

HORSE SORING

and the Past Act, H.R. 1518 & S. 1406



11/2013



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SORING

WHAT IT IS AND WHY IT'S DONE

During the late 1940s and 1950s Tennessee Walking Horses surged in popularity with the general public, and those with an exaggerated gait proved to be particularly attractive. Some horses that were “lite shod” could achieve such a gait with extensive training; however, as the “big lick” caught judges’ fancy, trainers started using other practices to enhance movement. Weighted shoes, stacked pads, and weighted chains began to appear, and the methods quickly became more aggressive—heavier weights and chains, objects (e.g., tacks) placed against the sole of the hoof to induce pain, and the application of caustic substances on the pastern or coronary band to induce pain when those areas were rubbed with chain or roller bracelets. These aggressive practices are called “soring” and the result is a horse that snatches its forelimbs off the ground to alleviate pain, and brings its hind limbs under itself as far as possible to reduce weight on the forelimbs.

HOW IT'S DONE

Chemical agents (e.g., kerosene, diesel or croton oil, hand cleaners, WD 40, oil of mustard, cinnamon oil, other caustic substances) are applied to the pastern and coronary band region. Then bracelet-like chains or rollers (“action devices”) are attached around the front of the pastern to rub against the skin and exacerbate the pain caused by the caustic agents. In the early 80s, Auburn University released a thermographic study on the effects of chains. Researchers found altered thermal patterns after two days of chain application. It took 20 days without chains for thermal patterns to return to normal. A stallion wearing 8-ounce chains developed lesions after brief training periods. “Performance Packages,” include a variety of mechanical pads, “stacks”, bolts, and heel springs that may be attached to the hoof. Pads currently in use may be up to 4” thick in the heel and more than 2” at the toe. Some can be removed without having to re-shoe the horse and are affixed to the hoof with metal bands. Current law permits pads and chains weighing less than 6 ounces on the show grounds. Physical soring includes grinding down the sole to expose sensitive tissues, making the hoof wall shorter than the sole, inserting hard objects between the shoe and the pad, standing the horse on raised blocks (“blocking”), over-tightening metal bands that affix pads or packages to the hoof, or adding excessive weight to the pad or package in the form of lead, nails or other heavy objects. Some trainers have even purposely induced laminitis.

Signs of soring include:

- Standing with the feet close together, shifting weight to the hind legs;
- Granulation tissue or scars on the pastern area;
- Darker hair on the pastern areas;
- Low carriage of the hocks and twisting them outwards when moving;
- Lying down for extended periods and resistance to standing up;
- Resistance to handling of hooves; and
- Difficulty walking and falling (gait resembles that of a praying mantis).

During show inspections, trainers sometimes attempt to conceal soring by applying local anesthetics or using distracting devices that cause pain elsewhere on the body. Occasionally

horses are switched so that the inspectors do not inspect the same horse that enters the ring. Additionally, horses may have been “stewarded” prior to presentation for inspection (i.e., trained to not react to palpation that would normally elicit pain by repeated beating and/or use of an electric prod).

WHERE IT MIGHT BE SEEN

States with the largest number of gaited horse shows include North Carolina, South Carolina, Mississippi, Arkansas, Louisiana, Texas, Tennessee and Virginia. The gaited horse season runs from February to October. The Tennessee Walking Horse National Celebration (the Celebration) takes place around Labor Day in Shelbyville, Tennessee.

THE HORSE PROTECTION ACT AND ITS ENFORCEMENT HISTORY

In an effort to stop soring, Congress enacted the Horse Protection Act (HPA) in 1970. The HPA prohibits horses that are sored from participating in shows, sales, exhibitions, or auctions, and drivers from transporting sored horses to or from any of these events. The 1976 amendments to the HPA established the Designated Qualified Person (DQP) program (see below).

Despite enactment of the HPA, soring has continued in the South and is widely practiced by trainers, owners and farriers. It is used on horses entered in local “fun” shows, as well as in large competitions.

USDA-APHIS-Animal Care is responsible for enforcing the HPA. The following individuals and organizations are currently involved in enforcement efforts:

- DQPs (Designated Qualified Persons) are individuals who are knowledgeable about the industry and trained by the USDA to detect soring. They are hired by the manager of the event. They inspect horses before they are shown, sold or exhibited in public. There are inherent conflicts of interest and varying standards.
- VMOs (Veterinary Medical Officers) are APHIS veterinarians who conduct additional, unannounced inspections. Due to budget constraints, VMOs are able to attend fewer than 10% of shows annually.
- HIOs (Horse Industry Organizations) are industry groups that have been approved by the USDA to self-police competitions and the industry. These organizations license DQPs and have inherent conflicts of interest.

Inspections at shows comprise a combination of visual observation (posture, movement pattern, gait), physical inspection (palpation for pain withdrawal responses and observation of the pastern area, looking for hair loss, scars, corded tissue or obvious sores or inflammation) and the use of additional tools such as digital radiography, thermography, and blood testing. Radiography will detect pathologic lesions in the bones of the foot and demonstrate radiopaque objects that have been incorporated into the shoe or pad. Thermography can reveal areas of the body that are excessively warm or cold and, thereby, help identify horses that may be suspect. Gas chromatography or mass spectrometry can be used to analyze samples obtained from the pastern region by swabbing for foreign substances. Blood may be drawn and analyzed to detect drugs that might mask pain.

In 2006, the USDA began to more stringently enforce the HPA. Disputes between trainers and inspectors escalated at the Celebration when 6 of 10 horses were disqualified from the August 25 grand championship class. That class was subsequently cancelled.

In the spring of 2008, the American Association of Equine Practitioners (AAEP) followed up on its 2003 policy opposing the soring of horses by releasing a white paper titled *Veterinary Recommendations for Ending the Soring of Tennessee Walking Horses*.

In the fall of 2010 the USDA Office of the Inspector General (OIG) audited APHIS oversight of the Horse Protection Program. It found self-regulation inadequate for ensuring that horses are not abused, and advised abolishing the HIO/DQP system.

In 2011 there were 1,111 violations identified by USDA VMOs and DQPs, and inspections were conducted at 474 of 600 to 700 shows. At the Celebration, 2,143 entries were inspected and 203 violations were identified—a violation rate of 9.5%. At the 2012 Celebration 1,849 entries were inspected and 166 violations were identified—a rate of 9%. During the 2013 Celebration 1,952 entries were inspected and 110 violations were identified—a rate of 5.6%. In addition to these violations 672 entries scratched prior to inspection at the 2013 Celebration.

In the spring of 2012 the Humane Society of the United States (HSUS) released an undercover video of a trainer and others abusing horses. It aired on ABC Nightline in May 2012 and generated substantial public concern. On Sept 18, 2012, the trainer in the video, Jackie McConnell, was fined \$75,000 and placed on probation for three years. He and four others have been charged with 31 counts of violating Tennessee anti-cruelty laws. This case marked one of the first criminal indictments brought against individuals for violating the HPA in 20 years.

Prior to 2011, Congress appropriated \$400,000 for HPA enforcement. In 2012, this appropriation was increased to \$696,000. To date in 2013, the Senate committee has recommended \$893,000, while the House committee's recommendation was \$500,000.

In June 2012, the American Veterinary Medical Association (AVMA) and the AAEP issued a joint statement recommending a ban on action devices and performance packages for Tennessee Walking Horses, and called for additional funding for enforcement of the HPA.

In July 2012, the Tennessee Walking Horse organization SHOW attempted to sue the USDA, alleging that the penalty system protocol as proposed in updated regulations was unconstitutional. The lawsuit was not successful.

In September 2012, H.R. 6388, the Horse Protection Act Amendments of 2012, was introduced and supported by the AVMA and the AAEP. Original sponsors included Steve Cohen (D-Tennessee), Jim Moran (D-Virginia), Jan Schakowsky (D-Illinois), and Ed Whitfield (R-Kentucky).

H.R. 1518 & S. 1406, THE PAST ACT

H.R. 1518, the Prevent All Soring Tactics (PAST) Act was introduced in April 2013 by lead sponsors Ed Whitfield (R-Kentucky), and Steve Cohen (D-Tennessee), along with Joseph Pitts

(R-Pennsylvania), Jan Schakowsky (D-Illinois), Frank LoBiondo (R-New Jersey), and Jim Moran (D-Virginia), as original cosponsors. Its related Senate Bill, S. 1406, was introduced in July 2013 by lead sponsors Kelly Ayotte (R-New Hampshire) and Mark Warner (D-Virginia). The Act, if passed, will:

- Make the actual act of soring, or directing another person to cause a horse to become sore, illegal, whereas the original HPA only banned showing, transporting, or auctioning a horse that was sore, not the actual practice;
- Prohibit the use of action devices (e.g., boot, collar, chain, roller, or other device that encircles or is placed upon the lower extremity of the leg of a horse) on any limb of Tennessee Walking Horses, Spotted Saddle Horses, or Racking Horses at horse shows, exhibitions, sales or auctions, and ban weighted shoes, pads, wedges, hoof bands, or other devices that are not used for protective or therapeutic purposes;
- Increase civil and criminal penalties for violations, and create a penalty structure that requires horses to be disqualified for increasing periods of time based on the number of violations;
- Allow for permanent disqualification from the show ring after three or more violations; and
- Require the USDA (rather than the horse industry) to license, train, assign and oversee inspectors to enforce the HPA.

USDA website for the Horse Protection Act: www.aphis.usda.gov/animal_welfare/hp/

AVMA website for soring information: www.avma.org/soring

Website for AAEP guidelines for Walking Horses: www.aaep.org/equine_welfare.htm



The American Veterinary
Medical Association

Soring: Unethical and Illegal

What Is Soring?

Soring is the unethical and illegal practice of deliberately inflicting pain to exaggerate the leg motion of gaited horses (such as Tennessee Walking Horses, Spotted Saddle Horses and Racking Horses) to gain an unfair advantage in the show ring. The American Veterinary Medical Association (AVMA) has condemned soring for more than 40 years.

How Soring Is Done

Chemical methods involve applying caustics (such as kerosene or mustard oil) to the horse's lower leg; the leg is then covered with plastic and a leg wrap for several days to allow the chemicals to penetrate the skin. The chemicals cause the horse's leg to be sensitive to action devices and their hoof to be sensitive to striking the ground. This method usually leaves obvious scars, which may be burned off using a chemical stripping agent (causing the horse additional pain).

Physical methods result in pain when the horse's hoof strikes the ground. This causes the horse to lift its legs faster and higher. Methods of physical soring include grinding or trimming of the hoof and/or sole to expose sensitive tissues or removal of the

normal support structures of the hoof wall; inserting hard objects between the pads and the sole to place pressure on this sensitive area of the hoof; over-tightening of metal hoof bands to cause excessive pressure; improper shoeing techniques that violate the Horse Protection Act (HPA); and purposefully causing laminitis (founder), which is an extremely painful condition of the hoof.

Why Soring Continues

Unethical trainers and owners use various tricks to avoid detection including application of numbing agents that mask pain during inspection, but wear off by show time; use of harsh and/or painful training methods (stewarding) at practice inspections to teach the horse that flinching or reacting will cause worse pain; application of something painful in a location other than the hoof (distraction device) just before inspection; and providing a substitute horse for inspection (horse switching). In addition, some judges continue to use judging criteria that encourage soring practices. Allowing sore horses to win in the ring gives their owners and trainers recognition and cash awards as well as future breeding and training fees. Finally, due to budget constraints, USDA inspectors attend only a small percentage of shows held. This has led to a system of "self-policing" by Horse



Gaited horses, particularly Tennessee Walking Horses, may be shod in stacked shoes with metal bands tightened across the hoof with or without chains around the pastern. This is not a violation of the Horse Protection Act. *Courtesy of Friends of Sound Horses (FOSH)*

Below Left: A USDA veterinarian examines a Tennessee Walking Horse during a competition. *Courtesy of USDA*

Below: Sole bruising (pink/red discoloration) from possible pressure shoeing. *Courtesy of USDA*



Industry Organizations (HIO), which is often compromised due to an inherent conflict of interest of many industry inspectors, who are often actively involved in the industry as owners and/or trainers. Historically, even when ticketed, punishment of HPA violators has been lax.

How Soring Is Detected

Soring may be detected by visual inspection of the horse's posture and legs and by palpation of the horse's lower leg. Signs of pain include excessive time spent lying down, unwillingness to move, and an abnormal posture while standing or when in motion. Inspection and palpation of the leg may reveal swelling, pain, abraded skin, or other signs of inflammation. The hair of the horse's lower leg may be wavy, rippled or curly, and there may be cording scars. Sore horses may also move forward very slowly with short, choppy strides.

Other methods used to detect soring include gas chromatography to identify chemical agents applied to the leg; thermographic images, which can identify excessively warm and excessively cool areas; blood tests to detect drugs used to mask pain; iris scanning for horse identification; hoof testers to determine if laminitis (founder) or other hoof pain is present; and radiographic images (x-rays) to determine if there are pathologic changes to the third phalanx (the bone surrounded by the hoof) or if nails, screws or other objects have been placed between the shoe pads and hoof to cause pain.



Radiographs (x-rays) may show surplus nails or screws added to increase the weight carried by the hoof or place pressure on the sole. *Courtesy of USDA*

Below left: Thermographic image showing excessive warmth, which may be caused by inflammation from soring. *Courtesy of USDA*

Below right: Scarring on the heel bulbs due to soring practices. *Courtesy of USDA*



A Tennessee Walking Horse "standing in a bucket" due to forelimb pain from soring. *Courtesy of USDA*



Report Soring to USDA:

- Document soring incidents observed at barns or shows
- Report barns, trainers and owners engaging in soring
- Report scheduled shows organized without licensed HIO inspections

United States Department of Agriculture Animal and Plant Health Inspection Service

Dr. Rachel Cezar,
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To Learn More:

- United States Department of Agriculture (USDA) on Horse Protection www.aphis.usda.gov/animal_welfare/hp
- American Veterinary Medical Association (AVMA) www.avma.org/soring
- American Association of Equine Practitioners (AAEP) www.aep.org/soring_position.htm

History



Surge in Walking Horse Popularity

1940's – 1950's

- ❑ Tennessee Walking Horses become particularly popular in the South
- ❑ “Big Lick” – everyone wanted it!

Shortcuts Developed

1950's – 1960's

- ❑ Shoes, weights, pads
- ❑ Chains
- ❑ Caustic chemicals

1940's

1950's

1960's

A Culture of Abuse



Soring – The intentional infliction of pain to create an exaggerated gait for the show ring

- ❑ Prizes, money, status and ribbons given to owners of horses that move this way



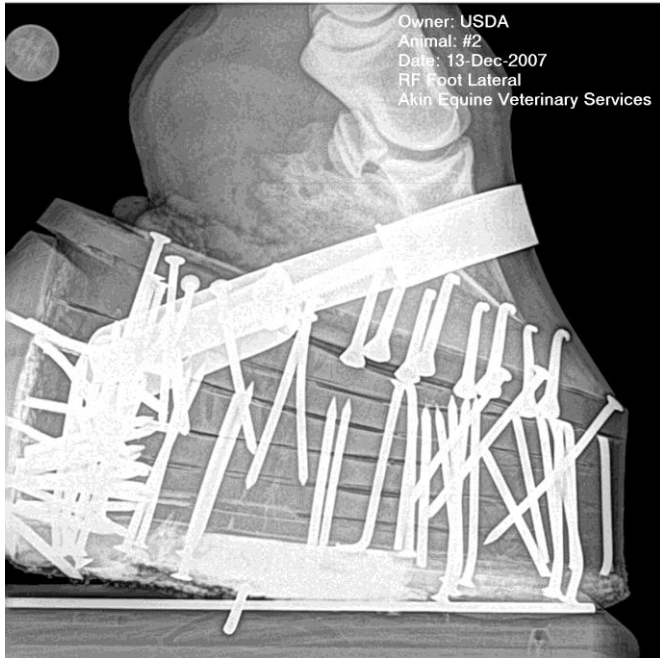


Physical Soring

- ❑ Trimming down to sensitive sole or removing supporting hoof wall
- ❑ Thinning of sole or wall at the toe
- ❑ Inducing laminitis



Laminitis
Severe solar bruising



Physical Soring

- ❑ Adding weight to pads or shoes, or inserting hard objects between pad and sole
- ❑ Overtightening of bands holding “packages”



Performance Packages

- ❑ Pads, “stacks”, bolts, or heel springs affixed to hoof
 - ❑ Pads up to 4” at heel, 2” at toe
 - ❑ Often weighted
 - ❑ Strapped on by metal bands
- ❑ Currently unregulated
- ❑ Although the industry says “there’s no science to suggest that chains and pads cause problems,” the science shows that raising the heels (placing a horse on pads and wedges) 8 degrees can cause the horse to stumble and tire easily.
- ❑ Additionally, horses placed on pads and wedges showed inflammation in the flexor tendon area of the pastern.



Action Devices

- ❑ Bracelet like chains or rollers
 - ❑ Steel, aluminum, wood
 - ❑ Circle front pasterns
 - ❑ Cause pain when very heavy or if skin is inflamed
- ❑ Currently one per limb allowed
 - ❑ Must be < 6 ounces
- ❑ The industry says “there’s no science to suggest that chains and pads cause problems.”
- ❑ The science says that chains that weigh 6 ounces will start to cause hair loss without the use of chemical irritants. Chains heavier than 6 ounces used on horses that have been previously sore will cause open lesions within two weeks.



Chemical Irritants

- ❑ Caustic chemicals applied to pastern; chains increase pain.
 - ❑ Pain causes exaggerated gait, which is rewarded in the show ring
- ❑ Chemicals used include
 - ❑ Kerosene
 - ❑ Diesel
 - ❑ Mustard or croton oil
 - ❑ Hand cleaner
 - ❑ WD-40
 - ❑ DMSO
- ❑ Effects magnified by wrapping in plastic
- ❑ Illegal, but in widespread use



Distraction Devices Used to Avoid Detection



An example of a distraction device (nerve cord)

Signs of Soring



PAIN! Standing with feet close, shifting weight to hind legs



Difficulty walking, “praying mantis” gait.
Lying down a lot, reluctance to rise



1970's: Horse Protection Act (HPA)

❑ 1970: Horse Protection Act

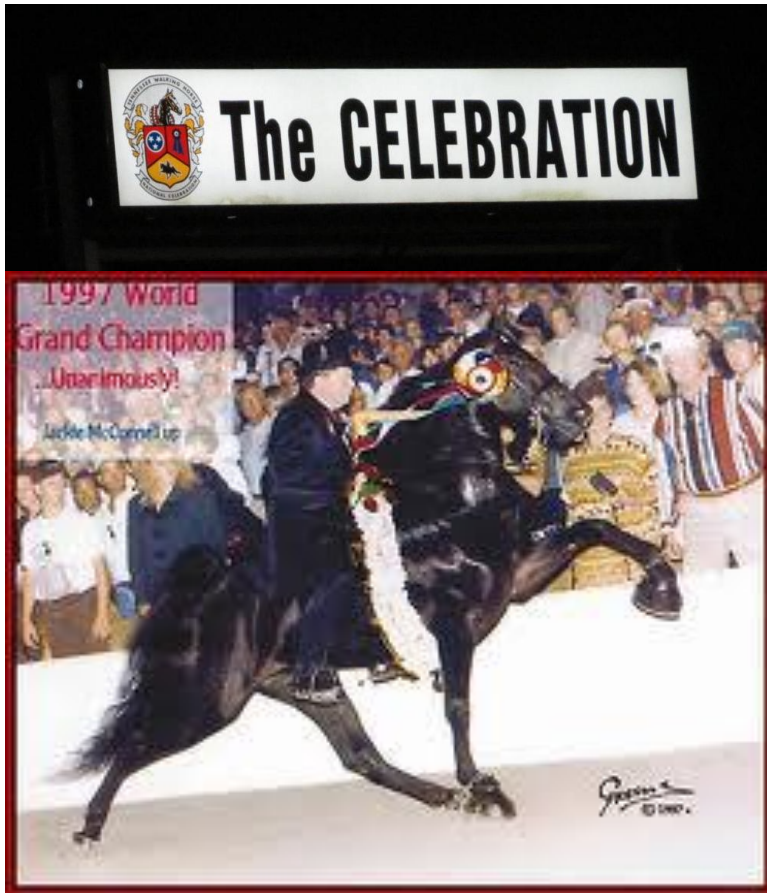
- ❑ Prohibits horses subjected to the practice of soring from participating in shows, sales, exhibitions, or auctions.
- ❑ The HPA also prohibits drivers from transporting sored horses to or from any of these events

❑ 1976: HPA amendment

- ❑ DQP program
- ❑ USDA oversight of DQPs
- ❑ DQPs licensed by HIO (Horse Industry Organizations)



1970 – 2007: Did Anything Change?



- ❑ More than 30 years after the passage of HPA, the Industry has failed to police itself
- ❑ Soring continues at both “fun shows” and big shows.

A sored gait is still being rewarded in the show ring.

2007: AAEP Task Force on Soring



Dr. Midge Leitch, TF chair



- ❑ Task Force of AAEP veterinarians drafted a White Paper on Ending Soring
- ❑ Endorsed by AAEP Board in 2008
- ❑ <http://www.aaep.org/images/files/AAEP%20White%20Paper%20on%20TWH%20Soring.pdf>
- ❑ White paper called for objective methods to detect violators, strict penalties and new judging standards

2008: AAEP White Paper Goes Public



- ❑ Over 9,000 equine veterinarians officially condemn soring
- ❑ Advised ZERO TOLERANCE for scarring and attempts to mask it.
- ❑ Recommended specific methods for detection and documentation of soring, changes within industry

Designated Qualified Person

- ❑ A 1976 amendment to the HPA led to the establishment of the DQP program.
- ❑ A DQP is a person who may be appointed and delegated authority by the management of a horse show or sale to detect horses that are sore.



Designated Qualified Person

Individuals licensed as Designated Qualified Persons (DQPs) include,

- ❑ Farriers
- ❑ Trainers
- ❑ Individuals with a basic knowledge of horses and the equine industry.

Qualifications

- ❑ DQP candidates must successfully complete a formal training program before becoming licensed.
- ❑ The regulations allow a Doctor of Veterinary Medicine accredited by USDA in any State to become licensed as a DQP without having to participate in formal training. This veterinarian must also be either a member of the American Association of Equine Practitioners, a large-animal practitioner with substantial equine experience, or one who is knowledgeable in the area of equine lameness as related to soring and soring practices.

Currently, the DQP program provides one of the primary mechanisms for detecting sore horses.

2010 OIG Audit



A 2010 OIG Audit concluded that APHIS' program for inspecting horses for soring *is inadequate to ensure that these animals are not being abused*

- ❑ “From 2005 to 2008, APHIS veterinarians were present at only 6 percent of all shows, yet DQPs issued 49 percent of all violations at these shows. In other words, DQPs noticed about half of the violations they found at the small number of shows where they were being observed by an APHIS employee.” (Page 6)
- ❑ “Due to this hostile environment (during inspections), APHIS employees routinely bring armed security or the police with them when they visit shows.” (Page 6)
- ❑ “Given the problems we observed with DQPs and the conflicts of interest, we are recommending that APHIS abolish the DQP program.” (Page 7)

Violation Statistics 2007-2013

Year	Number of Total Inspections Performed	Total Violations Issued	Percent in Violation	Number of Inspections with USDA in Attendance	Violations Issued with USDA in Attendance	Percent in Violation with USDA in Attendance	Percent of Violations Issued with USDA in Attendance
2007	109,008	629	0.57702187	7984	355	4.446392786	56.43879173
2008	111,932	637	0.56909552	7245	371	5.120772947	58.24175824
2009	70,122	889	1.26779042	5798	781	13.47016212	87.85151856
2010	77,241	1388	1.79697311	7164	627	8.752093802	45.17291066
2011	84,023	1111	1.322257	9680	587	6.064049587	52.83528353
2012	71,254	743	1.04274848	9962	582	5.842200361	78.33109017
2013	38,724	500	1.29118893	9510	399	4.195583596	79.8
TOTAL	562,304	5897	1.04872098	57343	3702	6.455888251	62.77768357

Celebration Statistics 2007-2013

Year	Number of Inspections Performed	Violations Issued	Percent in Violation
2007	1,788	103	5.7606264
2008	2,744	187	6.8148688
2009	1,949	405	20.7798871
2010	2,075	284	13.686747
2011	2,143	203	9.47270182
2012	1,849	166	8.97782585
2013	1,952	110	5.6352459
TOTAL	14,500	1458	10.0551724

USDA reported that at the 2013 Tennessee Walking Horse Celebration, 672 entries scratched prior to inspection

2013 Shows

- ❑ Top Left: Lead found in performance package
- ❑ Lower Left: Pressure shod with foreign object under the toe
- ❑ Below: Koppertox and boric acid



*Photos courtesy of USDA APHIS Horse Protection

2013 Barn Raid



Above: Blue Putty used to pressure sore
Below: Painful horse (standing in a bucket)



Above: Variety of Chains
Below: Close up of painful horse's feet, wrapped, padded and heavy chains



WHO Should Evaluate?



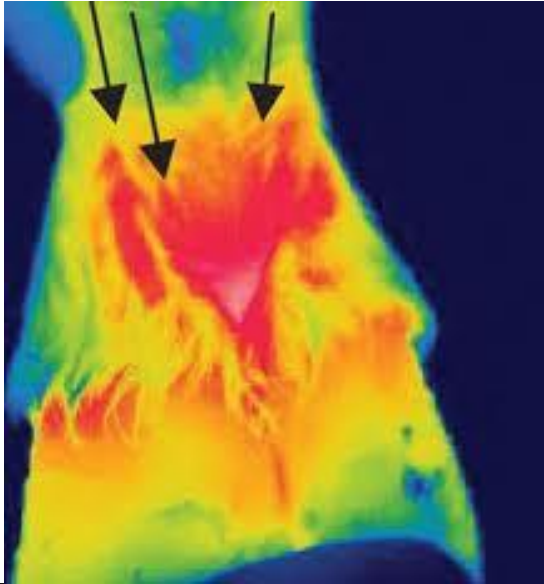
- ❑ USDA Veterinary Medical officers (VMOs) with an extra corps of trained veterinarians



USDA VMO Training



Objective Evaluation



- ❑ **Thermographic screening** of suspect limbs to identify abnormally cold or hot regions
- ❑ **Swabbing** of suspicious areas for foreign substance testing
 - ❑ Gas chromatography
 - ❑ Mass spectrometry
 - ❑ “Sniffer” technology, as used in airport security

Objective Evaluation



- ❑ **Blood sampling** to detect drugs used to mask pain
- ❑ **Equine identification system, EyeD**, to identify horses via iris scans; this helps discover and deter the practice of horse switching to hide violations of the Horse Protection Act.



Prevent All Soring Tactics Act (PAST), H.R. 1518 & S. 1406

- ❑ Makes the actual act of soring, or directing another person to cause a horse to become sore, illegal; whereas, the original Horse Protection Act only banned showing, transporting, or auctioning a horse that was sore, not the actual practice.
- ❑ Prohibits the use of action devices (e.g., boot, collar, chain, roller, or other device that encircles or is placed upon the lower extremity of the leg of a horse) on any limb of Tennessee Walking Horses, Spotted Saddle Horses, or Racking Horses at horse shows, exhibitions, sales or auctions and bans weighted shoes, pads, wedges, hoof bands, or other devices that are not used for protective or therapeutic purposes.
- ❑ Increases civil and criminal penalties for violations, and creates a penalty structure that requires horses to be disqualified for increasing periods of time based on the number of violations.
- ❑ Allows for permanent disqualification from the show ring after three or more violations.
- ❑ Requires the USDA (rather than the current structure of horse industry self-regulation) to license, train, assign and oversee inspectors to enforce the Horse Protection Act.



Endorsements for the Prevent All Soring Tactics (PAST) Act

(as of 11/6/13)

Horse Organizations

1. American Horse Council
2. American Quarter Horse Association
3. American Morgan Horse Association
4. American Paint Horse Association
5. American Saddlebred Horse Association
6. Appaloosa Horse Club
7. European Tennessee Walking Horse Association
8. Fenway Foundation for Friesian Horses
9. For The Tennessee Walking Horse
10. Friends of Sound Horses
11. Friesian Horse Association of North America
12. Gaitway Walking Horse Association (Missouri)
13. International Friesian Show Horse Association
14. Maryland Horse Council
15. Mountain Pleasure Horse Association (Kentucky)
16. National Plantation Walking Horse Association
17. National Walking Horse Association
18. Natural Walking Horses (Europe)
19. New York State Horse Breeders Association
20. New York State Horse Council
21. New York State Plantation Walking Horse Club
22. Northern California Walking Horse Association
23. Pennsylvania Equine Council
24. Pennsylvania Pleasure Walking Horse Association
25. Pinto Horse Association of America
26. Plantation Walking Horse Association of California
27. Plantation Walking Horses of Maryland
28. Professional Horsemen's Association of America
29. Pure Pleasure Gaited Horse Association (Oklahoma)
30. Sound Trails and Rails Society (Georgia)
31. South Carolina Horse Council
32. Southern Comfort Gaited Horse Club (Idaho)
33. Tennessee Walking Horse Association of Oklahoma
34. Tennessee Walking Horse Exhibitors Association of Oregon
35. Tennessee Walking Horse Heritage Society
36. Texas State Horse Council
37. United Pleasure Walking Horse Association (Missouri)
38. United Professional Horsemen's Association
39. United States Equestrian Federation
40. Walking Horse Association of Michigan
41. Yankee Walkers/Gaited Horses of New England (Maine/New Hampshire, Massachusetts, Rhode Island/Connecticut, and Vermont)

Veterinary and Animal Health Organizations

1. American Veterinary Medical Association
2. American Association of Equine Practitioners
3. National Association of Federal Veterinarians
4. U.S. Animal Health Association
5. Humane Society Veterinary Medical Association
6. Veterinarians for Equine Welfare
7. Alaska Veterinary Medical Association
8. Arizona Veterinary Medical Association
9. Arkansas Veterinary Medical Association
10. California Veterinary Medical Association
11. Colorado Veterinary Medical Association
12. Connecticut Veterinary Medical Association
13. District of Columbia Veterinary Medical Association
14. Florida Association of Equine Practitioners
15. Florida Veterinary Medical Association
16. Georgia Veterinary Medical Association
17. Hawaii Veterinary Medical Association
18. Idaho Veterinary Medical Association
19. Illinois Veterinary Medical Association
20. Indiana Veterinary Medical Association
21. Iowa Veterinary Medical Association
22. Kentucky Veterinary Medical Association
23. Maine Veterinary Medical Association
24. Michigan Veterinary Medical Association
25. Mississippi Veterinary Medical Association
26. Montana Veterinary Medical Association
27. Nevada Veterinary Medical Association
28. New Hampshire Veterinary Medical Association
29. New Jersey Veterinary Medical Association
30. Ohio Veterinary Medical Association
31. Oregon Veterinary Medical Association
32. Rhode Island Veterinary Medical Association
33. Vermont Veterinary Medical Association
34. Virginia Veterinary Medical Association
35. Washington State Veterinary Medical Association
36. Wisconsin Veterinary Medical Association
37. Donna Preston Moore, DVM, former head of USDA's Horse Protection Program
38. Michelle Abraham, Resident, New Bolton Center, University of Pennsylvania School of Veterinary Medicine
39. Susan Botts, DVM
40. Angela M. Dion, DVM
41. Judith L. Ford, Veterinary Technician
42. Hanna Galantino-Homer, VMD, PHD
43. Alicia Grossman, DVM
44. Sue Lindborg, CVT Research Specialist New Bolton Center
45. Midge Leitch, VMD, former head of Radiology, New Bolton Center, University of PA School Of Veterinary Medicine
46. Benson B. Martin, DVM, Associate Professor Sports Medicine, New Bolton Center, University of PA School of Veterinary Medicine
47. Nat Messer, DVM, University of Missouri College of Veterinary Medicine
48. Mary A. Robinson, VMD, PhD
49. Mary Lynn Stanton, DVM
50. Joy Tomlinson, DVM
51. Harry Werner, VMD, past president, American Association of Equine Practitioners
52. Steve O'Grady, DVM, APF
53. Alicia Grossman, DVM

Animal Protection Organizations

1. American Society for the Prevention of Cruelty to Animals (ASPCA)
2. Animal Law Coalition
3. Animal Legal Defense Fund
4. Animal Welfare Institute
5. Dakin Humane Society (Massachusetts)
6. Equine Welfare Alliance
7. Homes for Horses Coalition
8. Horse Harbor Foundation (Washington State)
9. Humane Society Legislative Fund
10. Michigan Horse Welfare Coalition
11. Mississippi Horses
12. Nevins Farm & Equine Center, Massachusetts Society for the Prevention of Cruelty to Animals
13. Oregon Horse Welfare Council
14. Second Chance Ranch (Washington State)
15. Tennessee Voters for Animal Protection
16. The Humane Society of the United States
17. Virginia Alliance for Animal Shelters
18. Virginia Equine Welfare Society
19. Virginia Federation of Humane Societies
20. Virginia Beach Society for the Prevention of Cruelty to Animals

Horse Industry Professionals

1. Marty Irby, Past President, Tennessee Walking Horse Breeders and Exhibitors Association
2. Chuck Cadle, Past Executive Director, Tennessee Walking Horse Breeders and Exhibitors Association
3. Georgina Bloomberg, professional equestrian sponsored by Ariat International
4. Leslie Desmond, natural horsemanship clinician and author
5. Susan Kayne, host of "Unbridled" television show
6. Pat Parelli, founder of Parelli Natural Horsemanship, a humane training method
7. Tom Seay, Best of America by Horseback, the top trail riding show on TV
8. Jan Ebeling, dressage trainer, member of the 2012 Olympic dressage team for the USA and co-owner of Rafalca
9. Gael Borquin, dressage and eventing coach
10. Dr. April Austin, USDF Bronze, Silver and Gold medalist
11. Karl Mikolka, Former Chief Rider, Spanish Riding School, Vienna, Austria and USDF Hall of Fame
12. E. Allen Buck, Sympathetic Horsemanship
13. Steffen Peters, American Olympian and FEI rider
14. Shannon Peters, dressage instructor and FEI rider
15. Sheryl Rudolph, FITS/Fun in the Saddle, Inc.
16. Heather Barklow, Equine Connections, LLC
17. Diane Sept, Connected Riding Senior Instructor
18. Anita Adams, dressage trainer and FEI rider
19. Mary Werning, dressage trainer and FEI Rider, USDF Medalist
20. Maria Lisa Eastman, Raintree Equine Assisted Services, equine therapy program
21. Dr. Christine Teicheira, equine and human chiropractor
22. Gigi Nutter, USDF Gold Medalist, dressage trainer, owner Touch-N-Go Farm
23. Lisa Kelly Simmons, Lipizzan breeder, Past Director of the United States Lipizzan Federation
24. Jayne Fingerhut, MA, CMT, USDF Regional Champion Rider, equine business patent holder and manufacturer
25. Michelle Andrews Sabol, director of an equestrian therapy program
26. Holly Mason, Equine Biomechanics Specialist, author of It's Never Too Late
27. Monty Roberts, award-winning trainer, best-selling author of The Man Who Listens to Horses

Sponsor of Original Horse Protection Act of 1970: Former Senator Joseph Tydings

Public Opinion in Key States with Largest Tennessee Walking Horse Industry

A poll conducted in December 2012 by Mason-Dixon Polling & Research found that 75% of Tennessee voters and 69% of Kentucky voters support federal legislation to strengthen the Horse Protection Act by ending the current, failed system of industry self-policing, banning the use of chains and stacks (devices implicated in the soring process) on horses at shows, and increasing penalties for violating the law.

Putting the Horse First:
**Veterinary Recommendations for
Ending the Soring of
Tennessee Walking Horses**



As the world's largest professional organization dedicated to equine veterinary medicine, with a membership of nearly 10,000 veterinarians and veterinary students who dedicate their life's work to caring for the horse, the American Association of Equine Practitioners (AAEP) takes very seriously its responsibility when offering a position statement regarding the treatment of horses. The AAEP condemns the abusive practice of 'soring' and formed the Tennessee Walking Horse Task Force in 2007 with the goal of contributing the expertise of the veterinary community to efforts that will permanently eliminate one of the most significant welfare issues affecting any equine breed or discipline.

The Task Force recognizes that any effective change in the current culture of the industry must come from within, but we genuinely hope that, with this white paper, we can provide support to those within the Tennessee Walking Horse (TWH) industry who endeavor to end the continuing abusive practices specifically prohibited by the Horse Protection Act (HPA) enacted by Congress in 1970.

A Culture of Abuse

Soring is the practice of inflicting pain to create an extravagant and exaggerated show gait for both padded and flat-shod horses and includes but is not limited to the use of irritants; the treatment of the pastern region to remove the visible effects of irritants or scar/callus remnants resulting from previous irritants and/or action devices; pressure shoeing and excessive paring of the sole and/or frog; and any method utilized to induce pain or laminitis. Its continued practice is documented by the U.S. Department of Agriculture's (USDA) citation of 103 violations of HPA regulations during the 2007 Tennessee Walking Horse Celebration, the industry's championship event.¹

The failure of the HPA to eliminate the practice of soring can be traced to the woefully inadequate annual budget of \$500,000 allocated to the USDA to enforce these rules and regulations. In the absence of adequate governmental funding, it is incumbent upon industry participants themselves – owners, trainers, and all support personnel – to take full responsibility for developing a program which succeeds in eliminating the recognized abuses that are at the core of the problem. Continued reliance on the use of traditional techniques dependant upon the subjective response of the horse would appear a wasted effort and funding for the development of objective methodology for use by qualified veterinary inspectors must be provided.

¹ USDA Veterinary Medical Officer Horse Protection Show Report for 2007.

Improved Methods of Evaluation

Because the HPA has been in effect since 1970, no scarring, calluses or other skin conditions indicative of treatments directed at increasing sensitivity should be present in horses currently in competition and none should be tolerated. Likewise, no efforts to mask such treatments should be tolerated. The Task Force recommends the following specific objective methods for evaluation of the horses both before and after each competition (class, not event) to ensure the health and welfare of the equine participants:

1. Immediate institution of drug testing (plasma, serum and cutaneous swabs) based on the methodology and regulations established by the United States Equestrian Federation (USEF).
2. Prohibition of any medical treatments or syringes, therapeutic or otherwise, by any personnel in the make-up ring prior to each class, an area which should be supervised by trained stewards known to be otherwise uninvolved in the Walking Horse industry.
 - a. Limitations on the number of individuals and equipment which may accompany the horse into the make-up ring.
 - i. Forbid the use of any devices utilized to tighten the bands which secure the 'packages.' (Packages are defined as the pads and shoe.)
3. In recognition of the fact that many acts associated with soring occur in the stabling areas of the show grounds, it is recommended that security personnel and supervising inspectors be present in these areas 24 hours each day of the competition to ensure that no violations of the HPA occur.
4. Physical inspection, by a veterinarian, of the horses prior to entering the ring to include:
 - a. Visual inspection of the limbs and shoes.
 - b. Removal of saddles/girths to check for pain-inducing objects.
 - c. Thermographic screening of the limbs to assist in defining specific anatomical areas requiring additional clinical examination and/or surface swabbing to detect forbidden substances.
 - d. Palpation of the limbs including:
 - i. Routine evaluation of the limbs.
 - ii. Assessment of digital pulses.
 - iii. Critical assessment of specific areas suggested to be abnormal on thermographic examination.
 - e. Swabbing of the limbs for foreign substance testing.
 - i. Areas determined to exhibit an abnormal thermographic pattern should be included in the testing.
 - f. Examination of the horses in a standard pattern at a walk and extended walk, on a loose rein, in hand and under tack.

5. Observation by qualified veterinarians of the horses during competition for lameness while at work.
6. Re-examination of selected horses as they exit the ring (with horses held in the make-up ring while examinations are completed) to include:
 - a. Thermographic re-examination.
 - b. Removal of both front shoes of randomly selected horses or horses with abnormal thermographic patterns:
 - i. Visual and hoof tester examination of unshod feet for evidence of methods directed at inducing pain, such as pressure devices and excessive paring of the sole and frog.
 - ii. Weighing of shoes (flat-shod horses) or shoes and package (padded horses).
 - c. Digital radiographs of the feet, in randomly selected horses or horses found to have any physical or thermographic abnormalities, to detect:
 - i. Laminitis, acute or chronic, as manifested by either rotation of the third phalanx or sinking of the bony column within the hoof capsule.
 - ii. Sole thickness.
 - d. Drug testing including both plasma and urine for the presence of prohibited substances.
 - e. Swabbing of the limbs for foreign substance testing utilizing current standard methodology.
 - i. Areas determined to exhibit an abnormal thermographic pattern should be included in the testing.

Implementation

Drug testing can be implemented in similar fashion to that utilized by the USEF, with contract veterinarians responsible for collecting and submitting samples to the testing laboratory. The enforcement of the screening methods outlined above will necessitate the training of a corps of veterinarians, known to be independent of the TWH industry and certified by an organization created solely for the enforcement of regulations governing competitions. The Task Force suggests that the staff of Veterinary Medical Officers (VMOs) be utilized to supervise the inspection of the horses by this corps of trained veterinarians and to impose sanctions for violations. Training of both the VMOs and this additional corps of veterinarians must include more objective measures of detection such as thermography and digital radiography. Every event should be required to have veterinarians on duty during the hours of competition who, in addition to providing emergency medical treatment, could assist in these evaluations.

The Designated Qualified Persons (DQP) Program should be abolished since the acknowledged conflicts of interest which involve many of them cannot be reasonably resolved, and these individuals should be excluded from the regulatory process. The current duties of the program should be assumed by qualified veterinarians.

Many of the above recommendations will require significant financial resources to implement; however, if the industry is serious in its intention to end this cruel and inhumane practice and restore the reputation of its breed and the integrity of its leadership, funding must be provided. The expense of these measures must be borne by the TWH industry.

The Importance of Additional Research

The AAEP believes in and supports equine research. More research is needed to improve the methods of detection of soring. The Task Force recommends that additional research be developed in the following areas:

1. Establishment of objective methods to detect soring in order to eliminate the current practice of conditioning horses to tolerate pressure applied to the distal limb.
 - a. Thermography
 - i. Confirm the consistent thermographic patterns of normal TWHs with double blind, placebo-controlled studies.
 - ii. Confirm, with double blind, placebo-controlled studies, the consistent thermographic patterns associated with soring reported by Nelson and Osheim, 1975; Purohit, 1978-1983; and Turner, 1981 and 1986.
 1. Areas of increased temperature (circulation).
 2. Areas of decreased temperature associated with topical applications.
 - iii. Determine if thermographic patterns consistent with pressure shoeing are demonstrable.
 - b. Digital Radiographic Assessment of TWHs to determine:
 - i. The normal configuration of the TWH digit including thickness and radiopacity of sole.
 - ii. Hoof capsule distortions.
 - iii. Presence of laminitis – either rotation or sinking.
 - iv. Identify which foreign materials may be visualized between the shoe and sole, resulting in inappropriate sole pressure, and within the package, resulting in excess weight.

2. Determine the effect of shoeing alone and shoeing plus chains of variable weights in the development of pastern irritation and scarring on both young and mature TWHs.
 - a. Evaluate the necessity of the use of lubricants with chains.

Furthermore, the AAEP stands ready to participate in developing independent research protocols and in soliciting proposals for projects through the AAEP Foundation. Independent funding sources from within the TWH industry will need to be identified.

Putting the Horse First

In comparison to other equine breed and discipline associations with which the AAEP is familiar, the TWH industry has several glaring differences which contribute to the difficulty of achieving the goal of eliminating soring. In conclusion, the AAEP recognizes that it has no regulatory authority over the TWH industry but offers on behalf of the horse these recommendations regarding governance structure, uniform regulations and judging standards:

1. Establishment of a single organization that has governance responsibilities for the industry is critical for the effective resolution of conflict and the establishment and enforcement of uniform standards and regulations. The current arrangement of multiple Horse Industry Organizations (HIOs) fails to accomplish this vital need and has resulted in competing interests.

The USEF could serve as a model for such an organization, with fees collected from members and competitors to fund the organization, the regulatory personnel (veterinarians and stewards) and the drugs and medication testing program (systemic and topical).

2. The adoption and strict enforcement of meaningful uniform standards and regulations, combined with more stringent penalties, are the cornerstones of establishing fair and humane competitions. Penalties should be much more severe and consequential to owners, trainers and other support personnel than in the past. Lifetime disqualification of horses found not to be in compliance would penalize trainers and owners to a degree likely to mitigate against a second infraction. We believe that owners are the only individuals who can bring adequate pressure to bear on each other and their trainers to eliminate these intolerable abuses.

3. Establishing standards of judging which value the innate grace and beauty of this breed instead of rewarding the currently manufactured extravagant and exaggerated gaits will facilitate a rapid return to horsemanship and training devoid of the intolerable abuses of soring in all its manifestations.

The AAEP, in its mission to act in the best interest of the horse, remains willing to assist the TWH Industry in prohibiting these cruel and inhumane practices. However, the decision to develop realistic and effective means of eliminating individuals who perpetuate this culture belongs to the TWH industry alone.

Respectfully completed by the AAEP Tennessee Walking Horse Task Force:

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AVMA and AAEP Position on the Use of Action Devices and Performance Packages for Tennessee Walking Horses

The American Veterinary Medical Association and the American Association of Equine Practitioners support a ban on the use of action devices and performance packages in the training and showing of Tennessee Walking Horses.

Action devices used in the training and showing of Tennessee Walking Horses include chains, ankle rings, collars, rollers, and bracelets of wood or aluminum beads. When used in conjunction with chemical irritants on the pastern of the horse's foot, the motion of the action device creates a painful response, resulting in a more exaggerated gait. Foreign substances are being detected on the pastern area during pre-show inspections at an alarmingly high rate, according to U.S. Department of Agriculture statistics. While there is little scientific evidence to indicate that the use of action devices below a certain weight are detrimental to the health and welfare of the horse, banning action devices from use in the training and showing of Tennessee Walking Horses reduces the motivation to apply a chemical irritant to the pastern.

The United States Equestrian Federation (USEF), the national governing body for equestrian sport in the United States, disallows action devices in the show ring for all recognized national breed affiliates. The AVMA and the AAEP commend the USEF for this rule and urge the USDA-APHIS to adopt similar restrictions for Tennessee Walking Horses.

Performance packages (also called stacks or pads), made of plastic, leather, wood, rubber and combinations of these materials, are attached below the sole of the horse's natural hoof and have a metal band that runs around the hoof wall to maintain them in place. Performance packages add weight to the horse's foot, causing it to strike with more force and at an abnormal angle to the ground. They also facilitate the concealment of items that apply pressure to the sole of the horse's hoof. Pressure from these hidden items produces pain in the hoof so that the horse lifts its feet faster and higher in an exaggerated gait.

Because the inhumane practice of soring Tennessee Walking Horses has continued 40 years after passage of the Horse Protection Act, and because the industry has been unable to make substantial progress in eliminating this abusive practice, the AVMA and the AAEP believe a ban on action devices and performance packages is necessary to protect the health and welfare of the horse.



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Congress of the United States
Washington, DC 20515

September 27, 2013

Tennessee Walking Horse Breeders and Exhibitors Association (TWHBEA)
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To whom it may concern:

It is my understanding that there has been some misinformation, whether purposely or accidentally, circulated about the impact my legislation, the Prevent All Soring Tactics Act of 2013 (PAST Act), would have on the use of shoes that are used regularly and humanely in the Walking horse industry. I am writing to clear up this misinformation.

Some are saying or making the argument that the section of the bill that addresses the use of “weighted shoes” will make ALL show horse divisions extinct in the Tennessee Walking Horse breed. Their argument maintains that the term “weighted shoes” includes the smallest to the largest of shoes, as all shoes have “weight” to them. This claim is as far away from the truth as possible. The fact is that the PAST Act does not prohibit all horse shoes. It also has no impact on horses ridden on the trail, or anywhere other than a horse show, exhibition, sale or auction. It expressly allows for the use in these venues of shoes that are “protective or therapeutic in nature.” There are many shoes of varying weights that are used on horses by their owners for the protection of the horses’ hooves or for therapeutic purposes. The overwhelming majority of horse shoes used on Tennessee Walking Horses and horses of all breeds are used for these purposes. There are many Tennessee Walking Horses currently being shown in several divisions with shoes that would be allowed under the PAST Act. The determination of the types and weight of shoes that are allowed will be determined by the United States Department of Agriculture (USDA) only after a formal rule making process. This rule making process will require that USDA seek the input of veterinarians, farriers, and other industry participants in the development of the regulations. These regulations will be available for public comment, so everyone will have a chance to weigh in on them before a decision is made.

However, for the three breeds – Tennessee Walking, Racking, and Spotted Saddle Horses. – where there are known abuses associated with the use of weighted shoes and hoof bands, the bill makes these abuses unlawful. It has been documented that heavy shoes and hoof bands are regularly used as an integral part of a practice generally known as “pressure shoeing” to cause horses to be sore, which creates an artificial high-stepping gait that is often rewarded in the show ring. The use of these heavy shoes – which rely on hoof bands to help hold them on the horse’s hoof – has also been shown to cause horses’ hooves to be shorn off at the band, causing great pain to the horse and risking serious, potentially permanent, and sometimes fatal damage.

Although this legislation seeks to stop people who are already breaking the law by soring horses, it does not provide a blanket prohibition on all shoes as some would have you believe. As the legislative process moves forward on this bill, I will work hard to ensure that the intent of this legislation is carried out in a way that is not harmful to the people who value Walking horses and do not sore them. Thank you for your attention to this matter.

Sincerely,



Ed Whitfield
Member of Congress



Steve Cohen
Member of Congress

THERMOGRAPHY IN DIAGNOSIS OF INFLAMMATORY PROCESSES IN HORSES IN
RESPONSE TO VARIOUS CHEMICAL AND PHYSICAL FACTORS

(Summary of the Research From September 1978 to December 1982)

SUBMITTED TO THE US DEPARTMENT OF AGRICULTURE

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THERMOGRAPHY IN DIAGNOSIS OF INFLAMMATORY PROCESSES IN HORSES IN
RESPONSE TO VARIOUS CHEMICAL AND PHYSICAL FACTORS

To study the effects of acute and chronic inflammatory responses of the horse's thoracic (front) and pelvic (hind) limbs, several studies were done over a seven year period at the School of Veterinary Medicine, Auburn University, Alabama.

Phase I. Normal Thermographic Pattern of the Horse Over 100 horses were used to establish normal thermographic patterns of both thoracic and pelvic limbs. There is a high degree of right leg to left leg symmetry to the infrared emission of the horse, which has also been shown in humans. But in the horse, there is also a high degree of symmetry between the front and rear legs from the carpus and tarsus distally. After exercise, the temperature patterns of lower legs remained very similar to normals obtained before exercise. Even though there was an overall increase of temperature due to exercise thermal patterns remained the same.

Phase II. Chemically Induced Acute Inflammation of the Thoracic (Front) Limbs and the Use of Anti-inflammatory Compounds in Horses Thirteen ponies were used to inject 1.25 ml of 1.9% iodine solution (hypodermis R) around the distal portion of the lateral left front splint. This was done to create an area of acute inflammation. Twenty-four hours after iodine injection, ponies were divided into four groups. Group 1 was control with no medical treatment. Group 2 was treated with Benzydamine Hydrochloride ointment. Group 3 was

treated with intramuscular injection of Benzy- damine Hydrochloride and Group 4 received intravenous injection of Phenylbutazone BID (twice a day). All treatments were done for 5 days and ponies were evaluated by clinical examination for heat, swelling, pain, and physical soundness, and thermographic evaluation was done before and after exercise. The objective of this study was to evaluate thermography as a means of quantitative determination of acute inflammation and therapeutic effectiveness of the anti-inflammatory compounds. The induced inflammation was readily shown with thermography while comparing control, nontreated and treated with anti-inflammatory compounds. Anti-inflammatory compounds like benzydamine and phenylbutazone decreased inflammation when compared to nontreated inflamed animals. Thermography was very effective in the diagnosis of inflammatory responses and healing processes.

Phase III. Thermographic Evaluation of Tennessee Walking Horses, Using Various Chemical and Physical Factors (A Field Trial) A one week extensive field study was performed on seven Tennessee Walking Horses, owned by various owners and trainers. This study was performed at Murfreesboro, Tennessee. Seven horses from various areas were brought and housed at University Camps of Murfreesboro, Tennessee. Each horse was individually handled by their trainers to provide field condition. Some of these horses were young and some were old. All had been shown at various Walking Horse shows in the nation. At one time or another these horses were considered to be sore according to the conversations with trainers and owners. Our objective for this phase of study was not to document how and when they were sore, but to evaluate these horses for a period of five to six days. Horses were given a thorough physical examination and pertinent data were recorded for information. Various thermographic views of all four legs were obtained pre-exercise and thereafter at 15, 75, 135, 255 minutes respectively for 5 to 6 days in each horse. In some horses 18 oz. chains were used for one day during exercise and then 10 oz. chains were used during exercise the other day. All horses were exercised by the trainer of a horse or by a trained horse rider hired on the research grant during the 6 day study period. With a few exceptions, most horses having old callouses will modify the thermographic patterns. But the effects of soring and the use of heavy chains can be differentiated from old callouses by comparing thermographic pictures with physical evaluation and location of the callouses. Thermographic pictures obtained 15 minutes after exercise in normal horses could be differentiated from the horses who were sore due to chemical or physical factors. This field trial produced results similar to those obtained by Dr. Nelson at Ames, Iowa.

Phase IV. Subclinical Diagnosis of Osteoarthritis by Thermographic Technique

Thermographic and radiographic evaluations of the tarsus (hock) were done in 20 horses, prior to and after exercise at 3

consecutive six week intervals. All horses were from the same stable, receiving identical care and training under equivalent schedules and conditions. . Normal thermographic patterns were established for preexercise and postexercise workouts. These patterns corresponded to the underlying tarsal vasculature. Postexercise thermal patterns were generally warmer, and the increases were uniform. Abnormal thermal patterns were more localized and did not conform to the normal underlying vascular distribution. The results of this study suggest the four horses that were unable to race professionally suffered sufficient discomfort in their hocks to cause reduced performance and inability to meet minimum track qualifying times. These horses were clinically sound but all exhibited positive thermal changes of the medial aspect of their right hocks with no radiographic evidence of inflammation in the corresponding surfaces. It is my opinion that the medial aspect of the right hock bears more weight and stress when horses racing counterclockwise make the turns of the track, and is consequently prone to traumatization and early degeneration. Only one horse exhibited clinical lameness, supported by radiological findings as well as abnormal thermal patterns within the same area. It may then be concluded that abnormal thermal increases may be detected in the subclinical stages where only slight discomfort produces reduced performance. This study did determine that thermographic changes can be detected prior to radiologic changes and that these thermal increases were correlated with discomfort that presumably resulted in reduced performance. Standardbred horses were used in this study.

Phase V. Thermographic Evaluation of Sore Horses

Objectives of this study were: to evaluate chemical soring without use of action devices; to determine the pressure at six different areas of the foot below the fetlock joint in response to chemical soring; and to evaluate thermographic pictures along with the gait of horses using videotape recording. Normal thermographic patterns, before and after exercise were similar to those reported previously (Phase I) in all three horses. Application of detergent soap and leg wraps for two days produced an increase in IR-emission pattern of the treated legs. This increase in temperature varies from 2-4 degrees C warmer than the non-treated legs. Following use of detergent soap, same legs were used for application of mustard oil. After second application of mustard oil, horses showed obvious signs of pain and discomfort. Horses were also very sensitive to touch. Thermographic evaluation of affected foot showed increase in IR-emission pattern and consisted of about 5-7 degrees C rise in temperature when compared to the non-treated legs. Three to five days after the last application of mustard oil there was gradual decrease in temperature, but did not return to normal level for 3 to 4 weeks. Rectal temperature along with temperature recording from the pastern area of the foot also increased following treatment with mustard oil. Thereafter, there

was a gradual decline in both rectal temperature and the temperature in the pastern area of the foot. Rectal temperature was between 99 to 101 degrees F before soring. Seventy-two hours after second application of mustard oil rectal temperature averaged about 105.5 degrees F (preexercise). Immediately after exercise, in sore horses there was a slight decrease in body temperature, whereas non-sored horses had an increase of body temperature of 1 to 2 degrees F. Six point pressure (SPI) below fetlock joint were recorded in all horses. In clinically normal horses before exercise, a mean pressure of 36 to 37 lbs. were recorded, prior to the flinching response. Fifteen to 30 minutes after exercise the pressure dropped to a mean value of 31 psi. Application of detergent soap followed by wrapping of the leg for 24 to 48 hours caused slight inflammation. This inflammation was obvious on thermographic evaluation. When these horses were tested for pressure response on the treated foot there was a marked reduction in pressure recording. Thus, point pressure obtained indicated the presence of inflammation. After the second application of mustard oil, treated legs were sore and inflamed to the extent that horses will not tolerate point pressure above 5 to 10 psi in the affected areas. Whereas non-sored legs of the same horse will withstand a pressure ranging from 24 to 40 psi. Thus one could conclude that along with physical examination and thermographic evaluation, point pressure of affected areas could also determine the inflammatory responses which can be quantitated by using point pressure recording. Increase in body temperature could also be used in acute cases of active inflammation, but further studies are needed in this area with the speculation that in response to chronic pain, body temperatures may not stay elevated in all horses.

Phase VI. Determination of Thermographic Patterns in Response to 10 oz. chains

The objectives of this study were to determine the effects of 10 oz. chains on normal horses, before and after exercise for a duration of two weeks and to use pressure testing device along with thermography and photographic documentation of any lesions produced by 10 oz. chains. Three horses (Nos. 3, 4, and 6) were exercised without chains for several days to obtain normal thermographic patterns and pressure data. Thereafter, the horses were exercised with 10 oz. chains for 10 consecutive work days (given weekends off) and pressure data were collected along with thermography and photography documentation. Horse No. 4 had 10 oz. chains on both pasterns whereas Horse No. 3 had a chain on the left pastern and Horse No. 6 had a chain on the right pastern. The chains were fitted according to the USDA, APHIS, Veterinary Services regulations so that the chain struck the pastern at least one inch above the coronary band. Results of this study provided evidence that by day 7 of exercise with chains lesions can be produced on a horse's legs. By the 10th day of exercise with chains, these lesions were more obvious and were present on the anterior and

posterior areas of both right and left pasterns. The anterior lesions were about 1 to 2 cm in diameter and about 0.5 cm deep with the presence of edema, exudate and some bleeding. The posterior lesions were less deep, covered a larger area and had an appearance more like an abrasion. Thermographically, horses exhibited altered thermal patterns as early as day 2 of exercise with chains. These altered thermal patterns persisted as long as chains were used. After 10 days of experimentation with chains the horses were exercised without chains, and it took about 20 days in recovery to obtain normal thermal patterns. Scars formed by using chains continued to show altered thermal patterns compared to the normal areas. Horse No. 6 was exercised with a 10 oz. chain on the right leg only so it could be compared to the left leg. The right pastern area developed inflammation and edema by day 8 and visible lesions by the 10th day. Alterations in thermal patterns of the right leg were present as early as day 3 after exercise with chains. Recovery in this horse was parallel to that of the other horses. It was concluded that the use of 10 oz. chains for 10 days without use of chemical soring produces lesions in the areas of the pastern which can be seen visually after 8 to 10 days and altered thermography patterns can be seen in 2 to 3 days. If animals are allowed to recover without use of anti-inflammatory treatment it would take 3 to 5 weeks for their thermal patterns to return to normal. Extent of soreness due to chains only are less dramatic than the chemical soring.

Phase VII. Simultaneous Use of Chemical and Chains for Soring Horses

The objectives of this study were to determine the effects on forefeet of horses of detergent, mustard oil and chains, before and after exercise for a duration of two weeks and to determine if pressure readings from the forefeet of sored horses will correlate with the thermographic findings. Three horses (Nos. 3, 5 and 6) were exercised several days in a normal fashion and the animals were monitored to establish pre-treatment physical condition of the forefeet. Data were obtained by pressure testing, thermography and by taking rectal temperature. Liquid detergent was liberally applied to the pasterns of the forefeet and they were then wrapped in plastic and cloth bandages. The next day the bandages were removed and # 3 was exercised 15 minutes with chains on both feet, # 5 with a chain on the right forefoot and # 6 with a chain on the left forefoot. Ten ounce chains were used. The next day 18 drops of oil of mustard were applied to each pastern after the horses had been exercised in chains as previously described. Plastic and cloth wraps were applied and left on overnight. Wraps were removed the next day and the horses exercised in chains for 15 minutes each day (except weekends) for 8 more days. The horses were then exercised in a normal manner 5 times during a 10 day recovery period. Results of this study showed that the combination of detergent, chains, and mustard oil caused the clinical signs of a sored horse described by Nelson (1975). Horse # 3 (chains on both

legs) and # 6 (chain on left leg) had some bleeding in the pasterns 8 days after detergent was applied. Horse # 5 did not bleed but had swollen and scabby pasterns. Thermal patterns of the foot were altered by the treatment with chemicals and mechanical devices but since detergent and mustard oil were applied to both pasterns of the forefeet of all three animals, and in 2 horses chains were used either on left or right foot, unchained feet were only sores chemically, were similar to the one with both chemical and chains. Thus inflamed area with or without chains showed similar results on thermography. Rectal temperatures were slightly higher during the period of treatment than for periods of non-treatment. The combined use of detergent, chains and mustard oil on the pasterns of horses causes lesions and tissue damage visible to the naked eye. They also cause alterations of the horse's behavior that are predictable. The pressure device is consistent in charting trauma caused to the feet of Tennessee Walking Horses. There is a wide margin between the pressures that an unsored horse will tolerate compared to those a sored horse can endure.

Phase VIII. Effects of Tranquilizers and Vasoactive Drugs on the Pattern of The Normal and Neurectomized Fore Legs of Horses

The objectives of this study were to determine the prolonged effects of neurectomies on the circulatory patterns of the legs of horses, and to determine the effects of epinephrine, norepinephrine, acetylpromazine and propanolol on the circulatory patterns of normal and neurectomized legs of horses. Four horses were used in this study. Normal patterns of the thoracic limbs were similar to those reported previously. To determine the effect of acetylpromazine, epinephrine, norepinephrine and propanolol, horses were injected with these drugs and thermographic patterns were determined for an extended period. Thereafter, posterior digital neurectomies were done and drug effects were evaluated again. Low and high volar neurectomies were also done. In 3 other horses the effects of local nerve blocks, high and low volar nerves and posterior digital nerve were studied to evaluate the circulatory patterns: Intravenous injection of acetylpromazine (0.06 mg/kg) caused increased thermal patterns of both the thoracic and pelvic limbs in horses. Similarly, epinephrine and propanolol caused vasodilatation and increased thermal patterns. Norepinephrine caused vasoconstriction and decreased temperatures of both pelvic and thoracic limbs (for reference see publication # 5). Following neurectomies in either the pelvic or thoracic limb at various sites there was increased heat in the areas supplied by these nerves. Within 3 to 6 weeks neurectomized areas had a readjustment of their local blood supply, and it was difficult to differentiate between the normal and neurectomized areas on thermography. Administration of acetylpromazine (0.06 mg/kg IV) caused increased heat in the non-neurectomized areas of the opposite limbs, whereas no effect was seen on the neurectomized limbs. Results obtained with low and high volar neurectomies were similar to those of a posterior digital

neurectomy. Thermographic evaluation of the thoracic and pelvic limbs were also done before and after local nerve blocks of both pelvic and thoracic limbs. Responses varied according to the site of injection. Nerve blocks only persisted for a short duration because carbocaine is a short-acting local anesthetic. It was concluded that the thermography can be effectively used to evaluate vasoconstrictive and vasodilatory drugs in horses. Neurectomized areas can also be detected by thermographic techniques.

Phase IX. Thermographic Evaluation of Chemically (Amphotericine B) Induced Arthritis of the Carpus and Tarsus Joints Along With or Without Injection of Steroids in the Joint

The objectives of this study were to chemically induce intercarpal and tibiotarsal arthritis by injection of amphotericine B and to evaluate the effects of corticosteroids in the treatment of induced arthritis. Both thermography and radiography were used to evaluate the above stated objectives. Twelve ponies were used consisting of 48 joints to be evaluated. Eight joints were used as controls, 8 were injected with dextrose for a positive control 8 joints were used for amphotericine B injection only and of the other 16 joints, 8 were injected with methylprednisolone before amphotericine B and the other 8 were injected with methylprednisolone 24 hours after amphotericine B. Ponies were evaluated physically, thermographically and by radiography. Results of this study showed that the corticosteroid treatment of intra-articular injection in the joints was effective in alleviating the pain and clinical signs of lameness when compared to the induced arthritis non-treated joints. Even after the clinical signs of arthritis disappeared thermography still showed the presence of inflammation up to 30 to 40 days after the injection of amphotericine B. Radiographic evidence also provided that arthritis persisted longer than it was evident on physical exam. Present and previous studies from this clinic show that thermography can diagnose subclinical inflammation and it can be used to evaluate the healing processes. (See publication for more details).

Phase X. Use of 8 and 10 Ounce Chains on Scarred Horses

This study consists of two parts. In the first part of the experiment two horses were scarred using chain and mustard oil. Along with these, two scarred horses were bought. The second part of the study consisted of using 8 and 10 ounce chains and 14 ounce rollers on the scarred horses to evaluate their effect on the scar.

Part 1 of Phase X, Scarring Processes: Two horses were used to produce scars using 16 or 14 oz. chains with clinical soring described previously. It took an unpleasant 2 months of detergent, mustard oil and chain use to produce minimal scarring of two horses. Bleeding of pasterns first occurred in about 7 to 8 days, while

exercising in chains. Evidence of inflammation of the pasterns was noted on thermovision the day after presoring and chain use, particularly after exercise. The thermal pattern became more diffuse and abnormal as the study proceeded. Drop in pressure readings occurred with continued use of chemicals and chains. The animals displayed many signs of discomfort and distress during the use of chemicals and chains. Some were stiffness, trotting instead of gaiting, lying down in the stall, reluctance to move, vagueness as to surroundings, bearing more weight on hind feet, stumbling, falling, hanging the head, wobbling, altered facial expression, and a peculiar stance when standing. Although the horses were seldom exercised in chains more than 15 minutes per day and were not exercised each day because of rain, thrown shoes and weekends, it was apparent that 14 and 16 oz. chains inflict more trauma than 10 oz. chains. Scars can be produced on pasterns with chemicals and chains but despite 2 months of efforts to do so they were small scars and barely discernible in one horse. Thermograms and pressure readings readily distinguish a normal, unsore horse from one being treated with chemicals on the pastern and exercised in chains.

Part 2 of Phase X, Effects of Action Devices on Scars:

The objective of the 2nd part of the study was to determine if legal action devices are injurious to the feet and legs of horses bearing scars in that area. Three Tennessee Walking Horses (#11, 13, and 14) with bilateral scars about the pasterns were subjected to studies in which legal action devices were affixed to their pasterns. Fourteen ounce aluminum rollers were used on # 11, 10 oz. chains on # 13 and 8 oz chains on # 14. Horse # 11 had less scar tissue than the other two. He was scarred on the premises with 14 oz. chains prior to this study. The other two horses were purposefully acquired with the scars. Horse # 11, a gelding, was exercised 7/28/80 - 8/1/80 without action devices for the purpose of monitoring his physical condition under normal circumstances. From 8/4 - 8/15 he was exercised 9 times for 20-22 minutes each time in 14 oz. rollers with vaseline as lubricant. From 8/18 - 9/15 he was exercised and monitored seven times to record data on his recovery. Horse # 13, a gelding, was exercised 6/26/80 - 7/11/80 without action devices for monitoring normal conditions. From 7/14 - 7/25 he was exercised and monitored for 15-30 minutes each time in 10 oz. chains. Vaseline was used as a lubricant. From 7/28 - 9/15 he was exercised and monitored 10 times during the recovery period. Horse # 14, a stallion, was exercised and monitored 5 times 9/15/80 - 9/19/80 without action devices to establish normal physical conditions. He was exercised and monitored nine times 9/22 - 10/3 in 8 oz. chains for 15 minutes each exercise period. Vaseline was used as a lubricant. From 10/6 - 10/22 he was exercised and monitored 12 times during the recovery period. Results of this study showed that all three horses developed raw lesions on the scarred pasterns when exercised in action devices and lubricant. The lesions bled on horses #13 and 14 that exercised in chains. Abnormal thermal patterns developed on the pasterns of the three horses during the

period of exercise in action devices and the drop in pressure readings occurred. Thermal patterns became more regular in appearance and pressure readings increased during the recovery period when the horses were exercised without action devices. Fourteen ounce rollers and 8 and 10 ounce chains will cause raw lesions on scarred pasterns of horses when the horses are exercised 15-30 minutes per day in the devices. Lesions occur in less than 2 weeks, even when the horses are not exercised on weekends. The action devices cause irregular thermal patterns detectable by thermovision, increased sensitivity to pressure on the pasterns, and discomfort and altered gaits visible to observers.

Phase XI. Use of 2, 4 and 6 Ounce Chains

The objectives of this study were to evaluate the use of 2, 4 and 6 ounce chains in Tennessee Walking Horses, without using any other chemical or mechanical technique to induce inflammation. Use of 2, 4 and 6 oz. chains did not cause any detectable pain, tissue damage. Thermographic and pressure evaluation did not change significantly. Thus, it was concluded that the use of 2, 4 and 6 oz. chains for a duration of 2 to 3 weeks did not produce any harmful effects to the horses' legs, with exception to some loss of hair from 6 oz. chains in the pastern areas.

Phase XII. Use of Non-Steroid Anti-inflammatory Compounds (Phenylbutazone Flunixin-Meglumine) to Enhance Healing after Soring with Mustard Oil and Chains

In this study horses were sored using mustard oil and 10 oz. chains described previously. Following soring one group of horses were treated with phenylbutazone twice a day and the other group was treated with Flunixin-Meglumine for 5 days. Steroid ointment was also applied locally in the area of inflammation for 5 days. Then treatments were discontinued. Normally it took about 3 to 6 weeks for complete healing after initial induction of inflammation without any treatment with anti-inflammatory compounds. But the use of phenylbutazone (IV) and local application of steroid ointment enhanced healing. Horses on phenylbutazone healed in about 10 days, whereas use of Flunixin-Meglumine use took about 15 days for complete recovery. Enhanced healing effects could actually be seen within 48 to 72 hours after initiation of treatment with anti-inflammatory drugs.

Phase XIII. Evaluation of Dimethyl Sulfoxide (DM50) Alone and In Combination with Gibson's Linament, Applied to Limbs of Horses

To determine if DM50 alone or mixed with linament would mask soring or otherwise interfere with thermography so that thermal patterns associated with sored feet and legs would not be detected. Two horses were used in this study. Gibson's linament, 90% strength

DMSO, and oil of mustard were applied to determine the effects on the forelegs of horses. Thermovision, a Micron, a Carillon pressure device, a rectal thermometer were used to evaluate the effect of above stated compounds. DMSO and Gibson's linament were applied alone and in combination of 1:1 and 1:2 linament-DMSO. Amounts painted onto the legs and feet ranged from 10 to 20 cc. Rear legs and feet were used to increase the number of tests. Ten drops of oil of mustard were applied to the right leg of one horse. Fifteen cc of a 1-2 mixture of linament-DMSO was applied the next day after thermovision confirmed an elevated temperature pattern. Horses were exercised for 4 days and physical condition monitored in a routine manner. The horses were monitored and exercised 7 more times during an 18 day recovery period. Preliminary studies conducted revealed that DMSO, Gibson's linament, and mixtures of the two caused inflammation that was detectable by thermography and that caused a decline in pressure measurements. A study on one horse with DMSO-linament mixture yielded basically the same results. The heat pattern caused by oil of mustard did not subside when DMSO, linament or mixtures were applied. There were no detectable distortions of patterns that might confuse thermographic findings in sore horses.

Phase XIV. Use of Seven Commercial Compounds to Determine if they Can Mask Soring

Studies were done to determine if preparations containing silicone can alter or cover up thermal patterns obtained by thermography. Several Large Animal Clinic horses were used over a period of 5 days to determine the effects of various dilutions of silver nitrate and 5 hair sprays and a boat water-proofing liquid containing silicone. Normal thermal patterns were obtained before the preparations were applied as a spray or with a dauber to the legs and feet. The limbs were observed at different time intervals during the day with a thermovision camera and the next day before the material was washed off. Mustard oil was used on several feet to cause an abnormal thermal pattern. None of the compounds used masked or altered normal or mustard-oil-induced abnormal thermal patterns. Thus it was concluded that silicone containing substances and silver nitrate used in this study did not mask or alter thermal patterns in horses.

Phase XV. Preliminary Studies to Evaluate the Effects of Change in the Heel to Toe Ratio

The objectives of this study were to determine if deviation of hoof angle will alter the gait of Tennessee Walking Horses and to determine if tendonitis or other inflammation were caused by deviation of hoof angle. Two horses, # 22 and # 23 were placed under observation on 4/9/81 and monitored before and after 15-20 minutes of exercise with thermography, pressure device, Micron, rectal thermometer and visually by rider, technician and

veterinarian. Horse # 22 was shod from 'barefoot status to wedges, pads and shoes on 4/13. Horse # 23 had been shod similarly before 4/9/81. On 4/29 the heels of both horses were raised 8 degrees, before exercise and monitoring. On 5/11 the heels were dropped 12 degrees by removing wedges and the horses exercised and monitored. Horses were then exercised and monitored on 10 separate days during the period of 5/12-6/1. No action devices or chemicals were applied to the feet or legs during the study. Thermography study suggests that shoeing of the forefeet in pads and wedges from a barefoot status (horse # 20) causes a 1-2 degree rise in temperature in the superficial and deep flexor tendon area. Similarly, inflammation in this area was observed on thermography when the angle of the hoof was raised or lowered (both horses). When the heels were lowered on 5/11 and observed until 6/1 there was a gradual decrease of inflammation in the flexor tendon area. Pressure readings taken at the usual 6 points on the foot fluctuated to a minor degree, reaching their lowest levels 2 days after the heels were elevated 8 degrees in both horses. Raising the heels 8 degrees caused both horses to stumble and tire easily. They did not regain a sound gait for about 7 days. When the heels were dropped 12 degrees the horses gaited more soundly although there was swelling in the flexor tendons for about 7 days. Raising or lowering the heels of Tennessee Walking Horses and shoeing one with wedges and pads from barefoot status causes thermal patterns in the flexor tendon area that can be distinguished on thermography. These changes cause less fluctuation in pressure readings than the use of action devices or chemicals. Inflammation subsides about one week after the heels are raised or lowered 8 and 12 degrees respectively. Raising the heel causes a more observable change in the horses' gait than lowering the heel after it has been raised.

Phase XVI. Pressure Shoeing

Two horses were used for pressure shoeing technique. Horses' gaits can be altered by pressure shoeing. The degree of soreness from pressure shoeing depended on the techniques used. Soreness from pressure shoeing was not detectable in the pastern areas by physical examination or by thermographic technique in all cases, because pads obscure the solar surface of the foot. But obtaining thermographs of the sole after removal of pads, soreness was obvious due to inflicted inflammation to the solar surface of the foot.

Phase XVII. Comparison of Pressure Data Between Pelvic and Thoracic Limbs Before and After Exercise for 5 Continuous Days

The studies were done to evaluate the six point pressure data of the coronary band and pastern areas of both pelvic (hind) and thoracic (front) limbs in 6 horses to determine the variation in the front and back legs. there were no significant differences in pressure

data from the front to the back legs of these horses. Pressure values averaged between 30 to 40 psi, before and after exercise in all normal horses. Whereas in horses where acute inflammation was induced by chemical or physical means significant decrease in pressure values were recorded.

Phase XVIII. A Field Trial with 8 Horses in Murfreesboro, Tennessee, to Evaluate the Pressure Device, Micron Temperature along with Thermography

This study was done using 8 Walking Horses brought during the month of June, 9-11, 1981. Horses were brought in by owners and/or trainers for this study. A 3 day trial was performed in which all horses were examined before and after exercise by 3 veterinarians and 1 DQP. In some cases as many as 4 to 5 veterinarians may have examined these horses. Each individual was requested to submit his own report without consultation with others, to Dr. Purohit for final compiling of the data. After examination by the DQP and veterinarians, thermographic evaluation was done before and after exercise. The pressure data on the pastern area were collected, and a hand-held infrared gun was used to determine the temperature of the legs. Owners were allowed to use 10 oz. legal chains, but they were asked not to notify us if they used any chemical or other technique to sore the horse. During the 3 days of this study, 3 horses at one time or another did show sensitivity to the physical examination and the same horses were classified as having inflammatory reaction on thermography and pressure device. Whereas 4 horses were not considered sore by all criteria used in' this study. Thermography technique was able to detect inflammation, on 2 horses even before they were exercised on day 1. Of the 3 sored horses 2 showed only selected areas of inflammation. One horse by day 3 showed acute inflammation on thermography. This horse was used with 10 oz. chains. Of the 8 horses, 1 horse in this study was very difficult to handle and several veterinarians and 1 DQP had considerable difficulty in examining this animal. The difficulty extended even to the point of the horse not allowing the use of the infrared Mikron thermometer. This horse had normal pressures on day 1 before exercise, with exception to the pocket and bulb of the heels, which were sore both on pressure and thermography technique. There was an excessive drop in pressure after exercise on day 1. Thereafter, the only sensitive areas noted were the backs of both front legs, especially in the pocket and the bulb of the heels. It was concluded that 3 of the 8 horses were sore, 1 was questionable, and 4 were considered not sore. There were some discrepancies among veterinarians, but after overall evaluations, only 1 horse which was questionable created the controversy, due more to the behavior of the horse.

REFERENCES: 1. Purohit RC, Bergfeld II WA, McCoy MD, Thompson WM, Sharman RS: Value of clinical thermography in veterinary medicine. Auburn Vet 33: 104-108, 1977.

2. Purohit RC, McCoy MD: Thermography in the diagnosis of inflammatory processes in the horse. Am J Vet Res 41: 1167-1174, 1980.
3. Vaden MF, Purohit RC, McCoy MD, Vaughan JT: Thermography: a technique for subclinical diagnosis of osteoarthritis. Am J Vet Res 41: 1175-1179, 1980.
4. Purohit RC, McCoy MD, Bergfeld WA: Thermography diagnosis of Homer's syndrome in the horse. Am J Vet Res 41: 1180-1182, 1980.
5. Purohit RC: The diagnostic value of thermography in equine medicine. Proc Am Assoc Equine Pract 26: 317-326, 1980.
6. Bowman KE, Purohit RC, Ganjam VK, Pechman RD, Vaughan JT: Thermographic evaluation of corticosteroid efficacy in amphotericin B induced equine arthritis. Am J Vet Res 44: 51-56, 1983.