Gray had witnessed three or four incidents a year where leather gave way, almost always with no warning that the harness lines—the equivalent of reins—were weakened and ready to snap.

But the incident that really got to him occurred in 1997 in a $5,000 claimer at Buffalo Raceway. Sequoia Blue Chip's line broke, and he dumped his driver. A track employee made a mistake and opened the gate to the paddock; the gelding cut sharply into the paddock, ripped open his side on a post, and bled to death. "That night, I went home and started drawing pictures, making a design," Gray said.

Sure Lines Inc.

He wanted to create a harness-racing line that, in cases where the leather broke, the driver would retain control of the horse. And he accomplished that goal. It was a short step to Thoroughbred and Quarter Horse racing, and Gray developed a design for a safety rein. He obtained two patents and with the backing of investors started Sure Lines Inc.

With a product that could save horses and save lives, it would appear that Gray had a sure winner, and indeed drivers and jockeys strongly support his safety reins and lines. But it has not been an easy road for Gray, who often becomes frustrated by the inaction of most regulators and the opposition of horsemen and some tack manufacturers. "It's such a simple solution and at a minimal cost," he said. "I knew it was going to be a bit of a struggle, but I didn't think it would be the struggle that it has turned out to be."

While broken reins are not widely discussed within the sport, the sudden danger to horse and rider was in the spotlight last October 29 in the Breeders' Cup Juvenile (G1), when Private Vow's rein broke on the backstretch. Fortunately, John Velasquez was able to use some mane and his remaining rein to guide the colt to the outside and eased him in the stretch.

Six months earlier, Merrill Gold's right rein broke at the start of Black Eyed Susan Stakes (G2). Under Edgar Prado, she set the pace under no control or restraint but tired to finish last of six.

When he was the national manager of the Jockeys' Guild, John Giovanni took Gray into the jockeys' room at Saratoga Race Course to discuss the concept of safety reins. "Every jockey in the room has a story to tell" about broken reins," Gray said.

Chris McCarron, a Racing Hall of Fame jockey who is starting a national jockeys school at the Kentucky Horse Park, said safety reins would offer significant protection to both jockeys and exercise riders. "Given a choice between a flak jacket and safety reins, I would take the safety reins," he said last month at the Association of Racing Commissioners International's annual meeting.

A simple concept

Gray's concept was as simple as could be. In essence, he wanted to put a rein inside a rein. He started out with a thin steel cable that was stitched into the reins or harness lines. When the cable proved too strong—harness horses sometimes need to have their tack cut away when they fall and become tangled—he switched to a half-inch-wide piece of nylon that is similar to the material used in nylon reins.

A half-inch of the nylon strip emerges from the leather reins, and it is attached to a clasp that in turn snaps onto the bit. Until it is needed, the clasp places no pressure on the bit. The nylon membrane runs through the grip of the reins, where weakness in the leather sometimes can go undetected.

In principle, the safety reins function much like safety glass, where glass is fused to a clear plastic membrane to keep it from shattering in case of an accident.

The day after he completed his drawings, Gray contacted his friend Robert Siegelman, a Meadowlands trainer who helped to develop the safety lines and put them into use under training and race conditions. The project attracted the attention of brothers Barry and Jeff Rubenstein, prominent harness owners who became the principal investors in the project. Gray was granted patents in 1999 and 2004.

The company did little paid marketing, and Gray took a leave of absence from state employment to promote the product, attending conferences and speaking to industry groups about his safety product. Although safety reins were enthusiastically endorsed by jockeys and drivers, they were greeted with silence, hostility, or abuse in other corners of the industry.

True, safety reins cost more than regular leather reins. While traditional reins might cost $75 to $80, tack manufacturers typically would charge $100 for the safety reins, Gray said. The additional cost of manufacturing and markup are most of the difference. Gray said Sure Lines's royalty is $3 to $5 per rein.

Gray, who takes no salary from Sure Lines and supports himself and his family with industry consulting work, is frustrated by the slow acceptance of his product and stung by insinuations that he and his investors are trying to make a financial killing at the expense of hard-pressed horsemen.

Profits to charity

Noting that his investors have put up hundreds of thousands of dollars that they may never recoup, Gray said it was decided early that any profits from the safety reins would be donated to equine charities. "This is something we said from the start," he said.

With his regulatory background, Gray knew well how fractious and divided horse racing is, and he believed the obvious strategy was to have racing commissions make the safety reins mandatory. He had observed how safety helmets for harness drivers were not adopted universally until racing commissions—most notably the New Jersey Racing Commission—mandated their use. For the safety reins to be effective, "everybody has to be using them," he said.

Gray said he has spoken twice before the ARCI's model rules committee but has been unable to persuade the panel to adopt safety reins and lines. "They said they wanted an industry consensus," he said.

With backing from the current Jockeys' Guild administration, Gray and Sure Lines have made progress toward mandating safety reins and lines in California and Indiana. California's legislature last year passed a requirement that the Horse Racing Board conduct an investigation and at least one hearing by July 1 into whether safety reins would provide greater protection to jockeys and exercise riders.

If the inquiry finds that the reins would improve safety, the Horse Racing Board is required to adopt a regulation making them mandatory by July 1, 2007. Although the requirement could be phased in, that period cannot exceed 18 months from the adoption of the regulation.

Earlier this year, the Indiana Horse Racing Commission approved a safety-rein requirement. Gray said he spoke at the hearing and heard no objections from horsemen attending the meeting. However, a torrent of opposition followed the hearing, including a statement by the Indiana Standardbred Association that the rule was unnecessary and placed an onerous additional expense on horsemen.

Gray agreed that the safety reins should be phased in over an extended period to give horsemen the opportunity to replace existing tack with safety equipment. "You can't tell them to change immediately. You don't want to create a financial hardship," he said. "We've urged the commissions to set a date a year in the future."

Get author description

Subhead

Arthur Gray took a leave of absence from state employment to promote the product, attending conferences and speaking to industry groups about his safety product. Although safety reins were enthusiastically endorsed by jockeys and drivers, they were greeted with silence, hostility, or abuse in other corners of the industry.

Helping Stop the Most Feared Call of All

DEATH is not dining room conversation in this sport. Drivers do not sit and discuss it with their wives and kids over dessert.

But every driver's wife knows, when the front door closes and her husband backs out of the driveway to go toward the track, that he is headed toward danger.

They know their husbands will be guiding a thousand pounds of pure power, in a speeding crowd of flying hooves, sitting on a catapult. They know that one bad step, or one broken line, can spell disaster. And every one of them fears, consciously or in the deeper recesses of her mind, the telephone call that starts with: "There's been an accident."

Ask Dottie Haughton. Ask Laura Dunkley. Ask Michelle Goudreau. Ask Jackie Smullin Roe. They all received those terrible calls, and they all are harness racing widows.

Ask Art Gray.

Gray is a college-educated former trainer, driver and New York presiding judge who has spent the last few years criss-crossing North America, attending meetings of state racing commissioners and track owners and anyone in authority who will listen. He is telling them that he can save lives, and end broken bodies and racing carnage, with his invention, Sure Lines and Reins.

He has covered thousands of miles, and spoken 100,000 words, telling how this simple idea can work.

John Campbell says the thing every driver fears most is a broken line. He wrote to the New Jersey Racing Commission saying, "I feel very strongly that the safety lines are a significant step towards safer racing, and I hope that they will be mandatory in the very near future."

Others who wrote similar letters included Chris McErlean of The Meadowlands; Hugh Mitchell of Woodbine Entertainment; Jerry Knappenberger of the Ohio Harness Horsemen's Association; Steve O'Toole, general manager of Flamboro Racecourse; Dennis Brida of the New York Thoroughbred Horsemen's Association; L. Wayne Gertmenian, president and CEO of Thoroughbred racing's Jockeys Guild; and Dan Fick of the American Quarter Horse Racing Association. They all endorsed Gray's idea.

Fans sitting high in the stands may not sense it, but all one needs to do to realize the danger on the track is to stand by the rail, or in the first turn, and feel the rush of raw power surge past.

If a line snaps, the driver is sitting behind a half ton of life-threatening dynamite—a runaway locomotive.

When Shelley Goudreau, one of the best drivers this sport has seen in the past 50 years, hopped on his bike behind Regan's Lad 20 years ago this August at Hollywood Park, he knew the danger—as every driver in every race knows it. It is part of the built-in peril of their careers.

And in the instant after Regan's Lad's bit broke, and Goudreau toppled backwards toward his death, he likely understood what had happened to him.

It need not have been Goudreau's last drive.

Gray's invention, a snap hook attached to a second reserve line, which is anchored inside the original line, could have prevented it—and could prevent every other disaster, fatal or simply fearsome, that comes from a snapped line or, with new refinements, a broken bit.

Owner Barry Rubenstein, who knows disaster first-hand from the blazing night when his trainer, Robbie Siegelman, lost his stable in the barn fire at Gateway training center, recognized the merit of Gray's invention the minute he saw it. He has made it financially possible for Art to continue his nationwide safety pilgrimage.

Rubenstein is not seeking profit. He has pledged 100 percent of any gain as an investor to racing-related charities. Rubenstein understands fully what these lines can mean. He was an owner in the Billy Haughton, David Dunkley and Shelly Goudreau stables when those three died in racing accidents.

It was Siegelman, who trains for Rubenstein and his Cheyenne Gang, and Ed Shumate, owner of Kelly's Harness Shop at The Meadowlands, who helped Art Gray reach the point where leading figures in harness, Thoroughbred and Quarter Horse racing now want his product to become required universally.

Shumate helped Gray with hands-on expertise in developing the line, and Siegelman tested it on his horses for more than a year at The Meadowlands. Along the way that track's leading drivers, led by Campbell, became avid believers.

The American Standards Testing Bureau now has successfully tested Gray's lines, and has agreed to be the certifying agency for them.

Rubenstein said that when Gray first told him about Sure Lines, he thought it would be great if harness racing could have a proactive way of preventing accidents, rather than simply reacting to them. He knew the NASCAR people learned after losing Dale Earnhardt that an accident need not be fatal if drivers had head restraints, which now are mandatory in that sport.

Sure Lines provide that type of safety net, a security blanket, a life-insurance policy, for the driver of the horse. Gray says his goal was—and is—to maximize safety for harness racing's human and equine athletes.

Our sport, and Thoroughbred and Quarter Horse racing, should support Sure Lines and Reins every step of the way, and should urge racing commissioners everywhere to mandate the safety lines as required equipment.

Art Gray's lines and reins can hugely reduce those heart-stopping phone calls.

More importantly, they can save lives. ■

Prairie Meadows Sued Over Trainer's Injuries

by The Associated Press
Date Posted: 2/7/01 8:25:37 AM
Last Updated: 2/7/01 8:25:37 AM

A North Dakota horse trainer who struck his head in a fall in 1999 at Prairie Meadows claims in a lawsuit that racetrack personnel let him lie on the ground for half an hour while they debated his rescue — a delay that cost him his career.

Douglas Miller's lawsuit names Polk County and the Racing Association of Central Iowa, which manages the track in Altoona. Attorney Tom Flynn said the track will fight the allegations.

Miller fell after a rein snapped on the horse he was riding. His head slammed into a rail and he suffered permanent brain damage, ending his career.

Miller's brother, Robert, filed the lawsuit, saying Miller's condition prevents him from being sole plaintiff. The lawsuit seeks compensation for physical and mental pain, and loss of earning capacity.

Miller's lawsuit contends Prairie Meadows should have had an outrider - someone on horseback ready to assist a struggling rider - on duty.

Prairie Meadows also failed to provide assistance when ambulance crews were unable to reach Miller - locked entrance gates delayed Miller's rescue, the lawsuit claims.

The lawsuit also blames the Altoona Fire Department for canceling a Mercy Air Life flight. "He could have been LifeFlighted back to the emergency room trauma center within minutes," attorney Gregory Landry said.

Altoona fire officials said they had not yet seen the lawsuit and could not comment on it.

The lawsuit comes six months after a Polk County jury awarded a former jockey more than $3 million for her injuries in a Prairie Meadows accident in 1996.

AQHA
AMERICAN QUARTER HORSE ASSOCIATION

January 16, 2002

Lonny Powell
President & CEO
Association of Racing Commissioners International (ARCI)
Two Paragon Centre
2343 Alexandria Drive, Suite 200
Lexington, KY 40504

Dear Lonny:

I wanted to express my support of the Sure Line lines/reins. I have provided the product to members of the AQHA Professional Horsemen's Association - Racing Division, including Pat Swan who is married to Tomcy Swan, President of The Jockey's Guild. I have spoken to these horsemen and women regarding its potential usefulness. The reaction I have received has been positive as a way to ensure continued safety on the racetrack and avoid potential situations from occurring.

Art Gray has worked hard to explain the many benefits of the Sure Lines lines/reins and as a former horsemen and racing official is able to effectively convey the usefulness of the product.

I would hope that RCI would see the value of the Sure Lines product as well.

Sincerely,

Dan Fick

cc: Art Gray, Sure Lines
Frank Lamb, NAPRA

P. O. Box 200 ▪ Amarillo, Texas ▪ 79168
1600 Quarter Horse Drive ▪ Amarillo, Texas ▪ 79104
(806) 376-4811

New York Thoroughbred Horsemen's Association, Inc.

February 2, 2002

Mr. Lonny Powell
President and CEO
Association Of Racing
Commissioners International, Inc.
2343 Alexandria Drive, Suite 200
Lexington, KY 40504-3276

Dear Mr. Powell,

The safety of horses, backstretch workers and jockeys is very important to the NYTHA and all horsemen in New York. Some of our members have tried the safety reins made by Sure Lines Inc., and have given us positive feedback.

While the NYTHA does not, as a rule, endorse products, it will back any product that will increase safety and performance in the thoroughbred industry. If you have any further questions on this matter, please contact me at the numbers listed below.

Sincerely,

Dennis J. Brida
Vice President
NYTHA

P.O. Box 170070 • Jamaica, New York 11417

Aqueduct (718) 848-3043 • Fax (718) 848-9269 • Belmont (516) 488-2337 • Fax: (516) 488-1698 • Saratoga (518) 584-6200

WOODBINE
ENTERTAINMENT

October 23, 2001

Mr. Terry Stone
Deputy Director,
Ontario Racing Commission
9th Floor
20 Dundas Street West
Toronto, Ontario
M5G 2C2

Dear Terry,

I write to endorse the concept of safety lines for Thoroughbred and Standardbred racing in the province of Ontario. I have seen one product in particular, *Sure Lines*, and its hook-up is excellent at helping to prevent either a line or rein from coming loose or breaking.

Safety of the race participants is of utmost concern to Woodbine Entertainment and we would hope the Commission would look seriously at the merits of the use of this equipment.

Sincerely,

Hugh M. Mitchell
Sr. Vice President - Racing

HMM/cm

WOODBINE ENTERTAINMENT GROUP
555 Rexdale Boulevard P.O. Box 156 Toronto Ontario Canada M9W 5L2
Tel: 416-675-3993 Fax: 416-213-2126 www.WoodbineEntertainment.com

WOODBINE MOHAWK Champions

WOODBINE
ENTERTAINMENT

January 21, 2002

Mr. Lonny Powell
President & CEO
Association of Racing Commissioners International (ARCI)
Two Paragon Centre
2343 Alexandria Drive, Suite 200
Lexington, Kentucky
40504

Dear Mr. Powell

I write endorsing the use of the Sure Lines as a safety feature on equipment used for both Thoroughbred and Standardbred race horses. The product offers a new standard of safety for jockeys and drivers which should be welcomed by the racing industry.

I trust that the ARCI will see the merits of the Sure Lines and look favourably on their use.

Sincerely,

Hugh M. Mitchell
Sr. Vice President - Racing

HMM/cm

cc: A. Gray - Sure Lines

WOODBINE ENTERTAINMENT GROUP
555 Rexdale Boulevard P.O. Box 156 Toronto Ontario Canada M9W 5L2
Tel: 416-675-3999 Fax: 416-213-2126 www.WoodbineEntertainment.com

WOODBINE MOHAWK Champions Hollywood Park TRN

** TOTAL PAGE.02 **

Charles E. Coon & Sons, Inc.

Track Consultants

CHARLES E. COON (Ret.)
9433 E. Shady Grove Court
White Lake, MI 48386-2061
248-698-1420

DANIEL C. COON
205 Wind Haven Drive
Nicholasville, KY 40356-8005
859-224-8580

GREGORY COON
209 Cumberland Circle W.
Longwood, FL 32779-5608
407-869-7449/fax 407-869-8905

Lonny Powell
President & CEO
Association of Racing Commissioners International (ARCI)
Two Paragon Center
2343 Alexandria Drive, Suite 200
Lexington, Kentucky 40504

Mr. Powell:

On behalf of Charles E. Coon & Sons (Chuck, Greg and Dan) I would like to take this opportunity to make you aware of our support for a system of safety lines/reins being considered by industry leaders.

Our primary business is the design, construction and maintenance of racetracks for thoroughbred and standardbred horses. Our first concern is for the safety of the athletes, both human and equine.

The Coon family has over 60 years of experience starting harness races. In that time, we have experienced the danger inherent when a horse breaks a line behind the starting gate. Personally, I can think of nothing more dangerous than a horse with a human passenger who cannot steer his mount.

As lifelong proponents of safety, we at Charles E. Coon & Sons support the implementation of a safety line/rein system.

Sincerely,

Greg Coon

Greg Coon
Charles E. Coon & Sons, Inc.

Safety Rein Test Analysis

Buffalo Testing Laboratories Inc. May 1999

These test were conducted when we initially starting developing the safety rein. Both Thoroughbred and Standardbred reins were tested.
The a) tests were to determine the break load of the safety hooks and black fishing line that we originally attempted to use.
The b) tests were to determine the weakest point of the rein. Results indicated that the loop at the bit was the weakest point in both the types of rein with a break load of approximately 425lbs.

ASTB/Analytical Services Inc. April 2002

These tests were performed when we determined that the 600lb break load for the safety hooks was too strong. We changed to a safety hook with a 500lb. break load. These reins were manufactured with the steel cable to anchor the safety hooks.
The Set "A" results indicated a consistent break load of approximately 506 lbs. These were leather reins.
The Set "B" tests were on nylon reins. The results indicated that the nylon material started but did not completely fail 440lbs. The safety hooks started to open at approximately 490lbs.

Quality Inspection Services Inc. May 2005

These tests were on the reins as they are made today. There was concern that using the steel cable to anchor the safety hook could be a problem. We replaced the steel cable with a half inch piece of nylon consistent with the bulk and strength used in manufacturing conventional nylon reins. Results indicate that break load for both the nylon and leather reins is reduced to an average break load of 460lbs., approximately 35 lbs. stronger than conventional reins.

Summary: The average break load of the safety rein is stronger than the conventional reins used today. But not too strong as to prevent the rein from breaking when required.

BUFFALO TESTING LABORATORIES INC.

CHEMISTS - METALLURGISTS
902 Kenmore Avenue
Phone (716) 873-2302

BIOLOGISTS - ENGINEERS
Buffalo, NY 14216-1495
FAX (716) 873-9914

Results:

Sample No. 1: Manufactured Sulky Bridle - Clear Fishing Line.

a.) Hook failed at 620 lbs.

b.) Leather loop failed at eyelet in buckle at ~~240~~ 420 lbs.

Sample No. 2: Hand made Sulky Bridle - Black Fishing Line

a.) Black line failed at 360 lbs.

b.) Leather loop failed at eyelet in buckle at 425 lbs.

Sample No. 3: Thoroughbred Bridle - Black Fishing Line. Gripped On Rubber Section.

a.) Black line failed at 380 lbs.

b.) Leather loop failed at eyelet in buckle at 415 lbs.

Sincerely,
BUFFALO TESTING LABORATORIES, INC.

ALLAN ENIS
METALLURGICAL ENGINEER

KENNETH G. KOLACKI
METALLURGIST

ASTB / ANALYTICAL SERVICES, INC.

4027 New Castle Avenue, New Castle, DE 19720 <> Phone: (302) 571-8882 <> Fax: (302) 571-0582

April 18, 2002

Sure Lines, Inc.
19 Naples Drive
West Seneca, NY 14224

Att: Mr. Arthur A. Gray
President

Gentlemen:

RE: Testing of Sure Line Products
ASTB/AS P. #1235-722; LR. #31071

Pursuant to your recent request, ASTB/AS received and tested two (2) SURELINE safety rein/line assemblies for ultimate strength determinations, described as follows:

SET "A" Light Tan Leather/Red Rubber Reins

SET "B" Black Nylon/Red Rubber Reins

These rein assemblies were tested in triplicate, with the following results:

	SET "A"	SET "B"
Peak/Breaking Load, lbs	506, 509, 507	485, 440, 496
Test Observations	Snap Hooks Deform	Nylon Loop/Snap Hooks Failed

The actual test sets are being returned under separate cover for your review.

Respectfully submitted,

ASTB/ANALYTICAL SERVICES, INC.

F. Wanzenberg, P.E.
Analytical Division

V. Morfopoulos, Ph.D.
Technical Director

FW/VM/ad
Enc.

Quality Inspection Services, Inc.

Corporate Headquarters
Cathedral Park Tower
37 Franklin Street • Suite 400 • Buffalo, New York 14202
(716) 853-2611 • Fax (716) 853-2619
Visit Us At: www.qisi.com E-Mail: Buffalo@qisi.com

REPORT No. : 65-2042 May 9, 2005

Attn. Arthur Gray
Sure Lines, Inc.
19 Naples Dr.
West Seneca, NY 14224

MECHANICAL TEST REPORT

Date Submitted: 5/3/05

Sample Submitted: Four (4) thoroughbred reins with sewn-in safety clips.

Objective: Tensile load test of safety clip assembly.

Test Methods: Assemblies were loaded in tension on our Tinius-Olsen Universal Test Machine S/N 88355 and ultimate load recorder.

Results:

Assembly No.	Ultimate Load (lbs.)	Failure Mode
Nylon #1	490	Bending of clip metal
Nylon #2	430	Bending of clip metal
Leather #1	460	Bending of clip metal
Leather #2	480	Bending of clip metal

Sincerely,
QUALITY INSPECTION SERVICES, INC.

Michael W. Timmons
Metallurgical Services Manager

Madison, Connecticut
Tel. (203) 245-7743
Fax (203) 245-8017

Warren, Pennsylvania
Tel. (814) 726-1988
Fax (814) 726-7850

Sustaining Member

Jacksonville, Florida
Tel. (904) 359-0747
Toll Free (800) 927-3575
Fax (904) 359-0771

Gamerville, New York
Tel. (845) 429-2000

Welder Training & Testing Services
Tel. (716) 831-1404
Fax (716) 831-1408

Buffalo, New York
Tel. (716) 836-0131
Fax (716) 836-9608

East Syracuse, New York
Tel. (315) 431-4291
Fax (315) 431-4292

Amherst, New York
Tel. (716) 568-0154
Fax (716) 636-5921

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NJSEA

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Giants Stadium
Continental Airlines Arena
Monmouth Park Racetrack
Boardwalk Hall
Atlantic City Convention Center
The Wildwoods Convention Center

MEADOWLANDS RACETRACK

January 14, 2002

Lonny Powell
President & CEO
Association of Racing Commissioners International (ARCI)
Two Paragon Centre
2343 Alexandria Drive, Suite 200
Lexington, KY 40504

Dear Lonny,

I wanted to express my support of the Sure Line lines/reins. I have seen the product in use at the Meadowlands Racetrack and have spoken to many horsemen regarding its potential usefulness. The reaction I have received has been positive as a way to ensure continued safety on the racetrack and avoid potential dangerous situations from occurring.

Art Gray has worked hard to explain the many benefits of the Sure Lines lines/reins and as a former horsemen and racing official is able to effectively convey the usefulness of the product.

I would hope that ARCI would see the value of the Sure Lines product as well.

Sincerely,

Christopher McErlean

Copy to: A. Gray, Sure Lines
F. Zanzuecki, NJRC
B. Plasteris, NJRC
B. Garland

Sent via fax/e-mail and regular mail

LONDON FISCHER LLP
59 MAIDEN LANE
NEW YORK, NEW YORK 10038

E-MAIL:
LAW@LONDONFISCHER.COM

(212) 972-1000

FACSIMILE
(212) 972-1030

September 18, 2002

Mr. Norman Barron
Chairman, Safety Committee
Ohio State Racing Commission
77 S. High Street
Columbus, Ohio 43266

Dear Chairman Barron:

By way of introduction, I am a long term insurance defense attorney specializing in equine related liability cases, including those cases which involve personal injuries and accidents occurring to horse races and training. I am therefore, taking this opportunity to endorse the safety lines and reins designed by Sure Lines, Inc.

Insurance companies recognize that horse racing, in general, can be a very dangerous activity. Any measure we can implement to protect our grooms, trainers, drivers, jockeys, exercise riders and horses should, therefore, be vigorously pursued. It is my considered view that the Sure Lines' safety lines and reins will provide an increased measure of safety for the human and equine athletes in all facets of racing and training by eliminating one of the more dangerous situations on the racetrack.

As evidenced by the present workers' compensation crisis, insurers are certainly concerned about horseracing's level of focus on safety. A concerted effort and renewed focus on safety procedures, policies, regulations and equipment would send a clear message to the insurers that the sport is concerned about safety as well. Additional safety measures such as the mandated use of Sure Lines' safety lines and reins should also have a positive long-term effect on future premium rates as accidents under these circumstances will be eliminated, or at the very least, significantly reduced.

The Safety Committee of the Ohio State Racing Commission, under your leadership, should be commended for its progressive position on safety. I sincerely hope that for the benefit of all in racing you will consider mandating this product as part of your progressive position on safety.

I appreciate your time and consideration.

Very truly yours,

LONDON FISCHER LLP

Harvey A. Feintuch

K:\360\002\corresp\Norman Barron Letter 9-18-02.doc

REFERENCE (H)

Matthew A. Dettman, P.E.

Geotechnical Engineering
Materials Testing
Construction QA/QC

June 15th, 2007

Lisa and Brian Peck

RE: Supplemental Report: Testing of Reinforced Reins

Lisa and Brian,

In accordance with your request, I have completed the second round of testing of your 1 inch reinforced reins. This letter will summarize the results of the testing. Please note that the reins and the process are identical to that described in my report dated December 6th, 2006.

PURPOSE

The purpose of this second round of testing was to verify the results of the initial testing to determine the consistency of the testing procedure as well as to serve as a quality control measure of your rein manufacturing process to see if the reins test the same over a period of time. In addition to the testing of the 1 inch reinforced reins, a sample of 1 inch reins were manufactured by you in the identical fashion as the reinforced reins except that the reinforcing was omitted. The purpose of this testing was to compare your reinforced reins to un-reinforced reins. In the first round of testing, un-reinforced reins were tested; however they were manufactured by a separate company. The goal here was simply to compare the results of the 2 reins with everything being identical except for the reinforcement.

TEST RESULTS

In this round of testing, 10 reinforced reins and 4 un-reinforced reins were tested in the identical fashion as the first series of testing. For all intents and purposes, the results of the testing for the reinforced reins were the same as the first series of tests in both failure mode and load at failure. In the failure mode, two distinct failure points were noted with the first failure being that of the leather portion of the rein and the second being that of the reinforcement. The failure mode of the un-reinforced reins resulted in one failure point, which was of course expected.

The table below shows the average results from testing. For the reinforced reins, both the leather failure

Contact Information:
Matthew A. Dettman, P.E. PO Box 1577 Bowling Green, KY 42102
Office) 270-745-2462 Mobile) 270-991-4814 email) matthew.dettman@wku.edu

and the cord failure results are shown. Results from the first round of testing are shown in parenthesis below the current results.

Un-Reinforced Rein 1 inch width	**Reinforced Rein 1 inch width**	
Leather Failure (lbs)	***Leather Failure (lbs)***	***Cord Failure (lbs)***
493 (500)	1145 (1130)	873 (840)

The results of the current testing show a high correlation with the initial testing which is a good indication that the testing method is sound and that the rein manufacturing process is consistent and reliable.

It should be noted that in the first round of testing there were a couple of "flyers", or reins that failed more than 20% over or under the average. This round of testing had one reinforced rein out of ten that I considered a "flyer". This rein failed approximately 30% below average in both leather and cord, but still well above the strength of the un-reinforced rein. It is my opinion that this type of result is to be expected of a product that is manufactured by hand using a natural material such as leather. In addition, I believe the results show that these reins are very consistent in strength and quality, and even the "worst case" failure is still capable of providing the intended safety of the jockey.

In conclusion, I believe that based on the two rounds of rein testing, that the test method I have developed is sound, reliable, and repeatable and that the reins developed by Lisa and Brian Peck will provide a reliable back-up system for the jockey such that in the event that the leather rein fails due to excessive use, weathering, sudden high tensile load, or any other event that could cause the leather to fail, the parachute cord will remain in-tact allowing the jockey an opportunity to regain control of the horse guide it to safety. If you have any questions or comments, please don't hesitate to contact me.

Sincerely,

Contact Information:
Matthew A. Dettman, P.E. PO Box 1577 Bowling Green, KY 42102
Office) 270-745-2462 Mobile) 270-991-4814 email) matthew.dettman@wku.edu

Matthew A. Dettman, P.E.

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Matthew A. Dettman, P.E.

Geotechnical Engineering
Materials Testing
Construction QA/QC

December 16th, 2006

Lisa and Brian Peck

RE: Testing of Reinforced Reins

Lisa and Brian,

In accordance with your request, I have completed the initial testing of the reinforced reins. This letter will summarize the purpose, description of reins, process, and results of this testing.

PURPOSE

Several weeks ago, you contacted me to determine if a test method could be developed to determine the strength of a horse rein that had been reinforced with parachute cords. It is my understanding that the purpose of the parachute cords is to provide a backup for the jockey if the leather in the rein breaks or fails, then the parachute cord will remain intact so the jockey has something to hold on to so control of the horse can be maintained to guide both the horse and jockey to safety.

DESCRIPTION OF REINS

At the time of our initial meeting, you provided several samples of un-reinforced reins that are currently in use, as well as samples of your new reinforced rein. The un-reinforced reins are made of leather with rubber grips and are 1 inch wide. The new reinforced rein is also leather with rubber grips, is 1 inch wide, and reinforced with parachute cord. The parachute cord is embedded in the leather and starts at the loop end of the rein and runs down the entire length of the rubber grip and it stops at this point. The remaining part of the rein contains no reinforcing. On a subsequent visit, you brought another group of reinforced reins which were identical to the previous samples; however they were ¾ of an inch wide. The 3 reins are shown in Figure 1, with the un-reinforced rein on the top, the 1 inch reinforced rein in the middle, and the ¾ inch reinforced rein on the bottom.

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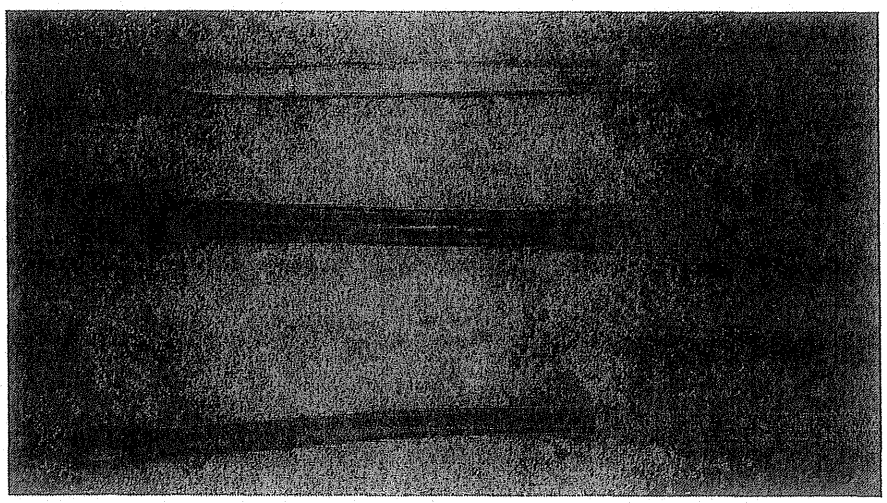

Figure 1 – Close-up of the 3 Reins Tested

TEST PROCESS

The project started with research into whether or not a current standard test method exists for the analysis of reins. Since no standard test method was found, it was necessary to develop a reliable and repeatable method to determine the ultimate tensile strength of the reins. Further research was performed into the process used to test safety straps and climbing harnesses and aspects of these different existing methods were combined in the development of the method used to test the reins. The difficulty in performing this test is how to "grab" the rein without tearing the material or creating stress concentrations that would have an adverse impact on the final results. The method developed to test the reins was to create 2 brackets that would hold a piston horizontally such that the ends of each rein could be wrapped around the piston and clamped so that enough friction would be developed to allow the reins to be pulled to failure. To pull the reins, one of the brackets was mounted to the floor, and the other was mounted to an MTS actuator capable of pulling a maximum force of 50,000 pounds. The actuator is computer controlled so that load and deflection readings can be taken during the test. Figure 2 below shows a close up of the brackets and a view of the entire test setup.

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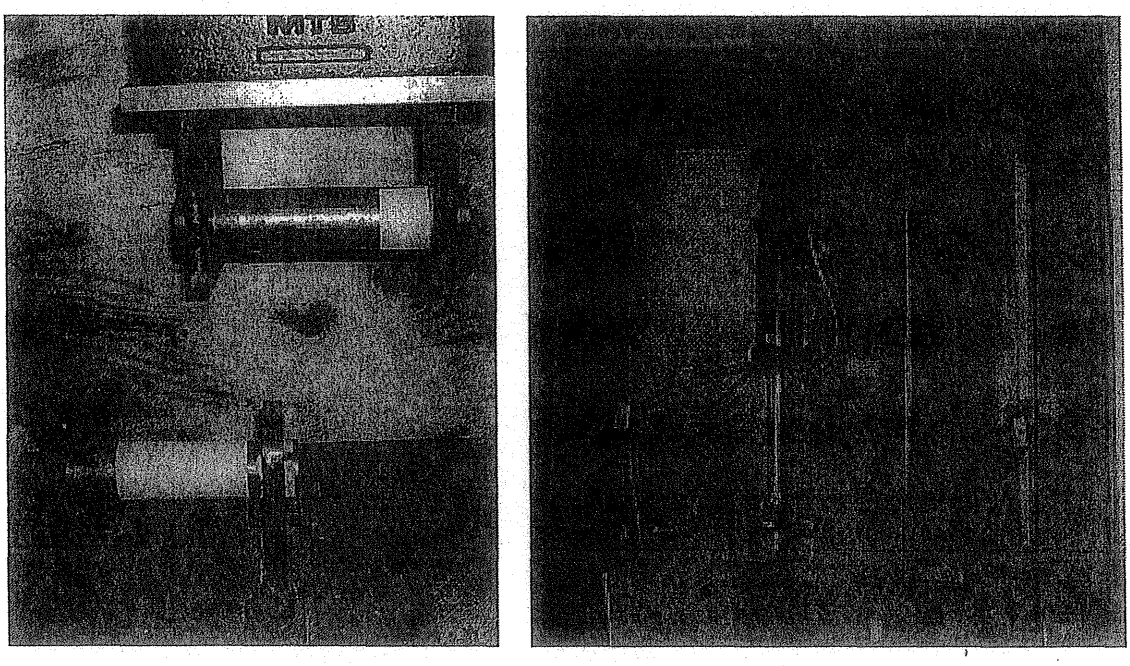

Figure 2 – Brackets and Test Frame Setup

As the purpose of the rein testing was to determine if the parachute cords would remain in-tact after the leather failed, the reins were tested entirely in the reinforced section to determine both the overall strength of the rein and to see if the cord would remain in-tact such that the jockey could hold the cord and guide the horse to safety. To perform this test, the loop-end of the rein was attached to piston of the upper test bracket, which is affixed to the MTS actuator, and the lower portion of the rein was wrapped around the piston of the lower test bracket, as shown in Figure 3 below. Once the rein was fully secured, the MTS actuator pulled the rein to failure recording both tensile load and deflection during the test. Figure 4 shows a close-up of a rein after the test was completed.

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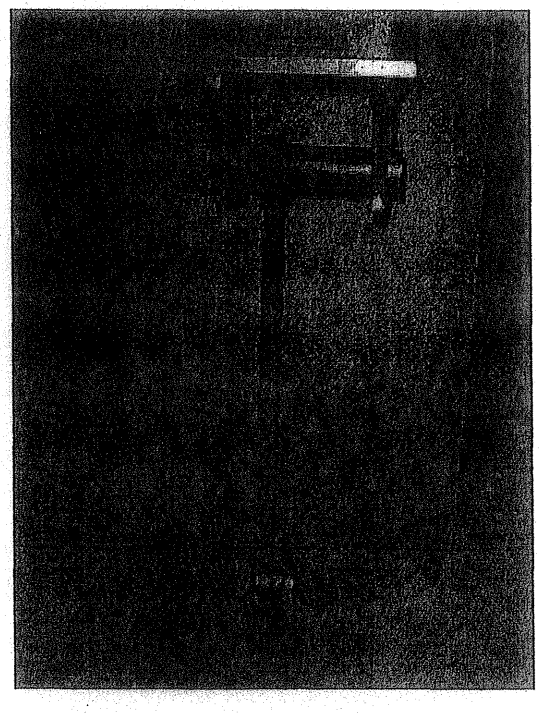

Figure 3 – Rein in the Test Setup

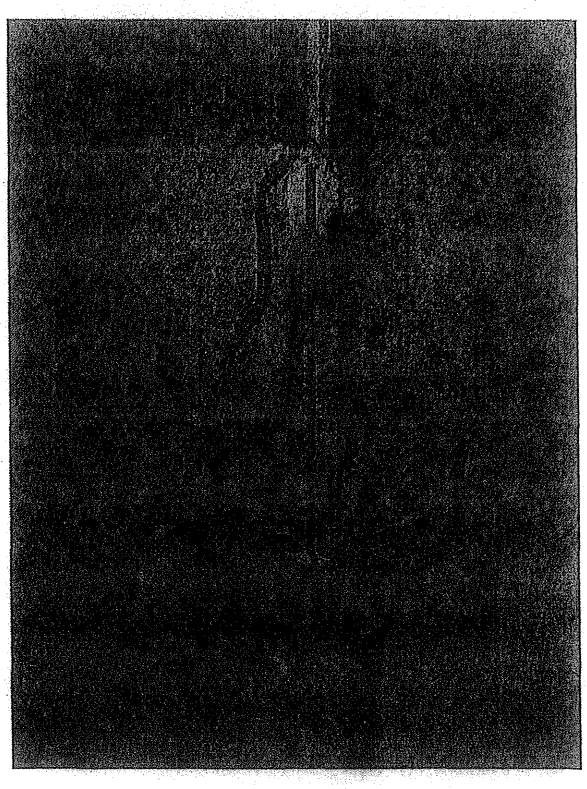

Figure 4 – Failed Rein

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TEST RESULTS

A series of tests was performed on each of the 3 types of reins. Several tests were run to test the brackets and MTS actuator in order to determine the best process that was repeatable and that provided consistent results. As stated above, each rein was tested to failure and the failure load was recorded for each test. For the reinforced reins, the tests revealed 2 separate and distinct failure loads recorded during the test. The first failure load recorded was the load at which the leather failed and the second failure load was the load at which the parachute cord failed. Based on these observations, it appears that once the leather fails, the parachute cord does in fact remain intact. When the parachute cord does fail, it typically does not break, but it pulls loose from its sewn connection at the base of the rubber grip. In none of the tests did the cord pull loose from the looped end of the rein.

The table below shows the average results from testing. For the reinforced reins, both the leather failure and the cord failure results are shown.

Un-Reinforced Rein 1 inch width	**Reinforced Rein 1 inch width**		**Reinforced Rein ¾ inch width**	
Leather Failure (lbs)	*Leather Failure (lbs)*	*Cord Failure (lbs)*	*Leather Failure (lbs)*	*Cord Failure (lbs)*
500	1130	840	1000	770

While this data represents a fairly small sampling of reins, the results were very consistent and did not show a very wide spread of data. In other words, most of the reinforced 1 inch reins broke within about two hundred pounds of the average value with only a couple "flyers", or reins that broke either much higher or much lower than the average. The same can be said for the un-reinforced reins and the ¾ inch reinforced reins.

At this point I am very confident that the test method developed is sound and will work for all similar reins. I would recommend another round of testing now that all of the "kinks" have been worked out of the system and the focus can be solely on the results as the testing process is established.

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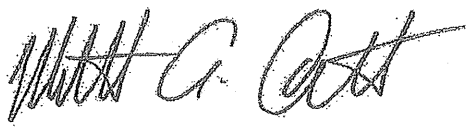
Please let me know if you have any questions regarding this report. I have several more pictures as well as video clips of the testing process. If you are interested in doing any more testing of reins, I would recommend a sample of 10 reins for each type to be tested. I am confident that the procedure is sound and any future testing would simply be to put the rein in the machine and test it. I don't see any more "kinks" in the system so the testing should go very quickly. I have really enjoyed working on this project and hope to do some more testing soon.

Sincerely,



Matthew A. Dettman, P.E.

Contact Information:
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REFERENCE (I)

Opposition to Mandatory Safety Reins

I am Dwayne Rhule, 1st Vice President of the ISA. Currently I hold an owner, trainer, and qualifier license for harness horses.

FOR THE RECORD:

Thank you Madame Chair and Commissioners for the opportunity to speak on this important matter concerning the "Safety Reins" issue. I am aware of the 20 minute time limitation. I will be speaking on behalf of the Standardbred, Thoroughbred, and Quarter Horse associations. Nat Hill IV, DVM will also speak within this allotted time frame regarding the "Safety Reins." We had originally requested that four of our leading harness manufacturers and suppliers be allowed to speak as well. Unfortunately, our time restraint will not allow everyone who has now gained knowledge on the "safety reins proposal" the opportunity to share their opposing concerns of the mandatory ruling.

Madame Chair, your letter dated May 16, 2006 stands correct that the Thoroughbred and Quarter Horse associations were in opposition to mandatory safety reins at the previous meetings. The ISA did submit a letter dated November 18, 2005 that we were not opposing mandatory "safety reins." However, if you would refer back to that letter it also stated that "Although possibly erroring on the side of caution, rather than to expose the horsemen to harm, the ISA agrees to support the safety rein requirement." No one at that time within the ISA Board of Directors had any real experiences with the "Sure Lines" product. Around mid-November 2005, I placed in service two sets of "Sure Lines" purchased through Tim Konkle's magazine, Hoosier Horse Review. Mr. Konkle had written and published a personal endorsement of the product for "Sure Lines." Shortly after the November 18, 2005 letter the ISA became deeply involved with the "Integrity '06 Proposal."

At the January 24, 2006 IHRC meeting Sure-Lines and the Jockey's Guild presented the "Safety Reins" proposal to the commission. Myself and other guests present at the meeting found it difficult to hear all of the comments and inter personal conversations of the IHRC persons and presenters. To speak or make objections at the time would not have been beneficial to us due to the lack of knowledge of the proceedings for the promotion of the "Sure Lines" product. After the meeting the 3 horse breeds

requested a copy of the transcript from the January 24, 2006 meeting. Upon reviewing the transcript the ISA Board of Directors voted to OPPOSE MANDATORY "SAFETY REINS." A letter was then drafted dated February 18, 2006 and forwarded to the IHRC. We realized the commission had moved to some degree on this matter but had not yet adopted or drafted a rule mandating "safety reins." We requested an opportunity to highlight our concerns to the commission before a decision was made to adopt "Safety Reins" as a mandatory rule. Thank you again for this opportunity.

According to the transcript from January 24th, page 55 lines 17 through 25. Mr. Gorajec stated, "Well, my opinion is that if the Commission feels that the safety reins are a ***SUPERIOR PRODUCT***, then the route to go is to mandate them. Quite frankly, they are kind of optional right now. My thought and I'm sure horsemen will have an opportunity to rebut me, but I think unless it's mandatory, I don't believe a lot of horsemen are going to opt for it because of the additional cost." It is the ISA's conclusion after in depth research that the "Sure Lines Product" is ***NOT A SUPERIOR PRODUCT!*** Additional cost is a factor, but is not the major concern for opposing the mandating of "Safety Reins." **Our concerns are quality, necessity, proposed endorsements, and cost of the "Sure Lines" product.**

Now let's look at "Sure Lines" after 6 months of use. (Line #1) The cable is frayed; (Line #2) nylon strapping is coming apart at the buckle area. I took these out of use after only 6 months. (Line # 3) Here a regular set of lines with 2 years of use that appear acceptable for a race. (Line #4) Here is 2 regular sets of lines with 5 or more years of use still in acceptable condition. "Sure Lines" contends that this product is under their close supervision and quality control. Why should the commission feel this product is superior to present market equipment?

Big Dee's is the largest supplier of harness equipment in North America. They sold or gave away for promotion 24 sets in 5 years of the "safety reins," while selling 13,163 sets of other lines on the market. Once again the concern of "safety reins" being a SUPERIOR product is questionable.

We have consulted with our membership including drivers and trainers. I have here a signed petition of 100 Standardbred drivers and trainers currently racing at Hoosier Park who **OPPOSE MANDATORY "SAFETY REINS."** This list of names includes Indiana's top trainers and drivers. Their names can be found on the back of the race program listed under "LEADING DRIVERS" and "LEADING TRAINERS." They hold first hand knowledge of our safety concerns for racing in the state of Indiana. For horsemen this is their business, income, and life at stake when sending a horse out onto the racetrack. Therefore, safety is at their forefront. After discussing with them the Commission's idea to mandate "safety reins" for the state of Indiana, many of them were more than eager to sign the petition to oppose a mandatory rule for "safety reins." This is just a small representation of the horsemen for the

state of Indiana. Keep in mind that the petition was signed by horsemen within 2 hours on one given race evening ending the petition at 100 trainers and drivers. Many more signatures could be gathered if need be. In addition to their signature many of the trainers and drivers who signed noted actually using the "Safety Reins." However, they do not believe the "safety reins" are a proven **SUPERIOR** product that warrants a mandatory ruling.

This leads us into the necessity of "Safety Reins." I asked Joe Gorajec if I could speak to the judge about the "safety reins". He said it was okay. I have no intention of placing the Judges in an awkward position. I did not ask them their opinion on the reins. I simply asked the following questions "Tim Schmitz, do we have a crisis on our hands concerning broken lines?" Tim responded, "We do not have a problem with broken lines." I then asked, "Tim, what equipment malfunctions have you seen at Hoosier Park and Indiana Downs during your tenure?" His reply, "One broken line 2 feet from the buckle area. It was a dry rotted leather line. The trainer was fined $300 and placed on probation." I proceeded to ask, "Tim, throughout your career as an Official Racing Steward, how many horses have you started that have had broken equipment relating to the reins?" Tim responded with "1 broken bit, 5 reins not buckled, and 1 rein broken in the middle of the line as mentioned previously." I then asked Tim "how many horses have you started in your 20 plus year career where you had made these observations?" His reply, "I have started an estimated 1,100,000 horses." I then asked him "Would reins constructed like the 'Sure Lines' product help this proposed safety issue?" His response was "No, why would a person hook a second hook when they did not buckle the line in the first place."

Please take a look at the February 2006 issue of the **Hoof Beats** magazine that has been provided to you. The top 21 Standardbred horses in North America are shown here without use of the safety reins. Is there a demonstrated need for safety reins? According to data that we have researched, this issue does not merit the need for safety reins. The same statement can be made for the **Thoroughbred Times** magazine **(Handout Copies)**.

Furthermore; according to the transcript from January 24th, page 42 lines 8 through 22. Art Gray stated "Now, on the safety rein issue, we are here today because of the need to protect the riders and the

horse and the integrity of the **betting public** in horse racing. Throughout the industry, as you know, times have progressed, certain safety measures have increased. And for the health and safety of riders and horses also, we are proposing from the Guild the use of safety reins. We have had an – I will just quote a couple of incidences. In the Black-Eyed Susan this year, Edgar Prado's horse broke a rein. He could not ride his horse out. He was one of the choices. Of course, it was **detrimental to the betting public**. He couldn't finish on his horse to a placing that the horse could have gained."

I have here a picture of the photo finish from the 2006 Kentucky Derby Winner Barbaro, with jockey Edgar Prado (who Art Gray referred to in the January Transcript). Please take notice that in this picture Edgar Prado was not using safety reins. This leads us to question his assurance of safety lines having the SUPERIOR QUALITY that would ensure his safety. By not using "safety reins" during North America's largest most publicized and wagered upon horse racing event it appears that there is not an emergency need for "Safety Reins?" Furthermore, this picture of the 2006 Preakness winner also does not show use of safety reins.

The USTA was approached for their endorsement of "Sure Lines," and they did NOT provide it per Mr. Hastings, head of regulations. The U.S.T.A. is the regulatory body of our Standardbred business. You also have a letter in your packet from an outstanding director of the U.S.T.A., Jerry Landess, not wanting mandatory "safety reins." He has over 60 plus years in the Horse Racing Industry, in which his opinion should hold value. You also have a letter from Doug Ackerman, with over 60 years as well in the industry and one of the top horsemen in North America who is from Indiana. These examples should all hold a high merit as excellent testimony opposing the necessity of "Safety Reins."

To the best of our knowledge no Indiana horse owner, trainer, driver, except Tim Konkle has asked for this product to be mandatory. Here in Indiana we are competing within our own jurisdiction. As noted previously, there does not appear to be a need for mandatory "safety reins" within our jurisdiction. We need to keep the focus on our needs here currently in the Horse Racing Industry of Indiana.

As for the cost factor, all three breeds are looking at a cost totaling well over $200,000 to owners, trainers, and drivers. This figure is calculated as a beginning figure for a mandatory ruling.

Safety Precautions to Consider:

Has this issue ever been brought to our trainers or Paddock Judges attention that they were not fulfilling their duties according to the IHRC Rule Book?

- Current IHRC Rule – **Paddock Judge Responsibilities;** inspection of horses for changes of equipment, broken or faulty equipment, and head numbers.
- Current IHRC Rule – **Trainer responsibilities;** ensuring that his or her horse are properly shod, bandaged, and equipped.

If we have a perceived problem why have we not seen some kind of communication from the IHRC before now? Mandatory safety reins is a drastic first communication with the horsemen.

I conducted a time and motion research study at Hoosier Park and Indiana Downs this past month of May. In short version Jockey's never looked at or touched the reins of their horses until they are asked to mount the horse. Jockey's have anywhere from 6 ½ to 8 minutes of idle time. Minor variations can occur. After observing numerous races in the paddock I could not understand how anyone could mount a horse and not check over his or her reins. Chief Steward said, "He had 2 broken reins in the last 2 years, but no conclusive data as to the cause of the broken reins."

As for the Standardbred drivers at Hoosier Park they have at least 3 to 8 minutes of time to look over a horse. Normally most drivers took about 2 minutes to look over reins and other equipment. The majority did a good job of reviewing their horses programmed to drive prior to leaving the paddock for the race.

A SOLUTION!

All accidents have a root cause. Root causes here are lack of inspection by users such as jockey's, drivers, and trainers. I can provide you with more detail later, but briefly this is what the ISA proposes. This simple solution would not cause additional financial burden to the owners, trainers, and drivers of Indiana. When horses are being prepared to race in the paddock, the paddock judge makes a call over the loud speaker to the trainers and grooms to check their reins. When the paddock judge calls for the horses to be hooked to the race bike, he once again makes a call for the reins to be checked. This would involve the trainer and groom checking to make sure the reins are fastened properly and are in a racable condition. Then as drivers and jockeys are called to mount their horses they are reminded over the loud speaker by the paddock judge to check their reins to ensure proper racable condition. This type of safety precaution can be conducted within 30 seconds. If more time permitted I could give you a detailed description of how the safety check could be performed. If there is reins or any type of questionable equipment malfunction the paddock judge already at both racetracks has stored extra equipment available for such emergency situations. This is a repetitive process that becomes second nature. It will be low cost but highly effective in the prevention phase.

In conclusion, the Standardbred, Thoroughbred, and Quarter Horse Associations hereby oppose a mandatory ruling for "Safety Reins." Please take into serious consideration this presentation before making a crucial judgment of mandatory "Safety Reins." Our research proves that "Safety Reins" do not possess SUPERIOR QUALITY, that Indiana has not previously demonstrated a need for this emergency safety precaution, nor does mandatory "Safety Reins" support the best interest of our Indiana Horse Racing Industry leaders or the general population of horsemen. (Give out the main points of this presentation.)

Thank you for your time, Dwayne Rhule, ISA 1st Vice President

REFERENCE (J)

CALIFORNIA HORSEMEN'S SAFETY ALLIANCE

DATE: October 1, 2008
TO: All CHSA Trainer Participants
FROM: Sonia F. Pishehvar, CHSA Administrator
SUBJECT: Used Reins Exchange Program

As a Licensed Thoroughbred Trainer and an active participant in the CHSA program we are offering for a limited time only a "used reins" in exchange for "safety reins" program. The limit is of two sets of reins per trainer and the choice from two styles of safety reins.

The safety reins are provided at a discount cost of $50.00 per set. You are not under any obligation legal or otherwise to participate in this "used reins exchange program".

Should you elect to participate, you would be asked to bring in two sets of old / used reins to the CTT/CHSA office at Golden Gate Fields.

This program is offered for a limited time only and on a first come first served basis.

Should you have any questions or need any further information please contact CHSA office at (626) 447-2146, Sonia at (909) 648-0843 or Pedro Muniz at (510) 449-3844.

CALIFORNIA HORSEMEN'S SAFETY ALLIANCE

Safety Rein Exchange Program
RELEASE OF LIABILITY – READ BEFORE SIGNING

I, _____, desire to participate in the Rein exchange program and receive a safety rein manufactured by Sure Reins and/or Safer Reins. Said reins are being provided at a discount cost to me. I acknowledge that I am not under any obligation legal or otherwise to use these particular reins. I am a licensed Thoroughbred horse trainer.

I, the undersigned, in consideration of being allowed to participate in this exchange program, acknowledge that the use of this rein is not a condition of worker's compensation insurance or other insurance coverage and that the use of these particular reins is not a requirement of either State Law or California Horse Racing Board Rules and Regulations. I understand that my feedback and opinion on the usability of these reins may be collected as informational data to be provided to CHRB on the issue of making safety reins mandatory in California. I hereby release the California Horsemen's Safety Alliance (CHSA), the California Thoroughbred Business League (CTBL), and California Thoroughbred Trainers (CTT) and their officers, directors, partners, employees or agents from any and all liability due to personal injury, accident or other personal occurrence which I or my employees, and or others to whom I provide said reins may suffer in any manner whatsoever arising out of or resulting from my participation in this program and/or the use of these reins. I am aware of the risks of riding, training, exercising and or otherwise working with horses, and hereby accept those risks on behalf of myself and those to whom I provide said reins. I expressly assume all risks inherent in riding, training, exercising or otherwise working with said race horses and I am aware that these reins may not protect me or my employees from injury. I understand that this release shall not affect any rights for worker's compensation benefits or other legal rights I or those to whom I provide these reins might have against other parties except for those parties named herein.

Additionally, in consideration of being allowed to participate in this exchange program, related events, and activities, I acknowledge, appreciate, and agree that:

A. The risk of injury from the activities involved in this program could be significant, including the potential for permanent paralysis and death, and while particular rules, equipment, and personal discipline may reduce this risk, the risk of serious injury does exist; and

B. I knowingly and freely assume all such risks, both known and unknown, even if arising from the negligence of the Releasees and assume full responsibility for my use of these reins and use by those to whom I provide these reins. I further release, discharge, and covenant not to sue, the California Thoroughbred Trainers, the California Thoroughbred Business League and their related entities, officers, directors, partners, employees or agents from any and all liability, claims, causes of action or damages (including attorney's fees, costs, and expenses) for personal injury, property damage or wrongful death arising out of the use of these reins and/or failure of these reins to protect me or those to whom I provide these reins.

I HAVE READ THIS RELEASE OF LIABILITY AND ASSUMPTION OF RISK AGREEMENT, FULLY UNDERSTAND ITS TERMS, UNDERSTAND I HAVE GIVEN UP SUBSTANTIAL RIGHTS BY SIGNING IT, AND SIGN IT FREELY AND VOLUNTARILY WITHOUT ANY INDUCEMENT OTHER THAN THE RECEIPT OF THESE REINS.

_____ _____

PARTICIPANT'S SIGNATURE DATE SIGNED

_____

PARTICIPANT'S NAME (PLEASE PRINT CLEARLY)

REFERENCE (K)

December 30, 2008

Colleen Germek
Regulations Analyst
California Horse Racing Board
1010 Hurley Way, Suite 300
Sacramento, CA 95825

Re: Status of Safety Rein Issue

Dear Ms. Germek:

With regard to the safety rein issue, the Jockeys' Guild and the California Thoroughbred Trainers (CTT) Association have reached an agreement to defer adoption of the safety rein standard and jointly seek the development of an ASTM standard for safety reins. We anticipate that a standard will be developed within the next 10 to 12 months. Sonia Pishehvar will take the lead on behalf of the California Horsemen's Safety Alliance (CHSA) to move the issue through the ASTM process.

The CTT has agreed that, once an ASTM standard is in place, it will join the Guild in supporting the adoption of a CHRB rule mandating use of an ASTM approved safety rein at California tracks.

At the January meeting, Ed Helpern and I have agreed to present the matter as a joint proposal of the Guild and the CTT.

Thank you for your consideration.

Sincerely,

Barry Broad

1127 11TH Street, Suite 501
Sacramento, CA 95814
(916) 442-5999
Fax (916) 442-3209

CALIFORNIA HORSE RACING BOARD

AUGUST 6, 2010
MEDICATION AND
TRACK SAFETY COMMITTEE MEETING

There is no board package material for Item 3

CALIFORNIA HORSE RACING BOARD

AUGUST 6, 2010
MEDICATION AND
TRACK SAFETY COMMITTEE MEETING

There is no board package material for Item 4

CALIFORNIA HORSE RACING BOARD

AUGUST 6, 2010
MEDICATION AND
TRACK SAFETY COMMITTEE MEETING

There is no board package material for Item 5

STAFF ANALYSIS
REPORT AND DISCUSSION REGARDING
CHRB RULE 1807, AUTHORIZED HORSE SALES,
1801, MEDICATIONS PRIOR TO SALE AND
1809 POST-SALE TESTS AND
CHRB'S RESPONSIBILITIES RELATIVE TO
HORSE AUCTIONS CONDUCTED AT CHRB INCLOSURES

Medication and Track Safety Committee Meeting
August 6, 2010

BACKGROUND

Board Rule 1807, Authorized Horse Sales, provides that the Board may authorize a sale or auction for the sale of race horses or breeding stock that is used in the production of race horses, to be held on the premises of a racing association, upon such conditions imposed by the Board. Board Rule 1808, Medications Prior to Sale, states no person having control over a horse offered for sale at a horse sale or auction under the jurisdiction of the Board shall administer any topical medication or drug within 72 hours of the time the horse is offered for sale unless the administration of the topical medication or drug is reported to the official veterinarian appointed to act at the sale or auction before the sale of the horse. Rule 1808 also provides that the prospective purchaser of a horse at an authorized sale or auction may request the report of medication administered to the horse. Rule 1809, Post-Sale Tests, authorizes the official veterinarian at any horse sale or horse auction sale under the jurisdiction of the Board to administer a blood test to any horse sold at such sale or auction at the request of the purchaser of the horse. The blood sample shall be delivered to the official laboratory for analysis.

This item is presented to update the Committee regarding the CHRB's responsibilities relative to horse auctions conducted at CHRB inclosures.

RECOMMENDATION

This item is presented for discussion.

CALIFORNIA HORSE RACING BOARD
TITLE 4. CALIFORNIA CODE OF REGULATIONS
ARTICLE 13.5. AUTHORIZED HORSE SALES
RULE 1807. AUTHORIZED HORSE SALES

Medication and Track Safety Committee Meeting
August 6, 2010

1807. Authorized Horse Sales.

Upon application by a recognized breeder's association, sales organization, or any other person, the Board may authorize a horse sale or horse auction sale for the sale of race horses or breeding stock that is used in the production of race horses, to be held on the premises of a racing association, and the authorization and approval of such horse sale or horse auction sale shall be upon such conditions as may be imposed by the Board.

Authority: Section 19(b) of Article IV, California Constitution and Sections 19420, 19440, 19460 and 19562, Business and Professions Code.

CALIFORNIA HORSE RACING BOARD
TITLE 4. CALIFORNIA CODE OF REGULATIONS
ARTICLE 13.5. AUTHORIZED HORSE SALES
RULE 1808. MEDICATIONS PRIOR TO SALE

Medication and Track Safety Committee
August 6, 2010

1808. Medications Prior to Sale.

(a) Persons owning or having care, custody or control over a horse offered for sale at an authorized horse sale or horse auction sale under the jurisdiction of the Board shall not administer to the horse any substance which is recognized as an injectable, oral or topical medication or drug within 72 hours of the time the horse is offered for sale unless the administration of the medication or drug is reported to the official veterinarian appointed by the Board to act at the authorized horse sale or horse auction sale before the sale of the horse in a manner as the official veterinarian may direct.

(b) Upon request of a prospective purchaser of a horse offered for sale at an authorized horse sale or horse auction sale, the official veterinarian shall make available to the prospective purchaser the report of medication administered to the horse.

(c) Compliance with this rule is the responsibility of the consignor of the horse and/or the person(s) having the care, custody or control of the horse. Violation of this rule is punishable by the Board by fine or in a manner determined by the Board.

Authority: Sections 19420, 19440 and 19580, Business and Professions Code.

Reference: Sections 19420, 19440 and 19580, Business and Professions Code and Section 24011, Food and Agriculture Code.

CALIFORNIA HORSE RACING BOARD
TITLE 4. CALIFORNIA CODE OF REGULATIONS
ARTICLE 13.5. AUTHORIZED HORSE SALES
RULE 1809 POST-SALE TESTS

Medication and Track Safety Committee Meeting
August 6, 2010

1809. Post-Sale Tests.

The official veterinarian at any authorized horse sale or horse auction sale may administer a blood test to any horse sold at such sale and shall make such test at the request of the purchaser of the horse, and the blood sample shall be delivered to the official laboratory approved by the Board for analysis.

Barretts Conditions of Sale

Articles 13 & 14

THIRTEENTH – PROHIBITED PRACTICES: (A) The following are not permitted in connection with any sale horse while on the Barretts or Fairplex grounds, or within seventy two (72) hours of any training preview or seventy two (72) hours of the horse's sale session regardless of the horse's location: (i) extracorporeal shock wave therapy or radial pulse wave therapy; (ii) acupuncture and/or electro-stimulation altering or attempting to alter laryngeal function; or (iii) any invasive procedure which conceals chronic lameness or any material condition that more likely than not adversely affects the horse's suitability to be trained for racing. No sale horse shall, at any time, have had any internal blister or other injections to the horse's knee altering or attempting to alter its conformation. No electrical devices designed or intended to increase the speed of a sale horse or to enhance its performance shall be used while the horse is on the Barretts or Fairplex grounds. Any and all of the foregoing shall be a "Prohibited Practice" and consignor warrants that no Prohibited Practice has occurred or taken place in connection with any horse offered for sale by consignor.

(B) Any horse that is not as warranted as provided in (A) of this CONDITION may be returned to consignor pursuant to CONDITION FIFTEENTH provided that buyer makes a claim in writing, accompanied by all supporting documentation, actually received by Barretts promptly upon discovery by buyer of any Prohibited Practice, but in all events no later than SEVEN (7) days after the end of the session at which the horse was sold. In the event that (i) buyer fails to comply with any of the foregoing requirements; (ii) buyer uses the horse under-tack after buyer's discovery of a Prohibited Practice; or (iii) buyer races the horse, buyer shall have no right to make any claims under this CONDITION and the warranties of this CONDITION shall terminate.

FOURTEENTH - MEDICATION WARRANTIES AND POST-SALE TESTING: (A) Consignor warrants that all medications administered to a sale horse within either seventy two (72) hours of any of its training previews or seventy two (72) hours of the start of its sales session: (i) will not materially exceed the manufacturers' recommended dosages and guidelines; and (ii) will, together with the dosage and time of administration, be reported to Barretts in writing on a daily basis and updated no later than two (2) hours prior to the start of the sale session. Consignor warrants that no medication will be administered to a sale horse within two (2) hours of the start of its sale session through the time it enters the sales ring, unless such medication, dosage and time of administration is announced by the auctioneer from the auction stand prior to the sale of the horse. Consignor is solely responsible for providing the auctioneer with such information in writing in a timely manner. Consignor warrants that all information required to be provided by consignor under this paragraph, as well as the horse's medication report in the possession of the official CHRB veterinarian pursuant to CHRB regulations, shall be complete, accurate, valid and authentic in all material aspects.

(B) Consignor warrants that no exogenous anabolic steroids have entered the system of any sale horse (broodmares, broodmare prospects, stallions and stallion prospects excepted) within forty five (45) days either prior to any of its training previews or prior to the sale of the horse.

(C) In connection with any sale horse, consignor warrants that either within seventy two (72) hours prior to any of its training previews or seventy two (72) hours prior to the start of its sales session: (i) no more than two (2) non-steroidal anti-inflammatory

Article 15: Medication Warranties and Post Sale Testing (cont.)

drugs (NSAIDS) were administered; (ii) no cortico-steroid was administered, except dexamethazone; and (iii) no bronchodilators, including but not limited to Clenbuterol and Albuterol, were administered. Consignor warrants that none of the following medications have been administered to any sale horse while on facilities, premises or sales grounds, or either within seventy two (72) hours prior to any of its training previews or seventy two hours prior to the start of its sales session: (i) all substances classified as either Class 1 or Class 2 by the Association of Racing Commissioners International; (ii) furosemide (Salix or Lasix); or (iii) procaine penicillin.

(D) Barretts and the official CHRB veterinarian assigned to the auction are entitled to take, on a random or selective basis, blood or other samples from any horse after it is sold. For purposes of this CONDITION, buyer is entitled to request that a blood sample be taken from a horse purchased by buyer, if and only if buyer completes Barretts' request form (available at the Barretts' sales office) and concurrently pays a non-refundable $250 administrative fee to Barretts, within 15 minutes of the fall of the hammer for the sale of the horse. In the event consignor refuses to cooperate with, or allow, the taking of any such samples, Barretts may, in its sole discretion, determine that buyer has the right to return the horse to consignor in accordance with the provisions of (F) of this CONDITION. Consignor and buyer acknowledge that testing of any such samples may not test for all medications which are the subject of this CONDITION and may not necessarily ascertain whether or not a consignor has complied with the warranties of this CONDITION. All testing, including of any split sample, shall be conducted at the direction of, and by laboratories selected by, Barretts or the official CHRB veterinarian, as the case may be. Any different or additional testing shall have no bearing whatsoever on this CONDITION. Neither Barretts, the CHRB or its official veterinarian, the testing laboratories nor any of their respective officers, directors, owners, agents, representatives, veterinarians, employees or contractors shall have any liability whatsoever in connection with or arising out of the taking of any samples from a horse, the testing of any samples, or the results of, or determinations made in connection with, any such testing, including, but not limited to, they each shall have no liability for any incidental, special or consequential damages or any lost profits or revenues whatsoever.

(E) If in the determination of Barretts the results of the samples taken and tested pursuant to (D) of this CONDITION reveals that it is more than likely than not that consignor has failed to comply with any of the warranties made by consignor in (A), (B) or (C) of this CONDITION ("Positive Test"), then the following shall occur: (i) buyer will be notified by Barretts of the Positive Test; (ii) upon such notification, buyer must immediately elect whether or not to return the horse to consignor, and the sale of the horse shall stand if either buyer elects not to return the horse or buyer fails or refuses to timely make an election; (iii) upon its receipt of a timely election of return from buyer, Barretts will notify consignor of the Positive Test and of buyer's election: (iv) upon such notification, consignor must immediately request that a confirmation test be conducted on any split sample taken from the horse and concurrently pay a non-refundable $250 administrative fee to Barretts, and buyer shall have the right to return the horse if consignor fails or refuses to timely request and pay for a confirmation test; (v) if Barretts determines that the confirmation test (if any is timely requested and paid by consignor) confirms the Positive Test, then buyer shall have the right to return the horse to consignor; and (vi) if Barretts determines that the confirmation test does not confirm the Positive Test, then the sale of the horse shall stand. Any return of the horse to consignor shall be in accordance with (F) of this CONDITION. If for any reason there are no test results with respect to any sample taken, or if the results of the initial testing of a sample are determined by Barretts to be not credible or to be inconclusive, then the sale of the horse shall stand. If there is a Positive Test resulting from the initial testing of a sample, but for any reason there are no test results with respect to any split sample, or if the tests results of a split sample are determined by Barretts to be not credible or to be inconclusive, then the Positive Test shall stand.

(F) In the event that Barretts determines that buyer has the right to return the horse to consignor: (i) consignor shall refund any sales proceeds paid to consignor by Barretts and pay buyer or Barretts all reasonable expenses or costs incurred by either of them in connection with, or related to or arising out of the horse, including, but not limited to, administrative fees, attorneys' fees, testing costs, veterinarian charges, vanning or other transportation costs, insurance premiums, and board and care expenses; and (ii) consignor shall promptly take possession of the horse where it is then located. Buyer shall exercise due care with respect to the horse while the horse is in buyer's possession or control. Buyer's right of return under this CONDITION shall immediately terminate if there is any material change to the horse caused by buyer, including, without limitation, any caused by buyer's failure to exercise due care or by buyer's affirmative act (such as, for example, the gelding of the horse). The remedies contained in this paragraph shall be buyer's sole and exclusive remedies and buyer will not be entitled to any incidental, special or consequential damages, nor entitled to recover any lost profits or revenues whatsoever.

(G) Any and all of Barretts' determinations made in connection with or arising out this CONDITION, including, but not limited to, whether or not there is a Positive Test or whether or not the Positive Test is confirmed by split testing (as long as same is substantially supported by the findings of the testing laboratory); whether or not a sale stands; or whether or not buyer is entitled to return the horse to consignor shall, absent fraud or bad faith of Barretts, be fully binding upon consignor, buyer and all other interested parties. In the event that any party commences any arbitration or takes any other action regarding any or all of Barretts' determinations, such party shall be liable for all of Barretts' reasonable expenses and costs, including, without limitation, its attorneys' fees and legal or arbitration related costs or fees, absent fraud or bad faith of Barretts.

Barretts Sales Policy

MEDICATION

Reports

All medications administered to a sale horse within either seventy two (72) hours of any training preview or the start of the sales session (a) must be at or below manufacturers' recommended dosages and guidelines; and (b) the medication, dosage and time of administration must be reported to Barretts in writing on a daily basis and updated two (2) hours prior to the start of the sale session.

No medication shall be given to a sale horse within two (2) hours of the start of the sale session through the time the horse enters the sales ring, unless such medication and dosage is announced by the auctioneer from the auction stand prior the sale of the horse. Consignor is responsible for providing the auctioneer with such information in writing in a timely manner.

Restrictions

(A) Seventy two (72) hours prior to either any training preview or prior to the start of the sales session:

1) No more than two (2) non-steroidal anti-inflammatory drugs (NSAIDS) may be administered.
2) No cortico-steroid may be administered, except dexamethazone.
3) No bronchodilators, including but not limited to Clenbuterol and Albuterol, may be administered.

(B) No exogenous anabolic steroids may be administered within either forty five (45) days prior to any training preview or prior to the sale of the horse (broodmares, broodmare prospects, stallions and stallions prospects excepted).

(C) The following medications may not be administered on Barretts or Fairplex facilities, premises or grounds or within either seventy two (72) hours prior to any training preview or prior to the start of the sales session:

1) All substances classified as either Class 1 or Class 2 by the ARCI.
2) Furosemide (Salix or Lasix).
3) Procaine Penicillin.

PROHIBITED PRACTICES

(A) The following are not permitted on Barretts or Fairplex grounds:

1) Extracorporeal Shock Wave Therapy or Radial Pulse Wave Therapy.
2) Acupuncture and /or Electro-Stimulation altering or attempting to alter laryngeal function.
3) Electrical devices designed or intended to increase the speed of a horse or to enhance its performance.
4) Any invasive procedure which conceals chronic lameness or any material condition that more likely than not adversely affects the horse's suitability to be trained for racing.

(B) Internal blister or other injections to the knee altering or attempting to alter a horse's conformation is not permitted at any time.

TRAINING PREVIEWS

Within one-eighth of a mile from the finishing pole line, a rider is prohibited from striking the horse behind the girth and the rider must be holding the reins with both hands. A rider is prohibited from striking the horse in any manner beyond the finishing pole. In situations where the safety of the horse or rider is in jeopardy, a riding crop may be used in front of the girth and the rider is not required to hold the reins with both hands. Riders are not permitted to use spurs during training previews. A $500 fine shall be paid by the consignor for any violation of this rule. Funds collected from fines levied will be distributed to a thoroughbred industry related charity chosen at Barretts' sole discretion. Offenders may be banned from the sales grounds. Barretts has full, final and sole authority to interpret and enforce this rule.

HORSESHOES

A horse at a two-year-old in training sale may not train on Barretts or Fairplex grounds with (i) front shoes that have toe grabs which exceed 2mm. or bends, turn-downs, stickers, jar caulks or any other traction device; or (ii) hind shoes with turn-downs of more than ¼ inch.

CONDITIONS OF SALE

All horses are offered and sold in accordance with Conditions of Sale contained in the catalog for each auction conducted by Barretts. The rights that a buyer may have in connection with a horse purchased are governed exclusively by the Conditions of Sale, which control over this Sales Policy. Buyers should therefore read and be familiar with the Conditions of Sale for the particular Barretts auction before purchasing any horses in such auction.

KEENELAND®

Uniform Sale Policy for Medication and Prohibited Practices

Keeneland Association, Inc.
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Lexington, KY 40510
P.O. Box 1690
Lexington, KY 40588-1690
859 254-3412 Tel.
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859 288-4347 Fax
www.keeneland.com

In an effort to protect the health and welfare of the horse, and to facilitate a fair evaluation of the sales horse for the mutual benefit of the purchaser and consignor, Keeneland has adopted a Uniform Medication and Prohibited Practices Policy as outlined below.

Medication

The following are suggested as "best practices" at this time. Keeneland reserves the right to include this medication policy as regulatory, by inclusion in the Conditions of Sale, if abuses are found to occur. Medications may only be administered at or below manufacturers recommended dosages.

1) No more than two (2) non-steroidal anti-inflammatory drugs (NSAIDs) may be administered.

2) No more than one (1) cortico-steroid may be administered.

3) No bronchidilators included but not limited to Clenbuterol and Albuterol may be administered within 72 hours of an under-tack show or sales session in which the horse is entered.

4) The following may **not** be administered on the sales grounds:
- All substances classified as either Class 1 or Class 2 by the ACRI.
- Furosemide (Salix or Lasix)
- Procaine Penicillin

Prohibited Practices

The following are outlined in the **Conditions of Sale**. Abuse can result in Rescission of Sale.

No Exogenous Anabolic Steroids or their esters are to be administered within 45 days of sale.

Not permitted on the sales grounds:

- **Extracorporeal Shock Wave Therapy or Radial Pulse Wave Therapy.**
- **Acupuncture and/or Electro Stimulation** with the intent of altering laryngeal function.
- **Internal blister or other injections** to the knee intended to have the effect of concealing the true conformation of the horse is not permitted at any time.
- **Any invasive practice which intentionally conceals a material defect or chronic lameness.**

KEENELAND

Keeneland Addendum to Uniform Sale Policy Restrictions

Performance of "under-tack show" during the Keeneland April 2-Year-Old Sale is according to KRS 230.240(2) Kentucky Horse Racing Authority Medication Race-Day Regulations:

Medication

1) NSAIDs permitted (not less than 24 hours prior to under-tack show) include:

a) Phenylbutazone – not to exceed 5 micrograms per ml of blood or serum.
b) Flunixin – not to exceed 20 nanograms per ml of blood or serum.
c) Ketophen – not to exceed 10 nanograms per ml of blood or serum.

2) The following anti-ulcer medications are permitted at the dosage stated, to be administered not less than 24 hours prior to under-tack show or sales session in which the horse is entered:

a) Cimetidine (Tagamet): 8-20 mg/kg.
b) Omerprazole (Gastrogard): 2.2 grams.
c) Ranitidine (Zantac): 8mg//kg.

3) The use of Oral Clenbuterol/Ventipulmin and other Bronchilators is restricted to a minimum of 72 hours prior to the "under-tack show".

*Medications after the "under-tack show" and prior to the sales session in which the horse is to be sold are according to the Uniform Sale Policy for Medication.

STAFF ANALYSIS
DISCUSSION AND UPDATE OF THE EFFORTS TO PROMOTE AND PROVIDE RETIREMENT CAREER CHANGE/OUTPLACEMENT OPTIONS FOR HORSES RETIRED FROM RACING IN CALIFORNIA

Medication and Track Safety Committee Meeting
August 6, 2010

BACKGROUND

At the May 2007 Regular Board Meeting the Thoroughbred Owners of California (TOC) presented a proposal to form a TOC managed California Retirement Management Account (CARMA) for retired thoroughbred horses. At the July 2007 Regular Board Meeting staff was directed to notice a proposed amendment to Rule 1467 to implement the CARMA program. The amendment to Rule 1467 became effective May 8, 2008.

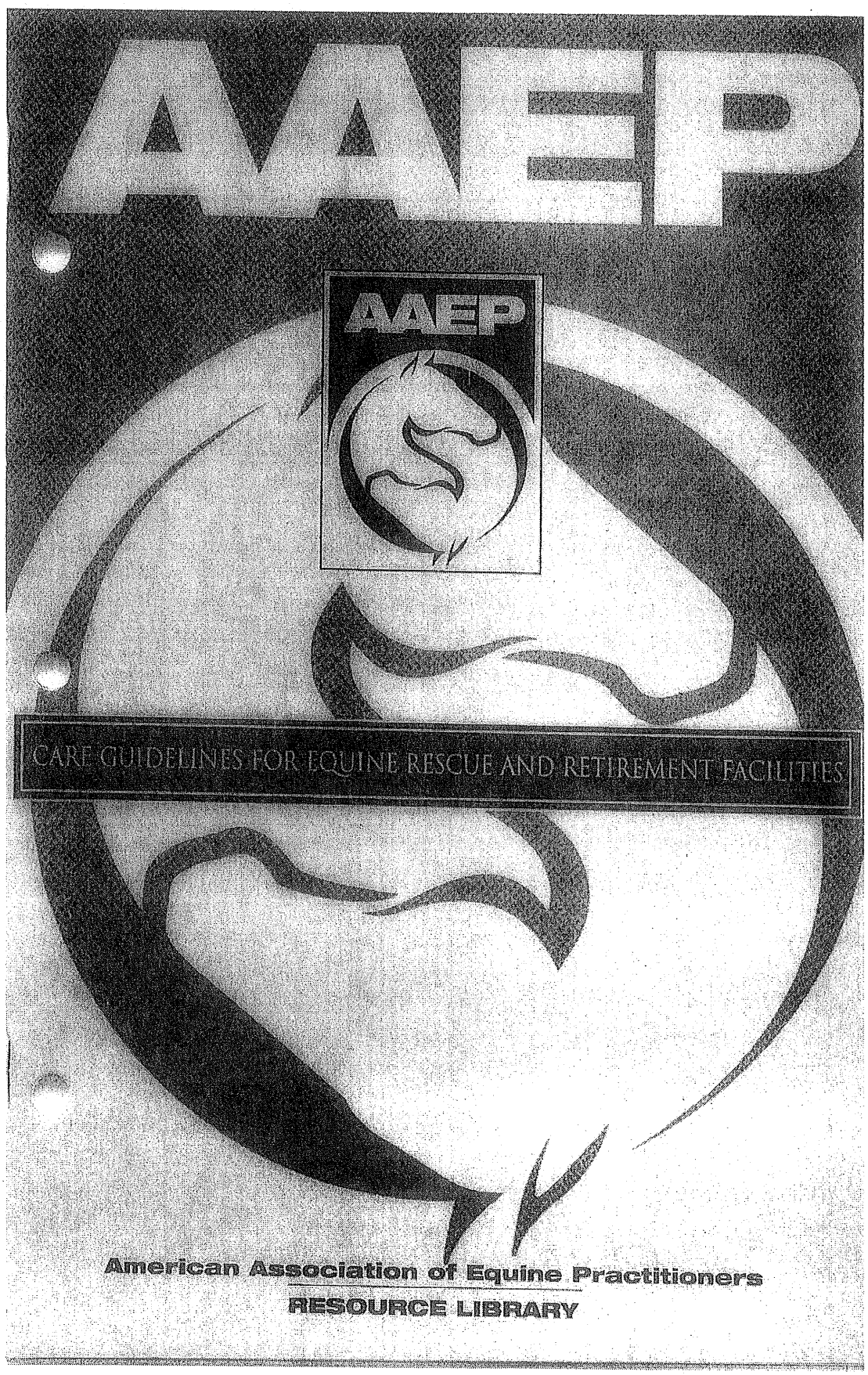
Under the CARMA program the paymaster of purses deducts 0.3 percent of the net purse earned by any thoroughbred horse at a thoroughbred racing association or fair meeting, for deposit into the CARMA. The program is optional, and horsemen may opt-out of the CARMA by submitting the appropriate paperwork to the paymaster. The CARMA, which was established by the TOC, is a charitable trust fund for the benefit of California Thoroughbred retirement/rehabilitation facilities. The horsemen's organization is required to submit to the Board an annual audited financial statement regarding the CARMA within 90 days of the close of the horsemen's organization's fiscal year.

In 2010 CARMA reported approximately 80 percent of horse owners were participating in the program. Since its inception in 2008, CARMA has granted $414,000 which has provided care to over 400 thoroughbreds that participated in California races at some point in their career. Over 80 percent of the funds raised by CARMA are used in the day-to-day care of retired race horses.

To assist organizations that rescue and provide retirement facilities for horses, the American Association of Equine Practitioners (AAEP) and the Center for Equine Health, School of Veterinary Medicine, University of California, Davis, have published guidelines. The guidelines cover subjects from basic equine health management to horse facilities and other aspects of caring for geriatric equines.

RECOMMENDATION

This item is presented for Committee discussion.


AAEP
AAEP
CARE GUIDELINES FOR EQUINE RESCUE AND RETIREMENT FACILITIES
American Association of Equine Practitioners
RESOURCE LIBRARY

AAEP CARE GUIDELINES FOR EQUINE RESCUE AND RETIREMENT FACILITIES

Developed by the AAEP Equine Welfare Committee
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The AAEP gratefully acknowledges the contributions of Lydia Gray, DVM, Andrew G. Lang, DVM, and Nathan M. Slovis, DVM, to the development of these guidelines. In addition, the AAEP thanks the American Horse Council for permission to include material from the AHC's "Care and Handling Guidelines for Horse Owners."

Published by

The American Association of
Equine Practitioners
4075 Iron Works Parkway
Lexington, KY 40511

AAEP CARE GUIDELINES FOR EQUINE RESCUE AND RETIREMENT FACILITIES

Table of Contents

INTRODUCTION

In order to provide guidance to non-veterinarians at equine rescue and retirement facilities regarding the care of a horse throughout its life, the AAEP has developed the following care guidelines. Rescue and retirement facilities play a vital role in providing lifelong care and/or finding new owners for horses that may be considered "unwanted" or have been subjected to neglect or abuse. The AAEP recognizes and commends the important services these facilities provide to the horses and individuals who benefit from their work.

While many principles of basic horse care and management apply to all horses, regardless of their situation, those horses entering rescue or retirement facilities may arrive with unique health challenges. For this reason, employees and volunteers should be experienced in basic horse care and understand the health conditions that require medical attention from a veterinarian.

Equine veterinarians play an important role in the care of the animals at rescue and retirement facilities and can offer valuable advice on many aspects of horse care. It is important that facilities establish a good relationship with an equine veterinarian.

The guidelines presented in this manual are for informational use only and are not considered to be legally binding. Because appropriate horse care practices vary due to climate, region, use and many other factors, the guidelines are intentionally broad.

I. BASIC HEALTH MANAGEMENT

Caring for New Arrivals

Every horse entering a rescue/retirement facility should receive a complete physical examination upon its arrival. A health record must be established for each horse, clearly identifying the horse by name and/or number, age, gender and description. All treatments and medication given should also be recorded in the horse's health record. When horses require medication, it must be administered as directed by the veterinarian.

Horses may be susceptible to transportation stress and disease following transport to a rescue/retirement facility. On arrival, new horses should be isolated to prevent the possible spread of disease. Handlers should carefully monitor recently transported horses for several days after long-distance transport. The temperature of these horses should be recorded daily for several days, and if not normal, the temperature should be recorded at least twice daily, i.e. morning and evening. If a horse's temperature exceeds the normal range, a veterinarian should be consulted.

Monitoring Your Horses

Frequent observation of the horses in a rescue/retirement facility is paramount to ensure they are healthy. Horses should be observed routinely, at least once every 24 hours, paying particular attention during high-risk periods (e.g., inclement weather, foaling, introduction of new animals).

The table below provides vital signs for an adult 1,200-pound (545 kg) horse at rest at 60°F. These criteria will vary according to age, physical fitness and environmental conditions. Younger horses tend to be at the higher end of the range.

VITAL SIGNS FOR A 1,200 LB (545 KG) HORSE AT REST AT 60°F.

Vital Sign	Normal Range	Average
Rectal Temperature	99.5-101.3 F (37.5-38.5 C)	100 F (38.0 C)
Pulse	28-45 beats/minute	36 beats/minute
Respiration Rate	10-14 breaths/minute	12/breaths/minute

Preventive Health Care is a Necessity

In consultation with a veterinarian, rescue/retirement facilities should develop a sound health care program, appropriate to the facilities and environment. Increased horse population density requires greater attention to disease prevention.

Parasite Control

A parasite control program must be established in consultation with a veterinarian. In terms of management priorities, establishing an effective parasite control program is probably second only to supplying the horses with clean, plentiful water and high-quality feed.[1] An effective program will include the administration of dewormers as well as manure and pasture management.

Vaccination

Administering the appropriate vaccinations is the best weapon against common infectious diseases of the horse. The specific immunizations needed by a particular group of horses depends upon several factors, including environment, age, breed, sex, use, exposure risk, geographic location and general management.[2] A veterinarian must be consulted to determine the most effective vaccination program for your facility's horses.

Dental Care

A veterinarian must examine horses' teeth at least annually. Uneven wear and abnormalities should not be allowed to interfere with normal eating habits. Dental care will depend on age, nutrition and environment. Dental care must be performed by a veterinarian or under veterinary supervision.

Be Prepared for an Emergency

Caregivers at rescue/retirement facilities must know how to recognize serious problems, respond promptly and take appropriate action while awaiting the arrival of the veterinarian. Your veterinarian's number should be kept by each phone, including how the practitioner can be reached after hours. Consult with your regular veterinarian regarding a back-up or referring veterinarian's number in case you cannot reach your regular veterinarian quickly enough.

All rescue/retirement facilities should prepare a first aid kit and store it in a clean, dry and readily accessible place. While a first aid kit can be simple or elaborate, the following items are essential:[3]

- Cotton roll*
- Contact bandage*
- Cling wrap*

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[1] AAEP/Bayer Corporation Animal Health client education brochure, Internal Parasites: Strategies for Effective Parasite Control, 2002.

[2] AAEP/Bayer Corporation Animal Health client education brochure, Immunizations: Protect Your Horse Against Infectious Disease, 2004.

[3] AAEP/Bayer Corporation Animal Health client education brochure, Emergency Care: Guidelines to Follow During Equine Emergencies, 2002.

- Gauze pads, assorted sizes*
- Gauze wrap*
- Adhesive wrap and adhesive tape
- Leg wraps
- Sharp scissors
- Hemostats
- Steel cup or container
- Rectal thermometer with string and clip attached
- Surgical scrub and antiseptic solution
- Latex gloves
- Flashlight and spare batteries
- Permanent marker pen
- Pliers (to pull nails)
- 6" diameter PVC tubing, cut in half the long way (like a gutter) into lengths of 1 ½ to 2 feet for emergency splinting

*Materials should be sterile

Special Considerations

The AAEP encourages the castration of all stallions entering a rescue/retirement facility. Castration and other surgical procedures must be conducted by licensed veterinarians using accepted surgical techniques in accordance with state and federal veterinary acts and regulations.

Distressed horses should be dealt with humanely, effectively and promptly to prevent suffering. Sick or injured horses must receive veterinary attention as indicated. Horses unable to rise need veterinary attention. Veterinary consultation must be sought prior to any attempt to move a downed horse.

Evidence of a reportable disease for your area, such as West Nile virus, vesicular stomatitis or rabies, must immediately be brought to the attention of a veterinarian. Any disease that appears to spread from a horse to a human should be reported. Signs that should be discussed with your veterinarian include but are not limited to: severe, unexplained, persistent or recurrent fevers; unexplained weight loss or progressive weakness; thick vaginal discharge; abortion of unknown cause; neurological signs, e.g. uncoordination, erratic behavior, abnormal postures or hypersensitivity; severe difficulty breathing, spasmodic coughing or frothy nasal discharge; soft swelling of the face or neck; and blisters or open sores on the lips, mouth, genitalia or above the hooves.

Dead horses must be removed and disposed of in an appropriate manner, as required by municipal, state or federal regulations.

II. NUTRITION

The following are basic guidelines for feeding and watering horses at rescue/ retirement facilities. Formulating a diet for a horse can be a complicated process that should take into account the horse's current state of health, geographic location, medical history, exercise/use and individual metabolism. Special recommendations for feeding a starved horse are found at the end of this chapter. A veterinarian or equine nutritionist should be consulted to ensure current feeding programs are meeting each animal's needs.

General Feed Requirements

Horses should receive a daily diet that is adequate for maintaining health and function and be fed on a regular daily schedule. In its natural state, the horse eats a variety of forages (mainly grasses) to meet its nutritional needs. Due to the small size of its stomach, the horse will normally consume its daily intake over 16 to 20 hours.

Horses should be fed a forage-based diet with grain supplementation if needed. At rescue/retirement facilities, fresh forage (pasture) can seasonally provide most of the horse's needs. Provided the stocking rate is correct, most horses can meet their energy, protein and mineral demands from an adequate supply of good-quality pasture. If possible, unless otherwise directed by a veterinarian, horses should have daily access to pasture. When pasture is limited, however, the diet should be supplemented with hay. However, certain minerals and trace minerals may be lacking.

When horses are fed high-grain (high-energy) diets, attention should be paid to avoid nutrition-related health problems, such as grain overload, laminitis, founder or obesity. Abrupt changes in diet should be avoided. To avoid major health problems, any changes in the type and quantity of feed should be introduced gradually over a period of several days. All feed components used in the diet should be free of spoilage, toxic insects or contaminants, dust and molds. Horses should also have access to free-choice salt and appropriate minerals.

When horses are fed in groups, adequate manger space or feeding points should be available to minimize competition for feed. All horses should have simultaneous access to feeders so that all can eat at one time. Horses that "bully" others and prevent these horses from eating must be separated to allow the less dominant horse or horses to receive adequate feed.

All feeds and supplements should be properly labeled to avoid misuse. Feeds designed for other species, particularly medicated feeds and those containing urea, are not to be used for horses. Feed troughs and buckets should be cleaned regularly.

Supplementary Feeds

Cereal grains such as oats, corn and barley should generally be added to the diet to meet extra energy needs, such as those associated with exercise, late pregnancy, lactation, growth and sometimes maintaining proper weight, convalescence or recovery from surgery. Cereal grains should always be measured by weight rather than volume when feeding, as there are marked differences in densities, not only among types of grains, but also within different consignments of the same grain.

Oats tend to be safer to feed due to high fiber content. Crimping is considered by many to aid digestion, but the storage of crimped oats reduces their nutritional value and should be avoided. Corn and barley have a higher energy value than oats. Because of their high-energy content, they can cause laminitis and/or colic if introduced to the diet too quickly. Barley's energy value lies between that of corn and oats. Its hard husk needs to crushed or cracked to aid digestion.

Soybean meals are often included in conditioning rations for young and growing horses and increase the protein content of the ration. They should be fed in small amounts and introduced gradually. Linseed meal is not an appropriate protein supplement for growing horses because it is low in the amino acid lysine that is essential for normal development.

Many brands of blended horse feeds are on the market. When the manufacturer's feeding recommendations are followed (this information should be printed on the label, along with an analysis of ingredients), they provide a simple method of supplementation. Where small numbers of horses have similar supplementary feeding needs, premixed balanced feeds can save the facility work and ensure continuity of diet. When feeding commercially blended feeds, care should be taken to ensure the horse has access to its minimum daily forage (fiber) requirement of 0.5 to 1 pound dry matter/100 pounds bodyweight.

Horse feeds are generally low in sodium. When horses are working and sweating, salt (sodium chloride) and possibly other electrolytes may need to be supplemented. Hand-fed horses should have salt supplemented daily. Advice on mineral deficiencies peculiar to any grazing area should be sought from a veterinarian or local extension nutritionist.

Calculating Horse Bodyweight

Before accurate feed calculations can be made, the bodyweight of the horse should be estimated. Bodyweight assessment is also required when medicines, including dewormers, are administered.

The most accurate method of determining bodyweight is the use of electronic scales.

When using scales, weighing the animal just before feeding and watering will help avoid variations caused by different gut-fill levels and will make the results of successive weighings more meaningful.

Weight tapes also can be useful in estimating a horse's body weight. For those without scales, the Henneke Body Scoring System can help the average horseman, with practice, to establish and track changes in a horse's body condition. See the appendix for this scoring system.

Determining Feed Requirements for Each Horse

The amount of feed required by a horse is made up of two factors:

- Maintenance needs
- Activity needs (which include rate of work, growth, lactation and pregnancy)

Both requirements should be satisfied to maintain body condition and weight. Every horse should be offered daily a sufficient and appropriate ration of feed to maintain its body condition at between 4 and 6 points on the Henneke condition score chart.

Maintenance Needs

Maintenance feed is the amount required to maintain the horse at rest. "At rest" means that the work required of the horse is no greater in physical activity than that expected of a healthy horse grazing freely in a paddock. Maintenance can be expressed as an idle, mature horse that maintains its normal weight. This usually includes horses being rested from their usual work, most horses at rescue/retirement facilities, learners' horses that rarely get into a canter and pleasure horses ridden carefully at a relaxing pace for no more than one hour per day.

The average horse consumes approximately 2% of its bodyweight daily, as dry matter of a palatable feed, to meet daily maintenance requirements. Regular condition scoring or weighing will help establish any individual variation required from the 2% bodyweight guideline.

Individual horses have varying digestive capabilities that affect maintenance requirements. Periods of extremely cold weather may also increase maintenance needs by up to 30%. Temperament should also be taken into account, as nervous or highly-strung horses require more energy than do quiet horses of the same bodyweight.

The following table will help calculate the necessary daily ration based on level of activity.

Expected Total Ration Consumption by Horses[4]

Class	Total Consumption, % of body weight
Maintenance	1.5 - 2.0
Late gestation	1.5 - 2.0
Lactation	2.0 - 3.0
Working	1.5 - 3.0
Weanlings	2.0 - 3.0
Yearling	2.0 - 3.0
Two-year-old	1.8 - 2.5

Adapted from NRC, 1989.

Nutrition of the Pregnant Mare

The non-working pregnant dry mare does not require an increase in feed above maintenance during the first eight months of pregnancy. During the last three months of pregnancy, the extra energy requirement, due to fetal growth and an increase in the mare's weight, is about 0.5% of bodyweight, as dry matter, so the total dry matter feed requirement becomes approximately 2.2% of bodyweight.

It has been estimated that a normal mare will produce milk equivalent to 3% of bodyweight in early lactation and 2% in late lactation. The milk production of pony mares is estimated at 4% in early lactation and 3% in late lactation. For example, this means an 1,100-pound mare (500kg) should produce 4 gallons (15 liters) of milk per day in the first three months and 2 ½ gallons (10 liters) per day in the last three months prior to weaning.

In dry matter intake, the lactating mare's activity needs are between 1 and 1.5% bodyweight above maintenance.

Nutrition of Growing Horses

Growing horses need feeding above maintenance to supply the "building blocks" for growth. The feed required varies with the expected mature weight, growth rates, age and exercise. Young horses have a higher protein requirement than do mature horses. Their feed should contain 13 to 15% protein as weanlings. Yearlings and two-year-olds require less. Young horses need approximately 3% of their bodyweight as dry matter intake, depending on diet ingredients.

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[4] American Youth Horse Council, Horse Industry Handbook: A Guide to Equine Care and Management, 1993, p. 790.

Special Needs of Aged, Sick and Injured Horses

When horses show abnormal loss of bodyweight, despite being fed a diet that provides maintenance and extra energy requirements, a veterinarian's advice should be obtained and followed. A veterinarian or equine nutritionist's advice may also be required to work out special feed requirements for sick and injured horses.

Horses with abnormalities of the mouth may find normal grazing and chewing difficult and will have a greater reliance on supplementary feeds to maintain bodyweight. This problem is common in older horses. These horses should be examined by a veterinarian and corrective action taken if possible. (Refer to Chapter IV for special considerations for the geriatric horse.)

Overfeeding, Obesity and Laminitis (Founder)

Some equines, particularly ponies, are able to utilize energy in feeds very efficiently. Excessive energy intake is one of the causes of a common and crippling disease, laminitis. Laminitis affects the feet of horses and results from the disruption of blood flow to the sensitive and insensitive laminae, which secure the coffin bone to the hoof wall. Founder is a commonly used name for this condition. It is important to note, however, that other causal agents of laminitis include stress, a sudden increase in work, excessive concussion and abnormally high body temperature.

Horses should not be permitted to become overly fat. Horses and ponies known to be susceptible to laminitis should have restricted access to grains and spring and autumn pasture. Low-energy forages should be fed. Control of overweight horses using starvation diets is unacceptable. The horses should be supplied with a balanced reduction diet of food and water.

Water Requirements

A horse's daily water requirements may range from 5 to 20 gallons (20 to 70 liters), depending on air temperature, humidity, body weight, level of activity and health and physiological status (e.g., pregnant, lactating or growing). Every horse should have access to a sufficient amount of water to meet its individual maintenance and activity needs.

As a general guide, horses need ½ to 1 gallon (2 to 4 liters) of water per 2 pounds of dry matter intake. This requirement increases with air temperature; e.g., an increase in ambient temperature from 55°F to 77°F (13°C to 25°C) increases water required by 15 to 20%.

Water troughs and containers should be regularly cleaned to prevent algae buildup. They should be located where they are protected from electrical problems, fouling and freezing. Automatic watering systems should be checked daily to ensure they are dispensing water properly.

A rapid loss of water and essential electrolytes can result from severe diarrhea, bowel diseases and exercise. Fluid replacement should be administered by a veterinarian in order to overcome dehydration if necessary.

Refeeding the Starved Horse

Unfortunately, some horses that arrive at rescue/retirement facilities have been subjected to long-term neglect and suffer from starvation. Rehabilitating a starved horse presents many challenges for caregivers. In both horses and humans, the abrupt refeeding of a starved horse can cause dysfunction of the body's metabolic system, which can lead to failure of the heart and lungs and ultimately to death.[5] A veterinarian is vital to the recovery of these animals and should be consulted as soon as a starved horse arrives at the facility.

What Happens during Starvation[6]

During the starvation process, the horse initially uses any fat and carbohydrate stores in his body to supply energy for metabolism. This is the normal process for any healthy horse: fat and carbohydrates are used for energy, exercise, brain function, circulation, etc., and are then replaced with nutrients from food. The cycle is constant and never-ending, even during sleep.

In a starved animal, once this source of fat and carbohydrate is gone, energy is derived from the breakdown of protein. While protein is a component of every tissue, there are no inert stores of it in the body such as there are for fat and carbohydrates. Consequently, the starved body uses protein not only from muscles, but also from vital tissues such as the heart and even gastrointestinal tissues – tissue that is necessary for life. The starved body cannot select which tissue protein will be metabolized for energy. As time goes by, the horse's survival is a precarious situation. When a horse loses more than 50% of its body weight, the prognosis for survival is extremely poor.

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[5] Reprinted by permission of the UC Davis School of Veterinary Medicine; this information originally appeared in The Horse Report, Volume 21, Number 3, July 2003, the newsletter of the Center for Equine Health. Copyright 2003, University of California Regents.

[6] Ibid.

The Refeeding Problem

Refeeding starved animals, including humans, is not an easy process. In humans suffering from starvation caused by illnesses such as anorexia, cancer or gastrointestinal obstruction, patients can develop "refeeding" syndrome when they are given concentrated calories, and this in turn can lead to heart, respiratory and kidney failure, usually three to five days after the initial meal. This same syndrome has been reported in the literature for horses.

The Best Diet

A team of California researchers led by Dr. Carolyn Stull of the University of California-Davis Veterinary Medicine Extension studied the rehabilitation of chronically starved horses and developed guidelines extremely beneficial for use in rescue/retirement facilities.

Dr. Stull and her team showed through their research that the best approach for initial refeeding of the starved horse consists of frequent small amounts of high-quality alfalfa. This amount should be increased slowly at each meal and the number of feedings decreased gradually over ten days. After ten days to two weeks, horses can be fed as much as they will eat. The horse will show signs of increased energy after about two weeks. Ears, eyes and head movement will be the first noticeable movements. Some weight gain can be achieved in one month, but three to five months usually are needed to rehabilitate back to a normal weight. Veterinary care and nutritional advice should be sought as complications arise.

Refeeding Recommendations

Days 1-3

Feed one pound (approximately 1/6 flake) of leafy alfalfa every four hours (total of six pounds per day in six feedings). Contact a veterinarian to evaluate the medical status of the horse.

Days 4-10

Slowly increase the amount of alfalfa and decrease the number of feedings so that by day six, you are feeding just over four pounds of hay every eight hours (total of 13 pounds per day in three feedings.)

Day 10 – Several Months

Feed as much alfalfa as the horse will eat and decrease feeding to twice a day. Provide access to a salt block. Do not feed grain or supplemental material until the horse is well along in its recovery; early feeding of grain and supplemental material complicates the return of normal metabolic function and can result in death.

*Provide clean, fresh water at all times.

*Deworming and correction of dental problems are very beneficial to the horse's recovery.

For complete information on Dr. Stull's research, please refer to the following studies:

- "Metabolic Responses of Chronically Starved Horses to Refeeding with Three Isoenergetic Diets," Journal of the American Veterinary Medical Association, 1998, Vol. 212, No. 5, p. 691-696.
- "Fat Supplementation to Alfalfa Diets for Refeeding the Starved Horse," The Professional Animal Scientist, 2003, 19:47-54.

III. BASIC HOOF CARE

The age-old saying "no foot, no horse" applies to every discipline in the horse industry and is equally important to the horse that enters a retirement/rescue facility. The foot is a common source of lameness; therefore, good, quality hoof care is imperative to the well being of a horse in these facilities. For the sake of the organization, discussion here applies specifically to horses in rescue/retirement facilities and should not be confused with any breed predilection or discipline.

Hoof Growth

As a general rule, adult horse hoof growth is approximately 3/8 of an inch (9 millimeters) per month, while hoof growth in a foal is approximately 5/8 of an inch (15 millimeters) per month. With that in mind, an adult horse should be trimmed (or shod) every six to eight weeks so as to maintain proper hoof-pastern axis and more importantly, proper hoof balance in accordance with the needs of the horse. Foals should be trimmed every four weeks.

Start with a Thorough Examination

Upon entering a facility, a complete physical examination should be performed on every horse. As part of the examination, the feet should be evaluated carefully to identify any hoof wall cracks, bruising, lacerations or any other pathology that needs the attention of the farrier or veterinarian. Any history of laminitis, navicular disease or any other disease entity should be addressed at this time to help facilitate proper shoeing for the horse.

Special Considerations

Horses entering retirement/rescue facilities come in all shapes and sizes and often require the involvement of the veterinarian and the farrier to address hoof concerns. For example, retired racehorses are often in aluminum shoes with toe grabs. It is thought best to remove these shoes, balance the foot according to conformation and leave the horse barefoot or apply flat steel shoes. These horses often have under-run or sheared heels and require several shoeings to achieve a proper hoof-pastern axis. Some other items to consider are:

1. *Hoof Wall Cracks/Quarter Cracks:* A farrier should evaluate and address the crack for infection, necrotic tissue and, most importantly, stability. Stability of a hoof wall crack is necessary for normal hoof growth.
2. *Navicular Disease:* Often seen in particular breeds and disciplines. If history exists or a diagnosis is made, veterinarian and farrier involvement is necessary to facilitate the shoeing needs of the horse.

3. *Laminitis - Chronic versus Acute:* Accurate diagnosis, which may require radiographs, is necessary to determine the shoeing needs of the horse. Proper shoeing, good management and nutrition all play a vital role in foot care relative to laminitis.
4. *Corrective Shoeing:* May sometimes be necessary depending upon injury and conformation. Often required with foals. Consultation with a farrier is recommended.
5. *Environment:* Hoof care is often dependent upon the environment in which the the horse lives. Moisture can be a problem and can lead to thrush and other problems. Cold weather slows hoof growth and must be considered when trimming is necessary. Shoeing considerations must be addressed and will be different for a frozen pasture versus a rocky pasture, for example.
6. *Management:* Good nutrition, shelter and dry bedding are all important in maintaining good, healthy feet. Some people advocate the use of feed additives for healthy hoof growth. Basic applied animal husbandry is paramount for normal feet and should never be omitted.

Rely on Qualified Caregivers

When a horse is to be shod, a qualified farrier who understands the goals of the facility should be involved. This will aid in minimizing any potential hoof problems, as well as correct any previous hoof problems. To find a certified farrier in your area, contact the American Farrier's Association at (859) 233-7411.

The horse should be shod or trimmed in accordance to its needs, which is dependent upon its housing, musculoskeletal problems, conformation and environment. Hind feet shoes are not recommended when horses are turned out in a group, so as to minimize injury to other individuals. However, there exist some musculoskeletal problems in hind feet that require shoeing.

There exist numerous other aspects of hoof care that have not been mentioned here. Management plays a critical role in the success of the retirement/rescue facility and more importantly, in the health of the horse. Good management should incorporate both the veterinarian and the farrier when addressing hoof care for the horse.

IV. CARING FOR THE GERIATRIC HORSE

The proportion of the equine population living into their 20s and 30s is growing. With proper care the lifespan of geriatric horses can be prolonged, as can their active, healthy status and quality of life. Rescue/retirement facilities should have knowledge of equine diseases and lamenesses common in geriatric horses and be able to identify early signs of disease, distress and injury in order to provide for the special needs of the older horses entrusted in their care.

It is imperative to recognize that caring for the geriatric equine is exacting and labor-intensive and may involve considerable expense. At times, difficult decisions concerning quality of life and euthanasia must be made *(see "Euthanasia," Chapter VII)*.

Health and Disease in the Geriatric Horse

Older horses are more likely to experience colic, dental disease, tumors, lameness and pituitary disease than younger horses. Alterations in the older horse's digestive system may predispose it to colic; the most obvious would be dental problems. The wearing down of grinding surfaces, malocclusions and loss of teeth results in a decreased ability to crush whole grains and forage. This predisposes the animal to poor digestion and esophageal and intestinal obstructions. A thorough dental examination should be performed in the older horse at least once a year and, in some cases, every six months. Dental care alone cannot increase the grinding ability of the older horse.[i]

There is increased prevalence of laminitis in the older horse, and its association with Equine Cushing's Disease (ECD) places them at higher risk. Cushing's disease is hyperactivity of the adrenal cortex, representing the most common endocrine disorder of horses.[ii]

Musculoskeletal problems are common in the older horse and are an accumulation of past injuries and wear and tear. If we look at recommendations for older people, regular exercise and resistance training improve muscle tone and mobility. Conversely, confinement and lack of movement weaken muscles and bones. Even in the oldest group of horses, movement in a pasture is preferred to stall confinement.

Providing Proper Shelter

Standards described in Chapter VI, "Shelter, Stalls and Horse Facilities," should be applied to geriatric horses as necessary to accommodate older horses' decreased ability to regulate body temperature and increased susceptibility to extremes of heat and cold.

It is essential to protect older horses from heat and/or humidity by providing shade and ventilation. Pastures and paddocks should include natural shade or properly constructed, well-ventilated shelters. Stables may require fans. Body clipping may be necessary to promote dissipation of heat from the body.

It is also essential to protect older horses from extremes of cold through the appropriate combination of shelter, wind breaks and blanketing. Pastures and paddocks should include natural or constructed shelter to provide a dry environment and protection from winds. Soft footing and deep bedding (but not too deep, as it's harder to move around in) should be considered for older horses with arthritic conditions and other lameness.

A pasture environment is an excellent option for older horses, as turnout promotes beneficial activity. Consistent light exercise regimens are recommended and may improve range of motion and muscle strength. Pasture turnout is preferred over stall rest, because stall rest generally results in increased stiffness and pain. Stall rest should be used only during periods of acute pain or joint instability. Body weight should be reduced to normal or slightly lighter levels to minimize mechanical stress.[iii]

Feed and Water

Standards described in Chapter II, "Nutrition," should be adapted to the special needs of geriatric horses. The body condition and/or actual body weight of older horses should be monitored carefully, because loss of condition is the most common problem in older horses. Weight loss can indicate abnormal and often treatable conditions, and lost weight is harder to regain in older horses than in younger horses.

Current recommendations of the National Research Council's *Nutrient Requirements of Horses* for mature adult horses are influenced by several circumstances of the aging horse, including slower metabolism, decreased digestive efficiency and decreased level of energy expenditure. Nutrient requirements of geriatric horses more closely approximate those of weanlings in terms of protein, calcium and phosphorous.

Protein requirements are higher in older horses than in younger adult horses, as the ability to digest crude protein is less in geriatric horses. Subsequently, it is suggested that geriatric horses are fed diets containing 14% to 16% crude protein. Loss of muscle mass is a common characteristic of geriatric horses. Although this has been attributed to decreased levels of activity, nutrition has also been implicated. Leucine, which may stimulate protein synthesis and is relatively high in alfalfa hay, may be useful in preventing loss of muscle mass in geriatric horses.[iv]

Phosphorous absorption is also impaired in older horses, such that phosphorous requirements are higher. The ratio of calcium to phosphorous should remain 1:1 or slightly higher. The grain ration typically should be approximately 0.3% phosphorous and 0.3% calcium (not more than 1% calcium) on a dry matter basis.

Older horses are likely to need grain to meet their energy needs. If they are performing, older horses work harder than younger horses at the same level of exercise.[v] Commercial rations designed for geriatric horses are available. Specialized feeds containing a highly digestible fiber and a form of fat for energy must be fed to accommodate older horses. Extruded grains or pellets are more digestible and more easily chewed.

Fat is an excellent source of calories for older horses and is well utilized with almost no increase of digestive upset compared to energy-dense rations containing primarily cereal grains. Commercial grain rations with fat added are available (5 to 8% crude fat content). Another way to increase fat is to add vegetable oil (up to 2 cups per day) or rice bran. If protein is insufficient in the diet, soybean meal is an excellent, high-quality protein source for older horses.

Older horses should receive high-quality roughage because of their decreased ability to digest fiber and to chew forage properly. Sweet, young grass is ideal. Another roughage alternative for older horses is beet pulp, because of its digestibility and calcium content. It can be soaked to make chewing easier.

Hay, when required, should be less mature and lacking in coarse stems, such as mixed hay with 60% legume content. All legume hay, such as straight alfalfa, is not ideal because the protein content may be too high and the phosphorous content is very low, although phosphorous could be supplemented. If chewing is impaired, chopped hay, hay cubes or roughage-containing pellets are alternatives. Soaking hay cubes and pellets in water will make them easier to chew, while decreasing the risk of choke (obstruction of the esophagus with impacted feed).

Feed supplements are desirable for some older horses. Electrolytes may be appropriate in the performing geriatric horse, as they sweat more at lesser intensity exercise.[vi] A probiotic product may help digestion, because of the altered intestinal microbial content of older horses.

Water intake should be monitored in geriatric horses, especially because some of their more common medical conditions are accompanied by increased water intake and increased urine production. Older horses may be less inclined to drink excessively cold water, especially after the loss of a tooth, because cold water may cause discomfort. If the horse does not drink well, feeding water-soaked feeds (at least 2 gallons of water per feeding) will help increase fluid intake. Addition of 1 to 2 ounces of salt to the feed may also encourage increased water intake but should be done only if the horse has unlimited access to water.[vii]

Special attention should be given to older horses pastured with other horses to avoid problems arising from age-associated decreasing aggressiveness. Access to feed should be ensured. Ideally, older horses should be pastured with their peers rather than with younger, more aggressive horses.

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[i] Paradis MR: Demographics of Health and Disease in the Geriatric Horses. Vet Clin Equine 18 (2002) 391-401.
[ii] UC Davis Book of Horses. 1996, p. 449.
[iii] Malone ED: Managing chronic arthritis. Vet Clin Equine 18 (2002) 411-437.
[iv] Siciliano PD: Nutrition and Feeding of the Geriatric Horse. Vet Clin Equine 18 (2002) 491-508.
[v] McKeever KH, Malinowski K: Exercise Capacity in Young and Old Mares. AJVR 58:1468-1472, 1997.
[vi] McKeever KH: Exercise Physiology of the Older Horse. Vet Clin Equine 18 (2002) 469-490.
[vii] Ralston SL: Management of Old Horses. Rutgers Cooperative Extension Bulletin FS715, http://www.rce.rutgers.edu/pubs/pdfs/fs715.pdf

V. SHELTERS, STALLS AND HORSE FACILITIES

The purpose of this section is to provide information on the basic principles of shelter for horses at retirement/rescue facilities. Many different types of housing and shelters are used at these facilities, and in this section it will be difficult to examine all possibilities. Many factors should be taken into account when designing shelters, including the diverse climatic and geographic conditions that can be found in the United States. Individuals requiring further information should refer to local sources, such as veterinarians and extension agencies.

Shelter

A shelter is a natural or man-made structure that provides relief to each individual animal from direct sunlight, wind, precipitation and other inclement weather. The design and use of shelters should promote the health, well-being and good performance of horses throughout all stages of their lives.

All constructed shelters should be structurally safe for horses and personnel. Shelters where horses are located should be constructed with no exposed surfaces or projections likely to cause injury. Shelter design should promote easy and safe handling of horses, as well as ease of cleaning and care. Horses should be provided with a clean area on which to lie.

Ceilings and support beams in horse-housing facilities should be high enough to permit the horse to stand naturally with a full range of motion in the head and neck without touching the ceiling. Floors in horse stables should be constructed and maintained to provide traction and drainage and prevent injury. Ventilation should be designed to provide adequate air circulation for enclosed shelters.

Electrical wiring and panels should not be accessible to horses and should be installed in accordance with applicable electrical codes. Lighting should be provided in a manner to permit effective observation of stabled horses. Alleyways and work areas should be uniformly illuminated. Natural lighting should be provided wherever possible.

Manure and disposed bedding should be handled and stored in a manner that has as little negative impact on the surrounding area and the environment as is reasonably possible.

Rescue/retirement facilities should have a designated area for quarantine or isolation purposes. This area should be separated from other holding areas.

Stalls

Stalls or portable corrals should be available to contain horses that may be sick or injured. The stalls should be of sufficient size for a horse to get up and down. Bedding should be provided and kept clean, with stalls being cleaned at least once every 24 hours. Good ventilation is very important.

VI. PASTURES, PADDOCKS AND FENCING

Pastures are an important aspect of rescue/retirement facilities. Pastures allow horses to have access to grass as needed. The number of horses intended to be pastured should determine the size and number of pastures and/or paddocks at a facility. Conversely, size and number of paddocks available will determine how many horses can be safely accommodated without compromising their physical and emotional health. Keep in mind safety and injury prevention while allowing plenty of exercise.

Stocking requirements of pastures will vary, depending on feed and quality of the pastures. But generally, one or two acres per horse are required. Horses have a natural herd instinct, and as such, will prefer to be with other horses. In addition, pasture containment with proper shelter will serve a facility better than stalls only.

Pastures and Range Management

Horses on pasture or range should have an adequate quantity and quality of feed and water. Properly maintained pastures may provide all or most of the nutrient requirements of grazing horses. Nutrient content of pastures should be closely monitored and supplemental feed provided when necessary. Salt and mineral supplements should be provided when necessary to supplement specific nutrient deficits in grasses and forage.

To prevent digestive and health problems, horses should be introduced to pasture gradually or cautiously, especially in heavy growing periods such as spring in some areas. Horses on pasture should be inspected regularly, paying close attention during high-risk periods (seasonal changes, introduction of new horses, foaling, etc.).

Application of fertilizers, pesticides, herbicides and manure to pastures should be planned and conducted to minimize risk to grazing horses and the environment. In addition, pastures and range land should be inspected regularly for poisonous plants.

Pasture and Paddock Fencing Safety

Pastures and paddocks should be properly fenced to safely confine horses. The suitability of type of fence varies according to the disposition of the horses, as well as stocking density and pasture/paddock size. Horses should be introduced to unfamiliar fenced areas during daylight hours and be monitored to reduce the risk of injury.

Fences and gates should be maintained in good repair to minimize the risk of horses gaining access to public roadways. Barbed wire and narrow gauge high

tensile wire, because of their cutting properties, can cause severe injury to horses. These materials are sometimes used for fencing extensive pasture areas, but should be avoided in closely confined paddocks or small pastures.

Pastures, paddocks and range should be free from equipment, machinery, debris and refuse that have the potential to cause serious injury to occupants.

Paddock and Small Pasture Management

Every property in which horses are kept should have a sufficient number of paddocks or pastures to permit separation of incompatible animals. The risk of injury increases when horses are overcrowded. Competition for food, water and space often leads to fighting and subsequent injury.

The number of horses and their grouping in each paddock or small pasture should be appropriate for their compatibility and for the ground conditions, taking into account the climatic conditions at the time.

Paddocks and small pastures should be cleaned regularly. Horses will not eat pasture grass or forage that is contaminated with manure. Without regular cleaning the effective grazing area is decreased.

Effective parasite control is more difficult in paddock or small pasture environments. Pasture rotation, manure removal and internal parasite control with effective deworming programs are a part of an integrated program of management. Sources such as your local veterinarian can help in the development of a specific program to fit individual conditions.

VII. Euthanasia

The term euthanasia is derived from the Greek terms *eu* meaning good and *thanatos* meaning death. A good death would be one that occurs with minimal pain and at the appropriate time in the horse's life to prevent unnecessary pain and suffering.

Justification for euthanization of a horse for humane reasons should be based on both medical considerations as well as current and future quality of life issues for the horse.

The following criteria (not all criteria need to be met for every case) should be considered in evaluating the necessity for euthanization of a horse[1]:

- Is the horse's condition chronic, incurable and resulting in unnecessary pain and suffering?
- Does the horse's condition present a hopeless prognosis for life?
- Is the horse a hazard to itself, other horses or humans?
- Will the horse require continuous medication for the relief of pain and suffering for the remainder of its life?
- If the horse is suffering but treatable, is proper and recommended care of the horse within the means of the rescue/retirement facility, such that the health and safety of the other horses are not compromised?
- Is the horse constantly and in the foreseeable future unable to move unassisted, interact with other horses, or is exhibiting behaviors which may be considered essential for a decent quality of life?

Acceptable methods of euthanasia for horses include[2]:

- Overdose of a barbiturate anesthetic, given intravenously be a veterinarian or a euthanasia technician, trained, certified and experienced in the humane euthanasia of horses.

- Gunshot to the head of a calm, sedated or humanely restrained horse by a professional trained in this method.

- Penetrating captive bolt to the head of a calm, sedated or humanely restrained horse by a professional trained in this method.

[1] "The Veterinary Role in Equine Insurance," AAEP 2000, pg. 6.
[2] Report of the AVMA Panel on Euthanasia, JAVMA 2001; 218: 669-695.

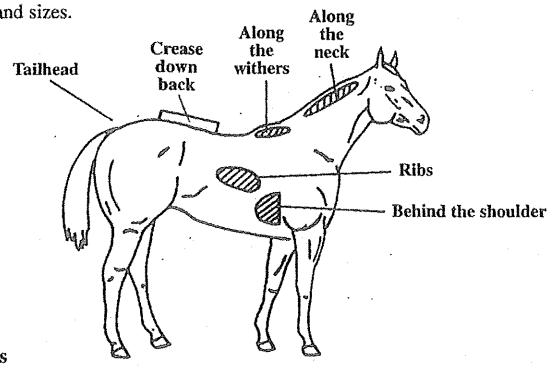
VIII: The Bottom Line – Protecting the Health and Welfare of the Horse

Ultimately, the best indicators of proper management of an equine rescue/ retirement facility are the physical and emotional health of the horses and the overall improvement in horses previously suffering from disease, trauma or neglect. Unless there is a medical explanation, all horses should regain and maintain an acceptable state of health and well-being with proper care.

Allowing rescued horses to deteriorate due to inadequate care, resources or space is no favor to them and can progress to the point of cruelty. Those who take in every animal, regardless of their ability to provide care or refusal to recognize when an animal is suffering, are hoarders, not rescuers. All rescue and retirement organizations should periodically reevaluate their principles, practices, capabilities and goals with the help of objective, knowledgeable outsiders, such as their equine veterinarian.

Body Condition Scorecard

This numerical condition scoring system provides a consistent measure of the degree of body fat in horses of various breeds and sizes.



Condition Score	Descriptions
1.	**Poor:** Animal extremely emaciated. Spinous processes, ribs, tailhead and hooks and pins projecting prominently. Bone structure of withers, shoulders and neck easily noticeable. No fatty tissues can be felt.
2.	**Very thin:** Animal emaciated. Slight fat covering over base of spinous processes, transverse processes of lumbar vertebrae feel rounded. Spinous processes, ribs, tailhead and hooks and pins prominent. Withers, shoulders and neck structures faintly discernible.
3.	**Thin:** Fat build-up about halfway on spinous processes, transverse processes cannot be felt. Slight fat cover over ribs. Spinous processes and ribs easily discernible. Tailhead prominent, but individual vertebrae cannot be visually identified. Hook bones appear rounded, but easily discernible. Pin bones not distinguishable. Withers, shoulders and neck accentuated.
4.	**Moderately thin:** Negative crease along back. Faint outline of ribs discernible. Tailhead prominence depends on conformation, fat can be felt around it. Hook bones not discernible. Withers, shoulders and neck not obviously thin.
5.	**Moderate:** Back level. Ribs cannot be visually distinguished but can be easily felt. Fat around tailhead beginning to feel spongy. Withers appear rounded over spinous processes. Shoulders and neck blend smoothly into body.
6.	**Moderate to fleshy:** May have a slight crease down back. Fat over ribs feels spongy. Fat around tailhead feels soft. Fat beginning to be deposited along the sides of the withers, behind the shoulders and along the sides of the neck.
7.	**Fleshy:** May have crease down back. Individual ribs can be felt, but noticeable filling between ribs with fat. Fat around tailhead is soft. Fat deposited along withers, behind shoulders and along the neck.
8.	**Fat:** Crease down back. Difficult to feel ribs. Fat around tailhead very soft. Area along withers filled with fat. Area behind shoulder filled in flush. Noticeable thickening of neck. Fat deposited along inner buttocks.
9.	**Extremely fat:** Obvious crease down back. Patch fat appearing over ribs. Bulging fat around tailhead, along withers, behind shoulders and along neck. Fat along inner buttocks may rub together. Flank filled in flush.

Recommendations for Assigning Scores

Scoring is based on visual appraisal and handling (particularly in scoring horses with long hair) of horses.
Conformation differences between breeds or types do not affect scoring when all criteria are applied.
Muscle tone should not be confused with fatness. Scores can be assigned in half-point increments.

Henneke et al Texas A&M 1983

Veterinary Checklist for Rescue/Retirement Facilities

(Adapted from the Thoroughbred Adoption and Retirement Association's (TARA) "Vet Check for Thoroughbred Adoption & Retirement Sites.")

Note: This checklist is provided as a sample for use by a veterinarian when evaluating the facilities available at an individual rescue or retirement.

Scoring System for Checklist:
Excellent – 5
Good – 4
Adequate – 3
Fair – 2
Inadequate – 1
Add specific comments as needed.

Name of Facility:_____

Address: _____

Primary Contact:_____

Telephone: _____ **Fax:**_____

I. Horses

Number at facility: _____ Maximum capacity: _____

Overall appearance and health: _____

II. Preventative Care and Basic Health Management

___ Parasite Control Program_____

___ Vaccination Program _____

___ Dental Care _____

___ Emergency First Aid Kit _____

___ Health Records System _____

___ Injury Protocol _____

III. Feed Program

___ Hay _____

___ Pasture _____

___ Grain _____

___ Supplements _____

___ Storage of Hay, Grain & Supplements _____

___ Free Access to Hay _____

IV. Water

Indoor water supply: ____ Buckets ____ Automatic Waterers

___ Availability _____

___ Cleanliness _____

Outdoor water supply: ___ Tanks ____ Automatic Waterers ____ Naturally Occurring

___ Availability_____

___ Cleanliness_____

Please list all indoor/outdoor water sources:

_____

V. Pastures and Paddocks

___ Cleanliness _____

___ Available for Turnout _____

___ Access to Feed and Water_____

___ Size _____

___ Division of Horses _____

VI. Fencing

___ Type_____

___ Condition_____

___ Safety _____

VII. Facility

___ Barns_____

___ Stalls_____
Size: _____

Number: _____

Isolation/Quarantine Area: _____

___ Run-in Sheds_____

___ Living Quarters for Workers_____

___ Personnel Present at Facility at All Times _____

VII. Farrier

___ Regular Visits _____

___ Quality of Care _____

VIII. Horse Transporation

Please describe modes of transportation for horses available at this facility (van, truck trailer, etc.):

_____

IX. Equipment Condition

___ Tack_____

___ Buckets _____

___ Brushes _____

___ Hoses_____

___ Hay Racks_____

X. Environment

___ Safety _____

___ Cleanliness _____

___ Bedding _____

___ Manure Removal _____

___ Fly Control _____

Additional Veterinary Comments:

_____

_____

Veterinarian: _____

Date: _____

EQUINE SANCTUARY & RESCUE FACILITY GUIDELINES

CENTER FOR EQUINE HEALTH
SCHOOL OF VETERINARY MEDICINE
UNIVERSITY OF CALIFORNIA, DAVIS

UCDAVIS
VETERINARY MEDICINE

EQUINE SANCTUARY & RESCUE FACILITY GUIDELINES

AUGUST 2009

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Introduction

The welfare of horses has long been a concern of the American public. Consequently, there has been a rising interest in providing proper housing and care for those horses that are no longer wanted by their current owner. These "unwanted horses" may be old, injured, sick, and unmanageable or just fail to meet their expectations for use. Currently, many owners find that their economic circumstances preclude them from being able to afford caring for them. Whatever the reason, there are tens of thousands of horses who find themselves unwanted, neglected and abandoned in the United States every year.

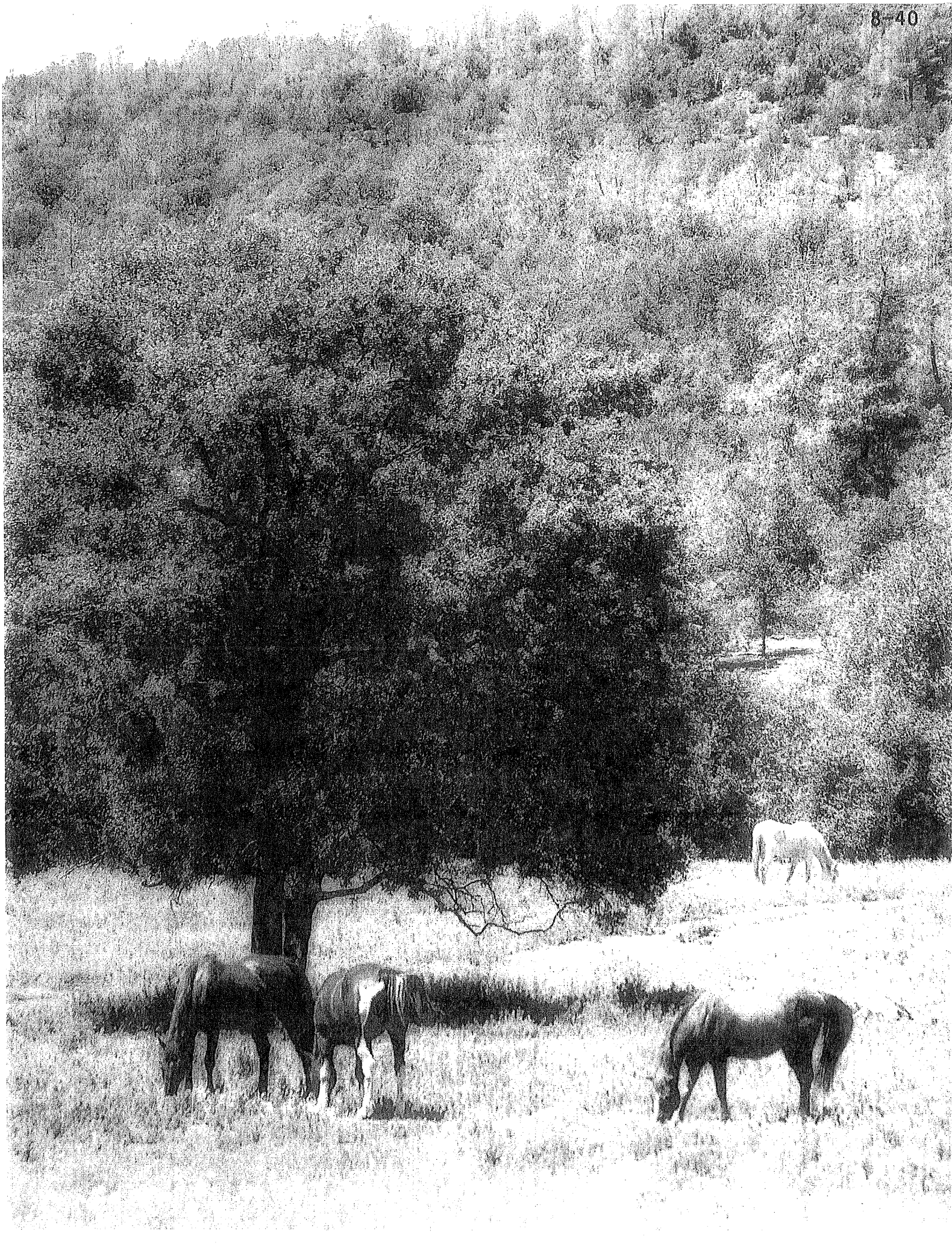
Regardless of whether these "unwanted horses" number just a few or many, every citizen, horse enthusiast and the equine industry at large has a responsibility to ensure that the humane care and treatment of these animals is assured. Because of this, many well-intentioned people have responded by developing equine sanctuaries and rescue facilities throughout the country. The operators of these facilities range from experienced and knowledgeable horse enthusiasts to those whose concern for the humane care of animals in general outweighs their specific understanding of horse care and management.

For that reason the UC Davis School of Veterinary Medicine has developed a set of guidelines to help ensure that horses maintained within equine sanctuaries and rescue farms receive adequate and proper care. The guidelines that follow address all issues related to sanctuary management and operations. They provide information on proper facility design construction and maintenance, suggestions for management and financial organization and instructions on the proper husbandry practices and health care necessary to ensure the successful operations of all types of sanctuary and rescue facilities. An evaluation checklist, based upon the content of our guidelines, is provided within the Appendix to assist individuals who may be called upon to evaluate the quality of any such facility.

We hope these guidelines will contribute to developing humane solutions to the problem of the unwanted horse.

Section 1

OPERATIONAL BUSINESS AND FINANCIAL PLAN



Equine sanctuary and rescue facilities both house and care for unwanted, abandoned, neglected, abused, or injured horses. Those that prepare and release sizable numbers of animals for adoption are defined as rescue or rehabilitation operations. Those that maintain horses permanently are considered sanctuaries.

The proper health and welfare of horses housed within equine sanctuary and rescue facilities requires the existence of a sound operational management program supported by a secure financial structure for the controlling business entity. The failure rate among animal sanctuaries of all types within the United States is known to be very high, with an average lifespan estimated to be around 3 years and a failure rate in excess of 70% for those facilities that do not own the land being utilized for their operation. Most of these failures can be attributed to one of two causes; the financial collapse of the entity due to poor business planning and/or practices, or the lack of a defined plan of succession for key management personnel. The operation of an animal sanctuary is no different that that of any other business entity in that its ultimate success or failure will depend upon proper initial capitalization, sound financial planning, strict fiduciary practices, and competent managerial oversight.

Consequently, before the commencement of operations by an equine sanctuary facility, a formal written business plan must be developed which defines the basic goals of the entity, its operational parameters, along with its financial system for capital acquisition and support. This business plan must also provide a structure for managerial authority that should include the designation of an oversight board of trustees and/or directors, the identification of key operational positions, and a clear plan for succession of oversight, advisory, and management personnel. The plan must also identify the size and scope of the sanctuary operation and define the basic animal programs which are to be included in the conduct of its operations.

Once the decision to engage in the establishment of an equine sanctuary facility is made, a basic business organizational structure and operational plan must be delineated by the individuals involved. A basic type of business entity (sole proprietorship, limited partnership, corporation, etc) must be selected. This decision will be based upon multiple factors including size and scope of operations, core capital funding, long range goals of the program, and the personal preferences of the organization's leadership. The tax status of the enterprise and its affect upon organizational decisions is of importance, particularly for those entities that intend to seek federal 501(c) (3) charitable status. The successful designation and maintenance of that charitable exemption will affect the type of business structure selected.

Corporate business structures and charitable exempt operations automatically will require the existence of a board of directors/trustees with oversight authority for the conduct of activities provided by the managerial officers of the company. However, it is recommended that even small sole proprietorship or partnership operations establish these types of boards in an advisory capacity to contribute to the continued viability of the business and insure the health and welfare of all animals involved in the program. Key management personnel and their areas of operational responsibility must also be identified. These are the individuals who will be responsible for the day to day operations of the sanctuary. Their responsibilities will include fiduciary management for business operations, personnel acquisition and supervision, and the oversight maintenance of proper husbandry and health care procedures for the horses and other animals held within the proposed facility. These primary managers and their competency are essential to the successful operations of any animal sanctuary. Not only must these individuals be identified early in the development of a sanctuary business model, but a clearly defined

plan of succession for these individuals must be documented. This is especially important in smaller operations when the person who is the driving force of the program and the hands-on manager of the facility is lost due to death, disability, or retirement. Without a plan for replacement, many of these operations will cease to exist, or worse, experience periods of improper management such that the health and welfare of their animal residents are compromised.

Once the decision is made to establish and operate an equine sanctuary and the key advisory and management personnel are selected, an operational financial plan must drafted. This plan should detail the operational plan for the business entity over at least a 5 year period of operation and should be renewed in the final year of the plan for each successive 5 year business period. The initial plan should include detailed information regarding the amount and sources of the initial capital investment in the business, the selected type and site of operation, and a general operating budget for each year of the plan. Sources and methods for the continued acquisition of operational funding must be identified and details of operational methods and their associated costs must be delineated such that expenses are constrained to balance against projected income. Business deficits are very difficult to overcome in any situation but will likely be impossible to solve if they are the result of a financial flaw in the initial business plan. Variable expenses for the sanctuary will be influenced by the numbers of animals, the scope of programmatic activities and the labor force employed. These variable expenses can be adjusted to comply with changes in yearly revenues. Fixed costs, however, cannot easily be adjusted in this manner. Therefore, it is important that fixed overhead cost which is determined largely by the size and scope of the sanctuary facility incorporated into the initial business plan be clearly determined and understood. A lack of planning in this area may lead to the financial collapse of the business since fixed overhead expenses are very difficult to reduce once business operations begin.

Finally, once operations commence, the business must employ professional and independent accounting, tax preparation, and financial planning services. Financial statements that include both income/expense and asset/liability reports must be prepared on at least a quarterly basis. These will form the basis for serial budget adjustments based upon income projections and cost analysis, thereby insuring the solvency of the business. The reports can also be used as a guide for projected growth and expansion of services or as an early indicator of the need for cautionary scaling back of operations to maintain financial stability and thus proper animal care. Additionally, such financial reports are absolutely essential for acquisition of donated funds by those sanctuaries and rescue farms who have obtained federal charitable status. Most individual donors and all private or public funding agencies will require these types of financial statements before committing to any charitable donation. Those equine sanctuaries who can present a clear and concise operational picture and a sound financial structure are much more likely to secure sizable and continual charitable contributions.

To summarize, it is essential that all equine sanctuaries have a sound business plan, a clear managerial structure, and a long-term strategic plan of operation if they are to be successful. Careful initial planning to insure financial stability and sustained quality of animal care and other programs over time must be done before any sanctuary operations commence. Constant management surveillance must be maintained so that needed adjustment in operational activities can be foreseen and responded to in an effective manner.

Section 2

FACILITY DESIGN AND CONSTRUCTION

The type and scope of facilities necessary for the operation of any equine sanctuary or rescue facility will, in large part, be determined by the size and location of the farm, the weather conditions typical for the location, the type of horses to be housed and their expected activities. There are, however, certain principles regarding the design and construction of equine housing that are universal. Pasture and dry lot fencing must be constructed of heavyweight materials and care should be taken to insure they can withstand the normal wear and tear applied by horses housed over time. Surfaces should be constructed so that the chances for projectiles from loose building materials such as fence wire, broken boards, etc. are minimized. The use of nails for construction of any type should be avoided as they tend to loosen and become exposed overtime. Exposed nail heads can easily cut horses. Countersunk lag screws and bolts applied in such a way that neither their heads nor the nut ends extend beyond the surface of building material are preferable. Housing spaces such as shelters and stalls should be constructed in such a way that their interior surfaces are as smooth and hazard free as possible. Loose sheet metal or any type of sharp edged materials are a definite hazard. Electrical cables, conduit or wiring must always be placed out of reach and unavailable to the probing curiosity of horses. Water pipes should be well buried when underground. Upright water pipes connected to watering devices need to be tightly secured and protected. Watering devices must be suitable for equine use and be securely placed to avoid damage to the waterers or injury to the horses.

Stalls

The numbers of barns or stalls included in the design of any equine sanctuary will be determined by the type of horses to be housed, their health care requirements and the type of rehabilitation and/or athletic use planned for them. In any case the presence of a minimum number of stalls will be necessary to provide shelter for injured, sick or otherwise debilitated horses that need extra husbandry and/or health care. The design and type of construction of those stalls will be determined largely by the climatic and environmental conditions of the sanctuary's location. Locations that have exposures to extreme cold may require a more enclosed and insulated design while those in milder climates or with summers characterized by high heat and humidity will need stalls that have a more open type of design. Regardless, barns with stalls must be designed to provide adequate ventilation (air flow exchange) for horses during all seasons of the year. Colder climates may accomplish this through the use of ceiling exhaust fans, and windows and doors that can be opened or closed depending on weather conditions and ventilation needs. Moderate to warm areas may want to utilize open topped stalls and or windows to provide cross air flow. In periods of high heat and humidity, fans can be used to increase air movement and cooling.

Stalls should be large enough in size to allow for the free movement and complete lateral recumbency of their equine occupants. Guidelines provided by the FASS cite the work of Zeeb (1981) that indoor floor dimensions of stalls should be at least twice the height of the housed horse at the withers. In most cases a box stall of 12'x12' should be adequate for most light horse breeds. The FASS guidelines also state that ceiling height should be at least 1 foot higher than the tips of the horse or pony's ears when held at their highest level. Generally, interior ceilings for stalls should be at least 8 to 10 feet in height to provide for proper light and ventilation. Draft breeds, some stallions and foaling mares may require larger stall space and higher ceilings to provide adequate comfort. The interior surface of the stalls should be smooth and free of any sharp edges, devices or implements that could catch halters stall blankets or damage exposed skin. Watering devices or buckets and feed tubs must be placed in such a way that they do not provide a hazard for entrapment of heads or limbs. These items should

be fairly indestructible to the typical habits of stall bound horses.

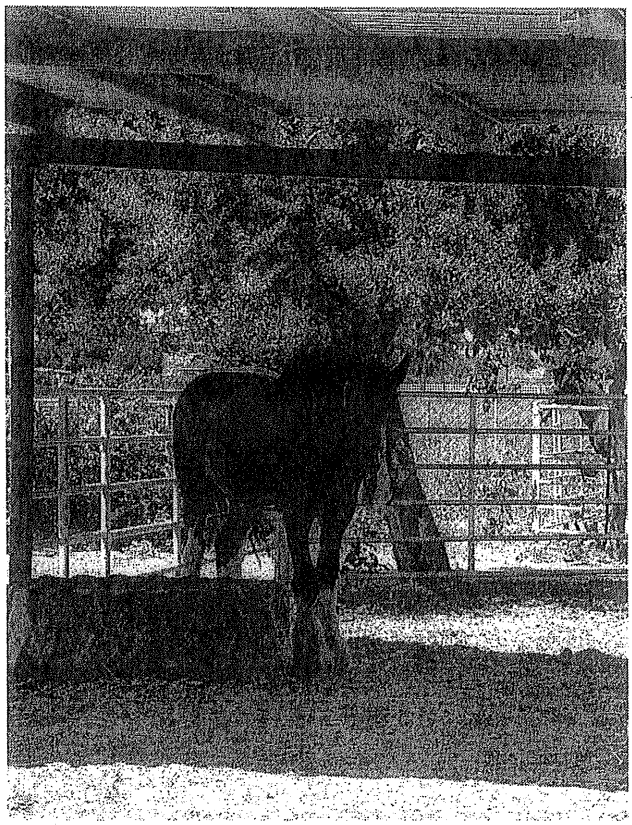
Hinged stall doors and windows should always open outwardly from the stall. Sliding doors on stalls and at the end of aisle ways also are acceptable and common in stables. Dutch-type doors in stalls may be desirable, as these provide the horse with seemingly more space and visual comfort. Design features must insure that when these doors are in the open and locked position that the horses cannot reach any hazardous implements or structures such as light switches, etc., on the outside surface of the stall. Doors should fit tightly into their openings so that horses cannot get their feet or legs trapped in small open spaces on the sides or bottom of the door. Door openings must be wide enough to allow easy ingress and egress without contact on the door frame for both horse and handler. The door frame and all door edges must be smooth and rounded as much as possible to prevent injuries or cuts.

Stall floors must be constructed of compact and either easily cleaned or replaceable materials. Suitable flooring can range from packed sand, clay or decomposed granite, to asphalt, concrete, wood, or manufactured rubberized materials. Concrete floors should have rough broom float type surfaces to avoid slipping and all hard surface stall floors should be slopped towards drains or gutters to allow for cleaning. When harder materials such as concrete or asphalt are used, it may be desirable to cover those surfaces with rubber mats or other material before bedding is placed within the stall. Regardless, these hard surface floors will require deeper bedding with suitable materials to insure the horse's comfort and safety. The type of bedding material used in stalls and enclosures should be selected to insure proper sanitation as well as comfort. It must be absorptive in nature and insure sound footing. Materials that are commonly used are straw, wood shavings, peat, and shredded paper or manufactured materials specifically designed for livestock bedding purposes. While horses can be bedded on sand, it poses problems for proper cleaning and sanitation. The selection of such material will depend upon the availability of the material and the means of its disposal.

All barns, stalls and other livestock enclosures must provide for adequate visibility to insure the safety of both the horses and their caretakers. Natural light for daytime viewing can be supplied through the use properly designed doors, windows, skylights, etc. Nighttime viewing requires adequate electrical lighting within stalls, barn aisle ways, feed storage, and animal handling areas. Light fixtures, switches and their supportive wiring are dangerous to horses and must be protected from them by placing these well out of reach. The type of light fixture, switch and electrical conduit used should be strong, relatively destruction resistant, and weather proof.

Shelters and Shade Structures

In all but the most temperate of climates, horses housed outdoors in corals, paddocks, dry lots and pastures will need to be provided with shelters from inclement weather and/or shade structures during the summer months. These structures can be one and the same but their design will vary significantly depending upon climate conditions and housing needs. Those areas with harsh winter conditions will likely require three-sided enclosed shelters. In areas of temperate winters and more days of heat and sunshine, simple pole and roof constructed shelters which protect from moderate rain and intensive heat may be preferable. Like stalls, walled shelters should be well constructed and free of surface projections that could pose a hazard to horses and their handlers. Ceilings should be of adequate height to allow horses to freely enter, exit and stand fully upright. Flooring should consist of brushed concrete, asphalt or other hard surface materials to allow for proper cleaning in all weather conditions. The minimum size for single horse shelters should be at least equal to that of a box stall (12'x12'). The FASS Guide's recommendations for shelters housing one or



In areas of temperate winters and more days of heat and sunshine, simple pole and roof constructed shelters which protect from moderate rain and intensive heat may be preferable.

more horses is to allow 120 square feet for each of the first two horses, then 60 square feet for each additional horse with access to a given shelter. As with stalls, any water sources or electrical lighting supplied must be properly constructed and protected from the strains of horse manipulation and weather. If feed bunks are to be included in shelters, they should be of sufficient numbers or be large enough so that all horses can feed at once and avoid aggressive behaviors between animals.

Outdoor Pens, Paddocks and Dry Lots

Regardless of the size, style or configuration of outdoor housing structures, fencing of proper design and adequate strength is a must. Proper materials and construction will not only insure the safety of the enclosed horses but, over time, will minimize the maintenance and upkeep of these structures. Fences can be constructed of various materials such as wooden posts and rails, metal pipe, wire cable or mesh, plastic, rubber or a combination of these. Fences should be sufficiently high to insure confinement, 5 to 6 feet usually being adequate for most types of horses. If rail type fencing is used, the bottom of the rail should be sufficiently high off the ground to prevent legs or feet from becoming entrapped between the fence and the ground. If wire mesh fencing is employed, the wire must be sufficiently anchored at the bottom of the fence by the use of a heavy cable, fastened to wooden boards or welded to pipe rails to prevent the wire mesh from becoming loose and creating a hazard. When wire, wire cable or wire mesh is used it must be of sufficient gauge and tensile strength to avoid cutting of horses' skin, especially legs or hooves. Barbed wire or small gauge, high tensile strength, wire fencing is dangerous to horses due to its cutting properties and should never be used. Electric fencing can also be used for horses in some conditions such as temporary holding facilities or for pasture rotation. When employed for these purposes, conductive plastic tape that is ¾" to 1-1/4" in width or other such highly visible electric conductive materials should be utilized. Electrified wire should only be used as a protective mechanism on the top rail of fences to prevent horses from chewing or reaching over the fence. One of the most desirable materials for the construction of corrals, small paddocks and dry lots are the commercially prepared pipe panels available though livestock supply centers. These can be easily configured, adjusted or re-arranged to meet changing needs. Anchoring of these panels to permanently placed upright support posts will be necessary, however, when larger areas or expanses are to be enclosed to prevent their possible damage or collapse and subsequent injury to horses. Very large dry lots or smaller pasture areas can also employ the use of welded pipe rail fencing. This type of fencing is safe for horses, permanent, long-lasting and low maintenance. If board rail or solid fencing is utilized, the boards should be fastened to posts through the use of lag-type bolts or screws. Nails will loosen over time and their exposed heads pose a risk for injury to horses. Broken or loose boards should be replaced immediately as they pose a hazard for severe injury.

When fencing corrals, paddocks and pasture areas the creation of sharp angled or enclosed corners should be avoided. These areas can entrap caretakers and horses and lead to their injury, particularly when several animals are contained in the enclosure. Gates should be well constructed from materials similar and/ or compatible with the type of fencing employed and should be of sufficient strength to avoid their sagging or bowing over time. The height at the top and bottom of the gates should match that of the fencing and gates should be sufficiently wide to completely fill the gate opening space within the fence. Narrow gaps at the edges of gates can easily trap the horses' head, hooves, or legs causing severe injury.

Shade and/or shelters should be provided in all pens, corrals and paddocks that are designated to provide permanent housing for horses. Their size and configuration to meet proper housing standards are the same as those for stalls, which have been previously discussed. Large paddocks and dry lots should also provide areas of dry surfaces during wet weather so that horses can stand or lie down out of the mud. This is most easily accomplished by creating dirt mounds with large surface areas in the middle of the enclosures. The areas around gates and water supply devices also are frequent sites for standing water and mud. These problem areas can be rectified by employing the use packed rock or gravel, asphalt, concrete, or rubber matted surfaces to create permanent level and cleanable surfaces. In general, careful planning and construction to avoid the presence of constant areas of free standing water is advisable to prevent muddy and hazardous conditions in winter and to minimize insect breeding areas in summer.

Workspaces for Animal Handling and Care

All equine sanctuary and rescue facilities regardless of size or type of operation will require a designated space for animal grooming, farrier services and veterinary care. The space can be incorporated into barns or other service buildings or built separately, depending on facility design and operational needs. The designated area must be covered by a permanent roof and sheltered as needed to allow for easy access and use in all weather conditions. It must be clean and dry, have a hard, non-slip, ground surface of concrete, asphalt or rubber material that can easily be washed and disinfected. The space must be well lighted and supplied with electrical outlets for equipment use. Faucets and hose bibs are necessary for animal washing and clean up. Sinks and countertops provided immediately adjacent to this area but safely away from animal contact would be advantageous, although not absolutely necessary. Equipment such as crossties and/ or stocks also may be desirable depending upon the animal activities included within the facilities operational plan. Secure and clean cabinet space placed adjacent to work areas would be convenient to hold veterinary and grooming supplies.

Feedstuffs and Bedding Storage

Hay, straw and other bedding materials are readily degraded or damaged by weather even in temperate areas. Consequently, designated areas must be provided where these materials can be safely stored and protected. The size and design of these storage areas will depend upon the amount of hay and bedding materials necessary to supply the needs of resident animals being fed and the climatic and environmental conditions of the area. While enclosed hay barn type structures are always preferable, other less costly options are acceptable. If barns are to be constructed expressly for the purpose of feed and bedding storage, steel warehouse type buildings with cement slab floors are preferable from a fire control standpoint. In areas of temperate climates cement, asphalt or packed gravel rock surfaces can be prepared and utilized for stacking of these materials. Such pads should be raised above ground level to allow proper drainage so that the bottom layers of material are protected from moisture during periods of rain. These areas may be covered by a roof (again metal preferable) if economically

feasible or the materials can be covered by secure and careful placement of tarps to protect them from sunlight and moisture. Regardless, of the type of feed storage facility utilized, it is essential that these materials be adequately protected from environmental hazards such as weather, varmint fecal contamination, or rodent infestation. Fire prevention and protective measures must also be planned for due to the flammable nature of these materials.

The storage of grain, feed concentrates, vitamins and other feed supplements also must be planned for at rescue or sanctuary facilities. In general these materials should be housed indoors and protected from weather, animal invasion and insect infestation. Sacks of grain and other feed material must remain dry and intact at all times. Once these are opened, their contents should be placed within enclosed, rodent proof containers with tight fitting lids. Fecal contamination from such varmints as opossums are known to transmit the causative agent of Equine Protozolal Myelitis (EPM), and infestation by rodents and/or insects can provide easy avenues for disease transmission. Likewise, supplement containers such as bags, buckets or plastic jars must either be securely closed between uses or have their contents placed within containers that can be easily sealed to protect them.

Operational Equipment Needs

The equipment needs for any equine sanctuary may be highly variable and will depend largely upon the size of the facility, the number of horses housed and the operational intentions of the management plan. Regardless, the planned acquisition, maintenance and ultimate replacement for every equipment item from hand implements such as shovels, pitchforks and rakes to power washing machines to trucks, tractors and other heavy motorized equipment must be taken into account. In spite of the obvious variable factors, there are certain items that are essential at every facility. All tools and equipment necessary for the proper cleaning and manure removal from animal living spaces must be in place and of adequate supply. Equipment necessary for the daily maintenance and upkeep of the grounds and structures within the facility is also an obvious necessity. The need for powered equipment, their size and configuration necessarily will be determined by management but must be sufficient to maintain a clean, healthy and equine friendly environment.

Since equine sanctuaries and rescue facilities most often house aged or disabled animals, the likelihood of having to deal effectively with equine emergency situations is high. A truck, trailer or van capable of moving healthy, sick or injured animals must be available at all times. In addition, the direct ownership or the immediate access to the equipment necessary for the handling and movement of recumbent and/or severely injured horses is essential to insure the welfare of the facility's inhabitants. Small emergency items and pharmaceuticals should also be in place in case of emergency. The character and number of these items can be catalogued based upon the advice of the sanctuary's attending veterinarian.

Waste Management and Manure Disposal System

A mature 1000 pound horse produces about 54 pounds of manure in a single day. Multiply that by the numbers of horses housed within a facility combined with the added weight and volume of wet, soiled bedding utilized daily and one can readily appreciate the need for a well planned and adequately equipped system of waste removal. The equipment and tools necessary for the removal of manure and other waste products from stalls, pens, corrals and large dry lots must be accessible and in working condition at all times. Containers to hold these materials, once collected and before removal from the facility, must be properly designed to fit the needs of the waste removal system and supplied in numbers sufficient to hold all acquired waste products. While those facilities that have access to large irrigated pasture areas or large open fields may be able to utilize manure-spreading

systems and equipment for waste management, most facilities will not. Smaller farms and those in which horses are housed and maintained on dry ground must utilize local waste removal services that are available on a routine basis. Additionally, city, county or state requirements may dictate the method and means by which equine waste is to be handled. Essentially, no manure and/or contaminated waste material can be allowed to accumulate upon the grounds of the sanctuary or rescue facility. Manure piles and large containers of waste that exist for extended periods of time on the property are not acceptable as these constitute a health and environmental hazard for horses and humans alike.

For larger farms and those combined with other livestock or farming operations there are systems for the composting of equine waste available. While many of these systems may be advantageous under certain conditions, they require advance planning and some expertise to be operationally effective and safe. These systems often are affected by jurisdictional authority from governmental agencies and so regulations must be researched prior to their implementation. It is recommended that advice be sought from individuals who have recognized expertise in this area before any composting plan is considered for use.

Water Sources, Drainage and Sewage Requirements

While some sanctuaries may maintain their own water supply through on-site wells, the water needs and quality for most sanctuaries will be dictated by local governmental agencies. Similarly the means and methods for the control of water run-off and sewage release from sanctuary facilities will be dictated by the rules and regulations of local and state governments.

In general, it can be stated that equine sanctuaries must be assured of adequate supplies of clean and pure drinking water. If wells are the source of water, their capacity to deliver sufficient quantities of high quality water throughout the year must be assured.

In general, it can be stated that equine sanctuaries must be assured of adequate supplies of clean, pure drinking water. If wells are the source of water, their capacity to deliver sufficient quantities of high quality water throughout the year must be assured. Drainage from farms must be designed so that water run-off is controlled and channeled into properly designed sewage systems. No drainage should be allowed to extend freely beyond the confines of the equine sanctuary such that it contaminates surrounding properties or naturally occurring bodies of water. Sewage disposal design and size must be adequate to handle all liquid and or solid waste to comply appropriately with regulated sewage requirements.

The FASS Guide calculates that a mature normal sized "light horse" housed in a thermoneutral environment will consume 4 to 8 gallons of water per day. In the case of draft breeds, lactating mares or high environmental temperatures that consumption could easily increase up to 25 gallons per day or more. Needless to say, all horses regardless of the manner in which they are housed need free access to an endless supply of water at all times. Horse facilities thus must provide adequate numbers of properly designed waterers which are strategically placed within all structures housing horses. The operation of these watering devices must be monitored routinely to insure that supplied water is not interrupted or contaminated.

Waterers can vary from simple buckets placed in stalls or small pens to appropriately designed automatic horse watering devices, to large watering troughs. As with all devices used around horses, waterers should be durable and securely fastened in place with no sharp edges or projections if injuries are to be avoided. For those areas housing multiple horses, sufficient numbers of automated waterers and/or adequate trough space must be supplied so that all animals have access to water and cannot be denied access by more aggressive horses. All watering buckets, devices and troughs should be cleaned regularly and troughs should have a means by which small animals or birds that might fall into the trough can escape, thereby preventing water contamination as a result of their drowning. Large troughs should be supplied in summer months with a population of mosquito fish to prevent them from becoming breeding grounds for mosquitoes. In areas of extreme winter cold, waterers need to be heated to insure that horses have access to water and will drink adequate amounts. Alternately, water may be offered several times per day to horses in severely cold environments. Winter time dehydration can be just as problematic as that in summer if water is too cold for comfortable consumption by horses or if the water sources become frozen.

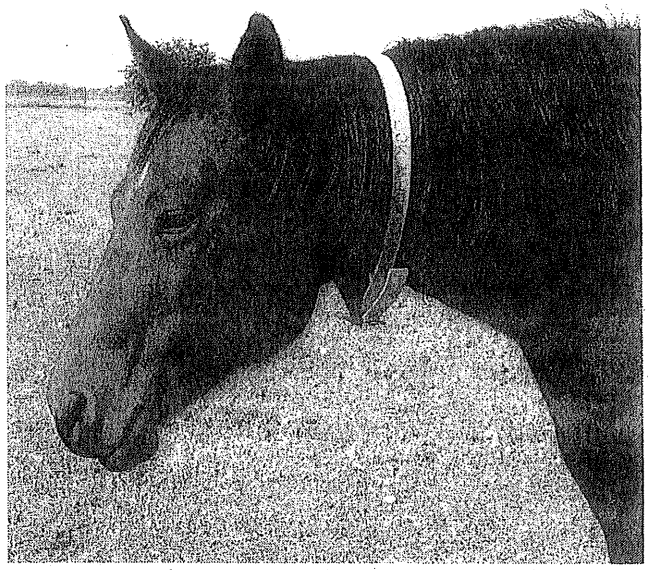
Section 3

HUSBANDRY PROGRAM

Animal Identification Program

A method for the positive and permanent identification of the horses housed within equine rescue farms and sanctuaries is an important component of proper husbandry management. This is especially important when large numbers of animals are maintained within the facility or where the turnover of animals through effective adoption is sizable. Permanent identification also allows for the tracking of animals which have been adopted out or otherwise transferred from the facility. While there are many traditional options for the permanent identification of horses such as lip tattooing, freeze branding, etc.; the more modern method of microchip implantation is considered by many to be preferable. These chips provide a permanent and unalterable method of identification, and are reliable, economical and humane. They are commercially available world-wide through veterinary and livestock distribution networks. A hand held scanner is necessary for reading the information on the microchip.

One of the drawbacks of microchips and other methods of permanent ID is that these do not allow for ready visual identification of horses. For this reason many farms and sanctuaries will combine those identification methods with neck tags, labeled halters or neck collars. All of these are acceptable as they can be marked with names or numbers for instant recognition. The labels can also be color coded if desired to designate gender (St, Fe, Geld) or herd groups, if desired. One important factor to remember when using these types of external ID systems is that while the material used to make these must be sufficiently durable to withstand daily wear and tear, it must not be so strong that it cannot be broken by the animal that becomes trapped or ensnarled on fences, feeders, waterers, etc. This is especially important for foals and weanlings for not only are they more likely



One important factor to remember when using external ID systems is that, while the material used to make these must be sufficiently durable to withstand daily wear and tear, it must not be so strong that it cannot be broken by the animal that becomes trapped or ensnarled on fences, feeders, waterers, etc.

to get their collars entrapped in small spaces but often lack the strength to free themselves.

Feeding and Nutrition

Tradition has played a large role in nutrition programs and the basic feeding practices utilized for horses, but new scientific research has expanded equine nutrition programs to include non-traditional feeds along with the development of ration formulation to meet the specific lifestyle of the horse. Sanctuary/rescue facilities should be knowledgeable about the nutritional requirements of the horses under their care, and may benefit from the knowledge and expertise of an equine nutritionist or veterinarian. Many commercial feed companies and the local Cooperative Extension service may offer consulting services on appropriate and cost effective equine nutrition programs for a minimal service charge. Written feeding protocols with nutritional goals should be developed for individual horses, especially those horses with nutritional challenges. Careful and consistent feeding practices are essential for maintaining the health and any rehabilitation needs of individual horses in sanctuaries.

Basic Nutrition

Horses have evolved over the years as grazing herbivores traveling in small herds over long distances in search of food and water, and as such, have a digestive tract that is best suited for digesting a continual supply of roughages or a series of small meals throughout the day. Ideally, feeding practices should allow horses to eat throughout the day, have some freedom of movement, and permit socialization with other horses. If these conditions cannot be met as with many horses housed individually in stalls within a stable, then horses should be fed at least twice per day. Feeding smaller meals more frequently or providing ad libitum hay and water throughout the day is advantageous to the horse's intestinal health and lessens boredom and the incidence of behavioral vices.

Some simple general guidelines should always be followed on developing feeding programs for horses in any facility, including sanctuaries. Horses are extremely sensitive to factors that contribute to poor quality feeds such as dust, mold, weeds, and toxins. Any poor quality feed can lead to laminitis or respiratory or digestive compromise, so these feeds must be avoided even when offered in the smallest amounts.

Maintenance Diets

Horses are commonly fed diets that maintain their normal body condition or weight. Thus, it is a recommended practice for sanctuaries to weigh horses on arrival to the facility and at regular intervals. Alternatively, the body condition of the horse can easily be scored using the Henneke scoring system (Table 1) of 1 (emaciated) through 9 (obese). Horses are usually fed a diet that is consumed at 1.5 to 3% of their body weight per day to maintain their body weight or body condition. An average horse is considered to be approximately 1000 pounds, thus the average mature horse is expected to consume daily 15 to 30 pounds of dry feed such as hay. Although individual horses are in different life stages, exercise programs, and/or environmental conditions, hay should be fed at a rate of 1% or more of body weight for the mature horse. Types of hay may vary by regions, but timothy, alfalfa, and other grass or cereal grain hays are commonly fed to horses.

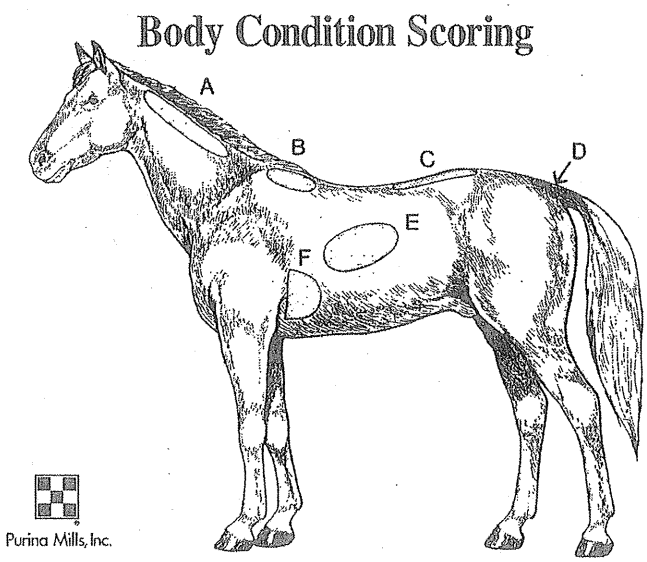
Concentrates are added to some diets to supply additional energy, protein, vitamins and minerals. Cereal grains commonly fed to horses are oats, corn, barley, or wheat and are added to increase the calories of the diet. However, the concentrate portion of the diet should not exceed 1% of the total dry feed, especially since these grain-based concentrates are high in starch. High levels of starch in concentrates have been associated with laminitis, obesity, and digestive disorders in all ages of horses. Supplementing with corn oil or some other form of palatable fat is often used to increase caloric density or energy without increasing the starch content of the diet. Vitamins, minerals, and protein supplements are commonly mixed in a ration to balance the diet. Since sodium chloride is deficient in many common diets and horses lose sodium chloride through sweating, salt should be added to diets for horses or be available free-choice as a plain or trace-mineralized salt block.

Horses in the care of the sanctuary with the highest nutrient requirements are young growing horses, late pregnant or lactating mares, and possibly horses with a vigorous exercise or work schedule (Table 2). These horses compared to sedentary mature horses have increased nutrient requirements especially for energy, protein, and some minerals and vitamins. The National Research Council's (2007) "Nutrient Requirements of Horses" provides both the recommended levels of nutrient requirements in diets for horses of various production classes along with the nutrient content of feeds for horses which are both helpful in formulating and balancing diets. Although the NRC requirements are scientifically based, the body condition or weight of each horse should be evaluated periodically and adjustments made to their diet.

Table 1
Body Condition Scoring System

Body condition, or the measure of fat cover, can be evaluated by visual appraisal and palpation. A scoring system in horses uses six areas of the body to assign scores of 1 (extremely emaciated) to 9 (obese). The six areas are: (A) along the neck; (B) withers; (C) crease down back; (D) tailhead; (E) ribs; and (F) behind the shoulder.

A score between 5 and 7 is considered ideal for healthy horses. Horses scoring in the 1 and 2 category should be evaluated further for causes such as medical conditions, dental problems, or the lack of proper nutrition.



Description of Individual Condition Scores (1–9)

(1) Poor. Animal extremely emaciated; spinous processes, ribs, tailhead, hip joints and lower pelvic bones projecting prominently; bone structure of withers, shoulders and back easily noticeable; no fatty tissue can be felt.

(2) Very Thin. Animal emaciated; slight fat covering over base of spinous processes; transverse processes of lumbar vertebrae feel rounded; spinous processes, ribs, tailhead, hip joints and lower pelvic bones prominent; withers, shoulders and back structure faintly discernible.

(3) Thin. Fat buildup about halfway on spinous processes; transverse processes cannot be felt; slight fat cover over ribs; spinous processes and ribs easily discernible; tailhead prominent, but individual vertebrae cannot be identified visually; hip joints appear rounded but easily discernible; lower pelvic bones not distinguishable; withers, shoulders and neck accentuated.

(4) Moderately Thin. Slight ridge along back; faint outline of ribs discernible; tailhead prominence depends on conformation, fat can be felt around it; hip joints not discernible; withers, shoulders and neck not obviously thin.

(5) Moderate. Back is flat (no crease or ridge); ribs not visually distinguishable but easily felt; fat around tailhead beginning to feel spongy; withers appear rounded over spinous processes; shoulders and neck blend smoothly into body.

(6) Moderately Fleshy. May have slight crease down back; fat over ribs spongy; fat around tailhead soft; fat beginning to be deposited along the side of withers, behind shoulders and along sides of neck.

(7) Fleshy. May have crease down back; individual ribs can be felt, but noticeable filling between ribs with fat; fat around tailhead soft; fat deposited along withers, behind shoulders and along neck.

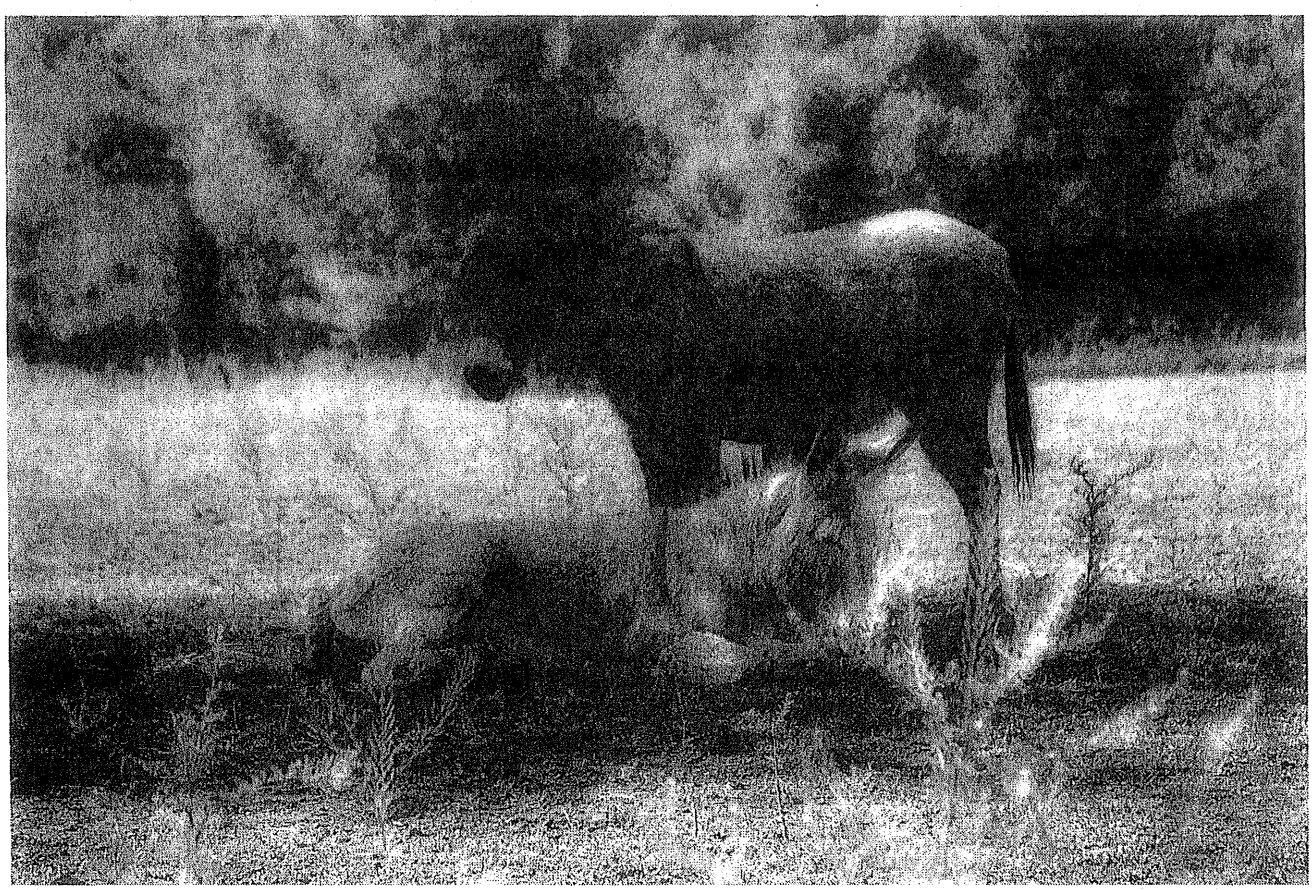
(8) Fat. Crease down back; difficult to feel ribs; fat around tailhead very soft; area along withers filled with fat; area behind shoulder filled with fat; noticeable thickening of neck; fat deposited along inner thighs.

(9) Extremely Fat. Obvious crease down back; patchy fat appearing over ribs; bulging fat around tailhead, along withers, behind shoulders and along neck; fat along inner thighs may rub together; flank filled with fat.

Table 2
Recommended Nutrient Intake of Diets* for Horses
During Different Production Stages or Work Level

	Digestible Energy (Mcal/lb)	Crude Protein (%)	Calcium (%)	Phosphorous (%)
Maintenance	0.90	8.0	0.24	0.17
Pregnancy (9–11 months)	1.00–1.10	10.0–10.6	0.43–0.45	0.32–0.34
Lactation	1.15–1.20	11.0–13.2	0.36–0.52	0.22–0.34
Growing				
Weanling	1.4	14.5	0.56–0.68	0.31–0.38
Yearling	1.3	11.3–12.6	0.34–0.45	0.19–0.25
2-Year-old	1.2	10.4–11.3	0.31–0.34	0.17–0.20
Work	1.15–1.30	9.8–11.4	0.30–0.35	0.22–0.25

* Dry matter basis. National Research Council, 1989.



Geriatric Nutrition

Older horses or geriatric horses may require additional nutrient needs and feeding practices to maintain a healthy body condition. Common ageing conditions include weight loss, loss of dental function, hormonal changes affecting metabolism, poor absorption of nutrients, skeletal problems such as arthritis

or laminitis, and kidney or liver degeneration. Healthy horses over the age of 20 years may have reduced digestion of protein, fiber, vitamins, and minerals. Diets should consist of a palatable ration based on high-quality forage, such as alfalfa. Diets should contain between 12-16% of easily digestible protein, which is greater than the 8% protein level recommended for the idle mature horse. Many commercial diets are available for the senior horse which facilitates increased digestibility and nutrient content of the diets. Loss of teeth and a suitable grinding surface can be a challenge for the older horse in properly digesting their feed. Good quality forage is the cornerstone of the geriatric horse, but may be fed in the form of pellets or chopped hay to aid geriatric horses with dental compromise or other challenges. Commercially available extruded feeds, processed feeds, or pellets can be fed to increase digestibility. Soaking commercially available equine feed pellets in a bucket of water to make drinkable slurry will benefit a horse with compromised dental function. Provide the geriatric horse an environment for eating with considerations to suitable footing to minimize discomfort due to lameness, an easily accessible water source, and the provision of shelter from extreme weather elements. Older horses often require a longer period of time to ingest their feed, so younger or more aggressive horses should be separated to minimize this competition for available feed intended for geriatric herd members.

Nutrition for Sick or Injured Horses

Illness, trauma, injury, stress, and other types of sickness in horses often impact the nutritional needs and their appetite. Depending on their metabolism, their caloric expenditure and protein requirement may increase or even decline as compared to healthy horses. The two basic types of metabolic conditions have been characterized for ill or traumatized horses are hypometabolism and hypermetabolism, and each requires a different approach for nutritional support (Kronfeld, 1997). The characteristics of a hypometabolic horse include inactivity, ears that may feel cold, low to normal rectal temperature, and minimal eating or drinking. The phrase "fire of life" burns low is often associated with a hypometabolic horse. Horses in a starvation cycle or in the terminal stage of a disease will approach minimal metabolism with an energy expenditure only 50 to 70% of the daily maintenance energy. The refusal of any feed or water will precipitate dehydration as an immediate concern, while carbohydrate and fat stores will be depleted over time. Nutritional support with the recommendation of a veterinarian can be provided to hypometabolic horses through enteral feeding (nasogastric tube) or intravenous administration of nutrients. Advice from a veterinarian or nutritionist should be sought for specific nutritional recommendations for the re-alimentation of each recovering hypometabolic horse, but any nutritional program should be introduced gradually with very small meals.

Hypermetabolic horses usually are suffering from severe trauma, sepsis, and stress and thus are opposite in

their symptoms and nutritional support as compared to hypometabolic equines. Hypermetabolic horses have warm or hot skin along with elevated temperature and demonstrate some signs of behavioral stress or pain. Their metabolism may be accelerated up to three times the daily energy for maintenance as the "fire of life" burns bright, and hence energy expenditure in the body is larger than caloric intake from feed. This may lead to tissue wasting to supply the energy for metabolism by breaking down the fuels of carbohydrates and fats, and as a last resort protein. These horses require nutritional support that starts with small meals, but is often progressive in achieving a diet that is twice daily energy for maintenance within 3 to 4 days. A veterinarian's or nutritionist's advice on nutritional support should be followed for each hypermetabolic horse and may include enteral and intravenous nutrition if the horse displays inappetence or is incapable of ingesting feed.

Obese Horses

Obesity or emaciation requires the individual management of the horse starting with the identification of the causes. The health of the horse should be determined before any changes in the nutritional program are initiated. A horse that appears overweight may suffer from metabolic disease (e.g., Cushing's, hyperthyroidism), but most likely, the horse has overindulged in sweet feeds or grain, over-consumed lush pastures, and/or has limited exercise or other physical activity. A healthy horse that is overweight or obese will likely benefit from a diet that is reduced in the content of energy (calories) and/or an increase in physical activity. Both regimes should be initiated in a step-wise fashion with a slow reduction in total amount of calories in the daily feed or changes in types of feed. Exercise or other activity should be slowly increased over time. Both regimes will lead to a reduction in total body fat. The caloric intake (digestible energy) can be slowly reduced, mainly by withdrawing any soluble carbohydrates (grain) in the diet while feeding good quality hay. A horse that body scores as a "9" may take 3 to 6 months of diligent daily care and feeding before obtaining a score of "5 or 6."

Starved Horses

Sanctuaries, as well as, rescue organizations, equine veterinarians, nutritionists, and other horse care providers may be challenged with the rehabilitation of a chronically starved horse. Emaciated horses (body condition score of "1 or 2") may suffer from many maladies of health, age, or nutritional basis. Dietary deficiencies can range from complete lack of feed (starvation) to an imbalance (excess or deficiency) of the nutrients (malnutrition) required in the diet such as protein or specific vitamins. During the starvation process, the horse initially uses any fat and carbohydrate stored in his body to supply energy for metabolism. In a starved animal, once this source of fat and carbohydrate is depleted, energy is derived from the breakdown of protein. While protein is a component of every tissue, there are no inert stores in the body such as there are for fat and carbohydrates. Consequently, the starved body uses protein not only from skeletal muscles, but also from vital tissues such as the heart and even gastrointestinal tissues. When a horse loses more than 50% of its body weight, the prognosis for survival is extremely poor.

The "refeeding syndrome" has been reported in horses with abrupt refeeding of concentrated calories causing death in 3 days. The best approach for initial refeeding of the starved horse consists of frequent small amounts of high-quality alfalfa. This amount should be increased slowly at each meal and the number of feedings decreased gradually over 10 days (Table 3). After 10 days to 2 weeks, horses can be fed hay in increasing amounts to reach a level of free choice hay. Grain supplementation is not recommended until the horse is near normal body weight, usually 6 months following the initiation of refeeding. Horses will show signs of increased energy after one to two weeks, but may be particularly aggressive at meal times. Ears, eyes and head movement will be the first noticeable change in

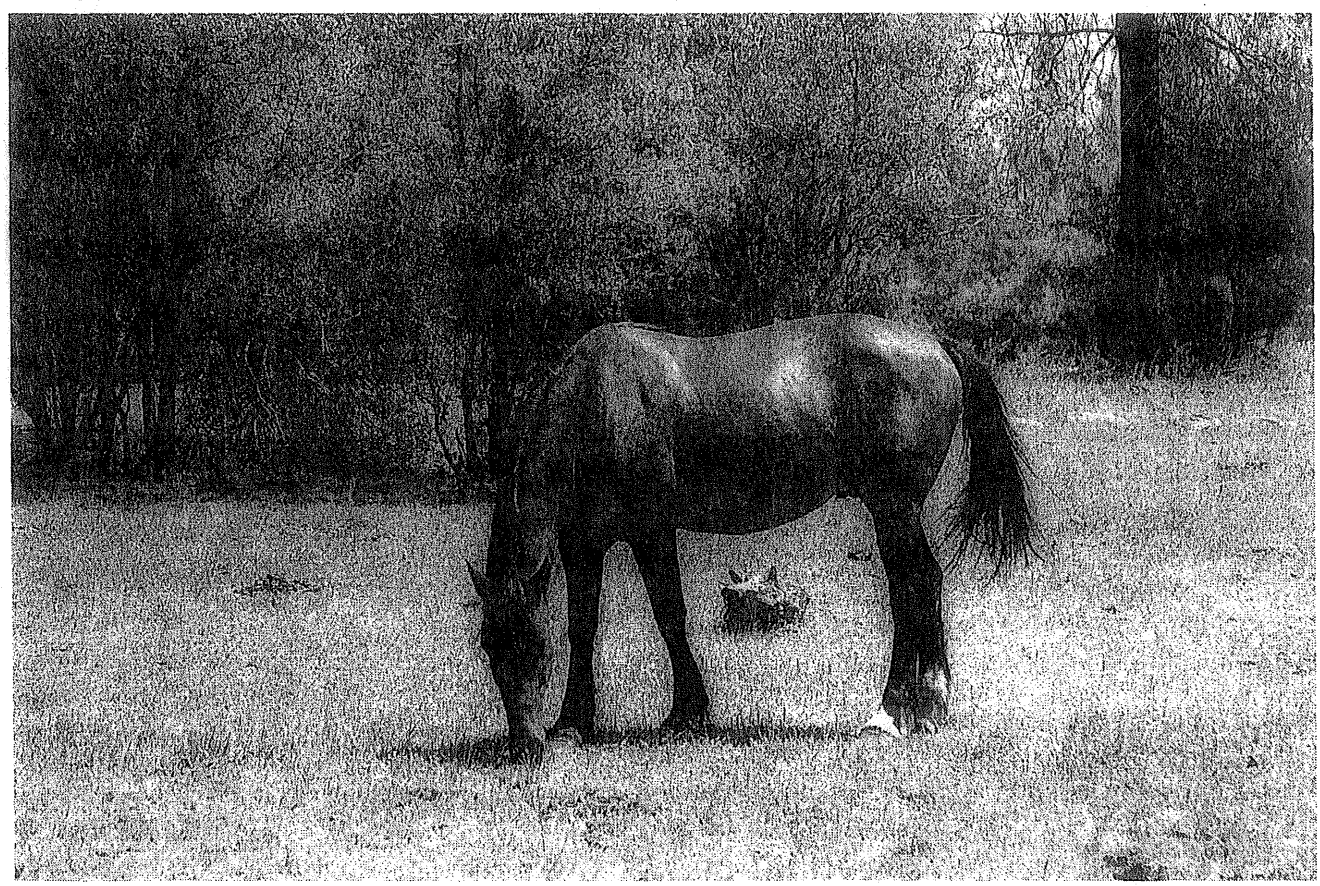
Table 3
Refeeding Recommendations for the Starved Horse*

Day	Number of Meals/Day	Feed (lbs)/Meal	Percent DE/Day
Days 1–3	6 (every 4 hours)	1.0–1.25 lbs alfalfa	50
Days 4–5	6 (every 4 hours)	1.75–2.0 lbs	75
Days 6–10	3 (every 8 hours)	Increase to 5 lbs	100

* Based on a starved horse with a projected normal weight of 1,000 lbs or 450 kg. Daily digestible energy (DE) requirement per horse can be calculated using the formula:

$$\text{Mcal DE/day} = 1.4 + 0.03 \text{ Body Weight (kg)}$$

DE of alfalfa hay is 2.28 Mcal/kg. Thus, the DE requirement for the horse is 15 Mcal DE/day, which can be provided with 6.6 kg or 14.5 lb of good-quality alfalfa. Witham et al., 1998.



activity in extremely emaciated horses. Some weight gain can be achieved in one month, but 3 to 5 months usually are needed to rehabilitate a horse back to a normal body weight. Vaccination and deworming programs should be considered with the consultation of the facility's veterinarian after approximately 2 to 3 weeks of refeeding. A physical exam of the horse prior to any riding or exercise program is advisable to ascertain any organ damage (i.e., heart) or other limiting disorders.

Water Management

Since a horse's need for water can be as much as 25 gallons per day, the need for a free access to an uninterrupted supply of water is paramount to the well being of the animals. Indeed, lack of water represents a much higher health risk than similar interruptions in supplies of feed. Consequently, not only do the proper type and sufficient numbers of watering devices need to be supplied, their continued operation and accessibility must be assured. Waterers must be checked for function at least twice daily and perhaps more often in periods of extreme heat. This twice daily monitoring easily can coincide with feeding, stall cleaning, or other husbandry practices. Watering devices or containers also must be kept clean and free of any contaminating debris. Dirty water, particularly that containing the horses own fecal material, will keep horses from drinking. Water troughs contaminated with dead animals or others noxious materials can be a source of toxins or microbial contaminants which are a threat to health. In areas of severely cold winters, water sources must be heated to insure that horses will have proper access to, and drink sufficient amounts of water, to prevent dehydration. Wintertime colics due to dehydration from lack of water consumption are common in areas of cold climate. Sudden changes in weather in any climate can also decease water consumption causing dehydration and possible colic.

Bedding Requirements

The purpose of all bedding materials is to provide comfort and sanitation to horses housed within enclosed structures. There is a wide choice of acceptable bedding materials and the selection of those used depends on local, availability, affordability, consistency of quality, the requirements for disposal and the personal health care needs of the horse(s) to be housed. The bedding most often utilized in the United States is wheat, oat or rye straw. Wood byproducts such as shavings or sawdust are also increasing in popularity due to price considerations and ease of storage. Shavings are preferable to sawdust because these are generally cleaner and easier to handle for waste removal. There are certain types of shavings that are toxic to horses and should never be used such as those derived from black walnut trees, pressure treated lumber or freshly cut cedar. Consequently, the source and type of shavings should be checked carefully before purchasing for equine use. Other types of materials that are acceptable and frequently used are peat, shredded paper or manufactured bedding materials designed specifically for horses.

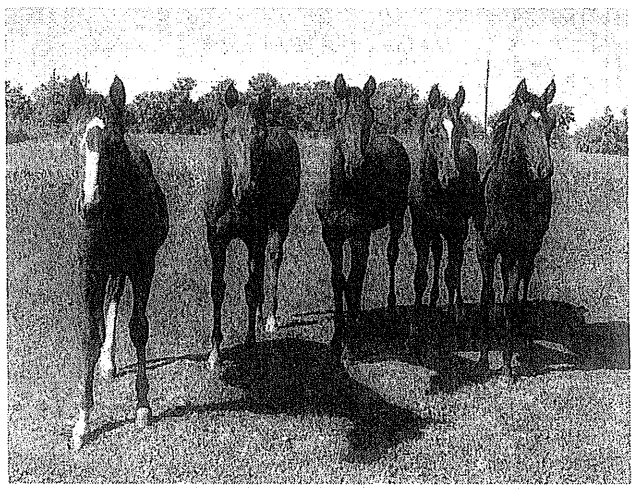
The single most important factor in the selection of bedding for horses is that the material should be as clean and dust free as possible. This is due to the fact that dusty bedding and dust accumulation within enclosed stable creates an undesirable environment for the respiratory health of the animals housed. Since straw, wood shavings and hay are dusty by nature it is extremely important that care is taken to purchase only those of high quality. Old, dirty, or moldy bales of hay, straw or wood materials are simply not acceptable due to the potential health hazards they present. Likewise, quality materials must be properly stored after purchase to avoid water damage, weathering, varmint (rodents, insects, etc.) infestation or other contaminating effects that create health risks. If possible, it is advisable to have horses taken out of their stalls during the bedding process to avoid the dusty air that is normally created during the spreading of these materials. Sometimes bedding can be sprinkled with a light drizzle of water if dust seems excessive. Dust buildup within barns and stables over time also creates an environmental hazard and so these structures should periodically have the

horses removed so that power washing or cleaning of their interior surfaces can be accomplished.

Regardless of the type of bedding selected for use and the type of structure employed to house horses, the comfort and cleanliness of the animal is the primary concern. Therefore, sufficient amount of bedding material must be distributed within the stall or enclosure to provide a soft, yet stable ground surface that allows the horses to recline comfortably and return to the standing position safely. The suitable depth of the material is dependant upon the type of bedding used and the underlying floor surface over which the bedding is spread. Hard floor surfaces such as brushed cement, asphalt or wood will require more bedding material to provide a deeper cushion than floors consisting of rubber mats, packed sand or clay. Secondly, bedded stalls must be thoroughly cleaned at least once daily such that all feces and wet material are completely removed. Any bedding material removed in this process must obviously be replaced with a like amount of new dry bedding. Depending on the size of the horse, size of the stall, diet, and the available labor supply, a second removal of manure can be carried out later in the day and may be beneficial to the cleanliness of the horse. While this process represents an increased cost of labor those costs may be offset as the daily amount of bedding removed due to fecal contamination will be decreased.

Animal Grouping and Housing Selection Criteria

The natural social structure of horses is one of strong herding instincts with a social order that is based upon individual dominance within a given group. Once these group orders are established they tend to remain stable. Over time, horses develop strong social attachments to individual herd mates. Consequently, the grouping of individual hoses within pens, corrals, dry lots and pastures should be done with careful consideration. Even horses housed alone in stalls or individual pens will be more content if they can have visual contact with other horses or animals on the property. When selecting horses for cohabitation, the gender, age, health, and individual disposition should be considered to avoid confrontational and aggressive behaviors such as fighting. All newly arrived horses should be quarantined (2-3 weeks) before mixing with resident horses. Before new horses are co-mingled, they can be exposed to the group by allowing an across-the-fence acquaintance period. All introductions of



Horses develop strong social attachments to individual herd mates. Consequently, the grouping of individual hoses within pens, corrals, dry lots and pastures should be done with careful consideration.

new individuals to each other regardless of group size should take place in daylight hours and under close supervision to avoid unnecessary harm or injury to horses.

The type of housing selected and the number of horses grouped together within a single enclosure will depend upon the types of horses involved, the available housing alternatives, climatic conditions and the health and soundness of the individual animals. Generally, animals of like gender (mares & geldings), similar ages and sizes should be grouped together. Old, geriatric horses whose mobility and activity is limited should be grouped together with individuals of similar disability to avoid injuries and to insure that they receive their proper share of feed and water. Usually, mature stallions are housed individually in stalls or small pens or pastures and not grouped together with other

stallions. In most sanctuaries and rescue facilities, stallions or colts are not grouped with fertile mares or fillies. It is important that animals housed individually in outdoor pens or grouped together in larger enclosures have adequate space since overcrowding may lead to aggressive behaviors such as fighting. Ideally, there should be adequate space to allow for exercise and free movement of every member of the group and enough space such that individual animals can separate themselves from the group. As mentioned previously, inadequate space for feed and water access is a common stimulus to confrontations. Additionally, excessive numbers of horses enclosed in small spaces represents a health risk due to the rapid accumulation of manure and urine. Stocking densities for horses placed on pasture will depend largely on the amount and quality of grass available; the American Association of Equine Practitioners recommends a minimum of 2 acres per horse.

Sanitation and Waste Removal

Clean and sanitary surroundings within the confines of any equine facility are absolutely essential for the health and welfare of the horses and for the avoidance of unnecessary environmental contamination. Therefore, the excessive buildup of feces, urine and other waste products within the housing enclosures or in and around the grounds of the facility is not acceptable under any circumstances. Indoor stalls and outdoor pen type enclosures must be cleaned of manure and other waste products daily; larger paddocks and dry lots must be placed on a regular schedule for manure removal and ground maintenance. Pastures should have accumulated manure either removed or spread on a regular and recurring basis to lessen environmental impacts and to minimize intestinal parasite infestation. Standing water or urine also must be prevented from accumulating in housing enclosures by proper drainage or absorbent bedding materials. Standing ground surface water provides optimal breeding grounds for disease transmitting insects and for microbial contamination of the environment. Manure attracts breeding flies and other insects which are both irritating and unhealthy to animals and humans, alike. Therefore, care must be taken to prevent the manure buildup under fence lines, along the edges of shelters, under feeders and waterers, and along roadways and horse paths. Areas designated as collection areas for the temporary storage of animal waste products before pickup and removal must be well maintained and kept clean. Areas where horses are groomed, shod, or provided health care services must be maintained as sanitary as possible. Barns, storage sheds, hay barns and all other structures should be properly maintained to prevent injuries and maintain a healthy environment. In short, a clean and orderly environment is healthy and safe for both the horses and the people who care for them. The pursuit of that goal should be made foremost in the minds of all employees and volunteers working within any rescue or sanctuary facility.

Daily Animal Inspection and Welfare Maintenance

Every animal maintained within an equine facility must be visually inspected for health and soundness daily. An exception is for farms or sanctuaries composed of very large land areas housing high numbers of animals (as with many wild horse type sanctuary operations) where the numbers of horses and the distances involved make such daily inspections impractical. Even in these situations, however, some sort of regular and routine system for the observations of equine residents should be devised to insure that injured, sick or entrapped animals are discovered as soon as possible to avoid needless suffering.

Horses, by their nature are curious and inquisitive and react to unexpected events through a "fight or flight" mechanism. Consequently, their propensity for injury, both minor and serious, is significant. Horses are highly susceptible to digestive disturbances and colic, especially after periods of abrupt weather changes or interruptions in water intake. Also, since they are

inherently nomadic, their interactions with fences can result in escapes or entanglements often accompanied by injury. Vigilance by employees and volunteers is the single most important element to maintaining health and preventing injuries in horses. Therefore, equine rescue farms and sanctuary facilities should develop written protocols for both routine care and emergency procedures. All employees should be held responsible for compliance to those standards and procedures.

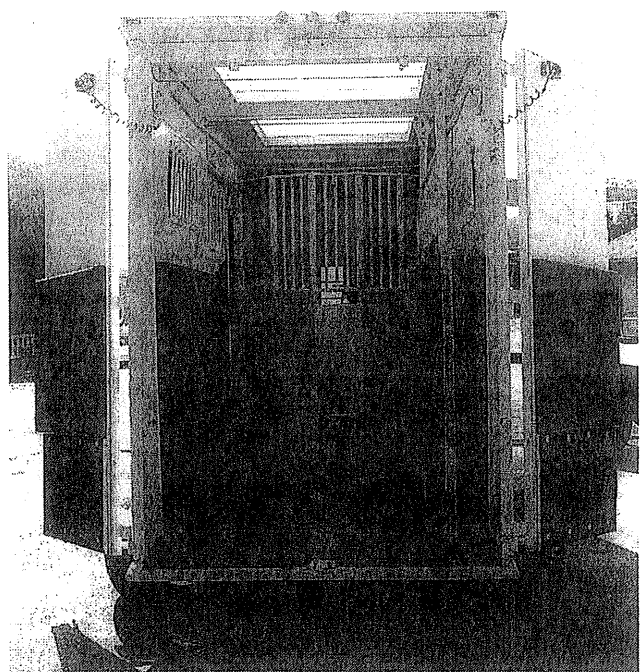
Hoof Care

Regular and proper hoof care is an essential practice in the basic maintenance of all horses. Very old, very young horses and those with significant disabilities or orthopedic problems require more attention to hoof care. Consequently, all equine operations must enlist the services of a qualified farrier on a regular basis. The farrier selected should work in conjunction with the facility's manager and veterinarian to develop a program for hoof health maintenance. Once the program is established, careful record keeping and adherence to trimming and shoeing schedules should be made a mandatory element of the facility's management procedures.

It is generally accepted that normal foot growth in the adult horse is approximately 3/8 inch per month, thus hoof trimming should occur every 6-8 weeks if proper hoof-pastern alignment and foot balance is to be maintained. Horses with hoof abnormalities, conformational abnormalities or chronic lameness issues may need hoof trimming or attention more often. Some horses may need to be shod regularly to maintain comfort and soundness. As a general guide, the AAEP recommends that "horses be trimmed and/or shod according to their individual needs, which are dependant on its housing, musculoskeletal problems, conformation and environment". In foals the hoof grows more rapidly with about 5/8 inch of new hoof wall produced each month. Consequently, foals and weanlings should have their hooves trimmed monthly until at least 1 year of age. Foals, weanlings and yearlings with conformational issues may need specialized trimming and/or corrective shoeing to insure proper limb growth and alignment.

Transportation Accommodations

Equine rescue operations and sanctuary facilities by their very nature will require the ability to transport horses on and off the farm. Horses to be rescued most often need to be transported from their current location to the rescue or sanctuary facility, and resident horses may need transportation to new homes or veterinary facilities. Health care emergencies are always a possibility within horse facilities, and these often require that afflicted animals be transported rapidly at any given hour of the day for immediate hospital care. Consequently, it is essential that all such operations have permanent and ready access, if not outright ownership of some type of horse hauling equipment. The selection of equipment, be it horse vans or trailers, will vary depending on the size of



Health care emergencies are always a possibility within horse facilities, and these often require that afflicted animals be transported rapidly at any given hour of the day for immediate hospital care. Consequently, it is essential that all such operations have permanent and ready access, if not outright ownership, of some type of horse hauling equipment.

the sanctuary operations, the type, numbers and sizes of animals routinely transported and the budgetary limits of the operating agency. Regardless of the type of vehicles chosen, these must be adequately maintained in operational order and "street ready" at all times. Employees should be adequately trained in their use and well practiced in the proper method for loading and unloading horses from the vehicle being used. They should, likewise, be knowledgeable and experienced in driving vans or trailers containing animals such that they can maneuver these in all situations and road conditions without endangering the horses being transported. Management should establish a written standard operating protocol for these transportation vehicles that includes all of the considerations previously described as well as any factors specific to a particular facility. A copy of these transport protocols should be maintained within the vehicle at all times.

Emergency Evacuation Plan

Natural and human caused disasters can occur at anytime and anywhere. These take many forms from wildfires to earthquakes to windstorm damage to flooding from a violent rainstorm. Any of these occurrences may necessitate the rapid evacuation of animals from a farm location. Consequently, it is important that all equine rescue farms and sanctuaries develop a written evacuation protocol or plan of action. It is recommended a list of volunteers be developed and maintained who can be called upon to provide assistance when disaster strikes. All disaster procedures should be reviewed and practiced in periodic training sessions with both the facility's employees and volunteers. This is particularly important when large numbers of animals are being housed at a given location. Arrangements with local horse van companies to supply adequate numbers of transportation vehicles should be made and maintained ahead of time if the facility houses more horses than their own hauling equipment can rapidly evacuate. Because in an emergency there is no time for animal training, all horses should be trained in loading and transport procedures as a routine part of their care and management.

The facility's written disaster protocol should include a plan with designated facilities to re-locate horses in emergency, alternate driving routes to those locations, and an option for removing horses if vehicle access to the farm is blocked. Sufficient halters and lead ropes should be conveniently located and clearly marked with the farm's identity and telephone contact number. As previously stated, all horses in equine sanctuaries or rescue facilities should have permanent identification. If not, they must be identified by a name or number that is securely fixed to the halter, neck collar, or similar identification tag.

A basic first aid kit with adequate supplies for the number of horses involved should be prepared in advance and maintained in proper order. This kit should reside either within the farm's own transportation vehicles or placed in a location that is readily accessible during the animal loading process. Additional supply kits containing feed tubs, water buckets, pitchforks, shovels, grooming supplies and other implements should be planned for as well. If time allows and space is sufficient, enough feed and water to maintain horses for 72 hours should be transported along with each load of horses.

Not all disaster situations will necessitate or allow for total facility evacuation. Occurrences such as barn or structure fires are possible and so protocols for dealing with these should be included in the facility's disaster plan. At times the circumstances of natural disasters such as floods or wildfires may block any chance of evacuation. In such instances "hold in place" procedures should be outlined within the overall disaster plan. Large cleared pastures or drylots may provide safe places to corral large numbers of animals safely from surrounding fires. High ground areas of a farm may be identified where animals could be taken, held and fed for extended periods during floods. These and other types of contingency plans that have specific application to the facility's location and operational activities should be developed, discussed, practiced and included in the facility's written disaster plan. Multiple copies of this document should be placed in strategic locations that are easily accessible to all personnel. The plan should be reviewed and updated if necessary at least once a year.

Section 4

MEDICAL HEALTH CARE PLANNING

Attending Veterinarian of Record

The proper medical management and health care for horses within equine rescue and sanctuary facilities is an absolute necessity. Effective procedural health policies and medical treatments will require the participation of qualified veterinary professionals. Consequently, all equine facilities should establish a permanent working relationship with a local veterinary practice experienced in the care of horses. Adequate veterinarians should be available either through the attending veterinary practice or through a cooperating back-up system of veterinarians, such that emergency service can be provided 24/7. The veterinarian(s) selected should not only be utilized to provide routine and emergency medical care but should be called upon to help design and plan adequate health care facilities and procedures for the facility. Their guidance and recommendations should be solicited and incorporated into all aspects of the health and care of the horses within any facility.

Basic Health Care Program

A program for routine health care and preventive medicine for all horses must be established within the rescue and sanctuary facilities. An individual medical record should be created for each horse housed that includes both past and current medical evaluations and procedures (routine or otherwise). Periodic routine medical examinations should be planned and performed on all horses to insure the early detection of health problems. Standard preventative medicine programs such as vaccination, de-worming and dental care should be designed in consultation with the attending veterinarian and implemented according to schedule. Suggested vaccination and deworming programs can be found on the web sites for both the American Association of Equine Practitioners and the UC Davis Center for Equine Health. Routine hoof care, hoof trimming and shoeing procedures should be designed in consultation with both the farrier and the attending veterinarian and implemented according to their recommendations. Additionally, programs for proper insect, rodent and other predator control should be adopted and carried out effectively.

Isolation, Quarantine and Biosecurity Procedures

Housing facilities must be provided and protocols established to provide for the proper isolation of horses newly introduced to the property and for the medical quarantine of those animals suspected of having contagious diseases. Isolation units can consist of as little as a few pens or stalls that are located well away from other horses and out of the routine flow of traffic, or they can be as elaborate as a small barn or medical unit that has strict biosecurity rules and procedures, depending upon the needs and size of the facility. All horses newly introduced onto the property or those that are returning from a long absence should be isolated from the farm's resident horses for a period of time (usually 2-3 weeks) to prevent the untoward introduction of contagious diseases. All individuals that exhibit signs of contagious diseases such as coughing, sneezing, high fevers, etc should be quarantined immediately. When sick horses are identified and placed within isolation units, biosecurity procedures must be implemented and followed carefully. Since disease can often be transmitted by fomites on clothing, tack and farm implements, all direct and indirect contact between these sick individuals and the farm must be prevented. Feed, bedding and waste materials must be kept separate and husbandry equipment and health care materials must be used only on the diseased horse and no others. Insect control should be implemented to prevent the transmission of disease or infections. Personnel should wear protective clothing and footwear, which should remain within the designated quarantine area. Disinfectant foot baths should be strategically placed

and all unnecessary visitors should be kept away. The attending veterinarian should provide guidance regarding other additional biosecurity measures that may necessary in such cases.

Emergency Medical Protocols

Horses may arrive at rescue farms and sanctuary facilities with injuries which have occurred during transportation or that were sustained prior to rescue. Consequently, all horses should be immediately examined upon arrival. A medical record should be started for each horse that includes photographs of the entire horse to document its general condition and any injuries or abnormalities that are present. Simply determining if a horse can move freely and wants to eat and drink are important observations and should be recorded. The animal's temperature, pulse and respiration should be noted and evidence of indicators for disease such as nasal discharge, diarrhea, wounds, swellings, or external parasites described. Signs of orthopedic problems like lameness or reluctance to move should also be documented. Horses with chronic painful conditions need to be identified and evaluated properly soon after arrival. Since many animals may require immediate or long-term health care for rehabilitation, veterinary consultation is essential when examining these new arrivals. Once diagnostic procedures have been implemented and therapeutic measures prescribed, these should be carried out effectively and all procedures documented within the horse's medical record.

Permanent residents of equine sanctuary facilities may become severely ill or seriously injured at any time. These animals should be immediately evaluated by the farm's attending veterinarian and recommended diagnostic and health care procedures should be initiated and carried out. These procedures also must be duly recorded within the horse's medical record.

Occasionally newly arrived or resident horses may be found lying down and unable to rise (recumbent). They may be permanently recumbent for a number of reasons, all of which are serious and often life threatening. Horses deteriorate very quickly when recumbent and rapidly develop muscle crush syndrome along with digestive and urinary problems. Many recumbent horses struggle to rise and may injure themselves. Struggling horses may present a great danger to people near the horse. Recumbency in horses, therefore, is considered a veterinary emergency that requires immediate attention. Veterinary inspection, diagnosis and immediate treatment or humane euthanasia should be decided within 1-2 hours or further damage can occur. The use of slings and supports to assist recumbent horses in rising to their feet requires special facilities, equipment and veterinary expertise, and therefore should only be attempted by personnel experienced in these procedures.

Evaluation of Stages of Disability

In general, horses that have normal ambulatory movement (M) capability, are eating (E) and drinking (D), and have stable body weight (W) are considered healthy (Table 4). Observation should also be made within the horse's environment for their ability to lie down and get up in the pasture or area of confinement. Short-term conditions which can produce illness or lameness need to be diagnosed and those conditions with a favorable prognosis for cure should be treated by the attending veterinarian. Their guidance should determine whether on-site short term treatments or hospitalization with acute care measures are appropriate for the resolution of each individual case. Rescue facilities should have a small treatment area and individual stalls assigned for medical treatments to insure the proper care of horses treated on-site.

The health status of geriatric or medically compromised horses may sometimes degenerate to levels which are inconsistent with humane care and sustenance of life. Consequently, a predetermined experienced and knowledgeable individual should be identified who can work in conjunction with a veterinarian to

Table 4
MEDW Criteria Expanded for Chronic Conditions

Movement (M)

Horses are able to walk, trot, lie down and get up without substantial lameness or lack of weight bearing on all four limbs. In veterinary medicine, lameness is graded on a 5 point scale with mild conditions starting a grade of 1 progressing to total lack of weight bearing graded a 5. When a given horse must constantly struggle to move, its condition may very well have progressed to a point where euthanasia should be considered.

Eating (E)

Horses must be able to eat long stem hay, processed feed pellets or cubes, and/or supplements. A loss of appetite, a general disinterest in feed or the physical inability that prevents chewing and swallowing are all signs for concern. If eating desire or ability is severely compromised and dental or other conditions cannot be corrected, then euthanasia may be considered.

Drinking (D)

Horses must be able to easily seek, move towards, and consume appropriate amounts of water daily for proper fluid balance and digestive function. Failure to consume adequate amounts of water leads to a rapid and dangerous degeneration of health. Horses with a physical or neurological impairment which prevents them from obtaining adequate water consumption should be considered for euthanasia.

Weight (W)

Horse's body condition scores (BCS) will vary with time of year, age, and response to a medical condition. An older, skinny horse that is eating, drinking and moving is not a reason for euthanasia. Deteriorating body weight and condition as the result of old age or an on-going medical condition will lead to weakness and inability to comfortably survive. Horses which arrive at this state should be considered for euthanasia.

assess horses when there is a question raised as to their ability to live a life without pain and/or severe physical restrictions. Each case must be evaluated carefully and individually as a degree of subjectivity is often an unavoidable part of the decision making process. Often a horse may have to be closely observed and monitored for a period of time with multiple and sequential evaluations to determine the magnitude of a disability and its consequences. An equine sanctuary or rescue facility should never become a hospice for horses that are severely infirmed, in chronic pain or for those where their humane continuance of life is not sustainable. Animals whose health status puts them in such a category should receive careful consideration for a humane end of life. Modern veterinary medicine has the ability to humanely end the life of an animal whose pain and suffering cannot otherwise be alleviated. "While medicine aims at restoring or maintaining healthy living, similarly, it is also conceptually part of the veterinarian's duty to end suffering totally erosive of the animal's quality of life." (Rollins, 2006).

Long-term Survival Evaluation and Care of Geriatric Horses

Regardless of the horse's age in years, the physical criteria of normal movement, eating, drinking, and normal weight (MEDW) should be the basis of evaluation of a horse's general state of well being. Additionally, the ability to lie down and get back up without significant difficulty is especially important in the older horse. Geriatric horses may loose some weight or appear, physically different due to redistribution of fat and the normal ventral curvature of the spine that occurs with aging, but if the other components of MEDW are present then quality of life is presumed to be adequate for their continued maintenance within the rescue facility or sanctuary. Regular assessments of these basic criteria should be used. In general older horses need more attention to hoof care, dental care, parasite control, and segregation from aggressive horses which may prevent them from eating hay placed in group feeders or pasture. Signs that an older horse has reached an end point vary but the use of MEDW is the basic assessment criteria. Additionally, frequent veterinary health examinations must be part of the routine care with geriatric animals so that early signs of metabolic organ failure or disease will be recognized and adequately addressed. Failure to attend promptly to diseases common to older horses can lead to unnecessary suffering and premature loss of life.

Decision Tree for the Timing and Need for the Humane End of Life

There are two instances where euthanasia of a horse needs to be considered. The first is an emergency setting involving a painful, acute-onset condition such as a fracture, head or spinal trauma and recumbency, severe colic, severe body wound, or penetrating wound to a joint. The second is a chronic longer-term problem which may be progressing to a situation that is erosive to the quality of life or involves uncontrollable pain.

The emergency situation requires an immediate veterinary response and prompt evaluation and consideration for euthanasia. If immediate veterinary attendance is not possible, experienced farm managers, animal control officers, or others who have had training to certify them in the use of emergency euthanasia of horses may perform euthanasia on an animal if it is a clear cut situation with massive suffering and/or the impossibility for recovery.

Specific information regarding emergency euthanasia procedures can be found at: **www.vetmed.ucdavis.edu/vetext/animalwelfare/euthanasia/emergencyEuth_horses2-2pdf**

In chronic conditions, the decision to end the life of a horse which has slowly progressed is much more difficult. While quality of life is always the primary consideration economic factors can also have influence. If a very old or infirm animal cannot be maintained properly due to lack of the financial ability to sustain care, then euthanasia, may be a reasonable

option. There is no standard flow chart or set of rules for decision making other than attempting to answer the following questions:

- How much suffering is the horse going through?
- What, if any, are the chances for recovery?
- What will be the veterinary costs of recovery?
- How much will it cost to maintain the debilitated animal?
- Can the care needed for the horse's condition be provided and maintained?
- Will other animals under the care of the facility be negatively affected by the commitment of time and expense to this one horse?
- Does the horse not meet MEDW standards for normal life in spite of the fact that it has been adequately treated for an extended period of time?

Specific guidelines for the humane end of life decision process for horses have been developed by the AAEP and can be found on their web site (www.aaep.org).

Carcass Disposal Protocols

Each state and many of the counties within them have specific guidelines for proper disposal of a horse's body following death or humane euthanasia. All rescue or sanctuary facilities should be familiar with the laws and regulations for their location. They should also have the contact information for a service which picks up deceased horses, and the options provided through that service for burial, composting, cremation, or rendering. Horses euthanized by chemical injection of euthanasia solutions (pentobarbital) are considered contaminated with that substance, and if left uncovered on open ground for any length of time represent a health hazard to scavenging birds, dogs, and other animals through the ingestion of the contaminated tissue. Supervision of the carcass disposal is part of the duty of the facility.

Additional Assistance for "Medical Health Care Planning"

Further information and assistance can be found at the following web sites:

- Center for Equine Health, UC Davis, **www.vetmed.ucdavis.edu/ceh**
- International Animal Welfare Training Institute, UC Davis, **www.vetmed.ucdavis.edu/iawti**
- American Association of Equine Practitioners, **www.aaep.org**

Resources

AAEP Equine Welfare Committee, *Care Guidelines for Equine Rescue and Retirement Facilities*, American Association of Equine Practitioners, 2004.

FASS, *Guide for the Care and Use of Agricultural Animals in Agricultural Research and Teaching*, Federation of Animal Science Societies, Savoy, IL, 1999.

Henneke, D. R., G. D. Potter, J. L. Kreider, and B. F. Yeates, *Relationship between condition score, physical measurements and body fat percentage in mares*, Equine Veterinary Journal 15(4):371–372, 1983.

Kronfeld, D., *Nutritional assessment in equine practice*, In The Veterinarian's Practical Reference to Equine Nutrition (K. N. Thompson, Ed.), American Association of Equine Practitioners and Purina Mills, Inc., USA, ISBN 0965959007, 1997.

National Research Council, *Nutrient Requirements of Horses* (5th Ed.), National Academy Press, Washington, DC, 1989.

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Rollin, B. E., *Euthanasia and quality of life*, Journal of the American Veterinary Medical Association 228(7):1014-1016, 2006.

Stull, C. L., P. J. Hullinger, and A. V. Rodiek, *Fat supplementation to alfalfa diets for refeeding the starved horse*, The Professional Animal Scientist 19:47-54, 2003.

Witham, C. L., and C. L. Stull, *Metabolic responses of chronically starved horses to refeeding with three isoenergetic diets*, Journal of the American Veterinary Medical Association 212(5):691-696, 1998.

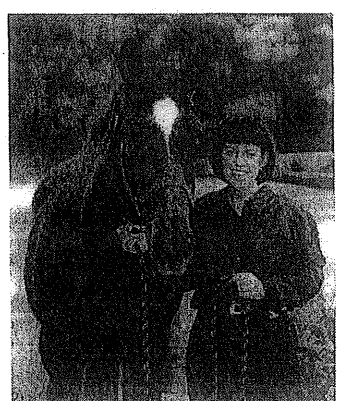
UC Davis Veterinary Medicine Extension Animal Welfare website, **www.vetmed.ucdavis.edu/vetext/animalwelfare**.

About the Authors

Dr. Gregory Ferraro with Hilde

Dr. Gregory Ferraro, Director of the Center for Equine Health in the School of Veterinary Medicine at UC Davis, has contributed to the health and well being of horses through clinical practice, veterinary medical education and research. He has authored more than 50 scientific papers and articles on equine health. In 1976, Dr. Ferraro took the lead in establishing the Southern California Equine Foundation, which revolutionized equine racetrack practice by building an on-site hospital facility for use by all attending veterinarians to protect and advance the welfare of equine athletes. Their model of an on-site racetrack hospital has been emulated at racing venues throughout the world. The foundation partnership was also responsible for development of the Kimzey Equine Ambulance and the Kimzey Breakdown Splint, which have greatly improved veterinary care for severely injured horses. Dr. Ferraro was instrumental, in partnership with Dr. Madigan, in the development of the UC Davis large animal lift.

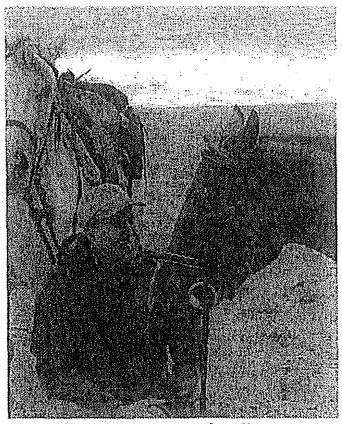
Dr. Ferraro earned his DVM degree at UC Davis School of Veterinary Medicine in 1971. He practiced clinical equine medicine and surgery in Southern California from 1971 to 1997 and was a professor of surgery at UC Davis in the Department of Surgical and Radiological Sciences, School of Veterinary Medicine, from 1979 to 1996. In 1998, he was appointed Director of the Center for Equine Health. He has served as president and chief executive officer for the Southern California Equine Foundation and is a trustee of the California thoroughbred Foundation. In 2001, he was appointed by the governor to membership on the California State Veterinary Medical Board. He is a former director of the Dolly Green Research Foundation, former vice-chair of the Medication Committee of the California Horse Racing Board, and has served on several committees of the American Association of Equine Practitioners. In January 2009, Dr. Ferraro was appointed to the Equine Advisory Task Force by California Department of Food and Agriculture Secretary A. G. Kawamura. The task force is intended to increase collaboration between the horse industry and Department of Food and Agriculture on equine issues.



Dr. Carolyn Stull with Windfall

Dr. Carolyn Stull received her BS degree in biochemistry from Purdue University and continued her studies as a graduate student at the University of Illinois. She received her MS and PhD degrees while working on reserach projects focusing on muscle and exercise physiology in the horse. Currently, as a Cooperative Extension Specialist, Dr. Stull directs the School of Veterinary Medicine's Animal Welfare Program focusing on the well being of agricultural animals, primarily dairy cattle and horses. She is the national recipient of the "Hank Award," presented for outstanding research benefiting the welfare of the horse. She has served as the Chair of the Animal Welfare Committee of the U.S. Animal Health Association and has worked in collaboration with the U.S. Department of Agriculture on issues such as the Horse Protection Act and the Commerical Transport of Equines to Slaughter. Dr. Stull was

the North American representative to the ad hoc group on Land Transportation for the OIE, the World Organization for Animal Health. Her research projects have been focused on examining long-term transportation stress in horses, developing nutritional rehabilitation programs for starved animals, determining the glycemic index of common equine feeds, evaluating the impact of extreme weather events on the welfare of dairy cattle on commercial dairies, the care and handling of cull dairy cattle, and the characterization of unwanted horses relinquished to nonprofit rescue and shelter facilities throughout the United States.



Dr. John Madigan with Allie & Suzi

Dr. John Madigan is a professor of medicine in the Department of Medicine and Epidemiology, School of Veterinary Medicine, UC Davis. He has been recognized for his contributions to equine medicine, neonatal care, and animal welfare and rescue. He earned is DVM degree at UC Davis in 1975 and is a Diplomate of the American College of Veterinary Internal medicine. He was a veterinarian in private practice until joining the UC Davis faculty in 1983 in the roles of assistant professor, clinician in equine medicine and head of the Equine Neonatal Intensive Care Program. In 1989 he became associate professor and head of the Horse Rescue Program. Since 1994, he has served as professor of medicine and epidemiology, senior clinician in Equine Medicine and Critical Care at the William R. Pritchard Veterinary Medical Teaching Hospital (VMTH), head of the Veterinary Emergency Response Team, coordinator and head of thet Equine Helicopter Rescue Program, and chief of the Equine Medicine Service at the VMTH. He is the director of the International Animal Welfare Training Institute at UC Davis.

In addition to serving as research scientist, mentor and educator, Dr. Madigan has made important personal and professional contributions to animal welfare. He was instrumental in the development of the UC Davis Anderson Sling and the UC Davis Large Animal Lift, state-of-the-art equipment for both emergency medicine and large animal rescue. He has actively engaged in several rescue operations for animals in natural disasters such as floods and fires and has been the driving force behind the UC Davis Veterinary Emergency Response Team.

Since 2001, Dr. Madigan has served on the State of California Committee for Animal Care during Disasters, and since 2000 ont he California Veterinary Medical Association Disaster Preparedness Committee. He was a member of the American Veterinary Medical Association Committee on Disaster and Emergency Issues from 2002 to 2006. He received the Pfizer Award for Research Excellence in 1996 and in 2006 received the Animal Welfare Award from the American Veterinary Medical Association, the Distinguished Service Award from the American Association of Equine Practitioners, the Legend of Veterinary Academic Medicine Award from Kansas State University, the American Red Cross Hero Award, and the United States Congressional Achievement Recognition Award.

Appendix

EQUINE SANCTUARY & RESCUE FACILITY EVALUATION CHECKLIST

Equine Sanctuary & Rescue Facility

EVALUATION CHECKLIST

Name of evaluator: _____ Date of inspection: _____

Name of facility: _____

Location of facility: _____

Number of acres owned: _____ or leased: _____

Telephone number: _____ Fax: _____ E-mail: _____

Website: _____

Name of contact person or facility manager: _____

Name of key officer: _____

Year of establishment: _____

Current number of horses receiving care: _____

Number of horses provided care by the facility in a given year: _____

Name of attending veterinarian of record: _____

Telephone number of attending veterinarian: _____

Name of farrier(s) for facility: _____

Telephone number of farrier(s): _____

Section 1: Operational Business and Financial Plan

Yes	No	NA	
❑	❑	❑	Management has established the basic type of business entity (i.e., sole proprietorship, limited partnership, corporation, nonprofit 501(c)(3) status, etc.) suitable for the facility and its goals and programs.
❑	❑	❑	Management has developed and implemented a written business plan including the goals of the facility, operational parameters, and financial structure.
❑	❑	❑	Oversight authority such as a Board of Directors or Trustees has been established to contribute to the viability of programs and financial security.
❑	❑	❑	Management has established with written protocols the key areas of operational responsibility and identified key personnel.
❑	❑	❑	Management has employed professional and independent accounting, tax preparation, and financial planning services.

Section 1: Operational Business and Financial Plan (continued)

Yes	No	NA	
❑	❑	❑	The facility owns the land and buildings utilized for their operations and programs.
❑	❑	❑	Management established and implements standards for the care, handling and well being of animals on the sanctuary/rescue facility and communicates expectations to employees.
❑	❑	❑	Written emergency/weekend/holiday animal care plans (emergency phone numbers, contacts and protocols) are posted in a visible location.

Section 2: Facility Design and Construction

❑	❑	❑	Facilities are designed and maintained to provide safe and comfortable conditions for all horses including ventilation, flooring and fencing.
❑	❑	❑	Adequate lighting in facilities and stalls allows for inspection of animals and provides safe working conditions.
❑	❑	❑	Water supply and watering devices are designed to be safely accessible to all horses and maintained to provide safe, clean and ample water supply.
❑	❑	❑	Horses housed in stalls are provided with a clean, safe and properly bedded stall.
❑	❑	❑	Adequate shelter or shade in case of extreme weather conditions is provided to all horses permanently kept outside.
❑	❑	❑	Barbed wire or small-gauge, high-tensile wire fencing is not used for any enclosure of horses at the facility.
❑	❑	❑	A designated workspace for grooming, farrier services, or veterinary care is available that is well-lighted with a nonslip ground surface and access to a water supply.
❑	❑	❑	Hay and feed are stored in areas protected from moisture and sunlight with adequate insect and rodent control measures established.
❑	❑	❑	Adequate tools and equipment for manure removal area readily accessible and maintained in working condition.
❑	❑	❑	A waste removal plan has been developed in accordance with city, county and state regulations to ensure proper control and timely removal of manure and contaminated bedding materials in both the indoor and outdoor areas of the facility.

Section 3: Husbandry Practices

❑	❑	❑	An appropriate system for animal identification is utilized on all horses housed within the sanctuary/rescue facility.
❑	❑	❑	Written feedback protocols have been developed for maintenance diets, geriatric, sick or injured horses, and obese or starved horses.

Section 3: Husbandry Practices (continued)

Yes	No	NA	
❑	❑	❑	Poor-quality feed, such as moldy or dusty hay, is never fed to horses.
❑	❑	❑	Horses housed in indoor facilities are fed at least twice per day.
❑	❑	❑	The supply of water for all horses is checked twice per day.
❑	❑	❑	In severely cold climates, water sources are heated to ensure access.
❑	❑	❑	Newly arrived horses are quarantined for two weeks before co-mingling with resident horses.
❑	❑	❑	The selection of horses for cohabitation considers gender, age, health and disposition to avoid aggressive behaviors.
❑	❑	❑	Horses are visually inspected and monitored morning and evening to identify any new injuries or health problems that may have been acquired.
❑	❑	❑	Hoof care by a farrier is practiced on a regular schedule for each horse.
❑	❑	❑	The facility maintains and safely operates horse transportation equipment.
❑	❑	❑	Horses are trained to load into the transport van or trailer.
❑	❑	❑	An emergency evacuation plan is written and reviewed yearly by all employees, including designated alternative facilities for relocation, alternate routes for evacuation, adequate transportation identified, and contingencies for "hold in place" emergency procedures.
❑	❑	❑	There are sufficient halters and lead ropes to allow for the evacuation—on foot or by van—of every horse in a disaster situation.

Section 4. Medical Health Care Planning

❑	❑	❑	The sanctuary or rescue facility has a permanent working relationship with a local veterinary practice that is experienced in the care of horses and the contact information is posted.
❑	❑	❑	The sanctuary or rescue facility has individual stalls and necessary supplies available for medical treatments to ensure proper care of horses treated on site.
❑	❑	❑	A medical record is established and kept current for every horse provided care by the sanctuary or rescue facility.
❑	❑	❑	Standard preventative health programs such as vaccinations, deworming and dental care are developed and written in consultation with the attending veterinarian and implemented according to schedule.
❑	❑	❑	Periodic routine medical examinations are performed on all horses to ensure early detection of health problems.
❑	❑	❑	Housing facilities, necessary supplies and equipment, and written protocols are in place to provide proper isolation of horses newly introduced to the property and for the medical quarantine of those animals suspected of carrying contagious disease.

Section 4: Medical Health Care Planning (continued)

Yes	No	NA	
❑	❑	❑	Written protocols for emergency medical procedures for newly arrived horses and resident horses have been developed in consultation with the attending veterinarian and are ready to be implemented by employees of the facility.
❑	❑	❑	Horses unable to rise receive immediate emergency veterinary evaluation within 1 to 2 hours of the discovered recumbency to ensure proper medical care and humane treatment.
❑	❑	❑	Protocols are developed in consultation with the attending veterinarian for the care, feeding and medical treatment of geriatric horses.
❑	❑	❑	Written humane end-of-life protocols are developed for assessing geriatric or medically compromised horses.
❑	❑	❑	A protocol has been developed for emergency euthanasia in the event that prompt veterinary attendance is not possible.
❑	❑	❑	Following death or euthanasia of a horse, the carcass is disposed of properly according to local regulations and the contact information posted for employees.

STAFF ANALYSIS
DISCUSSION REGARDING RESTRICTING THE USE OF DMSO (DIMETHYLSULFOXIDE) PRIOR TO RACING

Medication and Track Safety Committee Meeting
August 6, 2010

BACKGROUND

DMSO (Dimethylsulfoxide) is commonly used in veterinary medicine as a liniment for horses, alone or in combination with other ingredients. DMSO is a solvent derived from the processing of wood pulp. DMSO is a solvent for hydrocarbons, salts, and nitrogen-containing compounds. Because it penetrates body tissues quickly, it can "carry" other medications and substances with it. DMSO can be used as a short-term topical application if a horse is suffering from a non-infectious inflammation; or with antibiotics, which it will carry through the skin and underlying tissues. The United States Food and Drug Administration approved DMSO specifically for topical use in horses and dogs for the reduction of swelling due to trauma. DMSO can also be administered intravenously and orally for treating a variety of conditions in the horse. There has been concern that intravenous or oral administration of DMSO may enhance the reported pain reduction effect of the drug.

Board Rule 1843.2, Classification of Drug Substances, incorporates by reference the California Horse Racing Board (CHRB) Penalty Categories Listing by Classification (Revised 05/08), which is based on the Association of Racing Commissioners International Uniform Classification guidelines for Foreign Substances. Under the CHRB Penalty Categories Listing by Classification DMSO is a Class 5 drug substance. Class 5 substances are therapeutic medications for which concentration limits have been established by the racing jurisdictions as well as certain miscellaneous agents such as DMSO and other medications as determined by the regulatory bodies. Board Rule 1843.3, Penalties for Medication Violations, states Class 5 drug substances merit a Category "D" penalty, which is a written warning to the licensed trainer or owner.

In May 2010 a licensee wrote a letter of concern regarding the use of DMSO at California race tracks. The letter stated the strength of the smell of horses that have had DMSO administered was not the result of topical administration, but most probably from "dropping a jug on race day." The licensee stated DMSO was an industrial compound, not pure, and its use was not a practice for anyone who cared about horses, and concluded by suggesting the CHRB ban the topical use of DMSO on race day, or scratch any horse that "overwhelms" when entering the receiving barn.

RECOMMENDATION

This item is presented for Committee discussion.