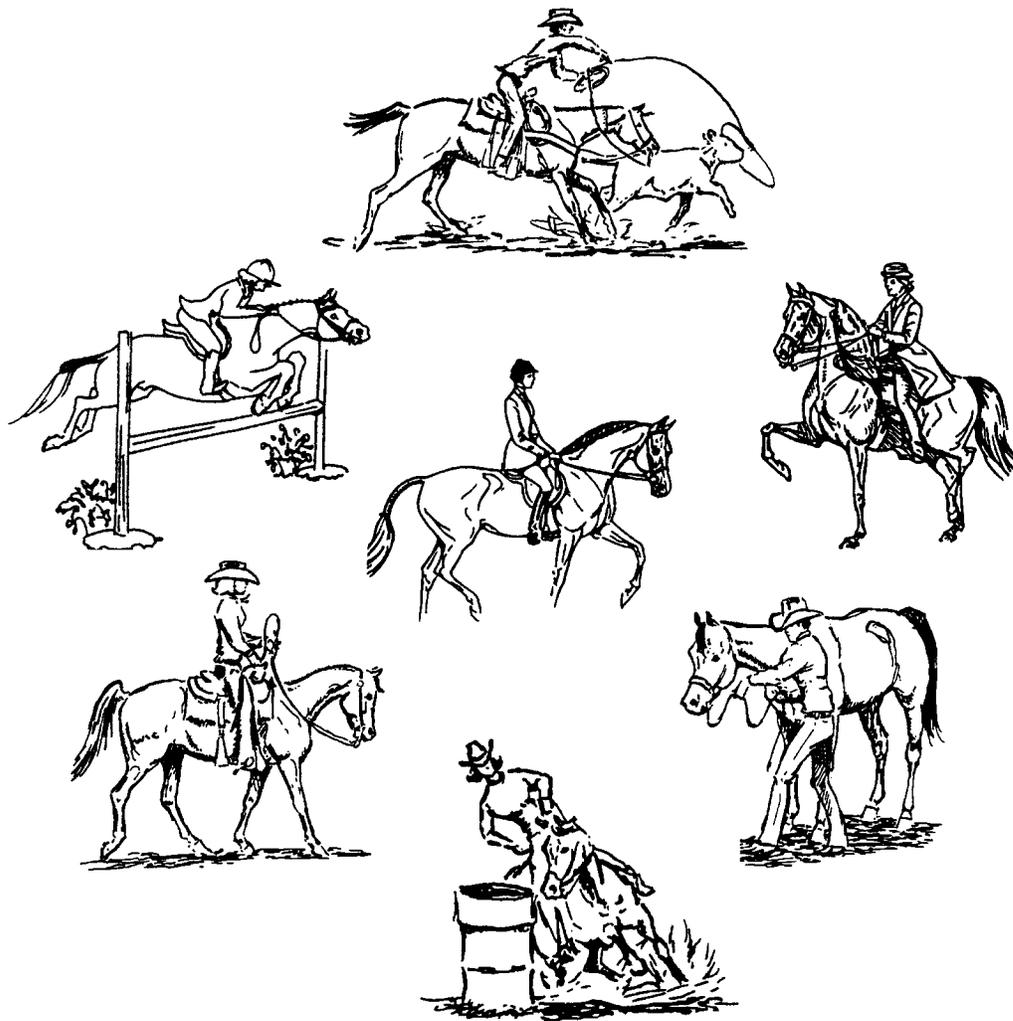

4-H HORSE PROJECT

MA 1500C
Member's Manual



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Acknowledgments

This revised edition of the Colorado 4-H horse project manual has had many contributors. Members of the Colorado State University Cooperative Extension Horse Program Committee collected and reviewed information for use in this manual.

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The committee extends special thanks to those who served as consultants or resource persons in writing and reviewing of the manual. We wish to thank Bill Culbertson, Extension Horse Specialist Emeritus, for his contribution to the content and artwork in this manual and give him special acknowledgment.

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Disclaimers

The content and recommendations found in this manual are based on average horse industry standards at the time of printing and under certain conditions these recommendations may be under or overstated. Under certain conditions, professional help may be required. When in doubt, consult your veterinarian, county agent or horse industry professional.

Terminology that is gender specific, such as horseman or cowboy, reflect common usage in the industry. No discrimination is intended.



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TABLE OF CONTENTS



Chapter 1: What is the 4-H Horse Project?	1
Chapter 2: Brand and Health Inspection Tips for Equine Transportation	3
Chapter 3: Breeds of Light Horses, Colors and Marking, Size and Determining Age	4
Chapter 4: Conformation and Judging of Horses	16
Chapter 5: Feeding Horses	24
Chapter 6: Housing and Fencing	44
Chapter 7: Your Horse's Health	46
Chapter 8: Grooming	61
Chapter 9: Training	67
Chapter 10: 4-H Showmanship at Halter	71
Chapter 11: Equipment (Tack)	76
Chapter 12: Saddling and Bridling	84
Chapter 13: The Riding Aids and Gaits	87
Chapter 14: Basics: Western Horsemanship	99
Chapter 15: Basics: English Equitation	102
Chapter 16: Horse Safety Guidelines	105
Chapter 17: 4-H Advancement Levels Program	117
Appendix I: Terms and Definitions	122
Appendix II: Breed Associations	128
Appendix III: Balance Your Horse's Feed	133

CHAPTER 1: WHAT IS THE 4-H HORSE PROJECT?



The purpose of the 4-H Horse Project is to help you learn how to care for and use your horse properly — and to have fun while you learn. Through the 4-H Horse Project, you can increase your knowledge and improve your horsemanship skills by learning basic handling principles.

As a member in the 4-H Horse Project, you are expected to learn about your own horse, and horse breeds, safety, body colors, health, markings, care and how to determine a horse's age. In addition, you will learn about shelter, grooming, training, judging, equipment, saddling and bridling, basic horsemanship and showing techniques.

A good horsewoman or horseman trains herself or himself in addition to training horses. You will develop *respect* for your horse, *responsibility* in caring for your horse and *discipline* in the way you handle horses. You also will develop *patience* in training, *neatness* in your own and your horse's appearance, and *pride* in yourself.

You can participate in several activities through the 4-H Horse Project. Topics include western riding, English riding, horse safety, horse judging, horse bowl, horse demonstration, horse public speaking, hippology, riding for the disabled, and, for members without a horse, horseless projects. Once enrolled in the horse project, you can choose any or all of these options.

Basic Requirements of the 4-H Horse Program*

- Own or lease one or more horses (light horse, pony, draft horse or mule). Members may also lease a horse. (See lease agreement details in the *Colorado 4-H Rule Book*.) Horses must be identified with the State 4-H Horse Identification sheet by June 1 of the current year.
- Feed, care for, groom, exercise and take responsibility for your horse when possible.
- Keep accurate records and note project progress in the 4-H Horse Project Record Book.
- Exhibit or participate with your 4-H Horse Project horse during the 4-H year.
- It is recommended that you give a demonstration or speech, or participate in horse judging, horse bowl, hippology or other 4-H activities (at least at the club level). These activities are not limited to members owning horses.

**These rules do not apply to the horseless horse project.*



CHAPTER 1: WHAT IS THE 4-H HORSE PROJECT?

Being a top horseman or horeswoman requires learning all you can about horses, and setting and achieving goals for you and your horse. With humane training methods, a well-trained horse will respond to your wishes and give you his or her best.

Additional information is available to 4-H Horse Project members and leaders from the Colorado State University Cooperative Extension's The Other Bookstore or your local Cooperative Extension office. Available literature includes *Colorado 4-H Horse Rule Book*, *4-H Horse Project Record Book* and *Fact Sheets*.

Other suggested publications and books:

- *The Horse*, by J. W. Evans, A. Borton, H. Hintz, and L. D. Van Vleck, Second edition, Freeman Company, New York.
- *Feeding and Care of the Horse*, Lon Lewis, Second Edition, Williams & Wilkins, Media, Pa.
- *Horse Industry Handbook*, American Youth Horse Council, Louisville, Ky.

When I Compete

(4-H rule while competing at events)

My performance goal is never only to beat someone else.

I respect and learn from other competitors more skilled than myself.

I don't criticize other competitors, officials or judges.

I do my best always.

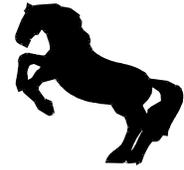
I have fun.

I stay home if I can not follow the above rules.

Humane Policy Statement for 4-H Horse Project

It is the responsibility of every 4-H member to ensure that proper care is taken of their horse according to acceptable methods of good equine husbandry, as set forth by Colorado State University Cooperative Extension and the Colorado Department of Agriculture. A healthy horse requires sufficient food, water, shelter and correct health care. Cruel and inhumane training methods are not appropriate in the Colorado State Cooperative Extension 4-H Horse Program. Specific equine husbandry guidelines and humane training methods are provided in this *Colorado 4-H Horse Project Manual*.

CHAPTER 2: BRAND AND HEALTH INSPECTION TIPS FOR EQUINE TRANSPORTATION



The Colorado State Board of Stock Inspection works with county sheriffs and Colorado State Patrol officers to check livestock transported over Colorado highways. Inspections control theft and illegal movement of animals. Anyone who transports livestock should carry proof of ownership papers such as a brand inspection. Breed registration papers are insufficient proof of ownership. Registered horses are not exempt from inspection laws. All horses, mules, hinnies and burros must have brand inspection papers when:

- transported more than 75 miles, regardless of change of ownership,
- transported out of state, regardless of change of ownership, and when
- there is a change of ownership — including gifts, trades or sales.

For more information on these laws, contact your local brand inspector or call the State Board of Stock Inspection, (303) 294-0895, to reach your local brand inspection office.

When transporting a horse across state lines, a health certificate and proof of a negative Coggins test are required. To obtain current health papers, contact your veterinarian.

See *Chapter 7: Your Horse's Health*, page 50, for an explanation of Coggins test and Equine Infectious Anemia.

A brand is not required for transport or ownership of horses. However, a permanent brand inspection card can be obtained without a brand. A brand helps to distinguish one horse from another of the same color. Brands can be purchased or a new brand can be registered with the State Board of Stock Inspection, with whom all brands must be registered to be legal. For further details on registering a brand, contact the brand office at the telephone number listed above.

In Colorado, up to \$3 of a brand inspection fee goes to the Colorado Horse Development Authority for education and promotion of the Colorado horse industry. This assessment fee supports educational programs such as Colorado State Cooperative Extension and the 4-H Youth Development Program.

CHAPTER 3: DETERMINING BREEDS, COLOR, MARKINGS, SIZE AND AGE



What is a breed?

A breed is a group of animals with a common origin. Each group, or breed, has definite breed characteristics not commonly found in other breeds. These characteristics are fixed in the genetic makeup of the breed and will be passed from parents to offspring. Many 4-H'ers can identify Chevrolets or Fords by body styles. You can recognize horse breeds the same way.

Some popular pleasure breeds found in Colorado include Quarter Horse, Arabian, Appaloosa, Morgan, Thoroughbred, American Saddle Horse and Paint Horse. Popular pony breeds for smaller riders are Shetland, Welsh and Pony of the Americas (P.O.A.). Horses that are crossbred are produced from mating two or more breeds and on table 1, pages 8–10, there is more information about many of the breeds found in Colorado.

When you learn to recognize breed characteristics, you can identify if a horse is a Thoroughbred, Arabian or Quarter Horse. You will soon be able to tell when certain breed characteristics appear in crossbred horses.

You are not required to purchase a purebred or registered horse for a 4-H project. Select a healthy, sound, well-mannered horse. As you learn more about horses, you may begin to prefer one breed over another. Remember every breed has good points, but no matter what its breed, your horse can only be as good as your ability to handle it.

Owning a horse is an expensive commitment and a big responsibility; horses require time. Consider this before buying a horse. When choosing a breed, keep in mind:

- the rider's age, size, interest and riding style,
- the family's knowledge of horses,
- available facilities, and
- what you can afford.

Horses are classified, regardless of breeding, to the purpose for which they are best suited. Some breeds may have horses classified in more than one type. When selecting a 4-H mount, determine what style or classification best fits you and your family's interest. Stock horses are used most frequently in Colorado on ranches and for pleasure riding, but they are also for showring competitions. English pleasure, hunter and jumper horses are show horses and are competitive. The type and conformation of major horse breeds are described in the *4-H Horse Judging Guide*.

Once you decide on a classification, select a horse that fits you. A beginner should not choose an unbroken horse, generally the outcome is not good. It is common practice to have a veterinarian, riding instructor, trainer or local 4-H leader inspect a horse before you purchase it. A veterinarian can perform a pre-purchase exam to determine if the horse is healthy or has structural problems that would affect its athletic ability.



Horse classifications

Stock horse

These horses are short-coupled, deep-bodied and well muscled. They were developed to work cattle, and often will compete in rodeos. Quarter Horse, Appaloosa, Arabian, Paint, Morgan or P.O.A. usually predominate stock horse breeds. Their easy-going gaits are the walk, jog and lope.

English style

Horses of this type are found in all light breeds. Their walk, trot and canter are popular for pleasure riding. English pleasure horses usually are more angular than stock horses and have more extreme style and action. Some of the popular breeds are Saddlebred, Morgan and Arabian.

Hunter

A hunter is a large, clean-cut horse bred for cross-country riding and jumping. It moves boldly and briskly and has a long purposeful stride. They are usually Thoroughbreds or crossbreeds selected for stamina, speed and surefootedness.

Ponies

Ponies are small horses less than 14.2 hands in height at maturity. Most common are the Shetland and the medium-sized Welsh pony. These two breeds often are crossed with Arabians, Morgans and other breeds of light horses to produce larger, more spirited ponies. The POA is the result of cross breeding an Appaloosa with a Shetland. Hackney ponies are noted for their high trotting action and light carriage use.

Sporhorses (warmbloods)

Some of the popular breeds are Holsteiner, Trakehner and Hanoverian. These breeds are used for dressage, jumping, combined training and combined driving. The warmbloods combine the Thoroughbred and Arabian blood with draft breeds.

Gaited horses

These horses have a unique gait that results in a smooth and rhythmic comfortable ride. Each breed has a specific synchronous lateral gait that is characteristic to the breed. Some gaited breeds are Paso Fino, Peruvian Paso, Tennessee Walking Horse, Missouri Fox Trotter and Rocky Mountain Horse.

Registered

These are horses belonging to a specific breed with registration papers documenting the horse's ancestors. Some registered breeds are considered purebreds. Other breeds of horses have open registries.

Crossbred

A crossbreed is a horse that combines the characteristics of two or more horse breeds.

Color breeds

These are breeds of horses that are bred for their coat colors or markings. Some color breeds are Pintos, Palominos and Buckskins. These horses can sometimes be registered with more than one association.

Draft horses

These breeds are heavily muscled horses used as workhorses. They stand 16 hands or taller and weigh 1,600 pounds or more. Some breeds of draft horses are Percherons, Belgians, Shires, Clydesdales and Suffolks.



CHAPTER 3: DETERMINING BREEDS, COLOR, MARKINGS, SIZE AND AGE

Some breeds of horses

Arabian

Identified by a finely chiseled head and dished face, long arching neck, high tail carriage and light build. They stand 14.1 to 15.2 hands tall and weigh 800 to 1,100 pounds. Coat color varies from gray, black, chestnut and bay. The Arabian is the oldest breed of horse, developed more than 3,000 years ago. Arabians originated in the Middle East or north Africa. The Arabian is the foundation breed for all modern breeds of horses. They are used for general purpose riding and show.



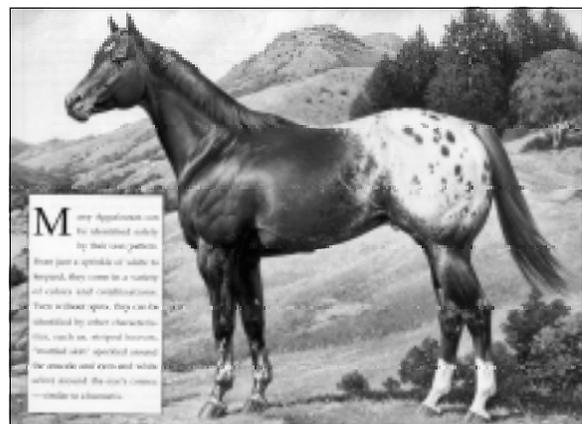
American Quarter Horse

Its well-muscled, compact and very powerful build is what gives the American Quarter Horse the ability to gain speed in a matter of seconds. Quarter Horses originated in the United States; the Quarter Horse is said to have run in colonial America for sport. The Quarter Horse ranges from a height of 14 hands to more than 17 hands; averaging 15 hands. Their use is determined by their physical stature — they can be used for anything from cattle events to English pleasure, depending on the horse. They range in color from golden palomino to bay and sorrel. White markings on the head and lower legs are acceptable. Quarter Horses can also be gray and roan.



Appaloosa

Identified by their coat patterns, most Appaloosas are spotted. However, non-spotted Appaloosas can be registered and shown. Most Appaloosas are between 950 and 1,250 pounds and 14 to 16 hands tall. They are used for general purpose riding and show. The Appaloosa Horse Breed recognizes four identifiable characteristics of Appaloosa markings (see page 13, Appaloosa coat patterns).



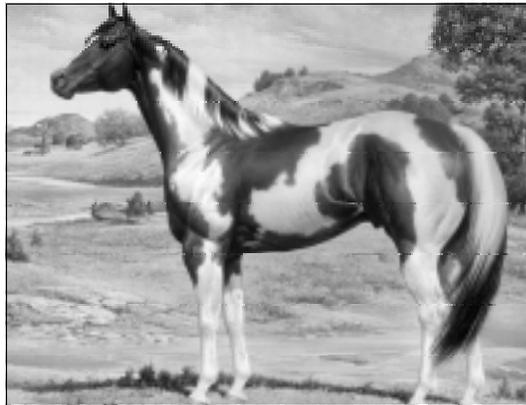


Morgan Horse

The Morgan horse breed is descended from one horse named Justin Morgan born in 1789. Today more than 125,000 Morgans are recorded. Morgan horses are compact and muscular yet refined. They have an upheaded, stylish, spirited gait. The Morgan averages 14.2 to 15.2 hands in height and is usually bay, brown, chestnut or black, but can be buckskin, palomino or gray. They are used for general purpose riding and show.

American Paint Horse

These horses are mainly bred for their color markings and are a recognized breed. The Paint or Pinto characteristic may appear on any base color and is a combination of white and colored markings. The two most common patterns are *tobiano* and *overo*. American Paint horses are a combination of conformation, have strict bloodline requirements and a distinctive stock-horse body type.



Tobiano



Overo

Pinto Horse

Pinto horses are bred for their color, either *tobiano* or *overo*. Pinto horses are spotted horses of any breed registered in the Pinto Horse Association of America. There are four types of Pintos produced by crossing breeds with a breed that passes on saddle, stock, pleasure and hunter characteristics.

Thoroughbred Horse

The thoroughbred originated in England as a middle-distance racehorse, The Jockey Club is the official breed registry for all Thoroughbreds born in the United States. The most common coat colors are bay, brown, black, chestnut and, occasionally, roan or gray. White markings on the face and legs are common. Thoroughbreds are known for their long stride and are used for flat-track racing, polo, hunting or general purpose riding and show.



CHAPTER 3: DETERMINING BREEDS, COLOR, MARKINGS, SIZE AND AGE

Table 1. Horse breeds that can be found in Colorado

<i>Breed</i>	<i>Origin</i>	<i>Color</i>	<i>Characteristics</i>	<i>Primary Uses</i>
Akhal-Teke	Russia	metallic gold, gray, bay	stands 14.2-15.2 hands	riding, racing, dressage
American Saddlebred	Kentucky (Fayette County)	bay, brown, chestnut, black, gray, paint, buckskin	stand 15-16.5 hands, long, and graceful neck, proud leg action, comfortable easy ride	three and five gaited, fine-harness, pleasure, stock, dressage
Andalusian & Lusitano	Spain	white, gray, bay, rare black	well muscled, 15.2 to 16.2 hands	parade, dressage, jumping pleasure, trail
Appaloosa	Oregon, Washington, Idaho	variable, often white over loin and hips with dark, egg-shaped spots; other patterns or solid	eye is encircled by white, skin is mottled, and hoofs are striped vertically black and white	cow horse, pleasure, parade, racing
Arabian	Arabia, Middle East or North Africa	bay, gray, chestnut, some white or black (white Arabians are registered as gray)	beautiful head, short back, high spirited, good endurance	show, pleasure, stock, saddle, racing, endurance
Belgian	Belgium	red roan with black points on chest	15.3-16.3 hands (can be taller), great strength	draft work, shows
Buckskin	United States	buckskin, red, dun, grulla	dorsal stripe on back and sometimes stripes on legs	cow horse, pleasure, show
Cleveland Bay	England (Yorkshire)	solid bay with black legs	larger than most light horse breeds stands 16-16.2 hands	riding, driving, farm (also cross-bred to produce hunters)
Clydesdale	Great Britain	bay, brown, gray, black	white on face and legs, legs carry profuse feather, stands an average 16.2 hands	farm work, promotion and advertisement
Connemara	Ireland	gray, black, bay, brown, dun, cream, some roans and chestnuts	stand 13-14.2 hands	jumpers, saddle and harness shows
Dutch Warmblood	Netherlands	any color	16.0 + hands	jumping, dressage, combined driving
Norwegian Fjord	Viking era	dun with a dorsal stripe, dark bars on legs	13-14.2 hands, compact muscular body	riding, driving, draft purposes, pleasure, jumping, dressage
Friesian	Netherlands	always black, no white markings	stand average 15+ hands, compact muscular, fine head, strong body, short legs with feathering on heels	all-around working horse, circus horse
Hackney	England; on the eastern coast in Norfolk and adjoining counties	chestnut, bay and brown most common, although roans and blacks are seen, white marks are common and desired	in showing, custom decrees heavy harness horses be docked and have their manes pulled; high natural action	heavy harness, carriage, cross-breeding purposes to produce hunters and jumpers.
Hanoverian	Germany	any solid color	16.0 + hands	dressage, jumping, sporthorse
Hungarian Horse	Hungary	all colors, either solid or broken	style and beauty with ruggedness	cow horse, cutting, pleasure, trail riding, hunter, jumper
Miniature Horse	United States	all colors, either solid or broken	stands up to 8 hands, fine, distinct horse-type features	pets, circuses, show

CHAPTER 3: DETERMINING BREEDS, COLOR, MARKINGS, SIZE AND AGE



<i>Breed</i>	<i>Origin</i>	<i>Color</i>	<i>Characteristics</i>	<i>Primary Uses</i>
Missouri Foxtrotter	Missouri, Arkansas (Ozarks)	sorrel, gray, brown	brisk walk with front legs and trot with back legs called the fox trot gait	all-around riding, used in U.S. Forest Service Districts
Morgan	United States	bay, chestnut, brown, black	good endurance, strong, versatile stands average 15.2 hands	all-around riding, show ring under saddle and harness
Mules	Spain	sorrel, gray, brown, either solid or broken	stands 12 to 17.2 hands tall, large well set ears	all-around riding, driving, pack animals
Mustang	United States	any color, coarse	13.2-15 hands tall, known for physical toughness	original cow pony, used by American Indians, now for general riding.
National Show Horse	United States; Saddlebred, Arabian Cross	all colors	refinement, stamina of the Arabian size and high-stepping action of the saddlebred	show ring under saddle, and halter
Paint	United States	tobiano or overo coat color pattern	breeding for coat color rather than specific size or type of horse	all-around riding
Paso Fino	Peru, Puerto Rico, Cuba, Columbia	any color although solid colors are preferred	walking and trotting is natural gait and very comfortable	pleasure, parade, show, endurance, working horse
Percheron	France	gray or black	Stand 15.2-17 hands, powerful stamina and endurance but fine head, beauty and grace of movement	draft and farm work, pulling contests
Peruvian Paso	Peru	any color, but solid colors are preferred	natural, smooth gaited walk and that is comfortable to ride	pleasure, parade, endurance, show, working horse
Pinto	United States, from horses brought in by Spanish conquistadores	half color or colors and half white, many spots well placed, two distinct patterns markings of Overo and Tobiano	glass eyes not discounted, separate registry for ponies and horses under 14 hands	any light horse purpose, especially show, parade, novice, pleasure, stock horses
Pony of the Americas	United States; Mason City, IA	similar to Appaloosa, white over the loin and hips, with dark, round or egg-shaped spots	happy medium to Arabian and Quarter Horse in miniature, ranging in height from 46 - 54 inches	youth western type pony, show, all-around riding, driving
Quarter Horse	United States	chestnut, sorrel, bay, dun, palomino, black, brown, roan, copper	well-muscled, powerful build, small alert ear; sometimes heavy muscles, cheeks and jaw	cow horse, racing, pleasure hunters, jumpers, cutting, reining, roping, barrel racing
Rocky Mountain Horse	eastern Kentucky	all colors, must be solid, white above the knee or hock	stands 14.2 to 16 hands tall, natural, ambling four-beat gait	pleasure, trail riding, endurance riding, working cattle
Shagya Arabian	Syria	gray	usual Arabian characteristics, stands 15 hands	all-purpose riding and sometimes harness
Shetland Pony	Shetland Islands	black, bay, brown, gray, chestnut	not more than 10.2 hands	children's horse, driving
Shire	England (medieval times)	bay, brown, gray, black	stand 18 hands, weigh up to one ton, strong, big, long legs, heavy feathering.	farm work, draft work, show ring
Standardbred	United States	bay most common but all solid colors	15.2 + longer back, good stamina	driving and racing
Tennessee Walker	Tennessee	black, bay, chestnut	four-beat gait walking and trotting stands 15-15.2 hands	saddle and harness shows, all-around riding



CHAPTER 3: DETERMINING BREEDS, COLOR, MARKINGS, SIZE AND AGE

<i>Breed</i>	<i>Origin</i>	<i>Color</i>	<i>Characteristics</i>	<i>Primary Uses</i>
Thoroughbred	England	brown, bay, chestnut, or any other solid color	stand 14.2-17 hands; fine head, elegant neck, sloping shoulder, powerful haunches	racing, hunting, jumping, pleasure, dressage
Trakehner	Germany	any solid color	usually 16-16.2 hands	dressage, jumping
Welsh Pony	Wales	any color except piebald and skewbald, gaudy white markings are not popular	small size, 12.2-14 hands	children, small adults, harness, racing, parade roadsters, trail riding, stock cutting, hunting
<i>Asses: Jacks and Jennets</i>	domesticated in Egypt	black with white nose, red, gray	compared to horses are smaller, shorter hair on mane and tail, no chestnuts on inside hind legs, long ears, smaller and deeper hoofs, and harsh voice (bray), less subject to founder or injury, more hardy	crossing with horses to produce mules; purposes include riding, driving and plowing

Body colors

Use the terms for various body colors and markings to correctly describe or identify a horse. Color descriptions describe body colors of many horse and pony breeds. Each breed has preferred colors which are stated in the literature available from the respective breed associations.

Bay

Body color ranges from tan to red, to reddish-brown or mahogany; mane and tail are black. Usually lower legs are black.

Black

A true black is without light areas with a black mane and tail.

Brown

Body color is brown or black with light areas at muzzle, eyes, flanks and inside upper legs; mane and tail are black.

Buckskin

Body color is yellowish or gold. Mane and tail are black, and usually black lower legs. No dorsal stripe.

Chestnut or (Sorrel)

Body color is dark-red or reddish-brown. Mane and tail usually are the same color as body but may be flaxen. Color varies from bright yellowish to red or rich mahogany.

Cremello

Double dilution of chestnut with off-white or cream body and even lighter mane and tail. Also called type A albino—not a true albino.

Dun

Body color is yellowish or gold; mane and tail are black or brown. Often has a dorsal stripe, zebra stripes on legs and a transverse stripe over withers.

Gray

CHAPTER 3: DETERMINING BREEDS, COLOR, MARKINGS, SIZE AND AGE



Mixture of white and black or other colored hairs, usually born solid-colored or almost solid-colored and gets lighter with age.

Grullo or Grulla

Body color is smokey or mouse-colored, not a mixture of black and white hairs — each hair is mouse-colored. Mane and tail are black, usually lower legs are black and may have a dorsal stripe.

Palomino

Body color is golden-yellow, with a white mane and tail.

Perlino

Double dilution of bay with off-white or pearl body and rust-color tips on the mane, tail, and sometimes on lower legs. Also called type B albino—not a true albino.

Red Dun

This is a form of dun with body color solid-yellowish or flesh-colored. Mane, tail and dorsal stripe are red.

Roan

Blue roan is a somewhat uniform mixture of white with black hairs over the body, usually with a few red hairs. Red roan is more or less a uniform mixture of white with red hairs on the body, usually darker on the head and lower legs. This color will not change with age.

White

A white horse has white skin and hair, but has some dark pigment in locations such as ears, eyes, stomach and hooves. It is born white and will not change with age. A true white foal is born with no pigment, having a genetic disorder called lethal white foal syndrome, known as lethal white, and does not survive.



CHAPTER 3: DETERMINING BREEDS, COLOR, MARKINGS, SIZE AND AGE

Markings

To identify a horse, discuss the horse's marking, not just its body color. Instead of identifying a horse as a dark sorrel, also mention its white blaze and three white socks. There are a variety of common markings.

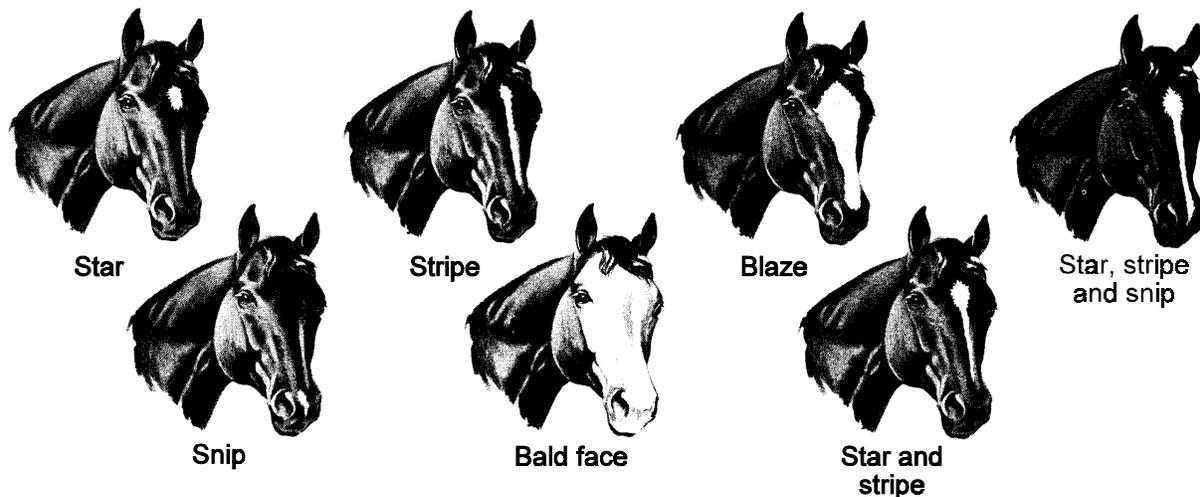


Figure 1. Head Marking.

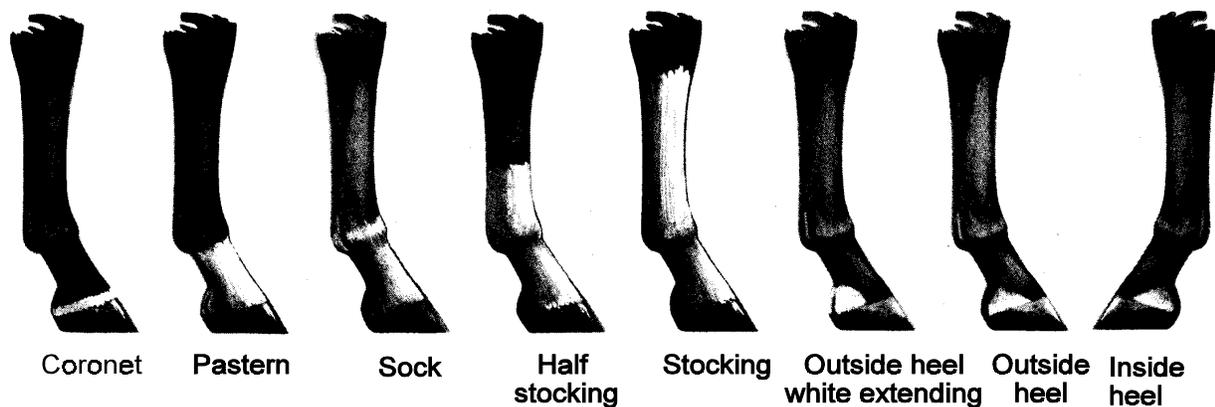


Figure 2. Leg Marking.



Other markings

Appaloosa coat patterns

The Appaloosa Horse Breed recognizes four identifiable characteristics of Appaloosa markings. Appaloosa patterns may appear on any basic coat color. Appaloosa horses can have spotted coat patterns such as leopard — white with spots over the entire body — or a blanket — a white patch covering the horses' hip with or without spots on the blanket. In addition to coat patterns and mottled skin, Appaloosas have white sclera around the eyes, white surrounding the pupil and have striped hooves. Appaloosas may be solid colored with the other characteristics present.

Black Points

Characteristics are a black mane and tail and extremities of the body (ears, muzzle, legs, etc.).

Paint or Pinto

The paint or pinto characteristic may appear on any base color and is a combination of white and colored markings. The two most common patterns are *tobiano* (*toe-bee-ah'-no*) and *overo* (*oh-ver'-oh*).

- The *tobiano* horse will usually have head markings like a solid-color horse. Its legs may be white and body markings are often regular and distinct oval or round patterns that extend down over the neck and chest. A two-toned tail is common.
- The *overo* horse often has a bald face and at least one leg will be dark in color. Body markings are usually irregular, scattered or splashy white markings, often called calico patterns that commonly do not cross the back between the withers and tail. The tail is solid-colored, usually dark but occasionally white. Glass or blue eyes are more prevalent in overos than in tobianos.

Ray or dorsal stripe

The ray or dorsal stripe is a darker line found down the backbone of some horses.

Transverse cross

The transverse cross is a dark stripe (same color as dorsal stripe) that runs perpendicular across the withers.

Zebra marks

Zebra marks are dark stripes that run horizontally on the forearm, knees and cannon.

Horses are measured in hands

The unit of measurement used to define a horse's height is a hand. A hand is equal to 4 inches. Measure the horse from the point of the withers to the ground. A horse that is 61 inches tall is 15.1 hands or 15 hands and 1 inch. A pony is 14.2 hands or less in height at the withers.



Determining a horse's age

Look at the horse's front teeth to judge its age. The following illustrations will give you simple clues that determine the age of a horse. Practice judging a horse's age with help from an experienced person.

A mature male horse has 40 teeth. There are 12 front teeth called incisors, four tushes or bridle teeth, and 24 molars or grinders. A mature mare has 36 teeth; the four tushes seldom are present.

The young horse, either male or female, has 24 temporary or milk teeth including 12 incisors and 12 molars. Milk teeth are smaller and whiter than permanent teeth.

First, learn the names of the incisors as shown in figure 3.

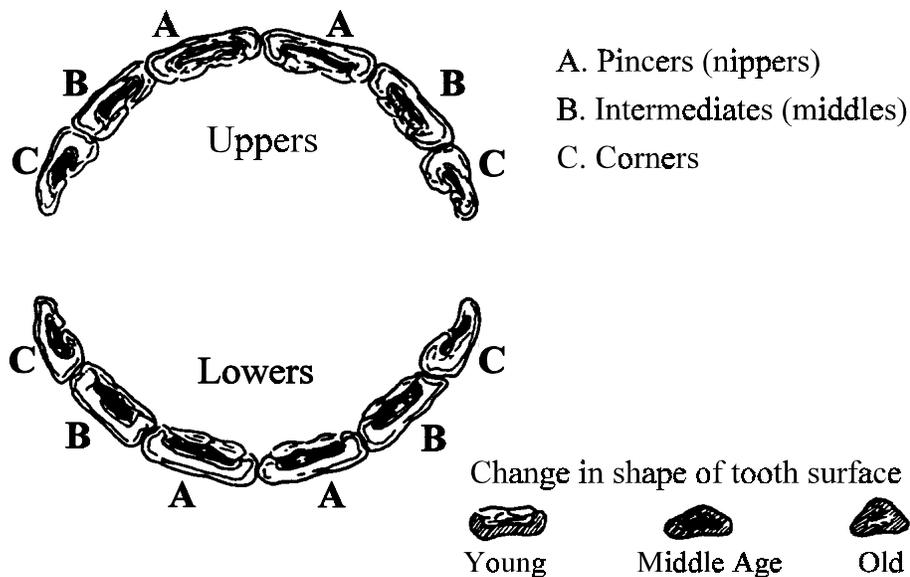


Figure 3. Incisors.

CHAPTER 3: DETERMINING BREEDS, COLOR, MARKINGS, SIZE AND AGE



From birth to 5 years, the eruption of incisors is used to judge age. At 5 years, permanent incisors are all in place. After 5 years, age is determined by wear on the incisors, shape of biting surface and angle at which incisors meet.

For general purposes, judge the approximate age-range by holding the lower lip down for a quick glance to see the shape of the teeth, the angle at which the upper and lower incisors meet, and the degree of wear shown by the length of the teeth. Consider the age as being in the foal period, the full-mouth period (5 years), the smooth-mouth period (about 11 years) and the old-mouth period (>11 years). Remember most horses begin to serve their best at 8 years and many still go strong past 15 years or more.

Study the illustrations in figure 4 for the points to look for at each year of age and practice looking at teeth.

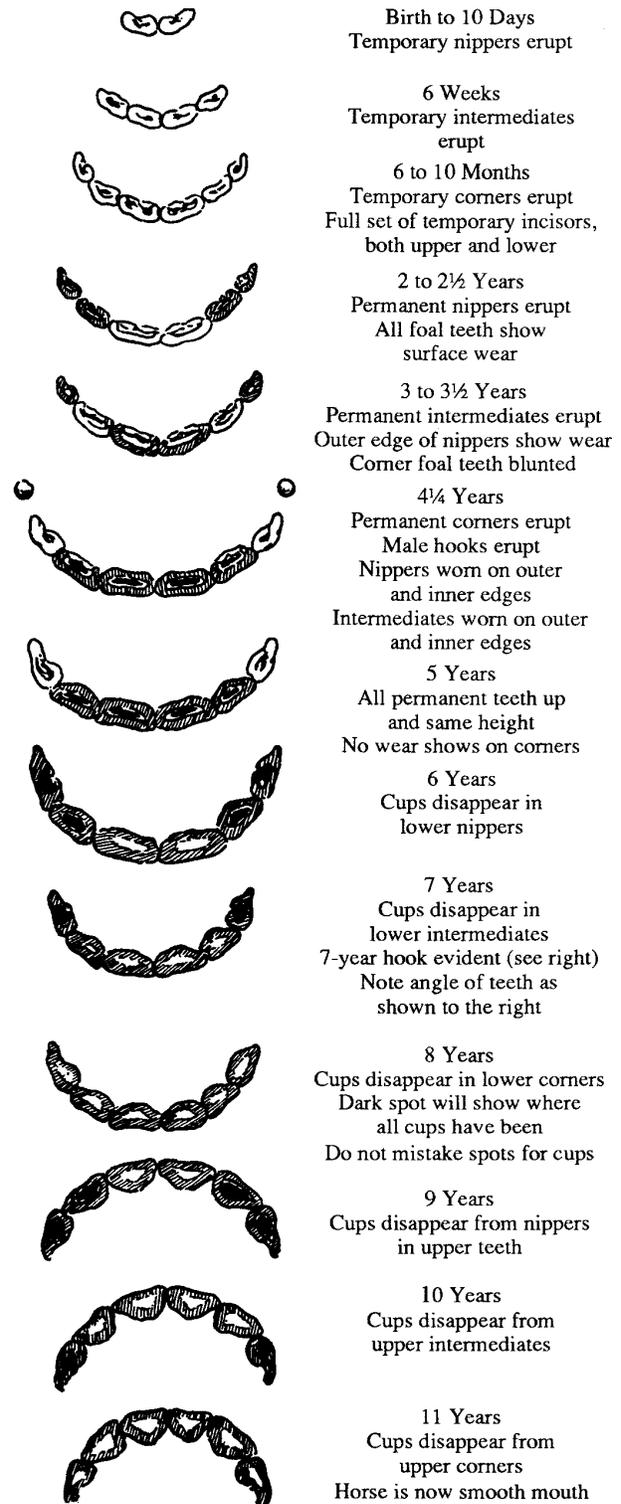


Figure 4. Determine a horse's age by looking at its teeth.

CHAPTER 4: CONFORMATION AND JUDGING OF HORSES



A horse that has good conformation is well balanced, muscled and structurally correct. Understanding conformation is necessary when selecting, caring for and using a horse. The *4-H Horse Judging Guide* contains information on conformation and formal judging. Remember, you evaluate your horse every time you study some part of it for grooming, feeding, shoeing, doctoring or training. If you watch for lameness, you are judging its gait. A lame horse will favor a leg or limp as it moves. To use and care for your horse properly, you must understand conformation, soundness, health and terminology. You also will apply this information to formal showing judging. Judging is an attempt to identify the horse that most closely resembles what is considered the industry ideal. When evaluating conformation, there are four major considerations:

- **Balance and quality**
Quality refers to a horse that *most* fits to the ideal of a specific breed. Quality also refers to a horse that has a clean, well-defined flatbone, clean joints and tendons, fine hair, and is refined through the head and ears. The horse that appears symmetrical with all parts blending together nicely is referred to as a balanced horse. Imagine a horse in the center of a teeter totter: the *board* should stay level, equally heavy in the front half as in the back half.
- **Muscling**
A horse should be well-muscled. Its chest should be fairly wide, deep and full. The forearm and gaskin should be well-muscled, and it should have deep shoulders and a short, strong, muscular back. The croup should be long, level and well-muscled and the rear quarters should be deep and heavily muscled.
- **Structural correctness**
See Figures 5, 6, 7, 8, 9 and 10.
- **Breed and sex characteristics**
The horse should look like the breed represented, possessing the characteristic breed standards. Mares should be feminine in appearance; stallions should be masculine in physical development. The gelding should display some masculine characteristics with refinement.

When judging a class of four halter horses, consider these characteristics and use a score chart as an aid to rank individual horses. Rank each characteristic first through fourth. Total the numbers for each horse; the horse with the lowest total score is first.

Example score chart

Horse #	Balance	Muscling	Structure	Breed & Sexual Characteristics	Total
1	1st	2nd	1 st	1st	5 pts.
2	2nd	1st	2 nd	2nd	7 pts.
3	3rd	4th	3 rd	3rd	13 pts.
4	4th	3rd	4 th	4th	15 pts.

James C. Heird, *Colorado State University Equine Sciences Horse Judging Manual*, 1992.

Final placement of these horses would be 1-2-3-4.

CHAPTER 4: CONFORMATION AND JUDGING OF HORSES



Parts of a horse

The parts of a horse are shown in figure 5 below. Learn and use the correct terms for parts of the horse. Figures 6-15 show more detail.

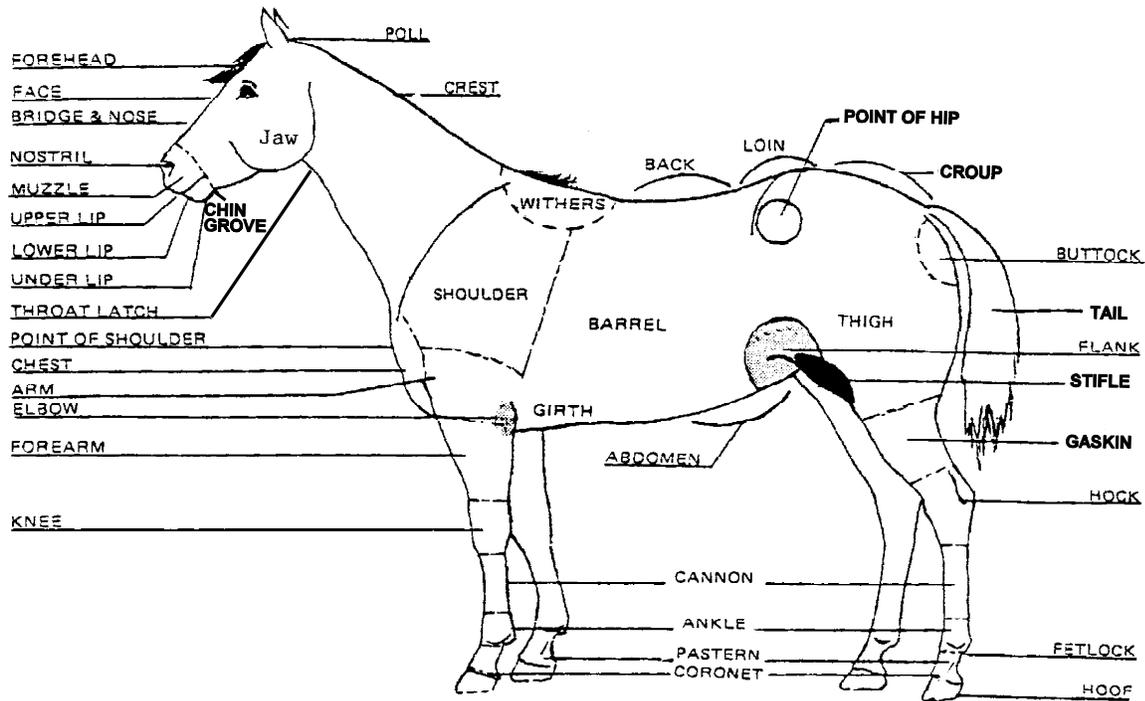


Figure 5. Parts of the horse.

Parts of the Hoof

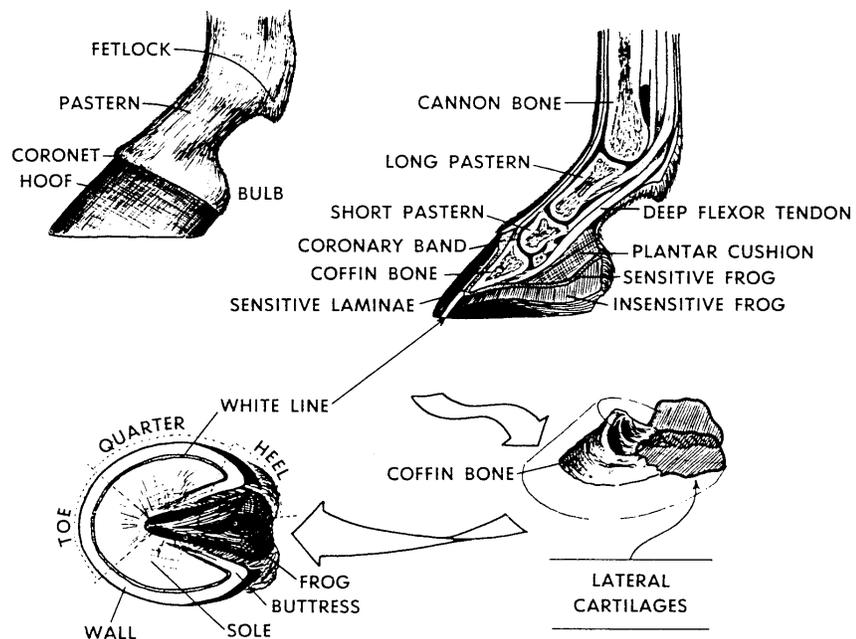


Figure 6. Parts of the hoof.



CHAPTER 4: CONFORMATION AND JUDGING OF HORSES

Feet and legs

Study the following illustration of correct and incorrect leg positions commonly seen in horses. Imagine these lines as you study live horses to help you determine if the feet and legs are correct.

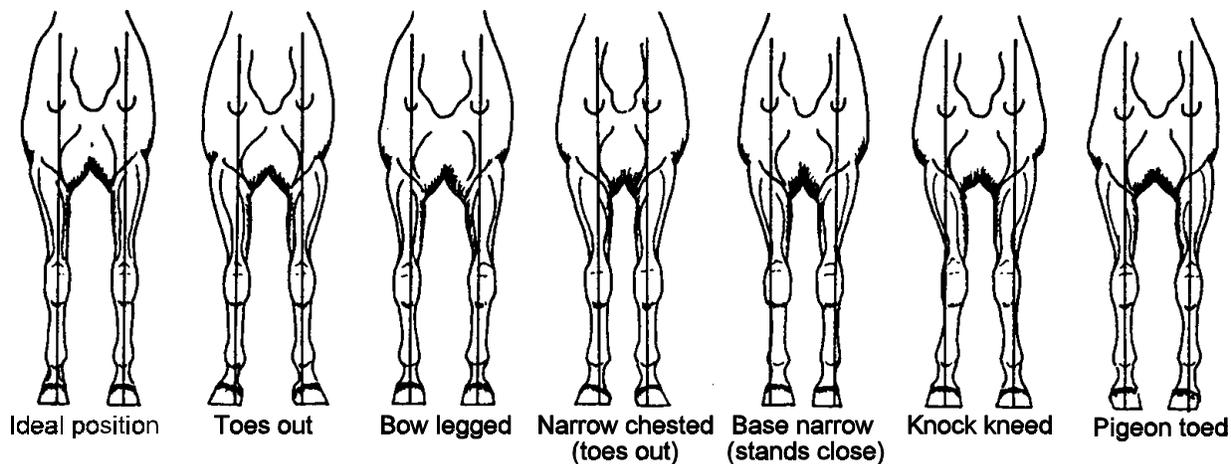


Figure 7. A view from the front. A vertical line from the point of the shoulder should fall in the centers of the knee, cannon, pastern and foot. It divides the entire leg and foot into equal halves.

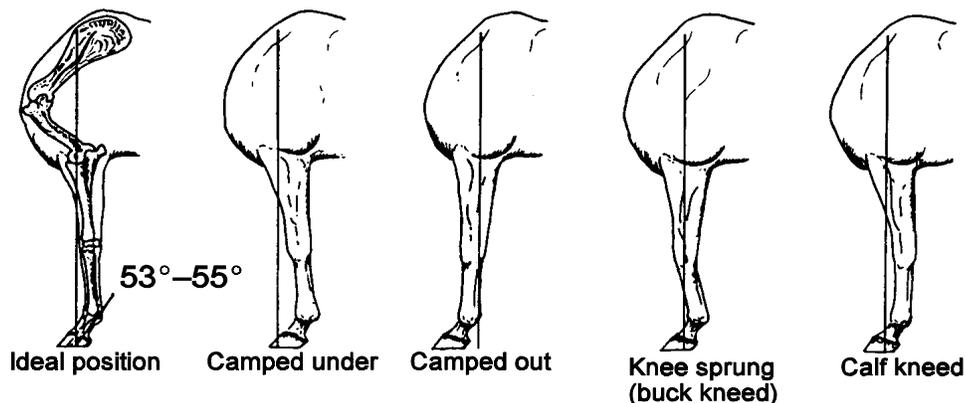


Figure 8. The front legs from a side view. A vertical line from the shoulder should fall through the center of the elbow joint and the center of the foot.

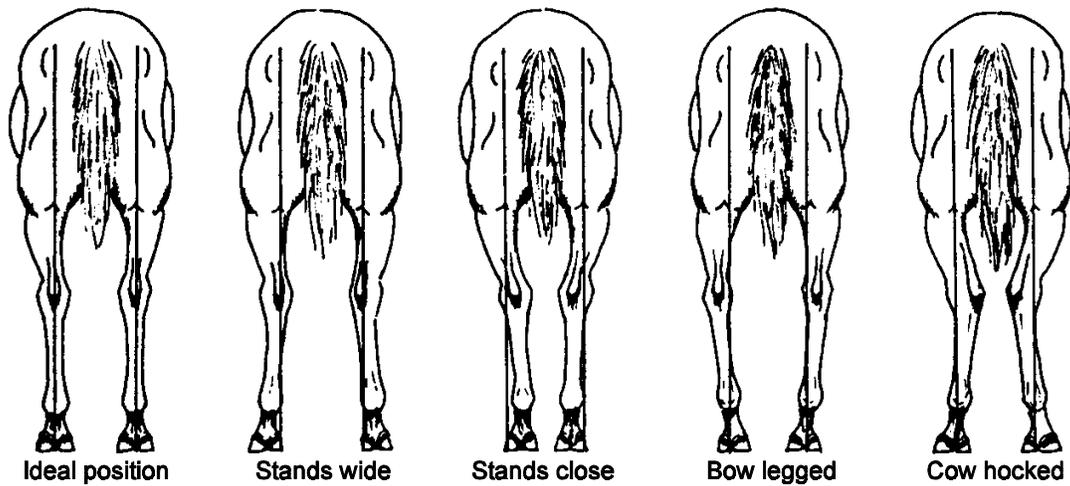


Figure 9. The hind legs from the rear. A vertical line from the point of the buttock should fall in the centers of the hock, cannon, pastern and foot.

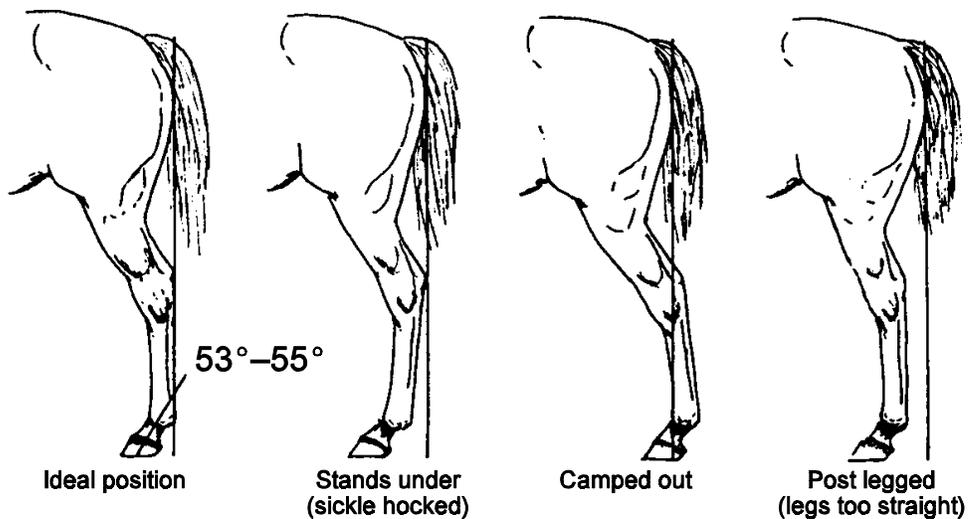


Figure 10. The hind legs from the side. The vertical line from the point of the buttock should touch the rear edge of the cannon from the hock to the fetlock and meet the ground behind the heel.



CHAPTER 4: CONFORMATION AND JUDGING OF HORSES

The action of the horse should be straight and true. A horse may move in a crooked manner because of crooked feet and legs or because of being pulled off-balance as it is led. Watch how a horse moves to help determine if it has a straight action.

Since few horses move perfectly true, it's important to know which movements may be unsafe. A horse that *wings in* can be more unsafe than one that *wings out* because it may trip itself. Some travel close, others travel wide. Observe the difference and determine how much value to place.

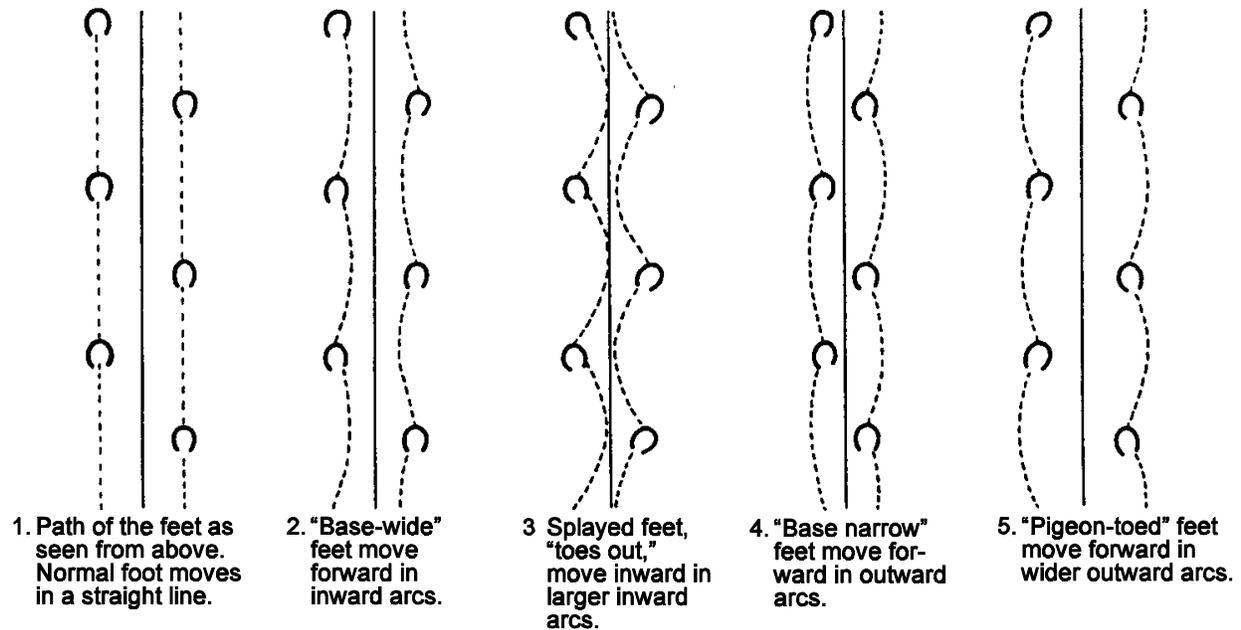


Figure 11. The path of flight each foot takes relates to the structure of the foot and leg. Example 1 shows normal path. Examples 2 and 3 *wing in*, while examples 4 and 5 *wing out*.

Figure 12 shows how the length and shape of the hoof affects the path of flight of the foot as the horse moves. Trimming and shoeing influence this. Keep the hoof in its natural shape to avoid leg strain. The correct structure of feet and legs is important because of the shock and strain on these parts when a horse moves. If the body structure is unsound, the horse may break down in use. Evaluation of inherited unsoundnesses in body structure is especially important in breeding classes.

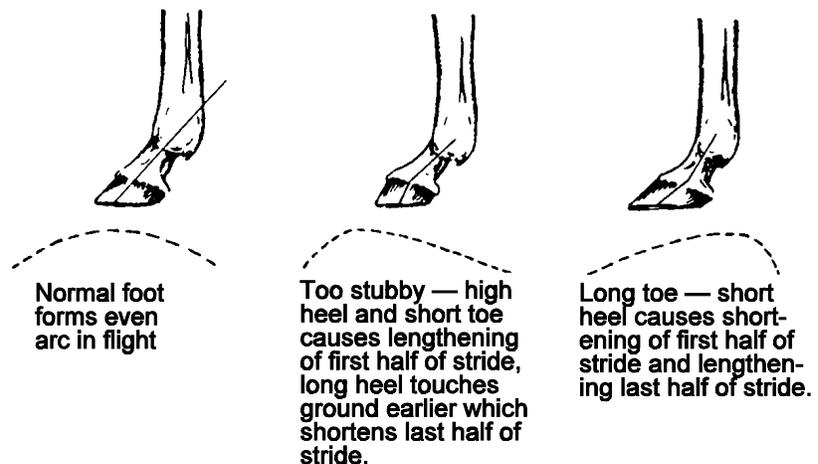


Figure 12. Length and shape of hoof affect the path of flight or the arc of the foot as it moves.



Blemishes, lameness and unsoundness

A horse that is unsound has imperfections that affect its ability to serve. Many unsound conditions are the result of weaknesses in body structure. These weaknesses will become worse when excess strain is placed on already weak parts. A horse that is lame is disabled so that movement, especially walking, is difficult and uncomfortable.

Blemishes are imperfections found on horses, but usually do not affect the horse's ability to serve. Old, healed-over wire cuts, rope burns and saddle marks are blemishes.

No horse is perfect. Understand common blemishes, lameness and unsoundness are judged on their importance in relation to the way you will use the horse.

Figure 13 shows a horse with the most commonly found unsoundnesses.

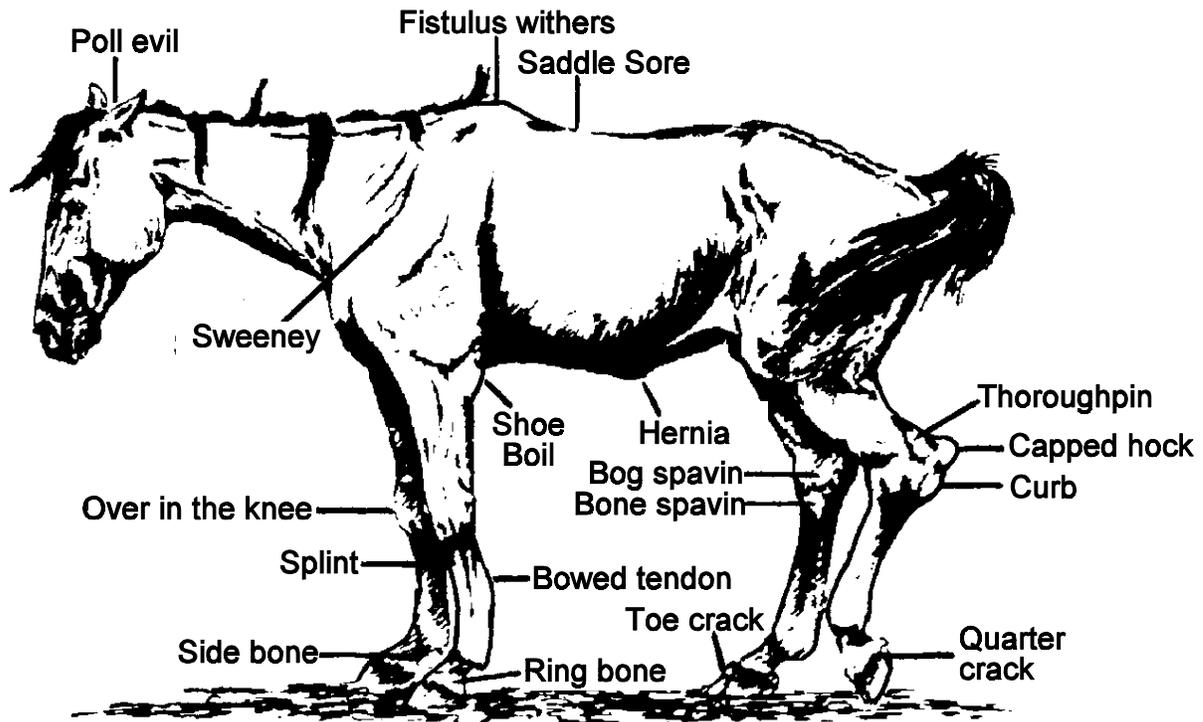


Figure 13. Unsoundnesses are weakness in body structure.



CHAPTER 4: CONFORMATION AND JUDGING OF HORSES

Definitions of blemishes, lameness and unsoundness

Poll evil — inflamed swelling of poll between ears.

Fistulous withers — inflamed swelling of withers.

Saddle sore — inflammation caused by poor fitting tack.

Thoroughpin — puffy swelling on upper part of hock and in front of the large tendon.

Capped hock — enlargement on point of hock, depends on stage of development.

Curb — hard swelling on back surface of rear cannon about 4 inches below point of hock.

Quarter or sand crack — vertical split in the wall of the hoof.

Toe crack — vertical crack in the toe of the hoof, similar to a quarter crack.

Bone spavin or jack spavin — bony growth usually found on inside lower point of hock.

Bog spavin — meaty, soft swelling that occurs on inner front part of the hock.

Hernia — protrusion of internal organs through the wall of the body, umbilical or scrotal areas are most common.

Shoe boil or capped elbow — soft, flabby swelling at the point of elbow.

Bowed tendons — enlarged, stretched flexor tendons behind the cannon bones.

Ringbone — bony growth on either or both sides of the pastern.

Sidebone — ossified (hardened, bone-like formations) lateral cartilage, protruding above and toward the rear quarter of the hoof head.

Splint — capsule enlargement usually found inside upper part of front cannon.

Wind puff — puffy swelling that occurs on either side of tendons above fetlock.

Sweeney — atrophy or decrease in size of a single muscle or group of muscles, usually found in shoulder or hip.



4-H judging

In 4-H, you can enroll in a horse judging project and judge both halter and performance horse classes.

Halter

Horses are judged on balance and quality, muscling, structural correctness, and breed and sex characteristics. The *4-H Horse Judging Guide* outlines rules. Ask your Colorado State Cooperative Extension agent how to become a member of a local team.

Performance

Horses are shown in classes such as western pleasure, horsemanship, western riding, reining, hunter under saddle, hunter hack and equitation.

Each class is placed by the ability of the rider and horse and the way the horse moves. When judging performance, be familiar with the rules of each class and, if applicable, how they are scored.

In a contest, you may judge two to four halter classes and four to seven performance classes. Classes consist of four horses. Each member is judged on how he or she placed that class. Four to six classes will be selected by officials for contestants to give *reasons*. *Reasons* are verbal explanations on why you placed the class as you did. Your reasons should:

- be accurate,
- emphasize major differences,
- include correct terms when describing the class, and
- flow in an organized sequence.

Your delivery of reasons should be convincing and bobble free. Your coach can help you reach this level of skill.

CHAPTER 5: FEEDING HORSES



Anatomy and physiology of the digestive tract

Understanding the anatomy and function of the horse's gastrointestinal (GI) tract is critical for maintaining its health and preventing conditions such as colic and laminitis.

A horse's GI tract consists of the mouth, esophagus, stomach, small intestine, cecum, large colon, small colon and rectum (see figure 14). The volume and length of each compartment of the GI tract is shown in the table below.

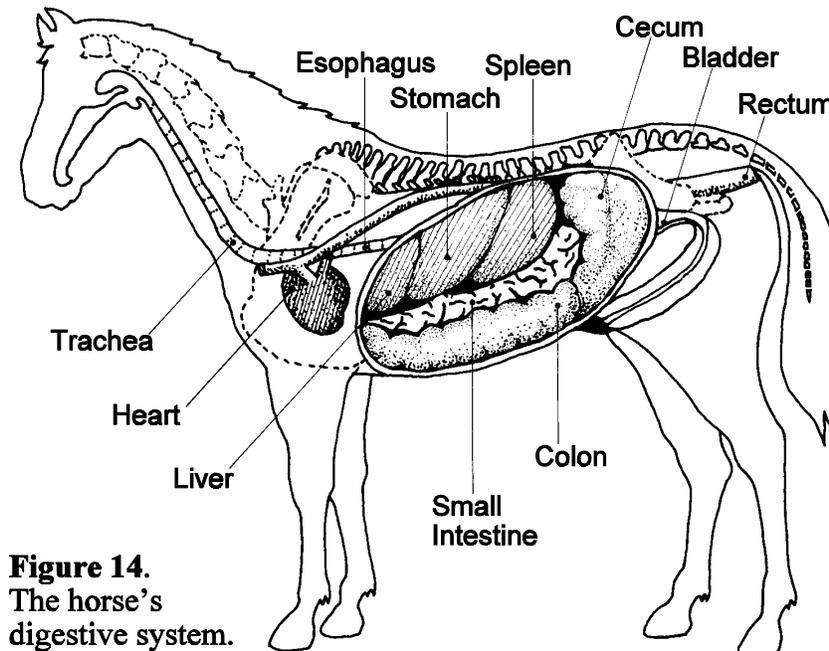


Figure 14. The horse's digestive system.

	Volume (gal)	Length (ft)
Stomach	2-4	—
Small intestine	10-12	50-70
Cecum	7-8	3-4
Large colon	14-16	10-12
Small colon	approx. 5	10

Table 2. Horse digestive tract.

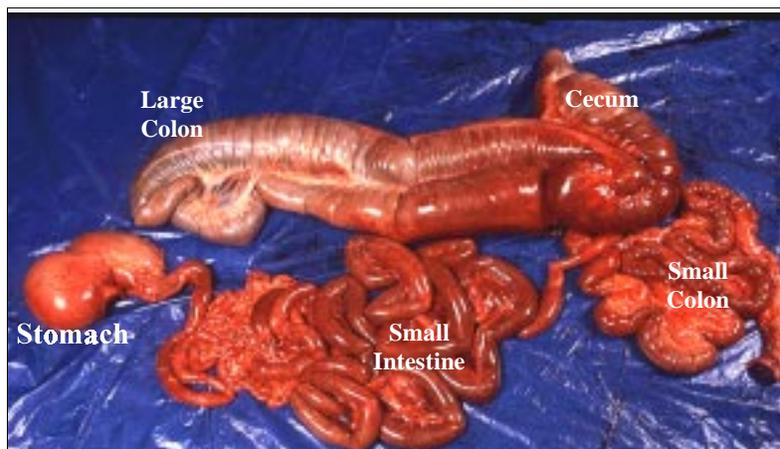


Figure 15. Components of the equine digestive tract.

Forty-five to 72 hours is required for food to completely pass through the digestive tract of the horse. The time food spends in various parts of the GI tract is illustrated in table 3.

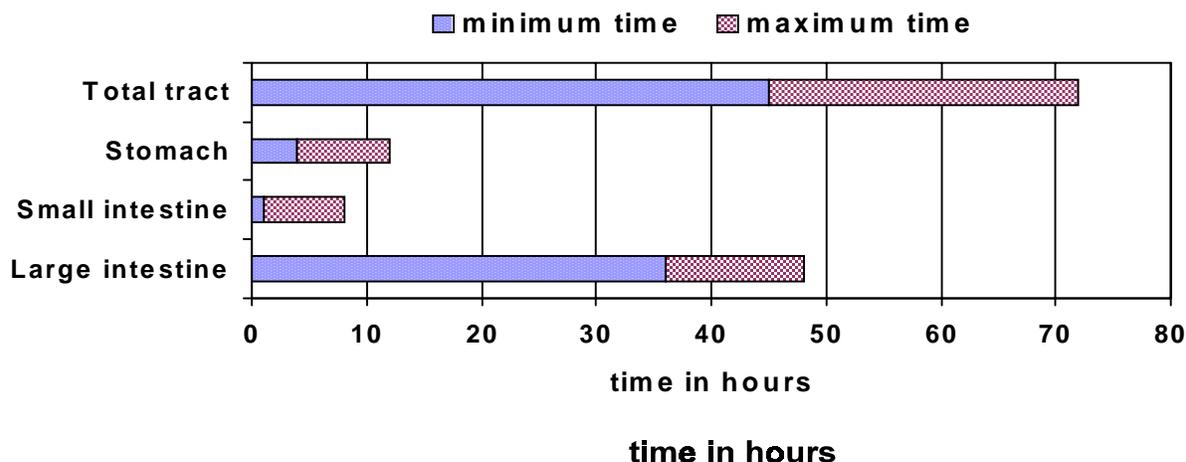


Table 3. Rate of passage of food through various segments and the total equine GI tract.

Each part of the digestive system serves a specific function in the digestion and absorption of nutrients. The mouth has several important functions including prehension (seizing and grabbing) of feed, chewing and swallowing. The lips of the mouth serve as prehension devices aiding in the movement of feed into the mouth and the selection of feeds that are most palatable or tasty. Incisors (front teeth) are used to cut feeds such as forages, whereas the molars (teeth in the rear of the mouth) are used to grind feed, reducing the particle size and aiding in the digestive process. The mechanical grinding of feed by the teeth is known as mastication. Horses chew in a circular motion that results in the eventual formation of sharp points on the molars that can cut the cheeks, a painful situation that may impair mastication. Sharp points on molars are prevented by having the teeth “floated,” which involves filing the sharp points down. Your veterinarian can provide this service. Swallowing is another function of the mouth. Ingested feed is ground and incorporated into a bolus (ball), lubricated with saliva and then swallowed into the esophagus.

The esophagus can be thought of as a pipeline from the mouth to the stomach. No digestion occurs in the esophagus. Food in the esophagus can only move in one direction — toward the stomach. If food becomes lodged in the esophagus the horse may choke. Although choking is painful and uncomfortable to the horse, it is not life-threatening like that in humans when the airway is cut off. A choking horse’s head often is hung low with saliva and masticated food coming out of the horse’s nostrils. A choking horse requires immediate veterinary attention and is usually treated with minimal complications.

The stomach and the small intestine make up the foregut of the horse; the cecum, large colon, small colon and rectum make up the hindgut of the horse. The majority of starch (the principle component of cereal grains metabolized for energy), protein, fat, vitamins and minerals are digested and absorbed in the foregut (primarily in the small intestine) by enzymes and other digestive substances secreted into the small intestine by the pancreas, liver and cells making up the wall of the small intestine. The hindgut contains microbes, which are bacteria and protozoa capable of digesting dietary fiber supplied by roughages in the diet. The horse does not produce enzymes which digest fiber and need microbes to break it down. Microbes enable horses to



utilize fiber quite well. Horses require fiber in their diet for the gut to function normally. It is recommended that the diet contain *no less than 1 percent of body weight of roughage such as hay, pasture, etc.* For example, a 1,100 pound horse requires at least 11 pounds of roughage. It also is important not to overfeed grain to horses because this causes digestive upset such as colic. When too much grain is fed, much of it is digested in the small intestine. It spills into the hindgut where microbes digest it rapidly, producing large amounts of gas and acid, both of which can cause discomfort and manifest into colic and, in some cases, laminitis. It is recommended that horses *not be fed more than 1 percent of body weight from a grain source.*

Some other important rules of thumb for maintaining the health of the horse's digestive system are to feed consistently. For example, feed two to three small meals at the same times each day. The horse's gut functions best with small amounts of feed moving through it regularly, keeping it somewhat full. This is best accomplished by trying to maximize the amount of forage being fed in the diet and minimize the amount of grain *while still meeting the horse's requirements.* This is not to say that grain should not be fed, but only feed the amount necessary to provide what is lacking in the forage. In addition, horses should have constant access to plenty of fresh, clean water for the gut to function normally.

In summary, the horse's GI tract is a delicate system. Feeds should be selected not only for their ability to meet the animal's nutrient requirements, but also for compatibility with the horse's GI tract.

Feeding your horse

When you feed your horse, take into account its age, weight, work and growth to determine its diet. Some horses are easier to feed and require fewer nutrients than others. Other horses are very difficult to feed and require special attention. It is important to know how to feed your horse and to make sure it gets all the nutrients it needs.



Five types of nutrients

A horse requires five types of nutrients. Each nutrient has an important role in the horse's body and is needed to keep the horse healthy. Those nutrients are:

- energy nutrients (such as carbohydrates and fats),
- proteins,
- vitamins,
- minerals and
- water.

None is more important than another with the exception of water and energy nutrients. Energy in feeds is measured in Megacalories (Mcal) of digestible energy (DE).

Water

Water is the greatest single part of nearly all living things. Water performs many tasks in the body. It makes up most of the blood which carries nutrients to cells and takes waste products away. In addition, water is the body's built-in cooling system; it regulates body heat and acts as a lubricant. A horse drinks about 10 to 12 gallons of water daily depending on the work it is doing. In hot weather, a horse may drink up to 15 to 20 gallons of water. In very cold weather, water heaters may be needed to prevent the water from freezing.

Energy nutrients

Energy nutrients are the body's fuel and make up the bulk of the diet. After food is digested, blood carries its energy to the body. Energy nutrients power muscle movement to walk, breathe and blink eyes. (At the same time, this energy maintains body temperature).

- *Carbohydrates* are the main energy source for all animals. Carbohydrates are complex compounds made up of carbon, hydrogen and oxygen. Cellulose (carbohydrates found in hay and grass) is one of the more complex carbohydrates. Horses can digest cellulose (grass and hay) because they have small microbes in their large intestine (cecum) that can break it down.
- *Fat or oil* are another source of energy. Like carbohydrates, fat is made up of carbon, hydrogen and oxygen and also provide energy for movement and heat. Energy in fat is more concentrated than energy in carbohydrates. Fat has 2.25 times more energy per gram than carbohydrates.



Proteins

Proteins supply material for body tissue. During digestion, proteins break down into amino acids. Amino acids build bodies; they enter the blood stream from the intestine, and blood carries amino acids to all parts of the body. They form body tissue.

Proteins eventually become muscle, internal organs, bone and blood. Skin, hair, hooves and many other parts of a horse also are made of protein. Protein not needed to maintain or build a horse's body is either converted into energy or passed through the digestive system. Total protein in feeds is measured by crude protein (CP).

Vitamins

Vitamins are needed in much smaller amounts than other nutrients, but they are just as vital. Each vitamin has a different job in the body.

Some vitamins are in the food a horse eats while others are produced inside the horse. Depending on its diet, a horse may need vitamin supplements. Supplements usually are not necessary if a horse is allowed to graze on grass.

Minerals

Small amounts of minerals usually are needed. Iron, copper, phosphorous, calcium and magnesium are examples of minerals that are important for a horse's body. Without iron, blood cannot carry oxygen to the body's cells. Without calcium and phosphorous, bones and teeth will not form properly.

Calcium and phosphorous should be fed in a ratio that ranges from 3:1 (three parts calcium for each part of phosphorous) to 1:1. An imbalance of these minerals can cause developmental bone disease in young, growing horses.

Types of feeds

Your horse can get essential nutrients from many types of feed.

Roughage/Forage

Roughage, found in hay or grass, is the bulk of the horse's food. Grass or alfalfa hay, or a combination of the two, are good sources of roughage. Grass hay is generally higher in fiber and dry matter than alfalfa, but alfalfa may be higher in protein, energy, vitamins and calcium.

- *Hay* comes chopped or cubed, in pellets or, most common, in longstem hay bales. Many horsemen feed straight alfalfa or a combination of grass and alfalfa to their horses. Grasses used as hay include brome, orchard, and timothy or grasses native to many areas of the country.



- Longstem hay is the traditional baled hay. It is cut, cured, and baled or crimped. It can be bundled in 50- to 80-pound square bales or large, round or long square bales that can weigh tons.
- Hay cubes are about an inch wide and 1- to 3-inches long.
- Hay pellets are ground hay compressed into $\frac{1}{8}$ inch by $\frac{1}{2}$ inch pellets.
- Chopped hay, common in the Midwest, is cut 3- to 4-inches long. Horses can eat it faster and consume more feed in a shorter period of time. Chopped hay is not usually fed to horses.

Horses need a good quality hay. It should be bright green, leafy and fine textured, with a fresh, pleasant aroma. Musty hay, or other indications of mold or heating, and dust, weeds and other foreign material in hay can be unhealthy for an animal. Color is an indicator of quality and nutrient content; good hay is a bright green.

Most nutrients in hay are in the leaves, and leafy hay is a valuable source of food. Leafiness is influenced by the kind of hay, its maturity when cut, the weather conditions while growing and curing the hay, and curing procedures of the hay.

Dust is objectionable in any feed for horses. It not only reduces the taste of the hay, it also aggravates respiratory problems. Sprinkling or dunking dusty hay in water can reduce dust. Avoid feeding moldy or dusty hay.

In the field, heavy rain on cut drying hay, leaches energy and protein from the hay. Hay baled before it is dry enough will lose nutrients through fermentation, or heating in the bale. This sometimes starts fires through spontaneous combustion in barnyard stacks of stored, baled hay. This type of hay is unacceptable for horses.

- *Good pasture* or grass that an animal can graze can be an economical food for horses, but pasture must be maintained. If animals are allowed to graze on a pasture too long, the grass may be killed. Some of the basic requirements for a good pasture are:
 - a supply of appetizing plants such as grasses or legumes;
 - a paddock or stall to house your horse for part of the day. Only use pastures for daily exercise and grazing;
 - a year-round supply of fresh, clean water;
 - shelter from wind, cold and sun;
 - safe, durable fencing;
 - no poisonous plants (see Table 8: Common Poisonous Plants of Colorado, page 43);
 - no equipment, holes or other dangerous materials in the pasture; and
 - grain for highly active horses or if the quality of the grass is poor.

Well-managed pastures reduce feed costs and provide energy, protein, vitamins and minerals to animals. An exercise lot with a few blades of grass is not a pasture; such a lot, or overgrazed pasture, is not a source of nutrients and can be a serious source of internal parasites. When a grass stand becomes too thin, overgrown, coarse or unappetizing to a horse, it should be clipped or mowed. Lush pasture forages can act as a



CHAPTER 5: FEEDING HORSES

laxative in early spring and may cause founder. Introduce horses gradually to pastures by slowly increasing their daily grazing time.

Concentrates

Small grains, such as corn, oats and barley, are known as concentrates. Concentrates are lower in fiber and higher in energy than roughages. The grain should be clean, mold- and insect-free, with a bright color. Grain quality is just as important as hay quality. Grains may be cracked, steamed or rolled, but, if ground too finely, may cause respiratory problems or colic.

Oats are the safest and easiest grain to feed with hay because it is high in fiber and low in energy, and higher in protein than corn. Corn has the highest energy content of any grain and can put weight on a horse quickly. It can be fed on the ear, cracked, rolled or shelled. Barley is an intermediate source of energy and protein content. All grains are low in calcium, but high in phosphorus.

Supplements

Protein and vitamin-mineral supplements are added to the diet to increase the diet's concentration. Grains are energy supplements to a high forage diet. Only add supplements to the diet if something is missing.

Some protein supplements are oilseed meals, soybeans, cottonseed, linseed (flaxseed) meal, peanut meal, sunflower seed meal and rapeseed (canola).

Vitamin and mineral supplements should only be added to the diet if the horse is deficient. Generally, the only minerals of concern in feeding horses are calcium, phosphorus and salt. In some geographical areas, lack of selenium and, in growing horses, copper and zinc, is a concern. Other minerals are likely to be present in adequate amounts in a normal diet.

Commercial grain mixes or complete feeds

Concentrated mixes are cereal grains with supplements added to increase the specific nutrient content of the mix. A complete feed is a grain mix that is high in fiber because it contains a forage or high-fiber byproducts feed such as hulls. Complete feeds are held together, usually by extrusion (puffed up like dog food) or by forming into pellets. If you are feeding a commercial complete feed, you will not need to feed hay (follow the label for feeding recommendations).

There are also feeds for specific classes of horses. Some feeds are specially formulated for young, growing horses (weanlings and yearlings); and for geriatric (aged) horses who are very old and have specific nutritional needs. Some commercial feed companies make pre-mixed, convenient, easy-to-use formulated feeds for horses who are on different hay diets such as grass or alfalfa. You should not need to add any other supplements to the diet. These feeds may be more expensive than developing your own ration, but they are good for the owner who does not want to spend time to research their horse's diet.



Horse pasture management tips

1. One 1,000-pound horse requires 600 pounds of dry forage each month. Non-irrigated pasture in Colorado produces 500 to 2,500 pounds per acre per *year*. Horses will trample grass and be selective in grazing, so follow the “take half, leave half” principle. Generally, a minimum of 29 acres of dryland pasture are needed to support one horse for one year.
2. Divide the pasture into two or three equal units and rotate livestock before grass is grazed to minimum height. Under a three-unit system, graze each unit seven to 10 days, then rest for 14 to 20 days, or corral horses and turn them out for a few hours per day to rest grass. (This guideline will vary greatly.)
3. “Take half, leave half” is a good rule to follow to allow roots to store enough food to produce a healthy plant the following season. This is very important in protecting dryland pastures; irrigated pastures can be grazed more intensely.
4. *Give your horses extra feed if you do not have enough grass to support them.* Livestock pastured on small lots should be confined to pens and allowed to graze and exercise for a limited time. Otherwise, livestock will devour or trample all vegetation in the pasture.
5. Provide adequate water in each grazing pasture. In large pastures, distribute water tanks equal distances apart to encourage more even grazing throughout the pasture.
6. Control weeds that invade your pastures. Spray weeds with an approved herbicide or mow before weeds go to seed. Always read and follow label directions for chemical substances. Don’t spray around horses or allow them to graze for several days.
7. Mow uneven growth to prevent spot grazing.
8. When possible, irrigated grass can be fertilized to increase production and the nutrients they contain. Test soil to determine how much nitrogen, phosphorus and potassium the pasture needs. A productive, established pasture requires 150 to 180 pounds of nitrogen per acre per year. Read fertilizer labels for guidelines on grazing after application.

For more information on maintaining a pasture, contact your local Colorado State University Cooperative Extension office.



Nutrient requirements for different horses

The nutrient requirements of a horse vary with its age, weight and the amount of work it performs. Hay is sufficient feed for a mature horse that is ridden very little. With an increase in work, grain should be added to its diet.

Table 4. Daily feed required by the average 1,000-pound horse

1,000-pound horse	Approximate Amounts	
	Hay	Grain
No work	20-25 lbs.	---
Light (1-2 hrs./day)	15-20 lbs. (1-1.5 lbs. grain/hr. of work)	1-3 lbs.
Medium (2-4 hrs./day)	15-20 lbs. (1.5-2 lbs. grain/hr. of work)	3-8 lbs.
Heavy (4 or more hrs/day)	15-20 lbs. (1.5-2.5 lbs. grain/hr. of work)	5-10 lbs.

Only a horse that is worked extremely hard would ever receive half of its ration in grain. A race horse in heavy training is an example of a horse requiring half of its ration in grain.

The above chart can be used as a rule of thumb, or you can be more exact and balance your horse's ration. Review Horse Ration Analysis Worksheet, page 38.

When balancing or evaluating a ration, use the National Research Council tables as a guideline to determine available nutrients to meet your horse's requirements (see Table 5, page 36).

When you balance a ration, the following steps should be taken:

- Determine the age, weight and level of activity or work of the horse.
- Daily nutrient requirements on Table 5, page 36, list what your horse needs according to its physiological status and level of activity.
- Determine the actual nutrient content of the available feed by sending your feed to a commercial feed-testing laboratory. Contact your local Colorado State Cooperative Extension agent for the name of the laboratory nearest you. If you cannot have your feed tested, use the average values listed in Table 6: Nutrients in Common Horse Feeds, page 37.
- Weigh the amount of each feed you plan to use in the ration. If you use premix feed, use the ingredient analysis listed on the feed tag for the percent of each ingredient.
- Determine the pounds of forage your horse should eat. This usually is calculated as 1 to 2 percent of the horse's body weight.



- Multiply each nutrient in each food source by the pounds of feed fed per day. Add up individual nutrients for each food source. See your project horse's nutrient total, page 36. (Example: crude protein. If your horse eats 8 pounds per day of a 10 percent protein feed, it consumes 0.8 pounds of crude protein per day: 8 lbs. x .10 = 0.8 lbs.).
- Check your totals against the daily nutrient requirements listed in Table 5, page 36. If the requirements are greater than the totals in your ration, then the ration is inadequate or not balanced for the horse. If your ration is deficient in a nutrient, you can add a good source of the deficient nutrient with a new ingredient to balance the diet, or increase an ingredient you already have that is a source of the nutrient. Always be careful not to create an excess of other nutrients when increasing feed ingredient levels. Excesses of some nutrients can interact with other nutrients. For example, excess calcium can prevent complete utilization of phosphorus. Check National Research Council tables for calcium to phosphorus ratios; however, a good rule of thumb is a 2:1 ratio.

Metabolic disorders, such as laminitis, osteochondrosis and epiphysitis, stem from an imbalance in nutrients. Many disorders can be avoided by giving your horse a balanced ration.

Remember, each horse has to be fed as an individual. Feed an amount that is adequate to maintain a body condition similar to that of an athlete. The National Research Council requirements are suggested values; individual horses may require adjustments to these nutrients. Constantly assess the body condition of your horse. A properly conditioned horse will have enough fat so its ribs don't show, but you should still be able to feel the ribs when you run your fingers over them. See figure 16 for areas emphasized in the Body Condition Score System. Depending on your horse's use, you will want to have its body score between five and six. Some horses require less feed than others.

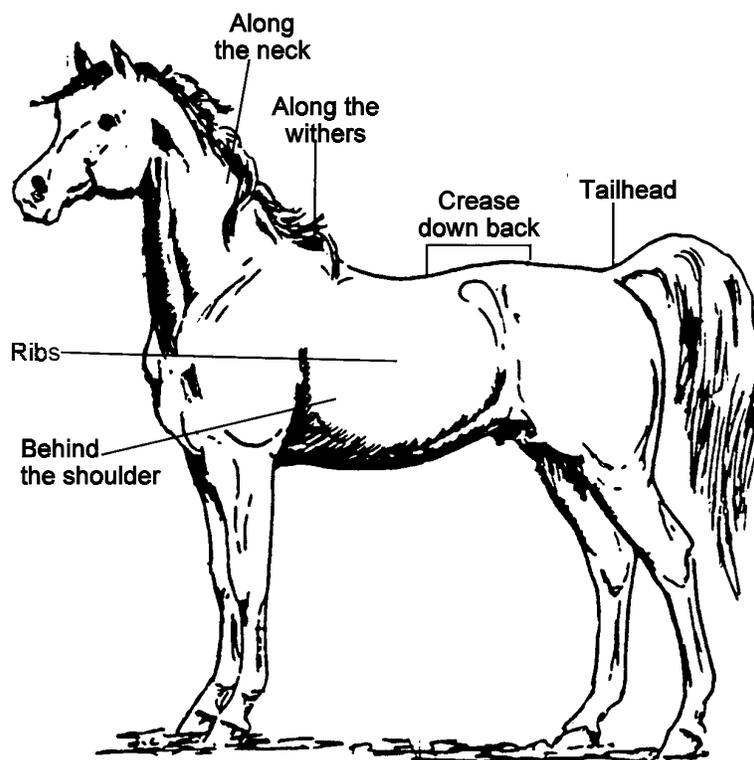


Figure 16. Diagram of areas emphasized in body condition score. Visual appraisal areas used when determining body condition score.



Description of body condition score system

(use figure 16 to determine your horse's body score)

1. Poor

Animal extremely emaciated. Spine, 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 spine projection, transverse processes of lumbar vertebrae feel rounded. Spine, ribs, tailhead, and hooks and pins prominent. Withers, shoulders and neck structure faintly discernable.

3. Thin

Fat built up about halfway on spine projection, cannot be felt. Slight fat cover on ribs. Spine projection and ribs easily discernable. Tailhead prominent, but individual vertebrae cannot be visually identified. Hook bones appear rounded, but easily discernable. Pin bones not distinguishable. Withers, shoulders and neck accentuated.

4. Moderately thin

Negative crease along back. Faint outline of ribs discernable. Tailhead prominence depends on conformation, fat can be felt around it. Hook bones not discernable. Withers, shoulders and neck not obviously thin.

5. Moderate

Back level. Ribs cannot be visually distinguished but easily can be felt. Fat around tailhead beginning to feel spongy. Withers appear rounded over spine projection. Shoulders and neck blend smoothly into body.

6. Moderate to fleshy

May have 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. Patchy 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.



Feeding tips

These helpful hints will help you care for your horse nutritionally.

- Provide high quality alfalfa or grass roughage with a complementing grain to balance the horse's diet. Feed by *weight*, not by volume.
- Always maintain at least half of the ration as roughage, such as hay or grass.
- Never feed moldy or dusty hay, grass or grain.
- Never feed lawn grass clippings.
- Have fresh, clean water available at all times—except to a hot horse. A hot horse needs to be given water slowly.
- Keep feed and water containers clean. Check and clean water buckets and tanks regularly.
- Watch your horse while it eats and inspect feed containers daily to detect abnormal eating or drinking behaviors.
- Check horse's teeth annually for sharp points that interfere with chewing. Floating sharp edges of teeth will increase feed efficacy. If a horse dips mouth in water while eating, it may have a sharp tooth. Tilting head to one side while eating grain may indicate a tooth problem.
- Ration changes be should be gradual — over a minimum of five days to prevent digestive disturbances.
- Proper exercise improves appetite, digestion, muscle tone and mental health for horses.
- Because a horse's stomach is very small and cannot hold a large amount of feed at one time, it should be fed at least twice a day on a regular schedule. Some horses benefit from three or more feedings per day. But don't overfeed your horse; too much feed at one time can cause founder.

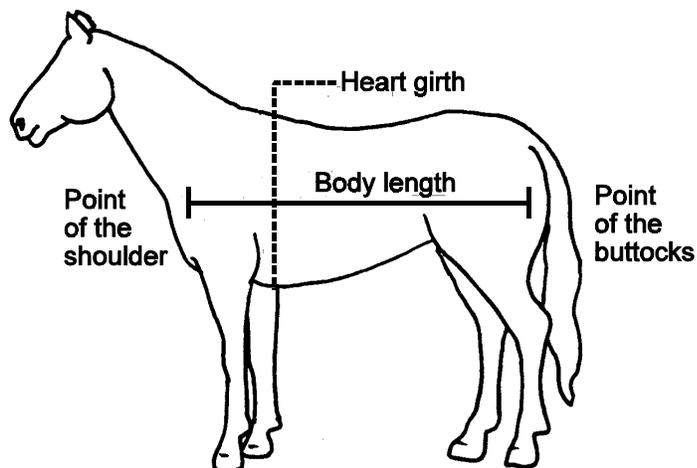


Figure 17. Estimate your horse's body weight. Multiply the girth (in inches) times itself (heart girth²) times the body length (in inches) and divide by 330. Example:

$$\begin{aligned}
 &\text{Heart Girth} = 74.8 \text{ inches} \\
 &\text{Body length} = 63 \text{ inches} \\
 &\frac{74.8 \times 74.8 \times 63}{330} \\
 &\text{Equals } 1,068 \text{ pounds}
 \end{aligned}$$

Table 5: Daily Nutrient Requirement of Horses (1,000 lb. mature weight) According to the National Research Council

Animal	Digestible Energy (DE) (Megacalories 1,000 calories)	Crude Protein (CP) (g)	Lysine (g)	Calcium (g)	Phosphorus (g)	Magnesium (g)	Potassium (g)	Vitamin A (10 ³ IU)
Mature horses								
Maintenance	16.4	656	23	20	14	7.5	25.0	15
Working horses								
Light work ^a	20.5	820	29	25	18	9.4	31.2	22
Moderate work ^b	24.6	984	34	30	21	11.3	37.4	22
Intense work ^c	32.8	1,312	46	40	29	15.1	49.9	22
Stallion (breeding season)	20.5	820	29	25	18	9.4	31.2	22
Pregnant mares								
9-months	18.2	801	28	35	26	8.7	29.1	30
10-months	18.5	815	29	35	27	8.9	29.7	30
11-months	19.7	866	30	37	28	9.4	31.5	30
Lactating mares								
Foaling to 3-months	28.3	1,427	50	56	36	10.9	46.0	30
3-months to weaning	24.3	1,048	37	36	22	8.6	33.0	30
Growing horses								
Weanling, 4-months	14.4	720	30	34	19	3.7	11.3	8
Weanling, 6-months								
Moderate growth	15.0	750	32	29	16	4.0	12.7	10
Rapid growth	17.2	860	36	36	20	4.3	13.3	10
Yearling, 12-months								
Moderate growth	18.9	851	36	29	16	5.5	17.8	15
Rapid growth	21.3	956	40	34	19	5.7	18.2	15
Long yearling, 18-months								
Not in training	19.8	893	38	27	15	6.4	21.1	18
In training	26.5	1,195	50	36	20	8.6	28.2	18
Two-year-old, 24-months								
Not in training	18.8	800	32	24	13	7.0	23.1	20
In training	26.3	1,117	45	34	19	9.8	32.2	20

Note: Mares should gain weight during late gestation to compensate for tissue deposition. However, nutrient requirements are based on maintenance body weight.

^aExamples are horses used in western and English pleasure, bridle path hack, equitation and so forth.

^bExamples are horses used in ranch work, roping, cutting, barrel racing, jumping and so forth.

^cExamples are horses in race training, polo and so forth.

Reproduced courtesy of National Research Council's Horse Nutrient Requirements, 1989.



CHAPTER 5: FEEDING HORSES



Table 6: Nutrients in Common Horse Feeds

Type	% Dry Matter	% Crude Protein	Digestible Energy (Mcal/lb.)	% Calcium	% Phosphorous
Hay					
Alfalfa					
Early bloom	90.5	18.0	1.02	1.28	0.19
Mid-bloom	91.0	17.0	0.94	1.24	0.22
Mature	90.9	15.5	0.89	1.08	0.22
Dehydrated Meal	90.4	15.6	0.91	1.25	0.23
Native Hay					
(Mountain meadow)	95.1	8.2	0.73	0.58	0.17
Timothy	89.1	9.6	0.83	0.45	0.25
Orchard	89.1	11.4	0.88	0.24	0.30
Oat	90.7	8.6	0.79	0.29	0.23
Smooth Brome	87.6	12.6	0.85	0.29	0.28
Pasture					
Alfalfa					
(late veg)	23.2	5.1	0.31	0.40	0.07
Bluegrass					
(early veg)	30.8	5.4	0.29	0.15	0.14
Crested Wheatgrass					
(early veg)	28.5	6.0	0.33	0.12	0.09
Orchard grass					
(early bloom)	23.5	3.0	0.24	0.06	0.09
Smooth Brome					
(early veg)	26.1	5.6	0.31	0.14	0.12
Concentrates					
Barley	88.6	11.7	1.49	0.05	0.34
Corn	88.0	9.1	1.54	0.05	0.27
Cottonseed meal	100.0	45.4	1.37	0.18	1.22
Oats	89.2	11.8	1.30	0.08	0.34
Molasses	77.9	6.6	1.20	0.12	0.02
Soybean meal					
(solvent extracted)	100.0	54.0	1.70	0.29	0.71
Wheat Bran	89.0	15.4	1.33	0.13	1.13

Table 7: Minerals

	Dry Matter %	Calcium %	Phosphorous %	Sodium
Dicalcium Phosphate (dical)	97	22.00	19.03	0.05
Limestone (calcium carbonate)	100	39.39	0.04	0.06
Monocalcium Phosphate	97	16.40	21.60	0.06
Monosodium or Disodium Phosphate (XP-4)	97	—	22.50	16.68



CHAPTER 5: FEEDING HORSES

Horse Ration Analysis Worksheet: Show your project horse's feeding program

(complete pages 38 to 42, then to balance your horse's ration, see Appendix III)

Junior and intermediate members should not attempt to complete this worksheet without adult assistance. Senior members should be able to complete this worksheet on their own. In the boxes below, show your project horse's record of rations. Feed should be adjusted to the usage of the horse. Feed amounts should be recorded in pounds.

What is the age, weight and physical activity (riding, work or pregnancy) of your project horse.

Age _____ Score <small>vrs.</small>	Weight _____ lbs.	Work _____ hours/avg. per day	Body Condition _____ 1=poor, 9=extremely fat
--	------------------------------------	--	---

Turn to Table 5, Daily Nutrient Requirement of Horses, page 36, and select the description that best fits your horse under the column *Animal*.

Fill in the box below with the numbers to the right of your selection. These are nutrient values your horse needs.

Digestible Energy (DE)	(Mcal)	Crude Protein (CP)	(g)	Calcium Ca	(g)	Phosphorus P	(g)
----------------------------------	--------	------------------------------	-----	----------------------	-----	------------------------	-----

If you feed cubes or pellets, weigh three buckets for the *average weight*. List the type of food and results in the box below.

<input type="checkbox"/> Pellets _____	Average weight of full bucket _____ lbs.
<input type="checkbox"/> Cubes _____	

What type of salt do you offer your horse(s)?

<input type="checkbox"/> Blocks	<input type="checkbox"/> Trace minerals	<input type="checkbox"/> Calcium and phosphorus added
---------------------------------	---	---



Show your project horse's roughage feeding program

If you feed longstem hay, weigh three flakes of hay for an *average flake weight*. Do this for each different type of hay you have and every time you buy new hay. List the results in the box below.

<p>Types of hay</p> <p>_____</p> <p>_____</p>	<p>Average flake weight</p> <p>_____ lbs./day</p> <p>_____ lbs./day</p>
--	--

Calculate the dry matter (DM) of the hay you are feeding (see Table 6, page 37 for DM percentages). Dry matter is the part of feed that is not water and is used to calculate nutrients in feed. For pasture dry matter percentage, use .40 average.

(pounds of forage per day)

(forage of dry matter)

lbs.	X	.90 DM% (avg)	=	lbs.
-------------	---	---------------	---	-------------

Turn to Table 6, Nutrients in

Common Horse Feeds, page 37 and find *Hay* under the *Type* column. Use the numbers corresponding to the type of hay you usually feed to complete the boxes below. Use your actual weight, as fed, because dry matter is already calculated. (Remember, .02% = .0002; move the decimal over two places.) If you are feeding more than one hay type, you will need to copy this page and repeat the calculations for each hay source. Then you will need to add the nutrients together to give you the total megacalories or pounds per day.

You feed:

(pounds of hay per day)	X	(Digestible Energy in Mcal per pound)	=	Digestible Energy in Mcal per day
lbs.	X	mcal/lb.	=	mcal/day
(pounds of hay per day)	X	(% Crude Protein)	=	Crude Protein in pounds per day
lbs.	X	(converted to decimal)	=	lbs./day
(pounds of hay per day)	X	(% Calcium)	=	Calcium in pounds per day
lbs.	X	(converted to decimal)	=	lbs./day
(pounds of hay per day)	X	(% Phosphorous)	=	Phosphorous in pounds per day
lbs.	X	(converted to decimal)	=	lbs./day



CHAPTER 5: FEEDING HORSES

If you feed your project horse a commercially-prepared grain mix concentrate, complete this page.

Weigh three full buckets of your grain mix concentrate and calculate the *average weight* of a full bucket. List the results in the box below.

Grain mix (3-way, etc.) <hr style="width: 50%; margin: 0 auto;"/>	Average weight of bucket full <hr style="width: 50%; margin: 0 auto;"/> lbs./day
---	---

If you feed a grain mix concentrate, fill in the boxes below for the nutrients shown *on the feed bag tag*. (DE, CP, Ca, and P) or see Table 6, Nutrients in Common Horse Feeds, page 37.

You feed:

(pounds of mix concentrate per day)	X	(Digestible Energy in Mcal per pound)	=	Digestible Energy in Mcal per day
<div style="border: 1px solid black; padding: 5px; width: 100px; margin: 0 auto;">lbs.</div>		<div style="border: 1px solid black; padding: 5px; width: 100px; margin: 0 auto;">mcal/lb.</div>	=	<div style="border: 1px solid black; padding: 5px; width: 100px; margin: 0 auto; background-color: #cccccc;">mcal/day</div>

	X		=	
(pounds of mix concentrate per day)	X	(% Crude Protein) <small>(converted to decimal)</small>	=	Crude Protein in pounds per day
<div style="border: 1px solid black; padding: 5px; width: 100px; margin: 0 auto;">lbs.</div>		<div style="border: 1px solid black; padding: 5px; width: 100px; margin: 0 auto;"></div>	=	<div style="border: 1px solid black; padding: 5px; width: 100px; margin: 0 auto; background-color: #cccccc;">lbs./day</div>

	X		=	
(pounds of mix concentrate per day)	X	(% Calcium) <small>(converted to decimal)</small>	=	Calcium in pounds per day
<div style="border: 1px solid black; padding: 5px; width: 100px; margin: 0 auto;">lbs.</div>		<div style="border: 1px solid black; padding: 5px; width: 100px; margin: 0 auto;"></div>	=	<div style="border: 1px solid black; padding: 5px; width: 100px; margin: 0 auto; background-color: #cccccc;">lbs./day</div>



CHAPTER 5: FEEDING HORSES

If you feed your project horse a straight grain concentrate, complete this page.

On page 37 in Table 6: Nutrients in Common Horse Feeds, look under the *Type* column and find *Concentrates*. Find the concentrate or grain type or with information on the feed bag that is most like what you usually feed. Use the numbers from the table to fill in the boxes below.

Remember, the percent amounts (example: 20% = .20 or .20% = .002) must be converted to decimal form before you can use them in these calculations.

Grain type (oats, etc.) _____ _____	Average weight of bucket full _____ _____ lbs. _____ lbs.
--	---

You feed:

(pounds of concentrate per day)	X	(Digestible Energy in Mcal per pound)	=	Digestible Energy in Mcal per day
<div style="border: 1px solid black; padding: 5px; width: 100px; margin: 0 auto;">lbs.</div>	X	<div style="border: 1px solid black; padding: 5px; width: 100px; margin: 0 auto;">mcal/lb.</div>	=	<div style="border: 1px solid black; padding: 5px; width: 100px; margin: 0 auto; background-color: #e0e0e0;">mcal/day</div>
(pounds of concentrate per day)	X	(% Crude Protein)	=	Crude Protein in pounds per day
<div style="border: 1px solid black; padding: 5px; width: 100px; margin: 0 auto;">lbs.</div>	X	<div style="border: 1px solid black; padding: 5px; width: 100px; margin: 0 auto;">(converted to decimal)</div>	=	<div style="border: 1px solid black; padding: 5px; width: 100px; margin: 0 auto; background-color: #e0e0e0;">lbs./day</div>
(pounds of concentrate per day)	X	(% Calcium)	=	Calcium in pounds per day
<div style="border: 1px solid black; padding: 5px; width: 100px; margin: 0 auto;">lbs.</div>	X	<div style="border: 1px solid black; padding: 5px; width: 100px; margin: 0 auto;">(converted to decimal)</div>	=	<div style="border: 1px solid black; padding: 5px; width: 100px; margin: 0 auto; background-color: #e0e0e0;">lbs./day</div>
(pounds of concentrate per day)	X	(% Phosphorous)	=	Phosphorous in pounds per day
<div style="border: 1px solid black; padding: 5px; width: 100px; margin: 0 auto;">lbs.</div>	X	<div style="border: 1px solid black; padding: 5px; width: 100px; margin: 0 auto;">(converted to decimal)</div>	=	<div style="border: 1px solid black; padding: 5px; width: 100px; margin: 0 auto; background-color: #e0e0e0;">lbs./day</div>



CHAPTER 5: FEEDING HORSES

Show your project horse's nutrient total

Your totals should match as close as possible to the requirements for your horse on page 38. Digestible energy should match, but make sure the other nutrients are at least as high as needed. Nutrients may exceed what is needed.

Hay (from page 39)	+	Concentrates (from page 40 or 41)	=	Totals
Digestible Energy in Mcal per day		Digestible Energy in Mcal per day		Digestible Energy in Mcal per day
mcal/day		mcal/day		mcal/day
Crude Protein in pounds per day		Crude Protein in pounds per day		Crude Protein in pounds per day X 454 to get:
lbs./day		lbs./day		lbs./day
Calcium in pounds per day		Calcium in pounds per day		Calcium in pounds per day X 454 to get:
lbs./day		lbs./day		grams/day
Phosphorous in pounds per day		Phosphorous in pounds per day		Phosphorous in pounds per day X 454 to get:
lbs/day		lbs/day		grams/day
				lbs./day
				grams/day

Your Ca:P ratio should range from 1:1.5 to 3:1 (divide CA by P; example: 68 grams ÷ 22 grams = 3 oz. or 3:1 ratio)



Table 8: Common poisonous plants of Colorado

Plant	Description	Symptoms
Arrowgrass	Grass-like, with thick leaves, fruit.	Nervousness; trembling or jerking muscles; either shallow, rapid respiration or slow, deep breathing; convulsions; death. Cyanide poisoning.
Bindweed	Low-growing, vine-like weed.	Seed causes severe colic.
Bracken Fern	Perennial ferns form with black root stocks, 2- to 4-foot long stems and fronds.	Weight loss, lack of coordination, depression, muscles twitching and convulsions.
Chokecherries	Large shrub with flowers and small cherries.	Nervousness, respiratory difficulty, convulsions, death. Cyanide poisoning.
Foxtail	Seed head similar to wheat with long, thin protruding “whiskers.”	Mouth ulcers.
Groundsel	Herb growing year-round with yellow flowers.	Staggering, depression, aimless walking, running into obstacles, cirrhosis of the liver.
Larkspur	Grows to 5 feet, broad leaves, segmented with blue flowers.	Repeated falling, nausea, rapid pulse and respiration, straddled stance, constipation, bloating, death.
Locoweed	Low-growing weed with purple, white, blue or yellow flowers resembling sweetpeas.	Loses sense of direction, irregular gait, weakness, withdrawal, loss of muscular control, nervousness, unpredictability, chronic affliction or death.
Lupine	Shiny green leaves, flowers of blue, white, pink, yellow or blue and white.	Nervousness, convulsions.
Milkweed	Green plant that produces pods with many silk-covered seeds. Plant secretes milk from the stem when broken.	Loss of muscle control, staggers and falls, respiratory difficulty.
Mountain Mahogany	Large shrub.	Anxiety, labored breathing, rapid heart rate, incoordination, convulsions, death.
Ornamental Plants	Laurels, rododendrons, yews and oleander are poisonous to some extent.	Some may cause death.
Russian Knapweed	Thistle-type weed with purple flowers.	Inability to chew.
Sage	Shrub, leaves and stem have a fuzzy appearance.	Affected horses appear normal until disturbed or stressed; then they become uncoordinated and fall over. Strong sage smell on breath.
Sudan/Sorghums	Broad-leafed grass; commercially grown for livestock.	Urinary incontinence, posterior weakness and incoordination, secondary urinary infections. Cyanide poisoning.
Yellow Star Thistle	Leaves bear dense coating of cottony hair, bright yellow flowers.	Twitching of mouth, flicking of tongue, holding mouth open, death through starvation or thirst.

For more information, or for help in identifying poisonous plants, contact your local Colorado State Cooperative Extension Office.

CHAPTER 6: HOUSING AND FENCING



Shelter for most 4-H horses should furnish protection from hot sun, wind or stormy weather. The type of shelter depends on the facilities available to each member. This varies from a three-sided loafing shed in the pasture to a barn with box stalls and a tack room. The stable need not be fancy, but it should be well-constructed for safety and arranged well so it can be kept clean. Listed below are some standard dimensions.

Your stable or shelter may not fit the listed dimensions exactly. Be certain there is room and plenty of light and ventilation with no drafts. The horse should have access to clear water at all times, either automatic waterers or buckets. Water buckets should be hung high enough so your horse cannot get its hoof in the bucket.

Shelter	Space Requirements
Box Stall	10' x 10' to 12' x 12'
Tie Stall	5' x 12' including manger
Ceiling Height	8' minimum
Doors	4' wide x 8' high
Hay Manger	28" sides, 38" high top edge
Grain Box	24" to 30" long, 8" to 10" deep 38" to 42" from floor to top edge

Arrange the grain box so your horse cannot get its hoof in the box and so the box can be cleaned easily. The hay manger should be constructed with an open space at the bottom for chaff, dirt and trash to fall out or so that it can be cleaned easily. Don't feed hay or grain on the ground because the horse will pick up dirt and sand with the feed. This may cause colic.

If you board your horse, there are several options: stabled (box stall), corral and pasture board. When selecting a boarding stable, ask what they provide for stabled horses. If you pay full board, the boarding stable should provide feed, cleaning and turn-out. Partial board arrangements vary, so check out what is included with your boarding arrangements.

If your horse is kept in a corral or pasture with a loafing shed, it is important that the shed and corral have enough room for the number of horses running together. Horses are herd animals and they establish social orders. Dominant horses bite and kick those horses who are in a lower social order. Be certain the loafing shed has enough room so the horses avoid being trapped by the dominant horse; this will help prevent injuries.

Regardless of where you keep your horse, always be alert for loose boards, nails and any projections that could cause injuries. Keep all wire and hay-bale twine picked up so horses don't get caught in it, resulting in injury, or eat it which causes health problems.

Fences can be constructed of poles, boards, plastic (PVC pipe) or wire. The important thing is that the fence be visible to the horse to keep it from running through the fence. Wire fence should be smooth — not barbed wire. Barbed wire will increase the severity of injuries to horses. Electric fences should also be constructed of smooth wire. Check electric fence with a fence-tester to be sure it works.



CHAPTER 5: FEEDING HORSES

Most electric chargers have a light that shows when the fence is not working or if the circuit is incomplete. Remove overgrown weeds from fence lines. Check all fences regularly and keep wire fences tight.

Disposal or composting manure

Develop a plan for manure disposal or use. Consider converting manure and yard waste into a useful product for gardening and landscaping. Composted manure returns needed nutrients back into the soil. See Cooperative Extension Service fact sheet, *Horse Manure: A Renewable Resource*, No. 1.219, for information on composting horse manure.

CHAPTER 7: YOUR HORSE'S HEALTH



Evaluate your horse's health often. You control many factors that affect your horse's health. Sanitation of stables and feeding equipment; clean, quality feed; protection from disease and properly fitting equipment are important, as are being sure to eliminate hazards around stables and pasture, watching your horse for injuries or signs of disease, and finally, the way you use your horse.

Proper treatment of diseases, injuries and parasites depends on two very important factors: correct diagnosis and knowledge of the proper medication. Your veterinarian knows what health and first-aid measures you can safely handle, and he or she will teach you the proper procedures.

This includes:

- recognizing health problems,
- what to do in case of sickness or injury before help can arrive, and
- simple treatments and remedies that are safe to follow under certain conditions.

It helps to become familiar with common diseases, parasites, injuries and health problems horses may encounter.

General

Cleanliness is very important. Feeders and water containers should be cleaned often. Bedding should be dry and clean, and manure should be removed regularly. The stable area should be level and well drained.

Stabled horses should have proper ventilation. Fresh air is needed even in winter, but avoid cold drafts. Urea in horse urine forms ammonia which can cause respiratory problems. If you smell ammonia in your horse stable, it's not cleaned well enough or the stable needs more ventilation. Keep stable temperature and atmosphere as close as possible to outside climates. Horses do not need to be kept in a heated barn.

First aid

First aid is the immediate and temporary care given to a horse until a veterinarian arrives.

First aid includes preventing your horse from further injuring itself. Remember — horses are creatures of fright and flight. Their instinct is to bolt and run when they experience a trauma and this can often cause more harm. First-aid includes keeping the horse calm. For example, if the horse is caught in barbed wire or a feeder, calm and soothe the horse until it can be freed. Take care that you do not become injured while helping the horse. If the horse begins to shake and quiver after an injury, cover it with a blanket, it may be going into shock.



Bleeding

The average volume of blood in a 1,000-pound horse is 36 liters or 8 gallons, about 6 to 10 percent of its body weight. A horse can tolerate losing of up to 25 percent of its blood — about 9 to 11 liters or 2.25 to 2.75 gallons. Because the horse is such a large animal, it can lose what looks like a lot of blood from an injury or laceration. However, blood loss is serious and should be controlled even if it may not be life-threatening.

To control a horse's bleeding, use a pressure bandage over the injury until a veterinarian arrives. Elastic bandages make good pressure bandages. It is important to be careful when you apply the bandage so the horse does not injure you. Many times a serious laceration of the limbs includes severed nerves which are sensitive to touch. The bandage should be applied tight enough to dramatically slow the bleeding. If the bandage is applied excessively tight, it could work as a tourniquet that cuts off the blood supply to the limb beyond the bandage. The injured limb needs blood circulation.

Before treating a laceration, remember home remedies can contaminate the wound and make it more difficult for the veterinarian to treat. Do not use lanolin or petroleum-based products in or around a wound because they are not water-soluble and are impossible to remove from the wound. Cleaning dirt and manure out of an injury with water and organic iodine solutions (not the strong tincture of iodine) or scrubs. This is the only first aid you should administer without a veterinarian. Wounds such as lacerations should be examined by a veterinarian as soon as possible. Lacerations should be sutured (stitches) as soon as possible. Do not exceed 24 hours before (stitches) suturing.

Vital signs

What is normal? Closely observe your horse's eating habits, gaits, activities and attitudes to determine what is normal. Changes in these habits indicate a problem. Measure temperature, pulse and respiration rate, to determine if you notice changes and think your horse is ill.

Temperature

Take the horse's temperature with a rectal thermometer. The thermometer should be lubricated, and the mercury should be shaken below 95 degrees Fahrenheit before inserting it into the rectum. The normal temperature of a horse can range from 99.5 degrees to 101.5 degrees, with an average of 100 degrees. A fever is classified as mild at 102 degrees and excessive at 106 degrees. Exercise, excitement and hot weather raise normal body temperature.

Respiration rate

To measure the breathing or respiration rate, watch the flank and rib movements with each breath. Count the number of these in-out movements in a minute or for 15 seconds and multiply by four. An adult horse at rest breathing rate should range from eight to 16 breaths per minute. The rate increases with exercise. Younger and smaller horses have a more rapid rate.



CHAPTER 7: YOUR HORSE'S HEALTH

Pulse

A horse's normal pulse rate averages 35 beats per minute. Lower rates are normal for larger, older horses at rest. Younger, smaller horses have a higher pulse rate. A yearling has a normal rate of 40 to 58 beats per minute.

A horse's pulse can be felt in several places: the inner surface of the lower jaw, the back edge of the jaw or cheek, under the tail, or inside the left elbow (see figure 18). Usually the pulse is taken from the artery on the inside lower jaw. It is in front of the large, round jaw muscles and found by moving your fingers up and down on the inside and underside of the jaw bone. The artery feels like a flat, soft cord. By pressing the artery against the jaw bone, you can feel the pulse. As blood flows through the artery, it pulses against your finger. If you have trouble finding the artery, ask your veterinarian to help.

1. The inner surface of the groove under the lower jaw (external maxillary artery)
2. The back edge of the lower jaw (the cheek), 4 inches below the eye (facial artery)
3. Under the tail, close to the body (medial coccygeal artery)
4. Point where heartbeat can be monitored with stethoscope
5. Inside the left elbow, up and forward, against the chest wall (heart)
6. The inside of the foreleg (median artery)
7. Behind the carpus, or knee (digital artery)
8. Medial or lateral pastern (digital artery)

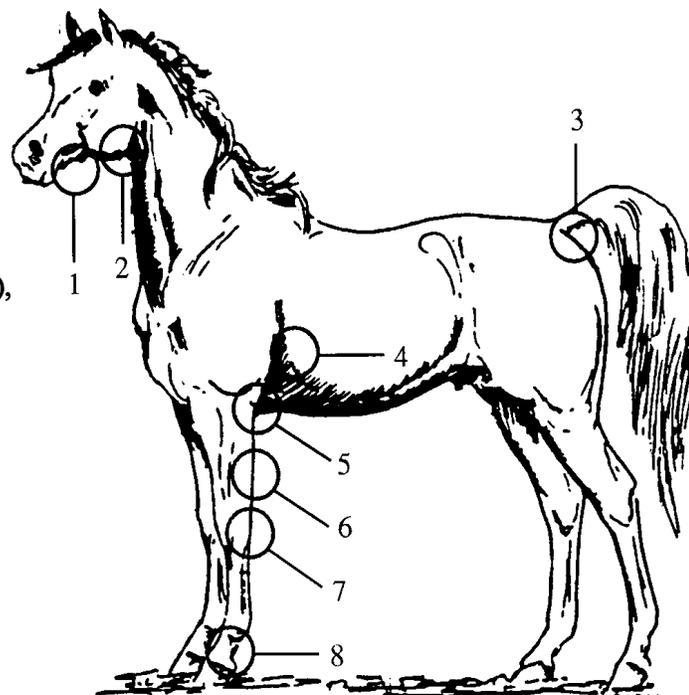


Figure 18. Points at which the horse's pulse can be felt and taken.

Capillary Refill Time

Capillary Refill Time (CRT) measures the time it takes for capillaries to refill with blood. It is an easy test to perform. Press the mucous membrane inside the nostril or the gums to measure CRT. As you press on the membrane, you press blood out of the capillaries. When you remove your finger the membrane appears pale. You can see the blood return as the membrane regains its pink color. It should take 1 to 2 seconds for the membrane to return to the color of the surrounding area. If it takes longer than 1 to 2 seconds, your horse's circulation is poor, or it may be in shock. Use yourself as a comparison. Squeeze your thumb. Watch the color under your thumb nail. It will be pale pink when you release it, but the color will return rapidly.



Colic

Colic, acute stomach pain, is the number-one killer of horses and can be a serious problem. Call a veterinarian immediately when you suspect colic and begin emergency first aid.

Horses with colic have a faster heart rate and higher body temperature than normal. The horse will sweat, become restless, paw the ground, try to roll, get up and down several times, bite at its sides, kick at its belly, show a change in its manure, or fail to defecate. The pain may be caused by several intestinal problems such as an impacted or plugged intestine, sand in the cecum, increased activity of the intestine, inflammation of the intestinal membrane lining, blockage of blood supply to the intestine, or stretched digestive tract due to gas or undigested feed.

Colic is caused by a variety of circumstances including an abrupt change in feeding practices, over-feeding, parasites, poor feed quality, dehydration, eating sand, a twisted intestine or pregnancy.

To prevent further complications if your horse becomes colicky, keep the horse calm. Call a veterinarian immediately and keep the horse quiet to protect it from self-inflicted injury. The severity of pain is not a good indication of how serious the problem may be. Pulse rates over 50 to 60 beats per minute, slow capillary refill time and blue mucous membranes indicate the serious nature of the problem.

The risk of colic can be reduced by carefully using a good parasite control program and reducing stress on your horse. Be sure to provide plenty of fresh, clean water.

Other health problems

An elevated or below-normal temperature, rapid pulse, lack of appetite, very loose or watery stool, coughing, listlessness, dull eyes, and rapid, labored respiration with flared nostrils are indications of a problem.

Influenza (flu)

Influenza, a respiratory infection caused by a virus, commonly affects 2- and 3-year-olds. However, older horses can develop the disease if they are susceptible. The virus spreads rapidly between susceptible horses. The flu is common among horses that are concentrated together, such as at sales, shows and race tracks. Crowding and stress may make your horse more likely to get this disease. It may be prevented with semi-annual vaccinations. However, horses at high-risk should receive vaccinations every three to four months.

Horses usually develop signs of influenza two to ten days after exposure. These signs include high fever, depression, shivering, inflamed throat, muscle stiffness and soreness, loss of appetite, increased pulse and respiratory rates, and fatigue. A dry, hacking cough later develops into a moist cough. Nasal secretions will be clear and mucous-like in the early stages. Complete rest is necessary for up to 30 days after these signs occur. Horses worked when they have temperatures often develop a bronchopneumonia complication. Horses that don't develop complications usually recover in one to two weeks.



Rhinopneumonitis

A herpes virus causes rhinopneumonitis. With flu-like symptoms, the disease has three distinct forms: respiratory, abortion-causing and neurologic.

- *Respiratory form.* This form occurs most frequently in young horses. Signs include a high fever (106 degrees) which may last one to seven days, and a clear to yellowish mucus-like discharge from the nostrils. It will remain fairly bright and alert with little depression. Coughing is uncommon unless the horse develops a secondary bacterial infection. Older horses infected with the virus have mild symptoms, but this form can be life threatening to younger horses.
- *Abortion-causing form.* This form occurs in pregnant mares three weeks to four months after infection or after the respiratory form infects horses on the premises. The virus causes the mare to deliver a dead foal during the last three months of pregnancy or to deliver a weakened foal that dies soon after birth.
- *Neurologic form.* The neurologic form usually occurs in horses more than one year of age. This form may follow respiratory or abortion-causing forms or may occur without prior signs of rhinopneumonitis. Uncoordination or paralysis of the hind legs is one sign of this form.

Vaccination prevents rhinopneumonitis, but does not produce lasting protection. Consult your veterinarian about a proper vaccination schedule.

Equine Infectious Anemia

A virus causes Equine Infectious Anemia (EIA), also known as swamp fever. Symptoms are a recurring fever, noticeable depression, increasing weakness, loss of muscle and weight, swelling in legs and underside caused by fluid accumulation, and anemia (lower than normal number of red blood cells). A test known as the Coggins test identifies this disease.

EIA has no specific treatments and cannot be prevented by vaccination. In many states, horse shows and races require a negative Coggins test for the disease on the horses before they may enter the state or the grounds. Most states require horses that test positive for this disease be kept in a permanent, lifetime quarantine or, because they are a lifetime carrier of the virus and are a threat to the total horse population, be put to sleep. Travel on interstate highways also requires a negative Coggins test.

Strangles

Equine distemper, shipping fever or strangles, is a severe, contagious disease that primarily affects the upper respiratory tract. Several strains of streptococcus bacteria cause the disease.

Symptoms develop two to six days after the horse has been exposed to the bacteria. Symptoms include a high temperature (103 to 104 degrees), nasal discharge, depression, an increased respiratory rate and a dry cough. Lymph nodes in the throat are swollen and painful.



Because of pain in the throat area, the horse has trouble swallowing and loses its appetite. Pain also causes the horse to stand with its neck stretched and head down. Swelling can be seen where the head and neck join. Swollen lymph nodes can become abscessed (filled with a creamy yellow, pus) and break open. Sometimes bacteria spreads to other lymph nodes in the chest and abdomen, causing serious complications for the horse. Nasal discharge is usually yellow or white.

Direct contact between an infected horse and a susceptible one transmits the disease. Bacteria also can be transmitted on buckets, feeders, fences, clothing, shoes and waterers. Rely on your veterinarian for vaccination recommendations and treatment.

Tetanus (lockjaw)

A neurotoxin produced by the bacteria *clostridium tetani* causes tetanus. It infects animals through deep puncture wounds from nails or splinters. Vaccinating your horse every year prevents tetanus. Booster vaccinations should be given when your horse is injured. The bacteria also can infect the navel of newborn foals. Tincture of iodine or betadine should be used on the foal's navel to prevent tetanus.

Symptoms usually occur within one to two weeks after injury. Tetany is the severe tightening of a muscle, muscle twitch or muscle cramp. Jaw muscles are some of the first to tighten and, since they are much stronger than muscles that open the mouth, the horse is unable to open its mouth. Lock-jaw is the common name for tetanus.

Other signs include tetany of the muscles in the hind legs, or the horse holds its tail up, ears erect, head and nose high with its head extended; tightening of muscles in the body causing legs to assume a sawhorse stance is a symptom. The horse has trouble moving because all of its muscles are tight or crampy. They overreact to loud noises and fast movements. Inability to eat or drink, rapid breathing, rapid heart rate, constipation, elevated temperature, and excessive sweating also are common signs of tetanus.

Sleeping sickness

There are three types of sleeping sickness, or equine encephalomyelitis, named for the different viruses that cause them: eastern equine encephalomyelitis, western equine encephalomyelitis and venezuelan equine encephalomyelitis. The three diseases transmitted by mosquitoes are difficult to tell apart since they produce similar symptoms.

- *Eastern Equine Encephalomyelitis (EEE)*
EEE is a severe disease of horses and humans and is often fatal. It doesn't occur as frequently as western equine encephalomyelitis, but it is more serious. Symptoms in the horse include fever, loss of appetite, depression, sleeping sickness, circling, head pressing, blindness, intense itching, paralysis of face muscles, difficulty chewing and swallowing, weakness, uncoordination, seizures, respiratory arrest, and death in up to 90 percent of the horses affected.



- *Western Equine Encephalomyelitis (WEE)*
WEE received its name because it occurs primarily west of the Mississippi River and in western Canada. It is the mildest but most frequent of the three types of sleeping sickness. Symptoms develop several weeks after the horse is infected. They are similar to those of EEE and last for two weeks or more.
- *Venezuelan Equine Encephalomyelitis (VEE)*
VEE is found in Central and South America. There was an outbreak of VEE in the United States in the 1970s. However, it has been eradicated here. It causes high death rates among humans, and horses serve as a reservoir for viruses that infect humans. Vaccinations for VEE are not used currently except for horses entering North Carolina and Texas.

Sleeping sickness can be prevented through vaccination. EEE, WEE and VEE vaccinations are combined with tetanus and influenza in one dose.

Potomac Horse Fever

Potomac horse fever is caused by an organism, *Ehrlichia risticii*, and is transmitted by insect bites. Symptoms include mild depression, refusal to eat, mild temperature, colic and profuse diarrhea 24 to 48 hours after onset that lasts for up to 10 days. Laminitis develops in one of four horses stricken with the disease. Treatment of severe symptoms usually is not successful, and the horse dies. Horses should be vaccinated in regions where the problem occurs most frequently.

Equine Protozoal Myeloencephalitis

EPM is a debilitating neurologic disease caused by a protozoal organism (*Sarcocystis falcatula*) which settles in horses' spinal cords. Affected horses generally lose coordination of their hind legs; the disease affects a horse's balance and mobility. Horses get EPM by eating sporocysts-infected feed. *Sarcocystis falcatula* is carried by birds which are eaten by opossums which shed the organism into horse feed, water and pasture. Horses cannot transmit the disease to another animal. A test for EPM has been developed.

Heaves

Heaves and broken wind are common terms that refer to *chronic pulmonary alveolar emphysema*. It affects the lungs and is caused by feeding dusty or moldy hay.

Symptoms of this disease relate to changes in the horse's lungs. Chronic coughing marks the beginning of the disease process. As changes in the lungs become more severe, the horse loses its stamina, nostrils flare and the horse suffers shortness of breath. In normal breathing when the diaphragm relaxes, the elasticity of the lungs forces air out. CPAE destroys this elasticity. The horse compensates by contracting its abdominal muscles to force abdominal organs toward the chest, pushing air out of the lungs. This looks as if the bottom of the abdomen is lifting up and occurs at the end of the normal shriveling of the chest during breathing. Because abdominal muscles become larger with this extra work, a line that defines them (heave line) develops along the bottom of the abdomen.



These changes in the lungs are permanent, and only the symptoms can be treated. Heaves can be prevented by feeding good quality, dust-free hay.

Laminitis (founder)

Laminitis means inflammation of laminae in the hoof of the horse. The white line in the hoof is the laminae, which are sensitive tissues inside the hoof wall that keep it attached to the third phalanx, a bone inside the hoof (coffin bone). Structures under the back of the third phalanx hold the hoof up. With this inflammation, attachments break down. After the break down, the front tip of the bone rotates or falls onto the sole and causes intense pain. The horse tries to reduce the pain by walking with its feet out in front and moving in a manner to keep pressure off its toes. Laminitis most often affects the front feet but may affect all four feet.

Laminitis can be caused by overeating grain, eating lush grass, drinking water before cooling down, infections, stress, and trotting or running on hard surfaces which cause a concussion. A horse that has laminitis has rough rings around the hoof wall. Horses with laminitis may be lame for the rest of their lives.

Hyperkalemic Periodic Paralysis

Some diseases are caused by genetics that can be passed on from parent to offspring. Hyperkalemic Periodic Paralysis is an inherited disease of quarter horses and other stock horses. HyPP is characterized by seizure attacks of muscles, including muscle tremors, weakness or convulsions. Muscle fibers leak potassium into the horse's blood, making blood serum potassium levels increase. High serum potassium levels can cause cardiac arrest and death. Because the disease is genetic, there is no cure; however, diet or medication may prevent seizures. Genetic testing can be used to select breeding stock that are not carriers of the HyPP gene.

Teeth wear

Although tooth wear isn't a disease, tooth care helps keep your horse healthy. A horse eats fibrous materials that require a lot of chewing. This process causes the horse's grinding teeth (premolars and molars) to wear down. Because the upper teeth are set slightly wider than the lower teeth, sharp points develop on the outside of the upper teeth and on the inside of the lower teeth. These sharp points cause the horse to bite its cheeks and tongue as it chews food. It's harder for a horse with bad teeth to grind its food once it's taken in, which can lead to weight loss or a blockage in the intestines. Horses 5 years and older should have these sharp points ground off every year by a veterinarian using a dental float.



Table 9. Equine Immunization Program

<i>Disease</i>	<i>Product</i>	<i>Procedure</i>	<i>Booster</i>	<i>Comments</i>
Tetanus (Lockjaw)	Antitoxin (passive or temporary immunity)	15,000 units or more as indicated when no prior vaccination status is unknown	Usually not done	Can be given in conjunction with tetanus toxoid.
	Toxoid	Primary immunization: 2 doses, 4 weeks apart	Single dose annually	Often in combination with either encephalomyelitis or influenza vaccine products.
Equine Encephalomyelitis (Sleeping Sickness) Eastern Western Venezuelan	Numerous products available. All are killed virus. Most often all species are combined.	Primary immunization : 2 doses, intermuscular, 2-4 weeks apart	Single dose annually	Best if vaccinated in spring before insect season.
Influenza (Flu) 2 virus strains	Numerous products available. All are killed virus, all have both viral strains present.	Primary immunization: 2 doses, intermuscular, 2-4 weeks apart	Every 2-12 months as indicated by situation	Vary booster frequency depending on horse's potential exposure. Very common disease.
Rhinopneumonitis (Equine Herpes virus, viral abortion)	Modified live virus, killed virus.	Primary immunization: 2 doses, intermuscular, 2-4 weeks apart with either product	Every 2-12 months as indicated by situation	Virus causes upper respiratory diseases, central nervous system disease, or abortions in mid- to late- pregnancy.
Streptococcus equi (Strangles)	Products available are either killed bacterin or specific protein from cell wall.	Primary immunization can be multiple doses at varying intervals depending on exact product used	Every 3-12 months as indicated	Controversy as to effectiveness of various products. Generally used only in specific circumstances.
Rabies	Killed vaccine only approved for use in horses.	Primary immunization: 2 doses, intermuscular, 2-4 weeks apart	Annually	Indications for use are now common, especially in endemic regions.
<i>Ehrlichia risticii</i> (Potomac Horse Fever)	Single product available, killed vaccine.	Primary immunization: 2 doses, 3-4 weeks apart	Singe dose annually	Vaccinate one month prior to insect season.



Internal parasites

Internal parasite control is vital for your horse's health from birth to old age. A parasite is a living organism that spends all or part of its life in or on another organism and at that organism's expense. In general, the horse ingests parasite larvae while grazing or feeding from the ground. The larvae migrate through the horse's internal systems. Larvae eventually settle in or near the intestines, where they rob the horse of nutrients. When mature, they lay eggs which pass out of the horse's system in its manure. New larvae crawl up grass blades to be eaten by other horses.

A horse infected with internal parasites often shows a dull and rough coat, weakness, stunted growth, weight loss, colic, diarrhea (sometimes bloody) or tail rubbing. Horses can die from heavy infections and occasionally, healthy looking horses die from internal parasite damage. Regularly deworming your horse regardless of whether it looks like it has parasites or not.

Horses kept in confined areas with several other horses are constantly reinfested, especially if they feed off the ground. Owners must take extra precaution against parasites. Keep the area free from accumulated manure, do not feed on the ground and use deworming medications at frequent, regular intervals.

Ascarids (large roundworms), *bots* and *strongyles* (bloodworms) are the three most serious internal parasites. Deworming medications vary depending on the type of worm. Check with your veterinarian to plan an annual deworming program.

In general, parasites interfere with normal growth and development, cause poor performance in working horses, lower horses' resistance to disease and transmit diseases.

Roundworms or Nematodes

Roundworms are non-segmented, cylinder-shaped worms and are one of the most serious internal parasites.

- *Horse ascarid* (*Parascaris equorum*) is an internal parasite found primarily in young horses. In the life cycle of roundworms, females lay eggs in the horse's intestinal tract. Feces pass the eggs from the horse. Outside, larva develops within the egg. This is first-stage larva.

In the environment, second-stage larvae are in the infective stage (ready to infect the horse) and form while still in the egg. After the horse eats these eggs, they hatch in the small intestine, burrow through intestinal walls, get into veins and drain blood. They then travel to the liver, where they burrow around the liver tissue and drain blood from the liver before moving on to the lungs. Here they burrow through lung tissue until they get into the air passages. They molt to a worm and migrate into air passages, causing a tickling sensation. The horse coughs them up and swallows them, and they go back to the small intestines where they molt to adults. Migration takes one to two weeks. These large worms can cause blockages in the intestinal tract, bleeding, and secondary pneumonia in the lungs.



CHAPTER 7: YOUR HORSE'S HEALTH

Botflies

Three species of botflies affect the horse. Adult botflies have no mouth parts and do not “feed” on a host. However, the activity of adult female botflies laying eggs on a horse is bothersome to the animal. It is the size of a honeybee with a curved tail. The common botfly (*Gastrophilus intestinalis*) deposits its eggs on the horse’s shoulder, mane, front legs and sides. The throat botfly (*Gastrophilus nasalis*) lays eggs on hairs of the chin and bottom of the throat. The nose botfly (*Gastrophilus hemmorhoidalis*) lays eggs around the lips and nose. Eggs are yellowish, the size of a pinhead and cling to hair.

The horse’s warm tongue licking the eggs makes the common botfly hatch. Larvae hide under the mucous membrane in the mouth for one month, then come to the surface and are swallowed.

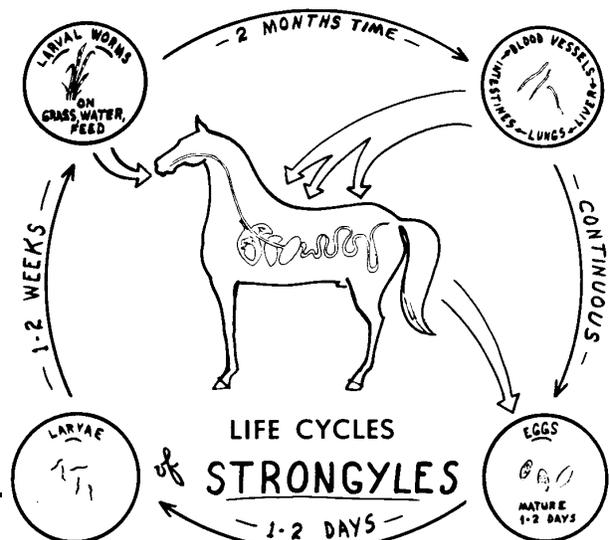
The other two types of botfly eggs hatch without stimulus. They burrow through the skin and under the mucous membrane, then begin a life cycle similar to the common botfly. When the larvae enter the stomach, they attach themselves to the stomach lining and cause sores that can penetrate through the stomach wall. This can cause a severe abdominal infection which could kill the horse. In eight to 11 months, the larvae pass from the horse, burrow 1 inch into the soil, pupate and return to the surface as adult flies between June and August.

Remove botfly eggs by carefully scraping horse hairs with a dull knife or piece of screen. This should be done frequently to prevent eggs from hatching and larvae from infecting the horse.

Strongyles

Three species of strongyles, commonly called blood worms, are a major threat to the horse. They are the single-toothed strongyle (*Strongylus vulgaris*), toothless strongyle (*Strongylus edentatus*) and large strongyle (*Strongylus equinus*). All have the same life cycle until they are ingested and go into the large intestine or cecum. From there, life cycles differ.

Once strongylus egg hatch, larva is released. It feeds on organic debris and bacteria. It sheds its cuticle covering, grows slightly and molts. At this stage, the larva is infective; it develops into an adult worm when it returns to the digestive tract of the horse. Once in the digestive tract, the larva molts into an adult parasitic worm. Under good environmental conditions, the first stages take three days to a week. After the larva finds a host, it takes 21 to 30 days to become an adult worm.





- Single-Toothed Strongyle.* The most serious of the three, it burrows through the intestine wall and gets into the arteries. It prefers the artery that supplies blood to the intestinal tract (anterior mesenteric artery). When they burrow into the arterial wall, the wall weakens so that the artery balloons — called an aneurysm. This weakened area can rupture and cause the horse to bleed to death. The larvae also cause body tissues to become inflamed, which can plug the artery — called a thrombus — or some of the material can break off and flow with the blood through the artery until it reaches a smaller artery that it plugs — called an embolus. The flow of blood stops — called an infarct — when arteries plug. The tissue not receiving blood dies, in this case part of the intestines. This causes severe colic. In most cases, the horse will die without surgery. Eventually larvae go back to the intestines and form adult worms. This process can take six months or longer. There are no effective medications to treat single-tooth migrating larvae.
- Toothless Strongyle.* It leaves the intestines, goes to the liver, then to the tissue around the kidneys and back to the large intestine. This journey causes damage to the liver and signs of colic. Because the larvae can carry bacteria, they can cause serious infections in any of the tissues they travel through. They also can rupture blood vessels, especially around the kidneys, causing hemorrhaging so severe that the horse could die. Their trip can take as long as 300 days.

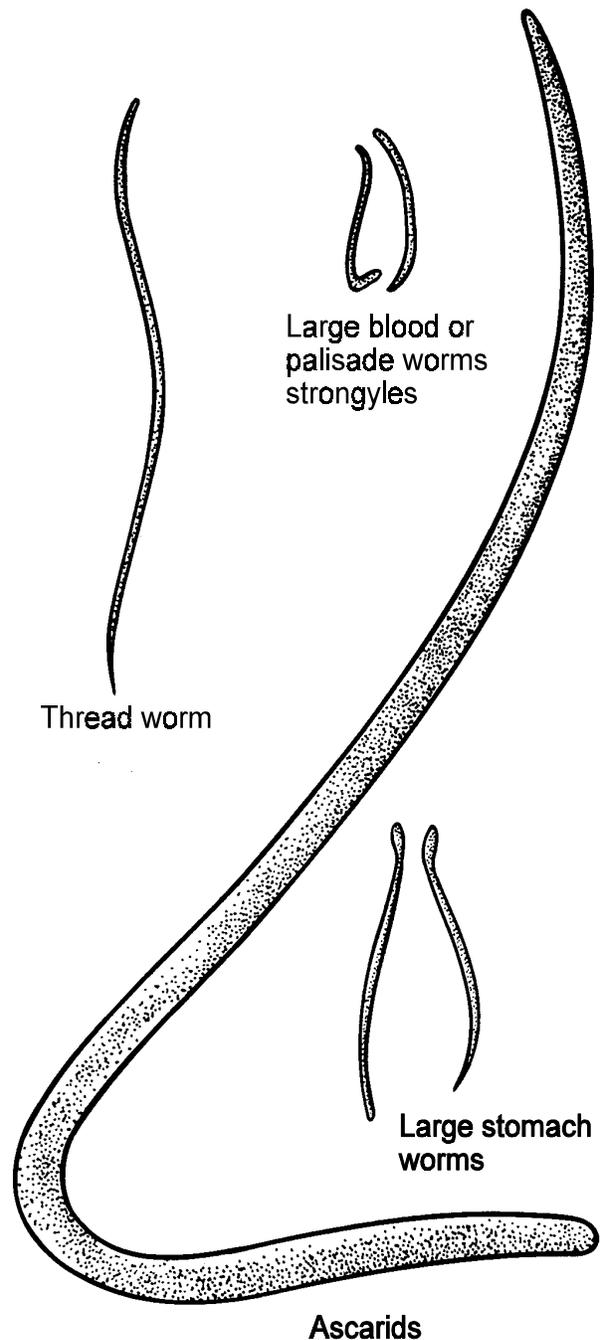


Figure 19. Stongyles (actual size).

- Large Strongyle.* It leaves the large intestine and goes to the liver and pancreas. Its



CHAPTER 7: YOUR HORSE'S HEALTH

burrowing damages these organs, and they can cause infections before returning to the large intestine. It takes about 240 days for the journey.

At least 12 species of small strongyles do not cause disease but lay eggs that look like those previously discussed. This complicates diagnosis of the serious strongyles when feces are examined for eggs.

Some roundworm eggs are very resistant to the environment and can survive as long as five years. Advanced stages of larvae have two cuticles, or coverings, and can survive up to a year in the environment. Environmental factors that favor egg and larva survival are moderate temperatures, adequate moisture and shade. The most potent weapons to control internal parasites in horses are extreme temperatures, drying and sunlight. Favorable environmental factors for parasite survival also stimulate the infective-stage larva to move up blades of grass to gain access to a horse. Conditions are more favorable at dawn and dusk. Running horses on pasture during hot, sunlit days and removing them at dusk through dawn will decrease their exposure to larvae. Since it takes three days to a week for the infective-stage larva to form, removal of fresh horse manure from the stall or paddock every two days will decrease exposure to parasites.

Pinworm

Pinworm females crawl out of the anus and lay eggs that stick to the skin around the anal opening. These drop off in about three days. The larva develop inside the egg shell and are eaten by the horse. Then, the larva molts to the adult stages and passes through the large intestine and completes its life cycle. The activity of the female as it crawls in and out of the anal opening and the cementing substance that holds the eggs to the skin cause intense itching. The horse scratches itself by backing up to and rubbing its tail against a solid object like a fence post or barn. This causes an unkempt, ragged appearance to the tail. The horse may lose weight and muscle because it spends more time scratching than eating.

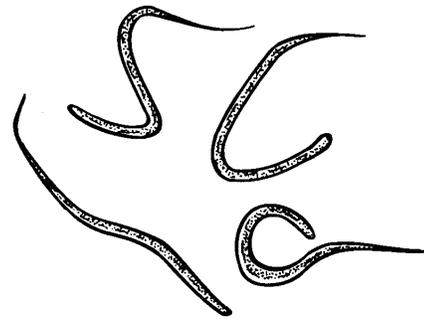


Figure 20. Pinworms (actual size).

Habronema

Habronema are stomach worms. Several species affect horses: however, horses rarely have heavy infestations. Fly larvae eat these eggs and, as the fly develops the larvae develops. The horse eats infected dead flies in feed and water. One habronema species causes benign tumors in the stomach wall. Occasionally, infected flies release habronema larvae into skin wounds. These larvae do not become adults because they must be eaten. They cause intense itching and open, oozing sores called Jack-sores or summer sores.



Others

Lungworms, tapeworms, liver flukes and roundworms also infect horses, but are rare.

Many compounds are available to treat internal parasites. Some are powders fed with grain, others are pastes or gels squirted in the horse's mouth, and some can be given through a stomach tube. These compounds have varying degrees of effectiveness against each of the internal parasites. A veterinarian should be consulted to develop a control program that will fit your management.

In general, horses should be dewormed every two months, but develop a parasite control program with the help of your veterinarian. Horses should be dewormed before being released into a new pasture or a cleaned corral to prevent contamination of the new area with parasite eggs. Treatment for botfly larvae in the stomach should be delayed until at least one month after the first fly-killing frost.

Removing manure from corrals can remove eggs and larvae and allow the ground to dry. Mowing tall pastures increases the amount of sunlight on the ground and allows it to dry. Sanitation plays an important role in preventing parasites.

External parasites

Flies

A number of flies cause problems in horses. Not only do they irritate the horse, they also transmit diseases.

- *Stable flies* suck blood from horses and other animals. The female lays its eggs in manure, urine and straw. This fly can carry the internal parasite larvae of *Habronema*, which cause summer sores. Cleaning destroys fly breeding sites.
- *House flies* do not suck blood but can transmit many serious diseases including the *Habronema* larvae. This fly lays its eggs in manure and straw.
- *Face flies* irritate the eyes. The fly is quite similar to the house fly.
- The *horse fly* is a large, black fly. Its bite is painful and may leave a bleeding wound. The *deer fly* is smaller and lighter in color with dark bands across its wings. Both flies can transmit diseases to horses. Larvae form from eggs deposited in muddy, wet areas. They burrow into the mud, emerging as adult flies 10 to 11 months later.
- Decaying and dead tissue attracts *blow flies*. They deposit eggs in infected wounds. Their eggs develop into fly larvae called maggots. Keeping wounds clean and uninfected along with using fly repellents around injuries will prevent blow-fly maggots.
- *Wohlfarthia flies* larvae which penetrate skin, forming abscess-like bumps containing the larvae. Maggots must be removed before the condition improves.

Mites



CHAPTER 7: YOUR HORSE'S HEALTH

Three types of mites (mange or scabies) parasitize horses. They produce a condition similar to lice that cause large areas of skin to become bald, reddened and inflamed. Intense itching causes the horse to rub or scratch the infected areas and makes the injury to the skin worse. Mites are small (1/40 inch) and can't be seen without a microscope. Because they burrow into the skin, some skin layers must be scraped off and examined with a magnifying lens or a microscope to see mites.

Horse lice

Horse lice are uncommon but can become a problem. Two primary kinds of lice parasitize the horse; a chafing louse and a sucking louse. Both cause intense itching so that the horse rubs against solid objects and bites or gnaws at affected areas. As a result, large areas on the neck, shoulders, flanks and hips lose hair and become red and inflamed. These symptoms are worse in the winter and early spring when lice populations peak. Adult lice are about one-tenth of an inch long, chestnut brown in color and clearly visible. Their eggs (nits) appear as whitish, small structures attached to fine hairs on the horse's body.

Funguses

Funguses also parasitize the skin and produce a condition commonly called ringworm. It is not caused by a worm, but some of the sores caused by the funguses appear ring-shaped with reddened patches covered with scabs. A better name for fungal infections of the skin is dermatomycosis.

These sores can be small to fairly large. They are hairless and inflamed with crusts. The funguses can be highly contagious, not only to other horses but also to humans. Care should be taken when handling horses with this problem. The funguses can be transmitted on infected tack and brushes to uninfected areas and to different horses.

CHAPTER 8: GROOMING



Grooming and care

Regular grooming of your horse will:

- give it a clean, shiny coat and skin;
- stimulate muscle tone;
- gentle most horses; and
- provide an opportunity to examine the horse closely.

Basic grooming tools include a rubber currycomb or rubber groom-mitt, a coarse-bristle dandy brush, a fine-bristle body brush, a wool cloth or cotton towel rub rag, a hoof pick, electric clippers, a coarse-toothed mane and tail comb, and a shedding scrape stick. Metal spring, or bar-type currycombs, are not recommended for show horses because they pull and break the hair. The shedding blade, bent double with the two ends fastened, is a handy tool to use during the spring when the horse sheds its winter hair. It can be turned over and used as a sweat scraper in the summer. A sponge can be used to clean muddy legs and other dirty areas. Keep your tools clean. Remembering how you use the tools, not their quality, determines the results.



Groom your horse before and after you ride. If you follow a definite system, you will thoroughly clean the horse each time and it will require less work. Comb in the direction of hair growth. Begin brushing the horse with a rubber curry comb or rubber groom-mitt at the head and work back on the near side including the legs; then go to the off side and work back from

Figure 21. Regular grooming and care ensures a healthy horse.

head to tail. Don't neglect the head (be gentle here) and the area around the tail. Do not use a metal curry comb the head or below the knees and hocks. There is no fat or muscle in these areas to cushion the comb's hard edge. Use a wet sponge or soft brush to remove dirt from the horse's head, knees or hocks. Use a rubber curry comb to remove caked dirt from below the knees and hocks.

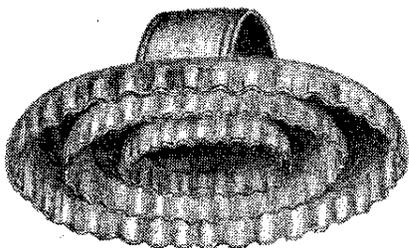


Figure 22. Curry comb.

When brushing, start with the coarse-bristle dandy brush and brush in short, brisk strokes. Flick the bristle up at the end of each stroke so it throws dirt away from the hair. Brush with the lay of the hair. It changes direction at different points on the body, so watch for these changes. Use the dandy brush on the body and legs, but not the head.

Use the fine-bristle body brush on the head, body and legs. Again, brush in the direction the hair grows. Rub the horse from head to tail with of wool cloth or cotton towel rub rag to remove dust.



Many old-time grooms use their hands and fingers to rub and massage hair and muscles. When training a young horse, use your hands to rub, scratch and massage every part of its body.

Trimming and clipping

Clippers and shears are additional tools used for grooming. Use clippers for cutting bridle paths and leg hair; trim around the head, ears and lower jaw, and to remove whiskers from the muzzle. Shears can be used in place of

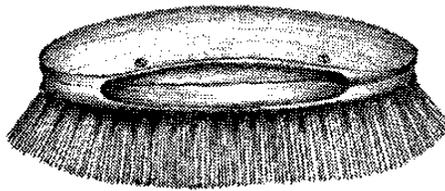


Figure 23. Dandy brush.

for horses that are clipper-shy.

Clipping a horse can be dangerous

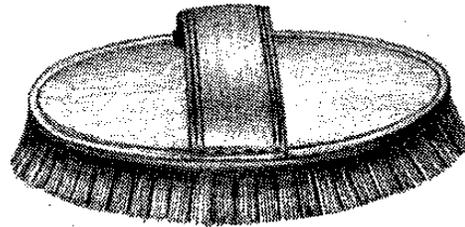


Figure 24. Body brush.

s; always have experienced people around to provide assistance.

Mane and tail styles vary with breed preferences. Contact your breed association for grooming styles.

Regardless of style, the foretop, mane and tail should be kept neat. Tangles in the mane and tail should be worked with your fingers and brushed with a dandy brush. Use caution when using a comb. Over a period of time, a comb or toothed comb will pull out hair and leave it thin. Never try to pull tangles out; they just become worse. Pick at them to loosen snarls. Watch for burrs and sticks caught in the mane and tail; remove them carefully. When grooming the tail, stand at the horse's side and never directly behind the rear of the horse.

Feet care

Proper cleaning of feet requires you to pick up each foot. Every foal should be taught to allow its feet to be picked up and handled. Begin when it is young so it gets accustomed to the feel of your hands. If you trim the foal's feet when young, you should have no trouble when the horse becomes full grown. Figures 25-28 show how to properly pick up your horse's feet.

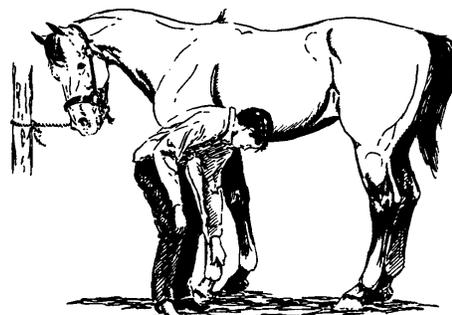


Figure 25. Near forefoot: Slide your left hand down the cannon bone to the fetlock. Lean with your left shoulder against the horse's shoulder. Reverse for picking up the off forefoot. When the horse shifts weight and relaxes on the foot, pick it up.

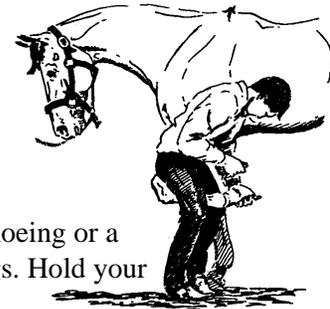


Figure 26. For a quick cleaning, hold the hoof in your free hand. When shoeing or a long cleaning job, it will help to place the horse's foreleg between your legs. Hold your knees together to help support the weight of the horse's leg.



Figure 27. Near hindfoot: Stand forward of the hindquarter and stroke with your right hand from the point of the hip down the hip and leg to the middle of the cannon. As you move the right hand down, place the left hand on the hip and press to force the horse's weight to the opposite leg. Grasp the back of the cannon just above the fetlock and lift the foot forward.



Figure 28. When the horse is settled, move to the rear, keeping the leg straight and swing your leg underneath the fetlock to help support the horse's leg. Never pull the foot to the side—the horse will resist. Reverse sides for picking up the off leg.

Clean the hoof from heel to toe. Pay particular attention to the area around the frog. Clean the depressions that are between the frog and the bars to prevent thrush and other foot infections. Watch for rocks, nails, injuries and loose shoes. Check the growth of the hoof periodically; trim and change shoes when necessary.

Proper hoof trimming is very important because it keeps your horse standing squarely and moving straight. Trim hooves every six to eight weeks, depending on the rate of growth. The hooves of young horses should be watched closely as they grow. Keep feet trimmed regularly so that the muscles and bones of the feet and legs will develop correctly. A healthy hoof grows about 3/8- to 1/2-inch a month and the fastest growth is at the toe of the hoof. Let hooves grow long during winter months or when you are not using your horse. Keep hooves trimmed. If you



horse is idle during winter months, it should be left unshod so its hooves have a chance to expand without being limited by shoes. This will prevent contracted heels.

Corrective trimming and shoeing on some horses improves or corrects inherited faults in conformation. The work should be done only by a person fully experienced in the structure of the foot and leg who has the knowledge of corrective measures. Ask your farrier for the shoe size your horse wears on the front and back, and if he did correct work on your horse. If so, ask what correction was needed and exactly what was done. Learn the basic points of proper shoeing so you will know when your horse is shod correctly. A poor job of shoeing can cripple your horse for long periods of time. Know what is correct and insist the job be done right.

The hooves of a horse will dry out rapidly in a dry climate and soils of the west. Keep your horse's hooves moist. A dry hoof will become brittle and crack; the frog will lose its elasticity. If a hoof is left dry too long, the frog will shrink and the heel will contract. Hoof dressing may be applied. One of the best preventions is to have some mud on the ground, possibly around the watering facilities, where the horse will stand long enough for moisture to go into the hooves. However, do not keep the hooves too moist because thrush infections grow in wet, manure-packed feces. If your horse gets thrush, apply a commercial germicidal preparation or a 7 percent iodine solution to the frog and the hoof.

Fitting and training for show

Competition when showing horses, either halter or saddle, is keen. If you intend to compete, you must plan to fit and train your horse.

Proper fitting is time-consuming; it requires a good worming program, proper feeding, a balanced exercise schedule, and grooming and training. You cannot fit a horse properly in a day, a week or a month. Start early.

Worming program

The worming program should keep the horse free of internal parasites mentioned in Chapter 7, *Your Horse's Health*, pages 55-59. If your horse has worms, it cannot make the best use of its food.

Feeding program

Follow a feeding program that furnishes all the required nutrients. Consider the size of the horse, its growth (if young) and the amount of exercise or use it gets. Feed to get a good covering of flesh, but not an overly fleshy body condition. You must balance your feeding with exercise to keep the horse's body hard and its muscles in good tone (see Chapter 5: *Feeding Horses*).

Exercise

Exercise is necessary to build muscles and develop wind. Circumstances will dictate how you exercise the horse, but it should receive some planned exercise daily. Training and exercising can be combined, but keep them in balance. Train for short periods. Plan to get the horse out on long, relaxed rides where it can walk and trot. Walking builds muscles; trotting builds muscles and develops wind; loping develops wind. Lunge the horse for 20 to 30 minutes on school days when the horse is not in training, to keep muscle tone.



Grooming

Regular grooming is a must. The horse should be cleaned and brushed at least once a day. Brushing will stimulate the skin and bring out natural hair oils that make the coat shine. A quick brushing when a horse is warm after working it will help bring out body oils.

Wipe the entire body with a cloth after brushing. As you use the cloth, it will accumulate oil from the hair. This oil will help shine the hair, and will pick up more dust from the hair. You may dampen the cloth and use it as a temporary substitute for a full bath.

- *Bathing*

When you bathe your horse, use a mild soap and rinse thoroughly. Use only water on the horse's face; avoid using soap. After rinsing the horse's body, scrape the remaining water off with a sweat scraper. Then, rub the horse dry with a clean towel. Keep the horse out of drafts until it is dry. The horse's coat may be fluffy and not lay flat after washing. If bathing can be done at least one day prior to a show, a horse kept clean until show time, the hair will lay flatter and smoother.

Cleanliness is very important, especially in showmanship classes. Clean the horse around eyes, nostrils, muzzle, under the tail and between its legs. The gelding's sheath and the mare's udder also require cleaning.

A blanket or sheet placed on the horse overnight will help keep the coat clean, but blanketing your horse should depend on circumstances. If you plan to show early or late in the season, it is necessary to blanket the horse full time when a short-hair coat is desired during the winter months.

- *Clipping*

Train the horse to allow you to use electric clippers to trim the long hairs on the muzzle, under the jaw, the ears, the bridle path, and if required, roach the mane. Breed and show customs will influence what to clip, but the goal is to have the horse looking trim and neat.

- *Shoeing*

Keep the horse's hooves trimmed and in a healthy condition. If the horse is shod, the shoes should be checked or replaced about every six to eight weeks. Replace worn shoes before a show. It is best to trim the hooves and shoe the horse one to two weeks before the show; this will allow time for the horse to recover if the hoof becomes sore due to short trimming.

The feet should be clean when you enter the show ring. A hoof dressing may be applied, but avoid those that leave a greasy appearance and attract dust. Use of artificial hoof coloring varies from breed to breed, so know your breed rules.

None of the tricks practiced in fitting a horse for showing replaces the need for good feeding, grooming, exercise and training. Be observant and learn new techniques as you watch others. Add these ideas to your fitting knowledge, and use those that appear to help. Don't be misled by fads or fancies.



Training

Tailor your horse's training routine to the type of show you'll be competing for. Training is explained more in other chapters, but it is important to train as you fit your horse. All of these points go together long before show day.

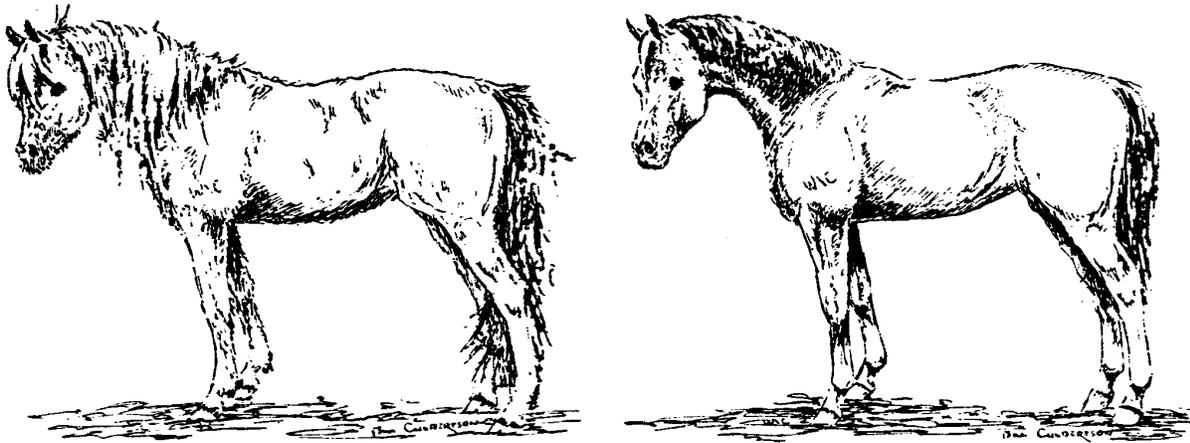


Figure 29. Compare the appearance of the two horses; the well-groomed horse is to the right.

CHAPTER 9: TRAINING



Good, consistent training is essential for your 4-H horse project. Every time you handle your horse, you are training it and reinforcing its previous experiences. All 4-H horse project members should take lessons, attend clinics and carefully observe other horse owners. Developing yourself into a competent horseman requires a dedicated and concerted effort.

Training methods vary with the trainer and the individual horse. A good trainer knows many methods and when to use them. This takes experience as you never stop learning. Do not attempt to handle and train a foal or yearling until you are old enough, large enough and have the maturity and experience to properly manage all situations.

The secret is to make what you want the horse to do easy for him to do, while at the same time making undesirable behavior difficult. The horse learns good behavior and respond, to cues through repetition. Some learn faster than others, but in either case you, as a trainer, must know what you want and ask for it in exactly the same way each time. Reward and stopping a cue at the correct moment is as important as giving the correct cue. Be patient, and remember one of your best aids is your voice. Talk to your horse with a soft, reassuring tone. Don't confuse your horse by asking too much too soon. Start out slow and be consistent with your training and commands.

Training can be separated into two parts, ground training and saddle training. This manual covers basic ground training. Saddle training requires experience and knowledge beyond the beginner or intermediate 4-H skill level, therefore only ground work is discussed here. An untrained or improperly trained horse is a nuisance at the least, and some behavior can be dangerous. The cute little tricks a foal learns will soon become bad habits, and even dangerous ones, when the foal grows up. Don't "baby" your horse, young or old. Be firm about what you want it to do. Use discipline when needed, but don't be harsh or cruel.

Ground work refers to working with the horse while the handler is on the ground. Ground work is best started when the horse is still very young. Halter the foal when it is a few days old and begin to train it to lead and stand quietly tied. These lessons should be short and frequent. The foal must learn to respect this equipment and the handler. This is important since you will use a lead rope, tie-ropes and reins to communicate with your horse for the rest of its life. Use large diameter cotton rope (3/8- or 7/16-inch diameter) during early training. This rope is soft and will not give rope burns to your horse. This size is much easier to grip and hold.

Many trainers tie the haltered foal near its dam for short periods of time. Others halter-break by leading the foal separately when the dam is led. Still others will tie the foal to a stout fence or pole for a short time and let it learn to respect the halter and tie. To prevent injury to neck muscles, tie a non-slip loop around the foal's body immediately behind the withers and elbows, with the end between the front legs. Tie the end through the halter ring and back to the post, or wrap it around the post, and run it back through the halter ring. When the foal pulls back, the pressure of the body loop will increase and the foal will stop.



This is not cruel as long as you watch the foal to ensure that it does not become entangled and injure itself. A good trainer will keep watch but will leave the foal alone to learn by itself. The foal must learn to respect the rope and halter if you want control and obedience later.

The foal should be taught to respond willingly to the lead rope. This is easier if it has learned to respect the halter. A good practice is to make a loop with your lariat and drop the loop over the rump of the foal (see figure 30 at the right). The loop should lie just ahead of the point of the hip and drop back to the rump under the buttocks. The rest of the lariat is held so a slight pull will give pressure at the loop if the foal holds back. Never jerk or pull at the head if the foal balks. This will cause the foal to fight back harder. Take it easy, and pet the foal when it responds correctly.

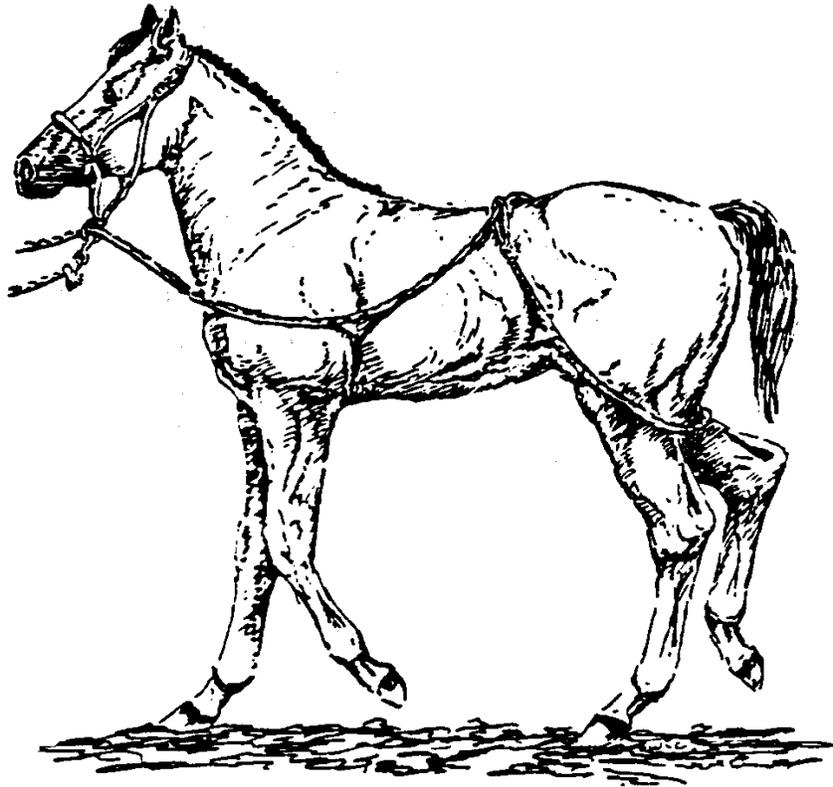


Figure 30. Loop lariat over foal's rump.

A horse taught to lead properly will move with you in any direction and at any speed. It will keep its head about even with your shoulder, or slightly in front, so you are about halfway between its head and shoulder. The horse should not crowd you or stay far away. It should keep a moderate distance away from you and work on a loose lead line. When you wish to stop, apply a slight resistance on the lead rope by making your hand passive, but do not pull back. The horse should stop when it feels this resistance. When it stops, it should stand straight and quietly, again on a loose lead. These points are very important for correct halter showing.

Don't forget to praise your horse with your voice and give him a pat when he responds correctly to training. While teaching a horse to lead, you should also teach the horse to respect your space and to move away from pressure. Your horse should quietly and immediately be willing to move any part of its body away from or toward the handler. A step or two at first is good enough. Later on, you can ask for more steps. Practice your ground work on both sides to keep your horse flexible and responsive.



Lunge line (ground training)

Many trainers use a lunge line for both training and conditioning horses. You will find a lunge line useful, especially for early training of young horses and exercising older horses.

A lunge line may be a lariat a light nylon or cotton rope at least 25-feet long. Fasten one end to a well fitted halter or lunging cavesson. The rest of the lunge line is held in the hand. Stand in a small area and drive the horse in a circle around you. Walk forward in a small circle as your horse moves in a larger circle. Keep the lunge line loose, but not dangling. A tight lunge line can spoil a natural gait. Do not attempt to use small diameter ropes since they do not coil properly and tangle. This is dangerous.

It takes patience to teach a horse to work on a lunge line. Up to this time, your horse was trained to walk by your shoulder. Start to train your horse to circle by teaching it to walk in a small circle around you. As the horse learns and responds, increase the size of the circle by increasing the amount of line you let out. A long, light whip may be used as an extension of your hand to make your horse move out, but never strike hard. The snap of the whip behind its fetlock, or a touch of the whip or light flick on its hindquarters will give all the signal needed. Soon you will not need the whip.

Figure 31 shows your position to keep the horse moving around you in a circle. It is possible to train your horse to stop when you step forward from this position.

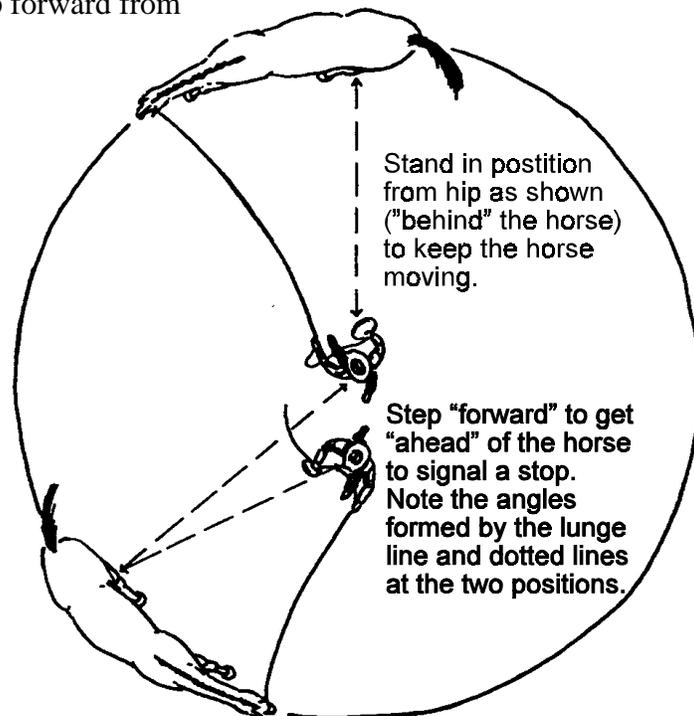


Figure 31. Lunge line or ground training.



After your horse has learned to circle freely at a walk and stop when you step forward and say “whoa,” you can begin training it to trot and canter slowly. Always circle both directions equally so your horse will develop muscles and skill to work in both directions of the circle. This is an excellent way for your horse to learn and use the correct leads at the canter and develop its natural balance and grace without the weight of a rider.

It is not recommended to work at excessive speed for a long length of time in small circles. This can cause stress and lameness in your horse’s legs. Keep the circle large; a tight circle is hard on a young horse’s joints.

Always use the same voice commands. Soon your horse will respond to these words.

Use a lunge line for regular exercise and training periods. Also, this is a good way to exercise your horse at a show. Both young and older horses should be trained to respond to the lunge line. In addition to lunging, you can ground drive your horse. This prepares a young horse for direct reining when put under saddle.

You’ll find that it is fun to train and work your horse from the ground. You will experience a difference in the way your horse responds when you ride.

Breaking a horse to saddle and saddle training is beyond the scope of this manual. Reference material about saddle breaking is available elsewhere.

CHAPTER 10: 4-H SHOWMANSHIP AT HALTER



Showmanship

The presentation of your horse to a judge is known as showmanship, and this presentation follows a pattern. A pattern is a written description of a group of maneuvers what the judge wishes to see and how he scores you on your skill in performing this pattern. A single maneuver is known as *walk, or trot, or back, or pivot*. A typical pattern for showmanship is to lead, walk, trot, back, set up or pivot the horse, in any combination. See the *Colorado 4-H Horse Rulebook* for suggested patterns, rules and explanation of scoring.

Presentation of the horse has two parts. Part one is the appearance of the exhibitor and condition and grooming of the horse. The exhibitor should be dressed in clean, fitted clothes, with polished boots and a brushed hat. The exhibitor's hair should be neatly arranged away from the his or her face. The horse is required to be clean and brushed, with a combed mane and tail. Hair that has been clipped or trimmed should have a neat, tidy appearance. The halter and lead should fit well, and be clean and in good repair (see figure 32).

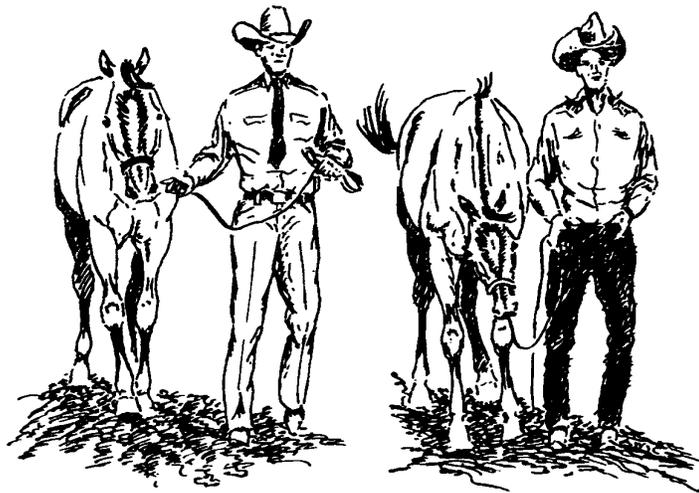


Figure 32. Note the clean, well-fitted horse and competitor on the left.

The second part of presentation is the actual performing of the pattern. The exhibitor should display confidence and poise when showing. The horse needs to be responsive to the exhibitor's cues when performing the pattern.

In the Show Ring

Be on time when the class is called. If an individual pattern is used, the show management will normally post the pattern. If no pattern is posted, enter the ring at the direction of the ring steward and watch the ring steward for instructions on where to go. Remember, even though the ring officials may be checking entries, the judge may be sizing up contestants as they come in, so stay awake.

When instructed to line up, enter the line from the rear in the position indicated. Line up evenly with the others and stand up your horse. Stand your horse quickly, then watch the judge. Do not crowd the other horses. Allow room between your horse and those either side. When the class is lined up or leading head to tail, do not crowd the horse in front. The horse should set up quickly, stand squarely and move forward or backward freely. Pose the horse according to your breed standards.



CHAPTER 10: 4-H SHOWMANSHIP AT HALTER

Training

There is never a substitute for training. No shiny halter, pretty new shirt or colorful hat will make you as competitive as the youth who have consistently schooled his or her horse.

Training does not describe any particular way of teaching. As all horses think and act individually, training methods need to suit the individual's ability. A training method is generally acceptable as long as *safety rules* and *humane treatment* of the horse are practiced. See Chapter 15, *Horse Safety Guidelines*, for basic safety rules.

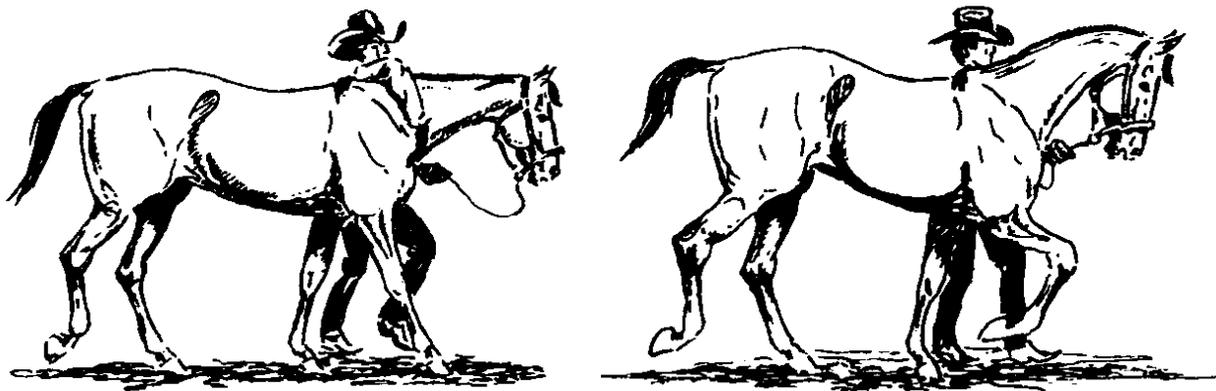


Figure 33. Be in control of your horse, hold the lead in your right hand and lead from the near (left) side. Note how the exhibitor on the left is not in control and the exhibitor on the right is clinching too tightly on the horse's head.

Three basic training rules

1. Patience
2. Consistency
3. Practice

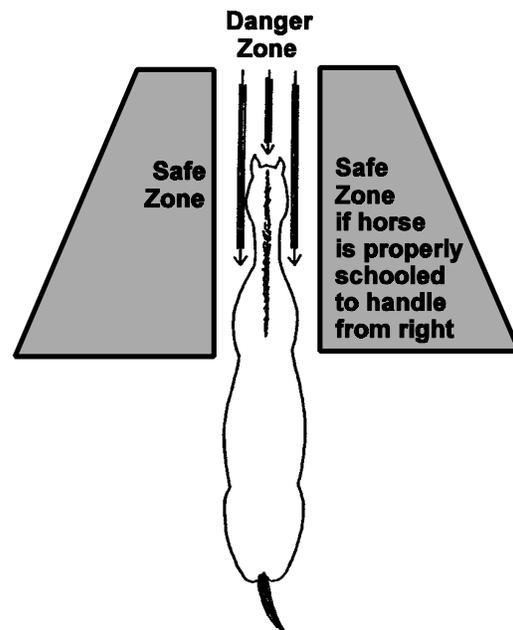
Train at home until the signals you give are understood by the horse.

Note the safe zone areas in figure 34 on the next page. These are the safe areas for someone who handles a strange or unschooled horse. When using the safe areas, you are out of the direct line of a sudden lunge, strike from the front legs or a kick from a back leg. Since a horse uses its head and neck to balance its body, the safe areas are the positions where maximum control can be exerted by pulling the horse's head to the side. This forces the horse off balance in hope of preventing further action if the horse becomes unruly.

Halter showing and showmanship customs today, especially in showmanship classes, encourage the exhibitor to move to either side of the horse. This is safe only if the horse is properly trained before entering the show ring. A horse acts independently on each side; therefore, you must train it to lead, stand and show from each side. Always handle a strange or untrained horse from the near (left) side since the majority of horses are started and handled from this side.



Figure 34. The shaded areas indicate safe zones for showing a horse from either side. Note the danger zone directly in front of the horse. Stand toward the front, not in the danger zone, and out of the direct line of action of a strike or lunge. It is permissible to cross the danger zone to get from one side of your horse to the other. Remaining in the danger zone is considered a fault. Use positions within the safe zones where both the horse and the judge can be observed.



As a trainer, you must give your horse the chance to do the work right. If you do not work your horse with patience and consistency, he can become confused. This often leads to a cranky, stubborn horse. *Practice makes you confident and the horse trustworthy.*

To begin training for showmanship, your horse must do two things: lead willingly and stand quietly.

The most important part of any showmanship pattern is the set up for inspection. The *set up* is a posed position of the horse for inspection by the judge. To achieve this pose, the exhibitor must teach the horse to stand squarely on each leg and stay posed until asked to change.

Bring your horse into the set up with the foot fall of the *right hind foot*. When you bring your horse from a walk to halt, the right hind becomes the base of your set up. *Do not move that foot.* Next is the placement of the left hind foot. Setting the hind feet is generally the most difficult chore in the beginning of training. Work only with the hind feet until you get a response. *Response* is movement of the foot or shift in weight when you pull or push on the lead shank. This beginning movement probably will not be correct in its placement, but once your horse understands he is to move a foot when you cue him, you can keep asking him to move his foot until he places it correctly, or anywhere you wish it to be. At first, you may have to pull very hard as the tendency of a standing horse is not to move. Once he moves, relax the lead. This is his reward.

The front feet are treated a little differently. The foot most out of position, or not square, is moved first. Moving the front feet is generally done with side to side motion of the lead, with the lead held under the chin. Again, when a front foot moves, release the tug. With patience, the horse will become sensitive to any movement of the lead shank. In time, a slight tug on the lead will cause the horse to move a foot. Eventually, the horse will anticipate your cues and stand himself correctly.



CHAPTER 10: 4-H SHOWMANSHIP AT HALTER

To demonstrate your horse's natural movement and soundness, the judge often asks you to trot your horse. If your horse does not trot beside you, he must be taught to do so. Begin teaching the trot from the walk. Your body position at the walk and trot should be midway between the horse's head and shoulder. Once you and your horse can walk together in this position without any pulling on the lead shank, pick up the pace of the walk. Vary your speed at the walk to test your training. The horse should adjust his speed to match yours, if it does not, continue practicing the walk. When you ask for the trot, ask with the same sound or cue you use when riding or lunging. Walk briskly and cue him to trot just as you begin to trot yourself. If he does not trot, return to the brisk walk and ask again. Continue this routine until he trots. *Never pull or drag your horse.* Making your horse trot is a good test of your skill. Having a friend stand behind the horse and cluck or wave his arms is not.

Patterns quite often require a pivot or turn on the haunches. The pivot is usually described as a quarter or half turn, or 90 or 180 degree turns, and sometimes a full or 360 degree turn is asked for. The turn is always to the right or away from you when a quarter or more. To begin the training, you must start with the *right hind foot*. This is called the pivot foot. Position your left hand at the corner of the horse's mouth and your body midway between the head and shoulder. Holding the lead in your left hand, gently push against the face with your fingers while simultaneously pushing against the rib and shoulder with your right hand and stepping forward. The rib and shoulder must move before the head. If you turn the head or push too hard with your left hand, the horse will bend in the neck. To help move the rib and shoulders, cautiously use a crop or tapper. Try to keep the horse as straight as possible. This movement is difficult for the untrained horse. To move his rib and shoulder, begin the pivot. He must step around with his front legs and cross the left over the right, while keeping his right hind foot, the pivot foot, in place. He will most likely take a step back, or take a step out to the right with the pivot foot. If he does, simply pull him back around to the start position and begin again. When you begin your training, ask only for one step, and reward the horse by stopping. Training the pivot is a challenge, so one small step done correctly is great progress. You may need the help of a friend to keep track of the pivot foot's position, as it can be difficult to see when standing at the front of the horse.

Finally, after all the training and practice, it is time to meet the judge and perform the pattern. The function of showing with the quarter system is to allow the judge an unobstructed view of your horse to evaluate conformation, fitness and soundness. To keep the judge's view clear, the exhibitor must move from one side of the horse to the other. The showman chooses his side depending on the position of the judge. The following examples of the quarter system will explain the movements.



The Quarter system

The four quarters can be visualized by an imaginary line drawn down the center of the horse's body extending from front and rear to divide the horse into left and right sides. Another line drawn across the horse at the base of the withers, extending out from both sides at right angles to the first line, divides the horse front and rear. This is shown by the dotted lines in figures 35 to 38. Visualize the judge moving in a clockwise direction around the horse or around the class of horses as you move from figure 35 through figure 38.

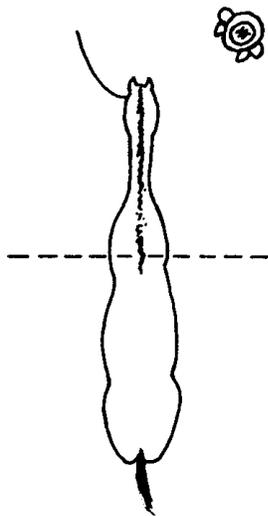


Figure 35. First, the exhibitor is in the basic position — safe zone at horse's left — and the judge at the horse's right front or in the right front quarter.

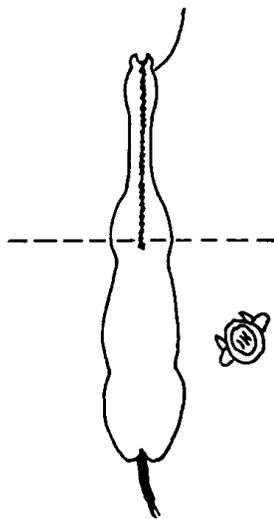


Figure 36. Second, as the judge moves across the imaginary line to the right rear quarter, the exhibitor steps across to the horse's right side.

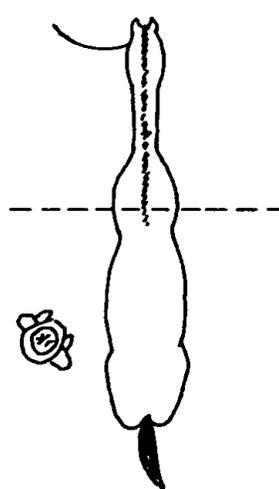


Figure 37. Third, the judge moves into the left rear quarter, and the exhibitor steps back to the left to be on the same side as the judge.

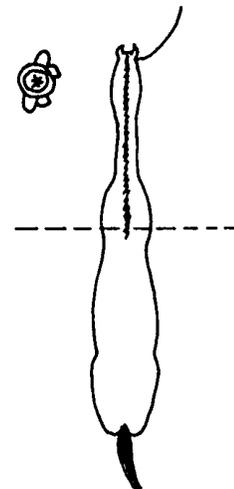


Figure 38. Fourth, as the judge moves to the left front, the exhibitor steps back to the right to avoid blocking the judge's view.

The exhibitor should stand angled toward the horse in a position between the horse's muzzle and eye, holding the lead with enough slack to allow movement under the chin as the handler changes position when the judge moves. The lead should be held flatly between the thumb and forefinger of the right hand, near the muzzle, but not touching the horse. The excess lead is held in the left hand in a manner comfortable for the exhibitor. Arms should be relaxed and the elbows slightly bent. Different positions are often required allowing for the height of the exhibitor.

A minimum number of steps should be taken when changing sides. You can limit your steps and make a smoother change by stepping off with the inside foot, placing it on the other side of the horse, turning on the foot as you place your other foot along side. The hand should follow the foot, moving quietly under the chin of the horse.

CHAPTER 11: EQUIPMENT (TACK)



Good equipment is a basic necessity. Equipment should be well made and fit both you and your horse. Fancy equipment is not necessary for your 4-H project.

Western

You will need a saddle, saddle pad or blanket, bridle with a good bit, halter and lead rope for your 4-H project. Other equipment, such as a chaps, splint boots, spurs or lariat may be needed, depending on the type of riding you do. Do not use spurs until you can use them correctly, as aids, not punishment.

Bridle

The bridle consists of three parts: the *headstall*, *bit* and *reins*. Western headstalls usually come in two styles: *browband* and *split-ear*. Western reins come in three varieties: *split*, *romal* and *mecate*. The headstall should be of strong, narrow leather. The bit should be as light and as mild as necessary while still allowing you to maintain control of your horse. Too often severe bits are used as a substitute for good training. Do everything possible to keep your horse's mouth soft and responsive.

The *bit* is used to communicate with the horse, not control it. Western bits fall into three main categories: *snaffle*, *curb* and *spade*. A snaffle bit is a non-leverage bit while curb and spade bits are leverage bits. The bit should fit the width of the horse's mouth and be properly adjusted to the horse's teeth, lips and tongue. Snaffle bits are usually correctly adjusted if they make one or two wrinkles in the corners of the horse's lips. Curb bits are usually fitted with one wrinkle or just moderate contact with the corners of the horse's mouth. Consult with your leader or riding instructor to learn more about proper biting.

The *hackamore* is a bridle without a bit. Hackamores come in two styles, *bosal* and *mechanical*. A bosal is made of braided leather or rawhide and can be a valuable training tool. Mechanical hackamores are a leverage device that creates pressure on the bridge of the nose and on the chin. Mechanical hackamores are not acceptable in western performance classes, but are often used in timed events and trail riding.

Curb straps are necessary on all leverage bits and mechanical hackamores. Some curb straps are made of leather and some include a flat chain. All curb straps must be at least ½ inch wide to lay flat against the horse's chin. Adjust the curb strap so it is tight when the bit shanks are a 45–50 degree angle to the mouth.

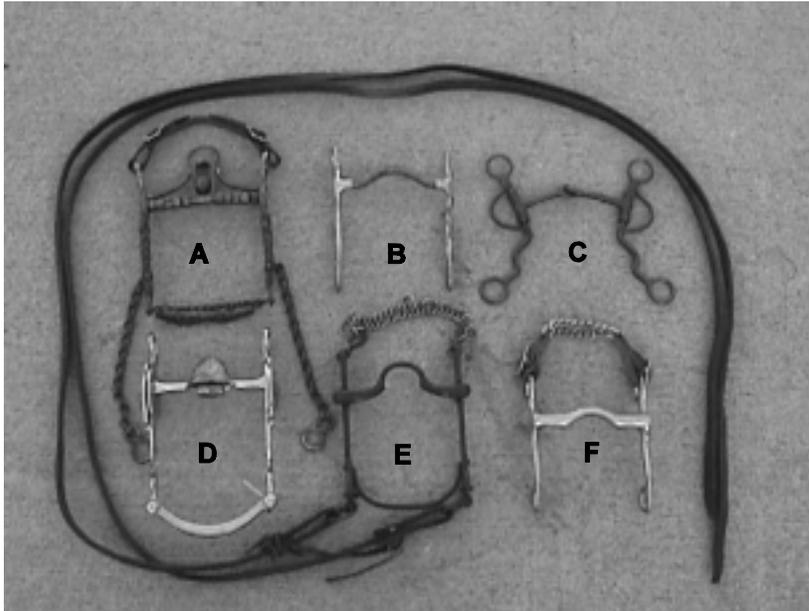


Figure 39. Three main styles of bits. A) a spade bit with spoon port, braces, roller, slobber chains and rein chains; B) a sweetwater copper mouth piece curb bit; C) shanked sweet iron snaffle with two rein rings; D) high copper covered port with cricket roller, decorative silver shanks; E) medium port sweet iron curb bit; F) low port grazing shank curb bit.

Headstalls

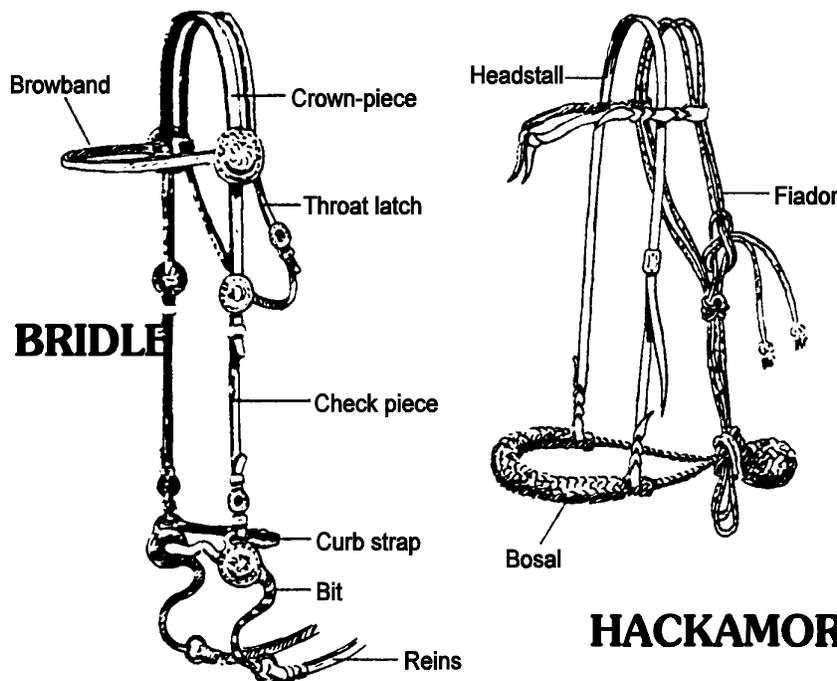


Figure 40. Browband headstall with curb bit on left; hackamore headstall with a rawhide bosal on right. This is an excellent training tool which eliminates pulling on the mouth of the horse being trained.



Saddles

The western saddle was developed for working cattle and riding long distances. It has a horn, cinch, wide-stirrup leathers called fenders and often a rear cinch. Designs are often tooled into the leather to decorate western saddles. The rear cinch helps keep the saddle in place when roping and working cattle. Wide fenders protect the rider's legs from horse sweat and thorns. A western saddle is designed for use with thick saddle blankets or pads.

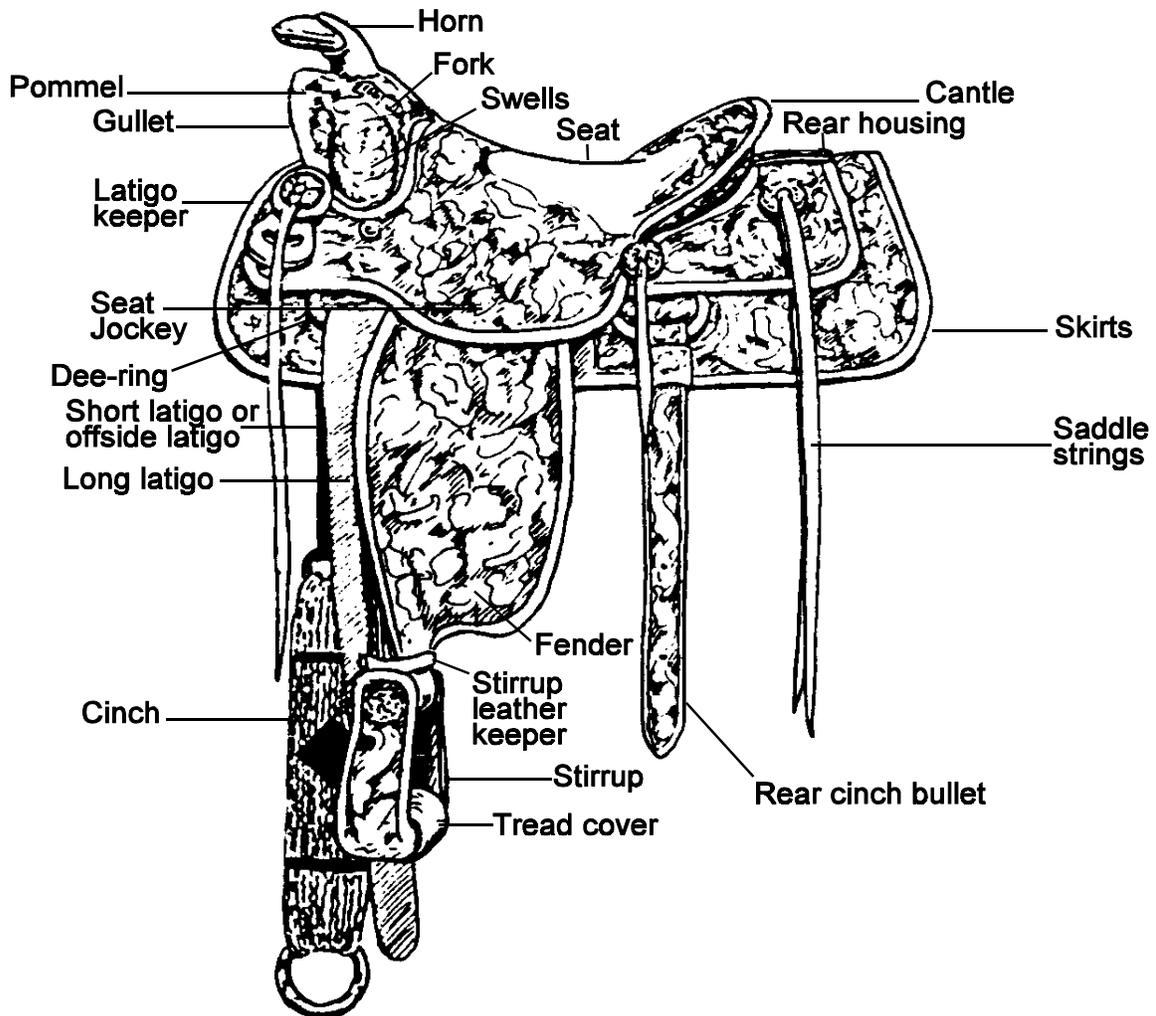


Figure 41. Western saddle.

Saddles that receive proper care will last a lifetime. Store them in a manner that supports the correct shape. Clean the saddle regularly with a leather cleaner and conditioner and use a saddle oil. Replace worn or broken parts before they affect the function of the saddle. Always use a clean and dry saddle pad on your horse. There should be enough pad thickness to keep the gullet of the saddle above the withers. You should be able to place your fingers between the withers and the saddle gullet.



Store your equipment properly. Keep it out of the dirt and weather. A saddle rack will help your saddle keep its shape during storage.

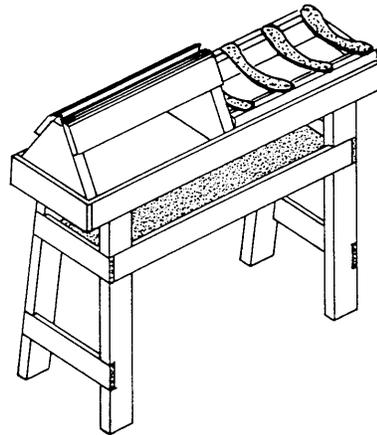


Figure 42. Saddle rack.

English

The English riding styles are the hunt seat, saddle seat and dressage.

Hunt seat

Acceptable bits include *snaffles*, *pelhams*, *kimberwicks* or *full bridles*. All bridles must be fitted with cavesson nose bands. *Martingales*, either running or standing, are permitted in classes over fences. Martingales are training equipment not allowed in flat under saddle classes. Correctly adjust the bit to the horse's mouth. Snaffle bits are usually correctly adjusted if they make one or two wrinkles in the corners of the horse's lips. Consult with your leader or riding instructor to learn more about proper bridle fitting.

The *snaffle bridle* uses a non-leverage bit and is the most commonly used bridle in hunt seat and dressage riding. The bridle is made of plain leather (raised or flat) with a browband, cavesson, throat latch and a single set of closed reins. A dropped noseband, figure eight noseband and flash noseband are all training devices that fit below the snaffle bit and keep the horse's mouth closed.

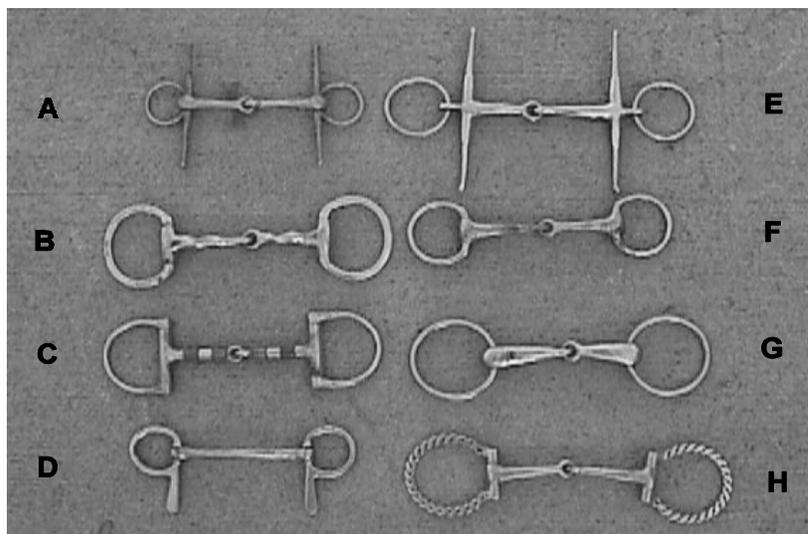


Figure 43. Snaffle bits: A) full cheek snaffle 4½ inch mouth; B) eggbutt snaffle 5 inch mouth with a slow twist; C) D-ring snaffle with copper rollers; D) mullen mouth spoon cheek snaffle; E) fulmer snaffle; F) eggbutt bridoon; G) O-ring snaffle large diameter hollow mouth piece; H) western D-ring, decorative rings.



The *pelham bridle* uses a leverage bit, called a pelham. This bridle is different from the snaffle because it has two sets of closed reins attached to the curb bit. The pelham also has a curb chain. When the top rein, or snaffle rein, is pulled, it puts pressure on the corners of the horse's mouth, lips and gums. The curb rein, or lower rein, puts pressure on the poll, mouth and chin groove. Correctly adjust the bit to the horse's mouth. Pelham bits are usually fitted with one wrinkle or just moderate contact with the corners of the horse's mouth. Adjust the curb strap so that it comes tight when the bit shanks are a 45 to 50 degree angle to the mouth. Consult with your 4-H leader or riding instructor to learn more about proper bridle fitting.

The *full bridle*, or *weymouth bridle* has two bits (a snaffle and a curb), two reins, two cheek pieces, a browband, cavesson, throatlatch and a curb chain. The curb rein puts pressure on the poll, mouth and chin groove. The curb should fit just below the corners of the horse's mouth without pinching. The snaffle puts pressure on the corners of the mouth and should rest just above the curb on the corners of the mouth. The curb chain must be twisted flat and rest below the snaffle. The curb chain should be loose at rest and tighten when the curb rein is pulled. There is a lip strap attached to the bit shanks and through the curb chain (see figure 44, E). The lip strap keeps the curb chain in place.

The browband of the bridle keeps the headstall in place and should not pinch the ears. The cavesson encourages the horse to keep his mouth closed. It fits between the cheek pieces and the horse's cheek. The cavesson should be adjusted to fit so that it lays approximately two fingers below the cheek bone and be neither too tight nor too loose. The throat latch adjustment should allow two to three fingers between it and the throat of the horse to permit the horse to flex its neck.

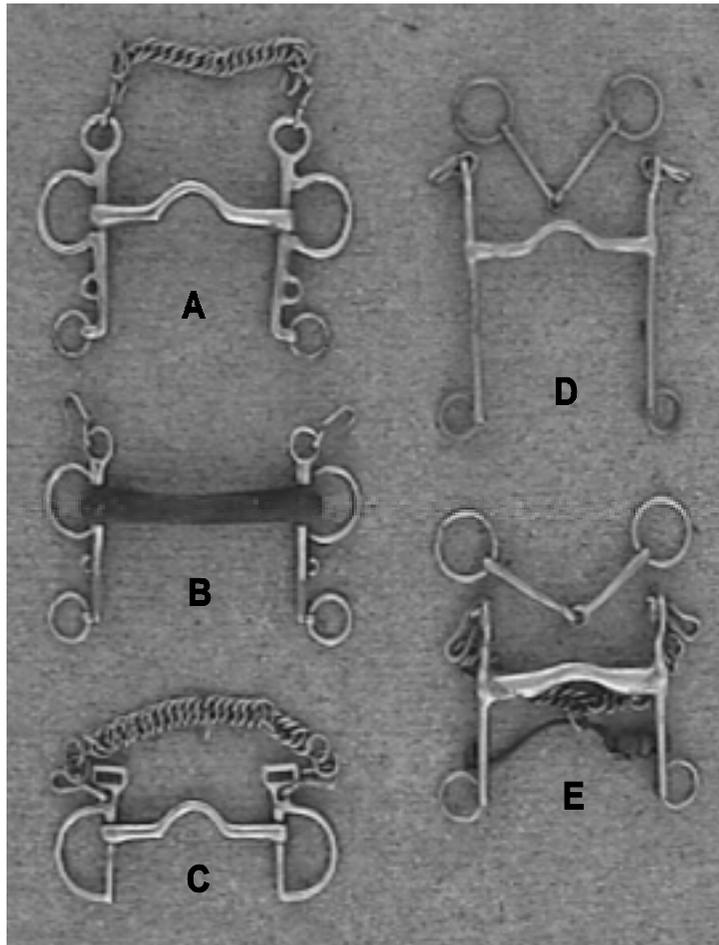


Figure 44. The pelham bit has both non-leverage and leverage functions: A) pelham with medium port; B) rubber mullen mouth pelham; C) kimberwick, medium port; D) weymouth low port, smooth bridoon; and E) curb with tongue relief, lipstrap and smooth bridoon.

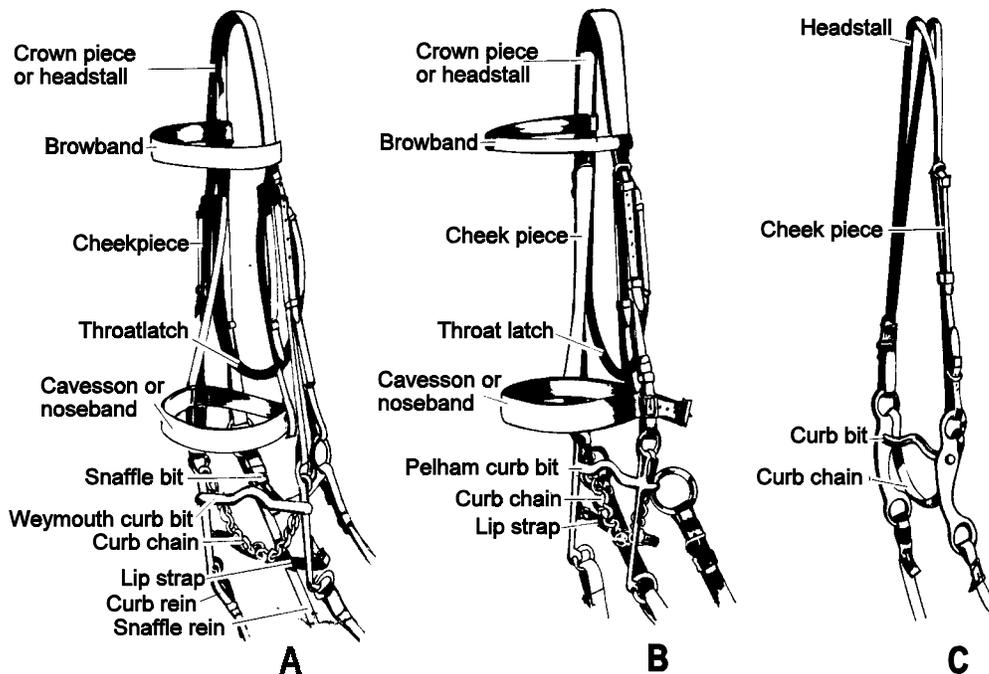


Figure 45. Three types of bridles: A) Weymouth bridle; B) Pelham, double-reinged bridle; and C) Split-eared western bridle with curb bit.

Saddle seat

Full bridles are required in saddle seat. Martingales are not allowed. A flat English-type saddle is required.

Dressage

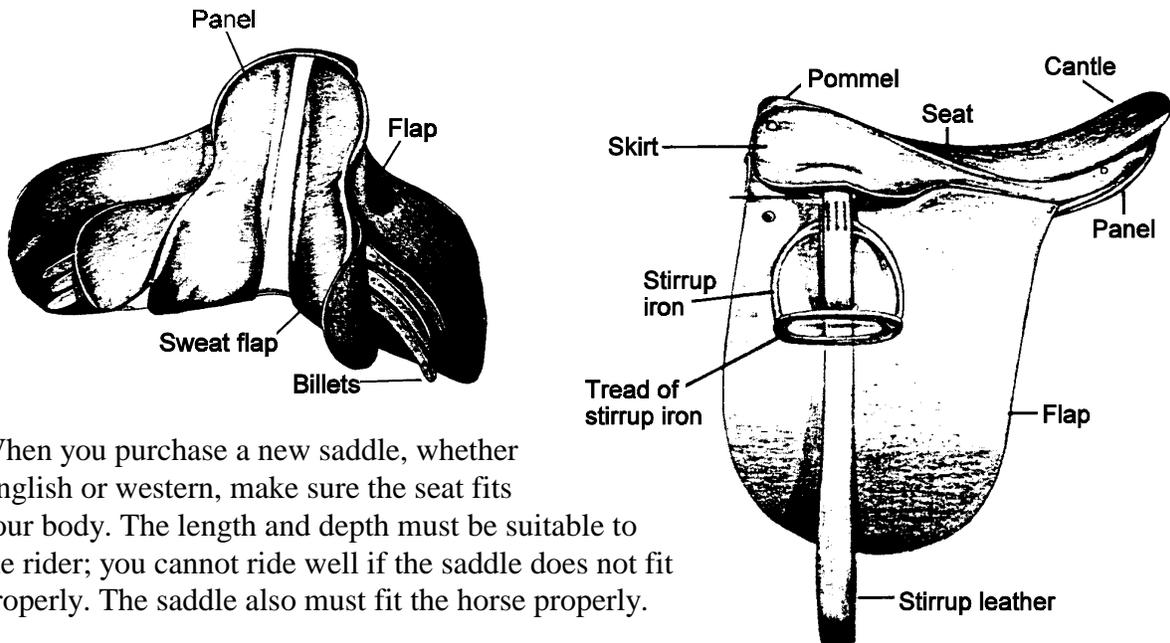
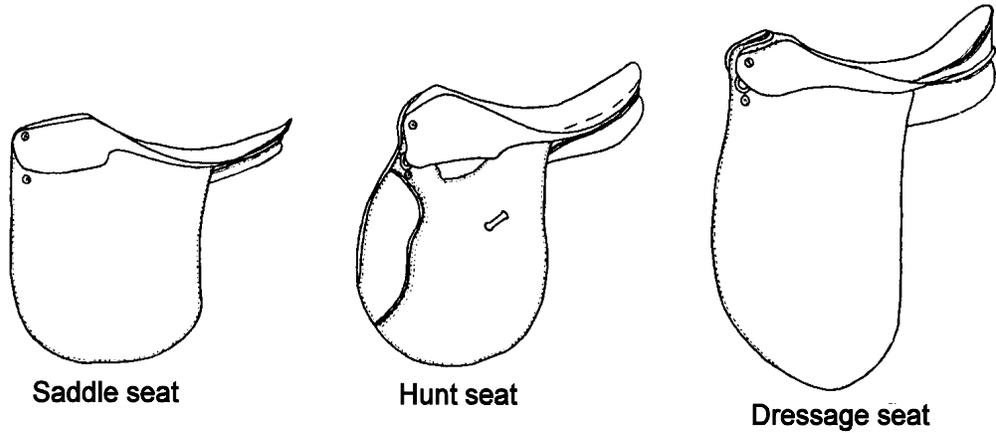
Snaffle bridles are used in all lower levels and training while full bridles are used in upper levels.

Saddles

The *English saddle* is made in many styles. The girth is attached to two or three billet straps which are under the flaps. English saddles are designed to conform to the horse’s back and fit very closely with a minimal amount of padding. It has metal stirrups and is lightweight. The flaps protect the rider from the horse’s sweat. Some saddles have knee rolls to help riders keep their legs in place. The skirt of the saddle protects the thighs of the rider from the stirrup bars and buckles.



Figure 46.
English saddles.



When you purchase a new saddle, whether English or western, make sure the seat fits your body. The length and depth must be suitable to the rider; you cannot ride well if the saddle does not fit properly. The saddle also must fit the horse properly.



Knots

Proper knots are important to your safety and appearance of your gear. Knot tying and braiding is fun to learn, does not take long and makes your equipment look neater.

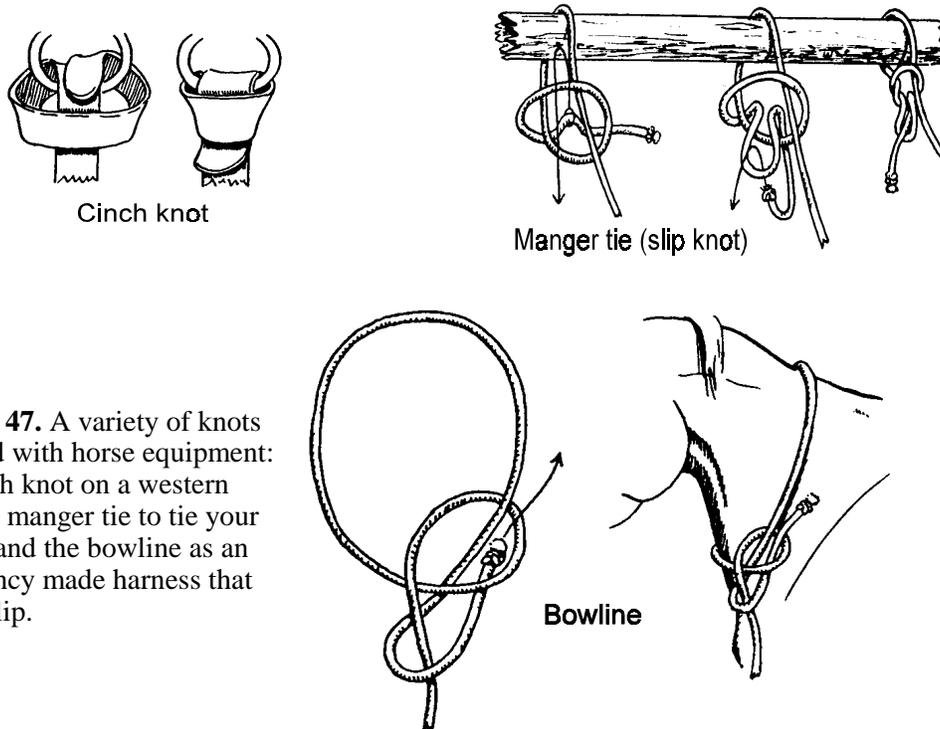


Figure 47. A variety of knots are used with horse equipment: the cinch knot on a western cinch; a manger tie to tie your horse ; and the bowline as an emergency made harness that won't slip.

CHAPTER 12: SADDLING AND BRIDLING



Develop safe habits when saddling and bridling your horse, and always consider the horse's behavior and reactions.

When you catch your horse, it is best to use a halter rather than a bridle. Let the horse know of your presence by speaking softly to him and gently touching him on the shoulder. Always approach from the left side and slip the lead rope around the horse's neck. This gives you control of the horse until you have the halter in place. After you catch and halter the horse, give the horse a small reward — a pat on the neck or some rubbing will do.

Tie the horse with a quick release knot or cross ties with panic snaps and give him a thorough grooming before you saddle and bridle him. Pay extra attention to cleaning the areas covered by the bridle, saddle and cinches or girth. Check his feet.

Many people leave the horse tied while they saddle, but it is preferable to untie the horse and have someone hold it by the lead shank while you saddle it. This gives you control of the horse.

If the horse is tied and you move from one side to another, walk behind the horse a safe distance away from his back legs. *Never cross under the lead rope between the tied horse and a fence or post.* If you untie the horse and hold the lead rope as you saddle, get a short, light hold of his head as you cross back and forth.

When you are ready to saddle up, make sure the saddle blanket is free of burs, straw or debris. Lay the saddle blanket or pad on the horse's back. Be sure it is even on each side. Always lay the blanket or pad several inches forward and slide it back into place. This makes the hair under the blanket or pad lie smooth. Remove all wrinkles.

Tacking up the western saddle

Fold the off stirrup, cinches and saddle strings over the seat of the saddle. If the stirrups are short, hook the stirrup tread over the horn. Slip your right hand into the hole formed by the fork in front of the seat and lift the saddle over the horse's back. Lift just enough to clear the withers and hold the saddle steady at the top of the lift so it will settle easily on the horse's back. You can steady the saddle at the top of the lift by placing your left hand on the edge of the front skirt. Smaller riders will find it necessary to use both hands and hold the saddle under the gullet with the left hand while grasping the rear skirts or cantle with the right hand. Many western riders have the habit of swinging the saddle up with the off stirrup and cinches flying. Stirrups are heavy and cinch rings are hard; a horse flinches to absorb these hard knocks when stirrups hit (see figure 47). Do not get into this habit. Instead, lift the saddle and settle it on the horse's back.

Next ease the off stirrup and cinches from the seat or go to the off-side to let them down. In either case, you must move to the off-side to check the stirrup, cinches, saddle strings and blanket to ensure they are straight and a correct length.

Return to the near side. Check the position of the saddle, raise the blanket edge where it lays over the withers to allow air space, swing the near stirrup over the seat and thread the latigo through



the cinch.

Several safety precautions should be followed when cinching. As you reach for the front cinch, watch both ends of your horse. Fasten the front cinch first. Pull it up smoothly and slowly — do not jerk it tight. Fasten it snugly but not tight. Then fasten the rear cinch. Finally, fasten the buckle and breast collar, or martingale straps. Remember on double-rigged saddles, saddle the front cinch first, then the back cinch; unsaddle the back cinch first, then the front cinch.

Tighten the front cinch just enough to allow your hand, with the fingers held flat, between the horse's body and the cinch. The rear cinch should not be tight but should be against the skin or just an inch or two below the horse's belly.

Tacking up the English saddle

Lift the saddle and the attached pad up and over onto the horse's back. Attach girth to the off side billet straps. Slide girth through the martingale loop if you use one, and pull the girth up and attach it to the near side billet straps. Do not pull up tight. Recheck the girth after you walk your horse to the mounting area. Pull stirrups down just before you mount. Always put stirrups up after dismounting. Remove the girth from both sides of the saddle when untacking.

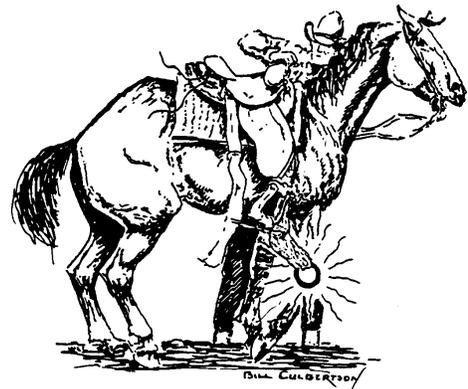


Figure 48. Do not throw the saddle onto the horse's back. Loose cinches can hit the horse's legs and startle it..

Bridling

When bridling a horse with a western bridle, untie the halter from the tie rail, fasten the crown-piece around the horse's neck, or loop the bridle reins over its neck so you can hold them if the horse pulls away. Loop the reins over his neck to keep them off the ground and from being stepped on by the horse. Follow the steps shown in figure 48.

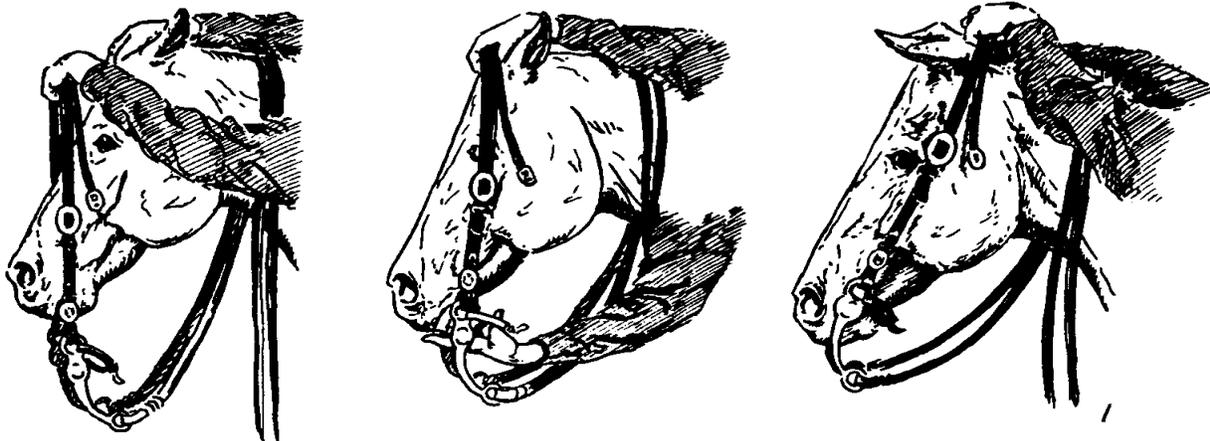


Figure 49. Be safe when bridling the horse.



CHAPTER 12: SADDLING AND BRIDLING

When you bridle for English riding, put the reins over the horse's head onto the neck. Place the headstall or crownpiece in your right hand. Continue as shown in figure 48.

When bridling, the rider must stand close to the horse's neck, just behind its head. This position is safe since the horse cannot throw his head and hit your face. Holding your right arm over his neck and poll will help keep his head down and may be dropped around the neck to help hold the horse. Work firmly but gently. With your right hand, pull the headstall up so the mouthpiece of the bit is pressing against the horse's teeth. When bridling with a cavesson, hold the cavesson in your right hand with the crownpiece. Use your left hand to guide the bit between the horse's lips. When his jaw relaxes and the mouth opens slightly, pull up with your right hand. The bit will slide smoothly between the teeth. If the horse is stubborn about opening its mouth, press the lip against the jaw bone with your left thumb at the gap between the incisors and molars. Do not jerk or pry at the mouth with the bit. Move your left hand to hold the crownpiece of the headstall above and in front of the horse's ears (see figure 48). Now you can lower the cavesson with your left hand. Be gentle as you bring the headstall over its ears. Use your right hand to protect and guide the ears under the crownpiece. Use caution when bridling horses, especially those you are not familiar with, since some are extremely shy about their ears and will resist by slinging their head.

After one more step, you are ready to ride. Lead your horse for a few steps. Then check your front cinch or girth again. You may be able to tighten it a few more notches. Check the front cinch or girth again after riding a short distance.

Untacking your horse

When your ride is over and you are ready to unbridle, fasten the loose halter around the horse's neck first. Undo the bridle throatlatch and cavesson, remove the bridle, taking care not to hit the horse's teeth. To properly remove the bridle, slide the crownpiece forward over the ears with your left hand. When free of the ears, hold the headstall loosely for the horse to spit out the bit. Then lower the headstall to allow the bit and curb strap to fall freely from the mouth and chin. Continue holding the horse and rub its head and poll where the headstall rested. Your horse will soon learn to expect this rubbing and will wait patiently instead of trying to break away. Halter the horse and hold the lead rope as you unsaddle.

Be sure to tie up the cinches and breast collar before pulling the saddle off. When unsaddling, lift the saddle slightly before pulling it off. This loosens the grip of the sweaty leather and blanket on the horse's hide.

Wet saddle blankets should be placed in the open, or on top of the saddle to allow them to dry completely before the next use. The bit should be rinsed to remove slobber and feed particles. A quick wipe down with a damp cloth will remove mud and sweat from your tack.

CHAPTER 13: THE RIDING AIDS AND GAITS



Natural aids

Your voice, hands, legs and weight can control your horse if your horse is trained to respond to them. Begin using these tools in a very definite manner in the early stages of training. As you progress, your horse will respond to very light applications of these aids.

The following discussion of specific aids for different responses indicates how you can communicate with your horse.

Voice

Your voice is a very important aid when working your horse. Certain words such as *whoa*, *easy* and *back* are readily understood by a horse. Many show horses have learned the words *walk*, *trot*, *lope* and *canter* from hearing them repeatedly during lunging, training and in the showring. Some riders do not use complete words, but instead develop voice sounds (e.g. clicking or kissing) to mean something to their horses. Be consistent and use the same word or cue each time. Repeat it often to teach your horse what you mean. Make your sounds distinct from each other. For example, *whoa* and *go* sound too similar to be effective. Many showring judges do not like to hear voice commands, so use them very softly when showing or avoid using them in the show arena.

Your tone of voice means as much to your horse as actual words. It indicates pleasure or displeasure. Learn to always use a low, soft voice when working around your horse. Screaming and yelling will only frighten the horse.

Hands

Your hands control the forehand (forequarter) of your horse directly by use of the reins. In advanced riding, your actions on the reins have an indirect influence on the hindquarters. Relax your hands and arms, hold your shoulders back and down, and keep your upper arm in a straight line with your body. Your forearm forms a straight line from the elbow to the horse's mouth as you hold the reins. Some movement of the arm is permissible, but excessive movement will be penalized by a judge.

Good hands are steady, light, soft and firm in their actions. You can achieve this only if your body is in balance and rhythm with your horse.

As you begin reining and rein cues, remember the importance of relaxing your arms, elbows, wrists, hands and fingers. Allow a small amount of slack in the reins to relieve pressure on the bit but hold the reins firmly enough to maintain light contact with the horse's mouth. When riding a young horse (4 years or younger), you are allowed to hold the reins with both hands when using a snaffle (non-leverage) bit or a bosal.



CHAPTER 13: THE RIDING AIDS AND GAITS

Learn to signal or cue with your reins (a give and take action) by slightly flexing your hands. Simply opening and closing your fingers is cue enough for a trained horse if you have the correct degree of contact with your horse's mouth. It is especially important to learn to use both hands on the reins when schooling or polishing the performance of your horse. The proper use of two hands to guide and set the horse until it learns to respond to cues is the mark of a good equestrian. As your horse responds, you may gradually switch to the use of a single hand on the reins when riding Western. But remember, that at any time outside the show ring when your horse isn't handling as smoothly as you desire, it is wise to use two hands.

If you plan to show your horse, study the rules on how to hold the reins and use the rein that allows you to have the softest hand on your horse's mouth. When using all of the aids provide release when the horse responds to pressure.

Legs

Your legs control the forward motion of your horse and its shoulders, barrel and hindquarters. When you squeeze your legs, your horse should learn that this is a signal to shift its weight to its hindquarters, lighten its weight on its forequarters and get ready to move out. Getting a response to this cue is very important; you will need it every time you move your horse, ask for collection or a change of gait, or correct misbehavior.

Pressure from your calves and heels controls the horse's shoulders, barrel and hindquarters. As you press with one leg or the other, your horse responds by moving away from the pressure or by moving against the pressure (see maneuvers in all figures in this chapter). When your horse responds to leg cues, less cueing is required by your reins. Balance pressure on the horse by using contact in the seat of your saddle and your thighs. Maintain only light contact with your knees so your lower legs can be used for cueing.

Seat/Weight

Although horses are trained to move away from pressure, they move under weight. Your body weight becomes a cue when you shift position in the saddle. This does not mean that you throw your weight by leaning excessively, you can give a weight cue by placing more pressure on one stirrup than the other by shifting to press more firmly on one seat bone. As you train your horse, you will find responses come from very slight weight shifts. Learning to be a good equestrian involves learning the effects of the aids, combining them to make your horse perform and using them in training and showing. The art is in developing a feel for when to apply the aids and when to release them.



Artificial aids

Spurs, whips, bats and crops

Artificial aids should be used only to reinforce natural aids. First, press the horse with the calves of your legs. If your horse doesn't respond, tap the horse with your heel. Finally, it may become necessary to tap the horse with your bat or touch it with a spur. Always tap the horse in the spot where your leg will touch. *Give the lightest cue first.* If your horse doesn't respond, use increasingly stronger cues. In this way, you tell your horse to respond or light discipline will follow. Remember, however, to give the horse time to learn what the cue means before using negative reinforcement.

Body position and aids in motion

General pointers

The rider should maintain a natural position during all gaits. Practice proper cueing until your horse moves into any of the gaits lightly and smoothly. This will help keep your balance and avoid punishing your horse's mouth and side(s), which occurs if you lose balance. Get light control of your horse with the reins before cueing it with your legs so the horse does not rush out and has to be pulled back.

The horse's head should always be carried at an angle that is natural and suitable to the horse's conformation and breed at all gaits.

Forward motion

Before your horse can make any kind of move, there must be *forward motion*. Think of forward motion as the thrust of the horse's hind legs with all of their power going through the horse's spine, moving the body straight from the point of impulsion. Study figure 50. The stick can be moved forward, backward or turned, but the rope cannot. Keep your horse moving straight and true from the impulsion of its hindquarters. If you don't, it will be like trying to guide a rope.

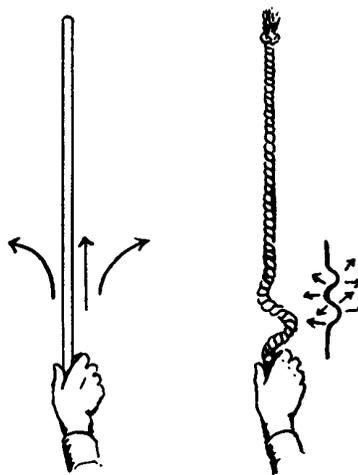


Figure 50. Visualize the thrust of the stick on the left. It demonstrates the forward motion of a horse, while the rope on the right cannot move forward, backward or be turned.



CHAPTER 13: THE RIDING AIDS AND GAITS

Walk

The walk is a four-beat gait in which your horse should stride out freely and willingly. It is a natural, flat-footed, forward working gait. Encourage your horse to walk out by using your seat and legs to drive the horse forward.

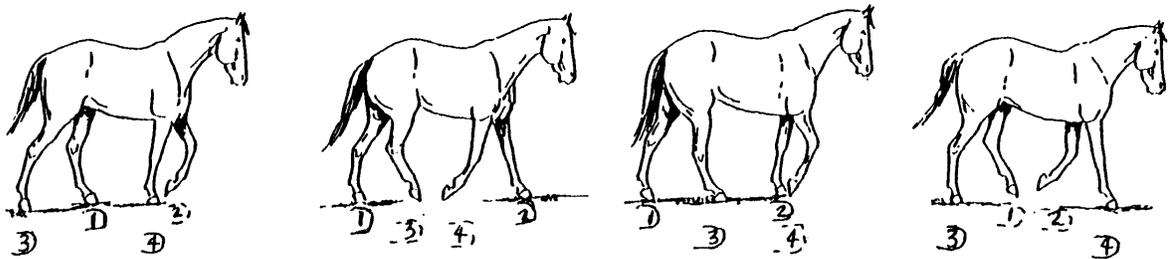


Figure 51. The walk is a four-beat gait.

Jog or Sitting trot

The jog or trot is a smooth, ground-covering, two-beat, diagonal gait. The horse works from one pair of diagonals (left front and right hind) to the other (right front and left hind). The jog or trot should be square and relaxed with a straight, forward movement of the feet. Horses that walk with back feet and trot with the front are not performing the required gait. When asked to extend the jog, the horse moves out lengthening the stride with the same smooth action.

The rider should sit when the horse is jogging and not post. Generally the western rider sits in the saddle when the horse is moving at the extended jog. However, posting is a very useful training tool and it is good for the Western rider to be able to post properly. Apply more leg pressure, gently pull the horse and allow the horse to move forward.

Posting or rising trot

English riders will use posting diagonals at the trot. In the rising trot, your upper body is inclined slightly forward from the hips so you remain in balance with the horse's movements. Your body rises by the movement of the horse and your seat returns to the saddle without any loss of balance. The rule for correct diagonal is to post with the outside diagonal pair. This means that the rider rises out of the saddle when the horse's outside front leg (in relation to the rail) and inside hind leg reach forward (off the ground) and sits when these legs touch the ground. For example, if riding on the right rein (clockwise), the rider will rise and sit with the left foreleg and right hind leg. Conversely, when riding on the left rein (counter-clockwise), the rider rises and sits with the right foreleg and left hind leg. To change the diagonal, the

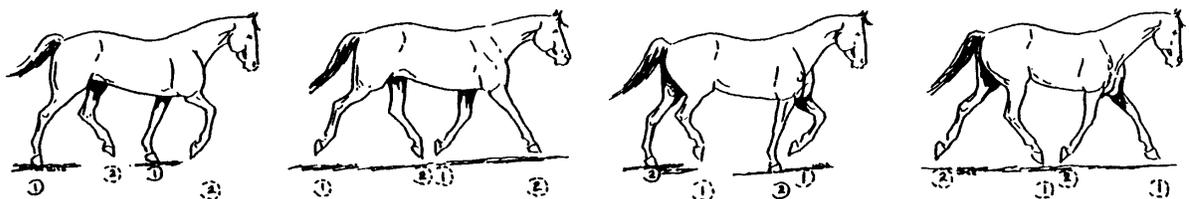


Figure 52. Trot.



rider sits for one extra beat of the two-beat trot.

Lope or canter

The lope, or canter, is an easy, rhythmical three-beat gait. The footfall pattern for the lope is as follows: beat 1 — outside hind leg beat 2 — inside hind leg and outside fore leg together by beat 3 — inside fore leg. Horses traveling at a four-beat gait are not performing the gait properly. The horse should canter with a natural stride that appears relaxed and smooth.

To signal a canter, collect your horse, shift your weight back to the horse's outside hind leg and applying sufficient pressure with your outside leg to instruct the horse to strike out in the proper lead. The horse should be bent in the intended direction of travel. Train your horse to assume a lope from a standstill, walk or trot. You will learn the proper cueing under the

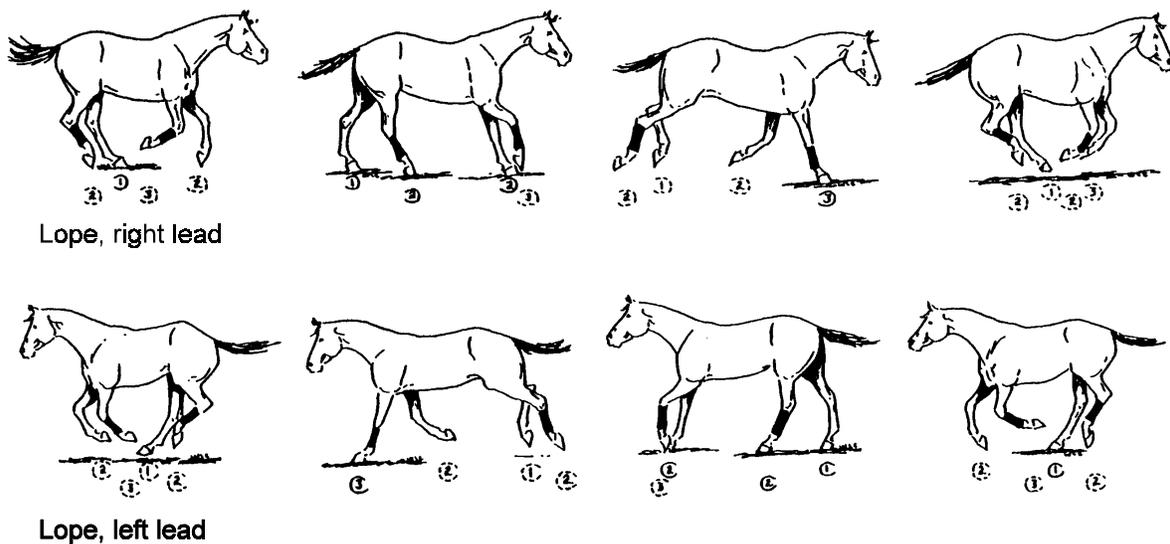


Figure 53. The lope or canter is an easy, rhythmical three-beat gait.

sections on leads.

Hand gallop or extended lope

The hand gallop is similar to the lope, but with a lengthened stride.

Leads

The correct lead

When your horse lopes or hand-gallops, its body is bent in the direction it is traveling because one pair of legs, one foreleg and one hind leg, on the same side of the horse's body lead, or reach farther ahead than, the pair on the other side of its body. The horse is on the correct lead when it is leading with the inside pair. Leading with the opposite fore and hindleg is known as cross-firing, which is an uncomfortable gait because the horse is unbalanced.



CHAPTER 13: THE RIDING AIDS AND GAITS

The correct lead (canter/lope) is very important when your horse circles or makes tight turns. A horse will naturally take the proper lead or change leads when it runs free, but it may not do this when it carries a saddle and rider. Show ring rules place a great deal of emphasis on proper leads. A well-trained horse will change leads at the will of the rider.

You should learn which lead your horse is on from the feel of its motion. Your inside leg should feel slightly further forward than the outside leg. Do not get into a habit of looking at the horse's shoulders or leaning forward to see the horse's legs.

Training your horse to depart on the lead you want requires patience and practice. Most horses favor one lead over the other. Work on getting the horse comfortable with either lead, but spend a little more time on the weaker lead by loping in a circle that requires that lead. Keep the canter slow and easy when training the horse so you can cue it properly.

Your horse should be trained to assume the correct lead at the lope/canter directly from the stop, walk and trot. At any time the horse does not lead correctly, slow it to a walk or trot and try again.

The following paragraphs describe the aids for using either lead. Study and learn these aids and use them until they become habit. Have control of your horse's head and be sure it is listening before cueing it with your leg otherwise your horse will move too quickly, throw you off balance and disrupt your cues. Train your horse to move smoothly into a lope. This will make it easier to apply your cues with proper timing.

Aids

To ask for the lead, bend your horse in the direction of travel, tipping the nose using the rein. With your weight to the outside, squeeze with the outside leg behind the girth and, with the inside leg, at the girth. For example, for the left lead, tip the nose to the left, shift your weight slightly to the right and squeeze with the right leg, using the left leg to ask for the bend. For the right lead, tip the nose to the right, shift your weight slightly to the left and squeeze with the left leg, using the right leg to ask for the bend.

When your cues and timing are correct and your horse is working willingly, you will feel a slight lifting of your horse's body on the lead side as it takes off. This is the result of the horse shifting its weight back to the rear leg, ready to lightly spring forward and reach out with the leading hind leg. This gives a smooth, gliding sensation and you are loping with the correct lead.

In early training, apply cues more firmly. But as your horse learns, it will respond to lighter cues. When cued properly, a horse will improve in riding circles, figure eights, serpentine, quadrilles or just plain turning.

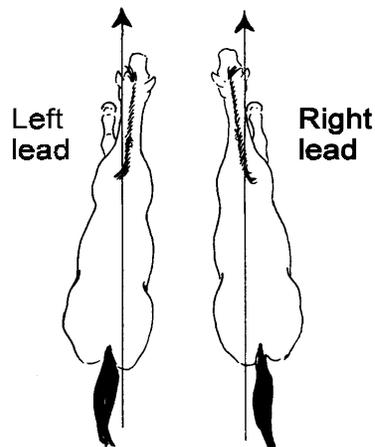


Figure 54. Note foreleg and hind leg on the same side reach farther ahead.



Changing leads

Changing leads is required when changing the direction of travel. The *simple change* is executed at the walk or trot and the *flying change* is executed through the lope. The change must occur during the moment of suspension, as illustrated in the footfalls.

Aids

When executing a change of leads, the rider will straighten the horse from its direction of travel and cue it into the new direction of travel. This will require changing the bend of the horse's body and moving your weight to the outside while changing leg pressure from the outside leg of the initial direction to the outside leg of the new direction. It is common for a horse to change in the front and not in the rear (i.e. cross-firing). Should this occur, exaggerate the change of your weight and leg pressure to move the horse's hips into the new lead (see footfalls for the timing of this maneuver).

Counter canter

The counter canter is when the horse leads opposite of its direction of travel.

Aids

The aids for the counter-canter are the same as cueing for a lead. However, upon departure into the counter-canter, it is essential that the rider's weight remain centered and balanced to ensure that the horse does not change leads out of the counter-canter.

Backing

Grip the horse with your thighs. Squeeze with your legs to collect the horse while you maintain light rein pressure to prevent the horse from moving forward. When your horse is collected, use the word *back*. Flex your reins gently, continue to squeeze with your legs, apply pressure and provide release with each step. You are asking for forward motion but in reverse. Control the direction of backing by varying the degree of pressure of one leg or the other.

Backing is unnatural and hard for a horse. Be patient and ask for a step at a time. Gradually increase the number of steps that your horse will back and reward your horse by stepping it forward and releasing pressure. Proper backing is smooth and performed easily without excessive jawing or resistance by the horse (for footfall patterns of backing, see figure 52, page 90).

Stops

A good stop is not necessarily a sliding stop. A good stop is balanced and smoothly executed. The horse's hindquarters are well under its body to balance its weight. The forequarters, neck and head are kept light. The horse is balanced and ready to do what is required next.



CHAPTER 13: THE RIDING AIDS AND GAITS

Timing is very important when you ask for a stop, especially from a lope. Use some preliminary cue to alert your horse that a stop is coming, which will allow it time to adjust its balance in preparation.

To cue for a stop, sit deep in the saddle, say *whoa* and then reinforce it by asking with the reins. Do not get into the bad habit of thrusting your feet forward, throwing your weight back and yanking on the reins.

School your horse to stop easily on the cues at a walk, then a trot, and finally, at a slow lope. This will allow you time to perfect your cueing and give your horse time to learn what the cues mean. You will work more softly on the horse's mouth by going slowly at first. When stopping at slower gaits, always make your horse stop completely and stand, preferably with a slacked rein. Do not let the horse walk. It is wise to vary the time of standing so your horse will not anticipate a short stop and begin to move.

Don't rush your training. You are making progress when you feel the horse's hindquarters sink under you slightly when you stop. Keep working for a light response and don't overdo the number of times you ask for stops. As you work, be sure to vary the places where you ask your horse to stop so it will not begin to anticipate stops at certain points. It is good to allow a horse to stop and then *catch his air* as a reward after an extended time of cantering or trotting. This teaches the horse that stopping is a pleasant thing.

Turn on the forehand

Your horse should be taught to move or hold its hindquarters in response to pressure from your heel or the calf of your leg behind the front cinch or girth. This control is very important in backing, side-passing, two-tracking, holding the hindquarters on pivots and roll-backs, and are correct leads. Turning on the forehand is not a forward movement. The horse pivots on the inside foreleg while the hips move away from pressure in the opposite direction of the nose.

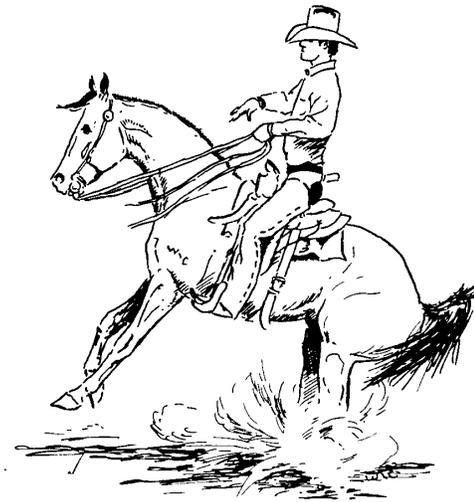


Figure 55. The horse in this figure is stopping too hard. A proper stop includes the voice command *whoa*, a light flex of your reins, a squeeze of your legs and increased pressure of rider's seat to cause the horse to halt and stand square and quiet.

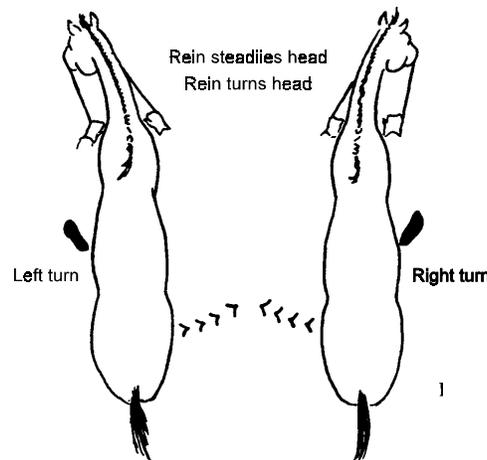


Figure 56. Note the position of the reins and the foot used to cue for turn on the forehand.



Aids

Bend the horse in the direction of the turn (e.g. to the right, horse bent to the right). Apply inside leg on the barrel or girth until hips move away from pressure (e.g. right leg behind girth and left leg balances at the girth). Your inside hand asks for the bend while your outside hand balances and prevents forward motion.

Turn on the hindquarters

With the turn on the hindquarter, the inside hind foot remains stationary. The forehand moves around the pivot foot with the front legs crossing over with each step. The turn on the hindquarters is the basic movement for controlled, smooth, fast turns in pivots, roll-backs, pole-bending, barrel racing and working cattle. The horse learns to roll back over its hocks.

Aids

The inside hand leads the horse into a bend into forward motion, while the outside hand controls the bend. Bend the horse's nose slightly in the direction of the turn. Apply outside leg pressure at the girth or just in front of the girth and inside leg pressure at the girth. The rider's weight should be focused on the horse's hips and the outside seat bone used to encourage the horse's hips to remain stationary (do not tip or lean your body).

This is a movement that requires time and patience to execute exactly. Do not expect a 360 degree turn immediately but work one step at a time, applying pressure and release with each step. It is also important that your horse maintain impulsion, which is accomplished by driving the horse's motion with your seat and legs.

You should be able to stop the swing of the hindquarters by pressing with your outside leg. This leg cue may not be enough to stop some horses. If this happens, you will need to add another cue. When you feel the horse beginning to shift its hindquarters, apply pressure with your outside leg. You must learn to feel the movements of your horse through your seat to know what is happening and how to correct any problems. When your horse is willing to execute this movement slowly, then you can progress to more advanced movements such as a roll back.

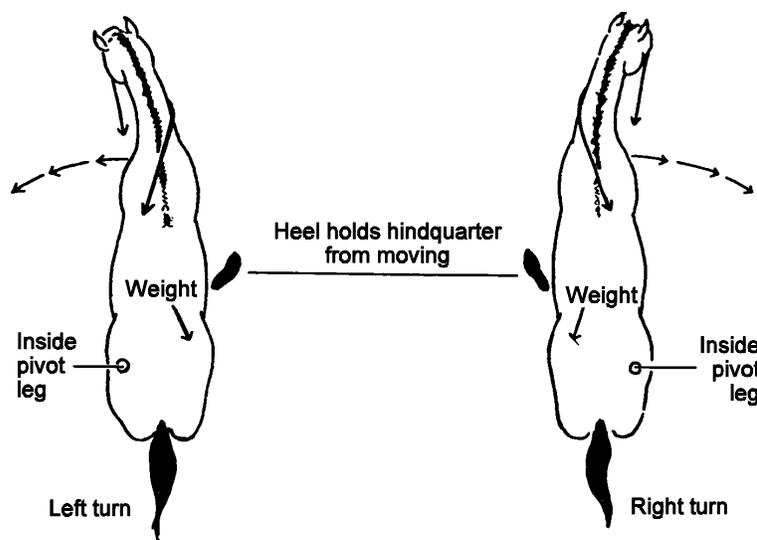


Figure 57. Note position of the reins and the foot used to cue for turn on the hindquarters.



Side-pass

The side-pass is a sideways lateral movement of your horse by stepping to the right or left with both the forequarters and hindquarters moving evenly together. The horse's legs should cross in front of the opposite supporting legs.

Side-passing is necessary for the smooth opening and closing of gates and is an excellent training tool. Figure 58 shows the cues used to side-pass.

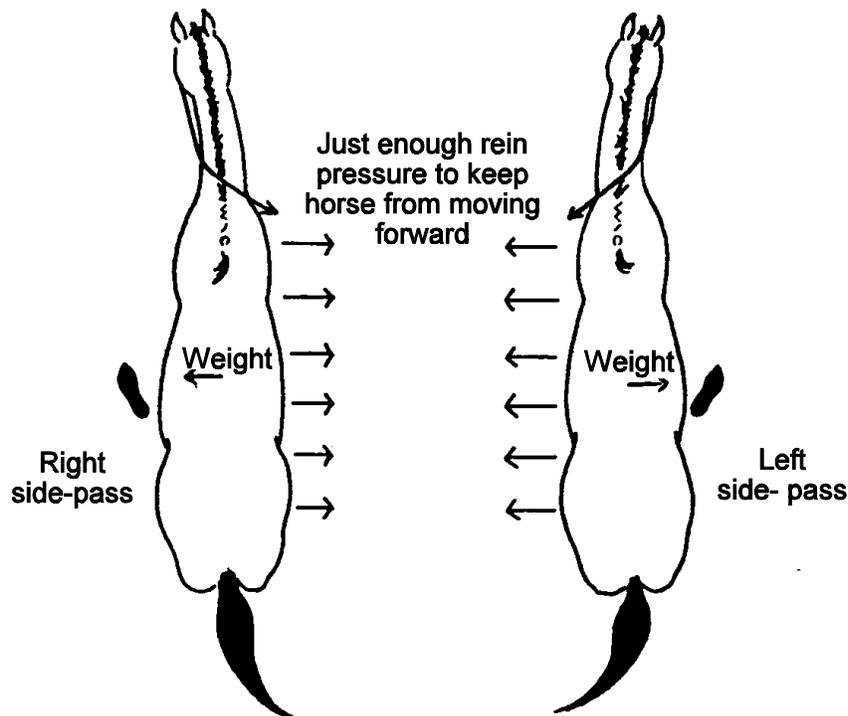


Figure 58. Note position of reins and the foot used to cue for left and right side-passes.

hindquarters to the left.

You will need practice to learn the feel of the correct rein tension and leg pressure necessary to move the horse to the side without backing or moving forward. At first, it may be helpful to face a fence to keep the horse from moving forward. If the horse backs, simply relax tension on the reins and use your legs to move it up into the bit again.

You may need to begin by moving the horse's shoulders, first then the hips, until your horse begins to learn what you are asking. Side-passing, as with all movements, should be practiced in moderation. After the horse performs a few correct steps, do something else.

Two-tracking or leg yield



Two-tracking or leg yielding is a lateral movement in which your horse moves forward in a diagonal direction. This may be used as a training tool for lead departures or lead changes. Begin at the walk and then go to the sitting trot and lope.

Two-tracking aids

Cueing for the two-track is the same as cueing for a side-pass. However, rein tension must be lighter and you will need more leg contact to move your horse forward. You want your horse to move at an angle so more forward motion is needed. This is accomplished by holding the rein in the same positions but much lighter. Push your horse forward, as well as sideways, with your seat and leg.

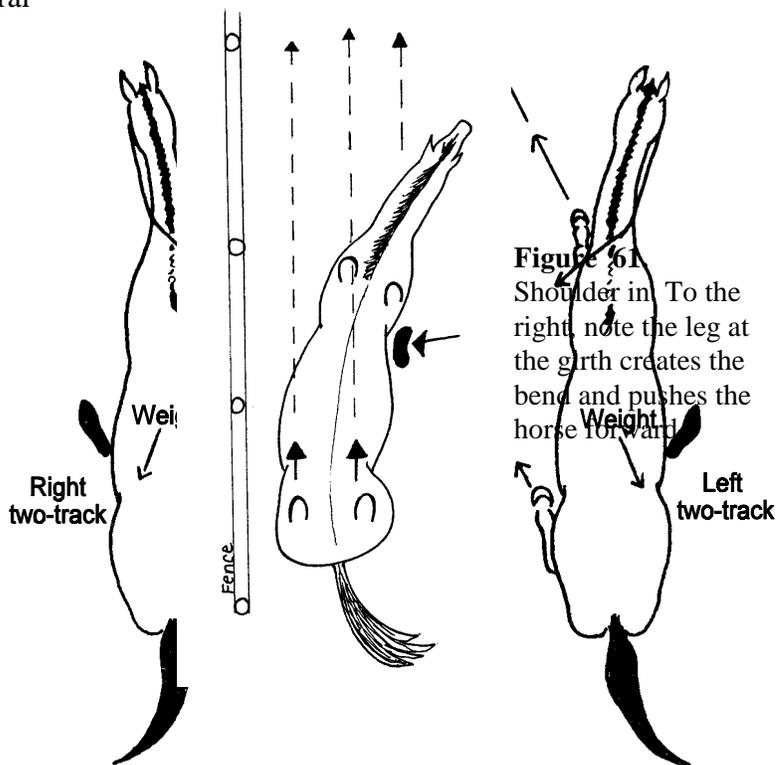
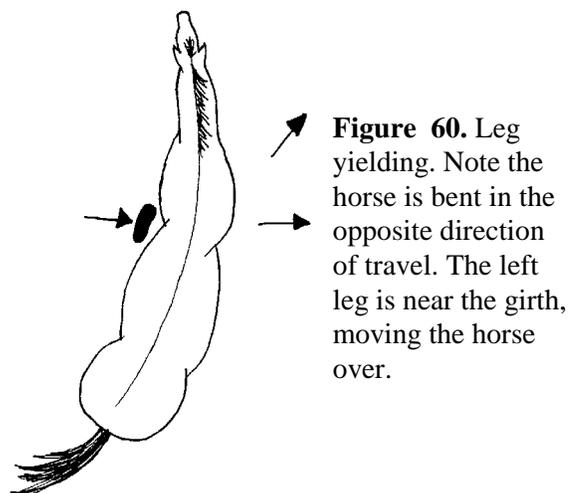


Figure 59. Note position of reins and the foot used to cue for left and right two-track.

Leg yielding aids

Leg yielding is a forward and sideways movement with the horse is bent in opposite direction of travel (e.g. the horse is bent slightly to the right but moving forward and to the left). The forehand slightly leads the quarters. The aids for leg yield to the right are as follows: the horse is moving forward at the walk or sitting trot. The left leg is near the girth cueing the horse to move over. The right leg keeps the horse moving forward and is behind the girth, controlling the amount of sideways movement. The left hand leads a slight bend to the left. The right hand may be slightly open and leading the horse to the left. The rider must be sitting straight and even.



Shoulder in

The shoulder in is a bending exercise. The horse will move on three tracks (see diagram). The



CHAPTER 13: THE RIDING AIDS AND GAITS

aids for shoulder in to the right are as follows: position the horse's forehand at approximately a 30 degrees angle from the rail. The right, or inside leg, is at the girth to create the bend and keep the horse moving forward. The left leg, or outside leg, is behind the girth to prevent the quarters from swinging out to the left. The right rein, or inside hand, keeps the horse's forehand to the right and maintains the degree of bend. The left hand, or outside hand, controls the pace and the degree of bend.

Travers (haunches in)

The travers is a bending exercise with the forehand on the rail and the haunches moved to the inside. The travers is a four track movement. The aids for travers to the right are as follows: the right, or inside leg, is at the girth to create the bend. The left, or outside leg, is behind the girth to move the haunches off the track to the inside. The right, or inside rein, creates the bend to the inside while the left, or outside rein, controls the degree of bend to the right.

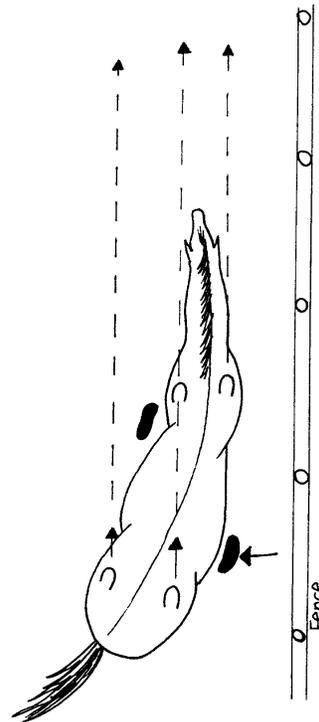


Figure 62.
Haunches in. Note the rein pressure and the foot used to cue the haunches in and the left leg bends the horse.

CHAPTER 14: BASICS: WESTERN HORSEMANSHIP



Horsemanship, or equitation, is the art of riding in a balanced and graceful manner. This takes time and patience and can only be achieved if you and your horse work together as a team.

The following suggestions will help you become a better rider. This basic information can be applied to every type of riding with slight modification.

Mounting

There are two positions considered proper for mounting. In the first position, as shown in figure 63, the rider stands by the horse's left shoulder with his body facing a quarter turn to the rear of the horse. The rider's head is turned so both ends of the horse can be watched. This is the safest position to use when you mount.

It is easier to place your left foot into the stirrup from this position, but be careful not to rake the toe of your boot along the horse's side as you swing up. Brace your knee against the horse for support to keep your foot away from its side.

When you use this position, take one hop on the right leg and go into the second position briefly as you swing into the saddle.

The second position, shown in figure 64, is used when you are tall enough to stand and place your left foot in the stirrup without moving back to the rear of the horse. You should face squarely across the seat of the saddle. Turn your left foot so the toe of your boot is pointed forward or into the cinch.

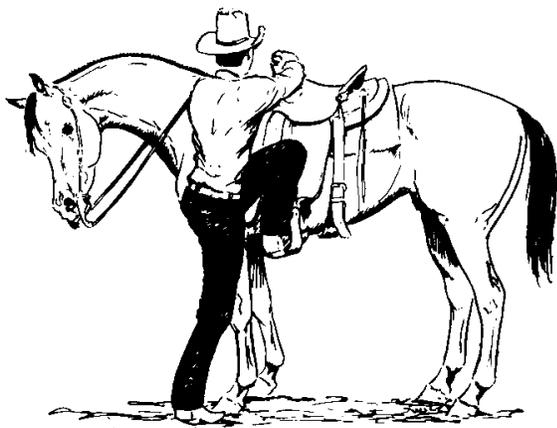


Figure 63. First position. Use this method to mount green-broke horses, or horses unfamiliar to you.

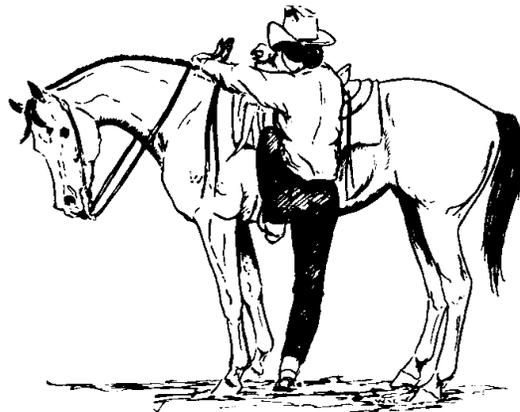


Figure 64. Second position. Use this method when you are tall enough to place your left foot in the stirrup without moving back to the rear of the horse.



CHAPTER 14: BASICS: WESTERN HORSEMANSHIP

In both positions, hold the reins in your left hand with the left rein slightly shorter to give enough tension to steady your horse. Place your left hand on the horse's neck just in front of his withers. Steady the stirrup with your right hand until your left foot is in the stirrup. Then place your right hand on the saddle horn and your left knee against the horse. Swing up and into the saddle with a spring by pushing with your right leg. Your body will be balanced by the triangular base of support formed by your hands and knee.

Spring hard enough with your right leg to carry you up and over the saddle with a minimum of weight on the left stirrup. Lower yourself smoothly and lightly into the seat of the saddle. Do not swing too high and plop into the saddle.

If you consistently pull the saddle to the side, you are not springing up hard enough. With practice, you will mount in a smooth, easy motion.

Dismounting

When you dismount, use the same hand position. Take the slack out of the reins to steady the horse. While holding the reins, place your left hand on the neck of the horse, grasp the saddle horn with your right hand, shift your body weight slightly to your left leg and keep your left knee in close to the horse. Your right foot should be free of the stirrup.

Swing out of the saddle and keep your right leg as close to the horse as possible without hitting the cantle of the saddle or the horse's rump. Do not swing your right leg in a wide arc. Keep it close to the near side of the horse so you will face slightly forward when your right foot touches the ground.

Push down on your left heel to allow your foot to slip out of the stirrup. Do not roll your left foot on its side to slip it out of the stirrup. If you are not tall enough to reach the ground with your right foot, slide both feet out of the stirrups. Swing your right leg over the rear of the saddle while rolling your belly to the saddle seat, and land with both feet on the ground.

Seat position

Your position in the saddle is important to maintain balance and rhythm for ease of riding, and to carefully use aids.

Sit tall in the saddle in a balanced, relaxed manner. Keep your back erect and flex with the horse. Do not slump in the saddle and never sit back on the cantle with your feet shoved forward. You will find it necessary to change your seat slightly for different types of riding, but the basic principles remain the same. You should sit where the horse can be controlled with aids in a comfortable riding position. Keep your body weight where it will help rather than hinder your horse's movements.



Note how the rider in figure 65 sits erect and squarely in the center of the saddle. The rider sits deep in the seat of the saddle and not on the cantle. The rider should not be tipped forward or backward on the his or her pelvis. The ball of his or her feet should be the contact point with the stirrup. The rider should push down on the heels and pull up with the toes.

Train the stirrup leathers on your saddle to turn at right angles to the horse's body to prevent pressure on your feet and help you hold your stirrups more securely. When you store your saddle, twist the stirrups one and one-half turns inward and insert a broomstick in both stirrups.

In any style of riding, when the rider sits in the saddle his legs forming a straight, vertical line through his ear, center of shoulder, center of hip and back of heel (see figure 66). Stirrups should be long enough to allow the rider's heels to be lower than his toes, with his knees bent slightly and his toes directly under them. The body should always appear comfortable, relaxed and flexible. The back should be nearly flat. The rider's body should be supple, poised and balanced in rhythm with the horse's motion.

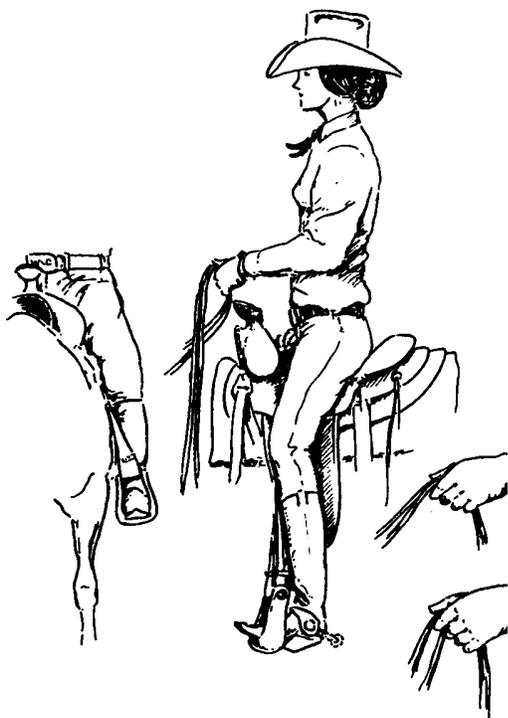


Figure 65. Correct seat position is necessary for control and comfortable riding.

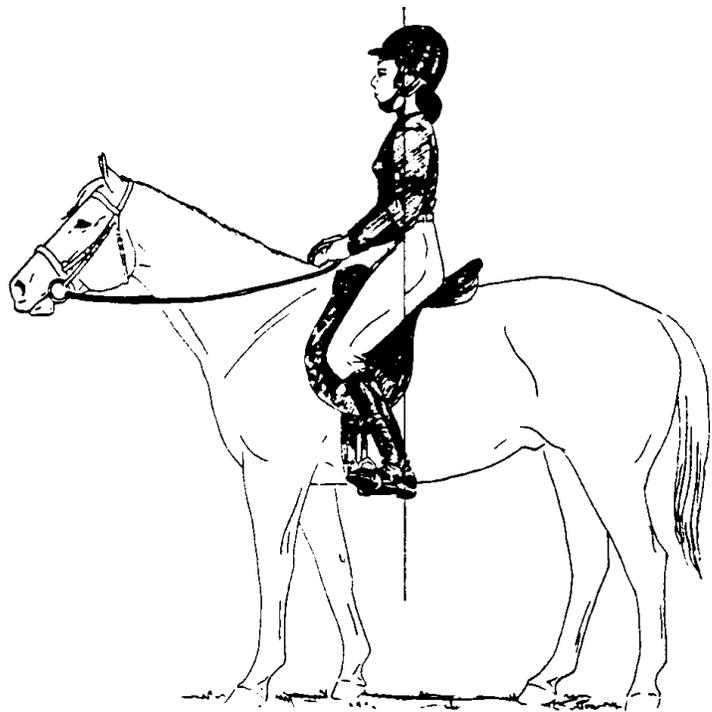
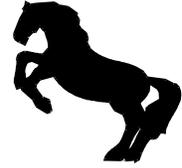


Figure 66. Correct hunt seat position.

CHAPTER 15: BASICS: ENGLISH EQUITATION



The skills required for English riding are similar to those used for western riding. The rider must sit in a balanced position that does not interfere with the horse's own balance or ability to perform.

Mounting

Mounting and dismounting for English equitation is very similar to western style. Place the reins over the horse's head. Hold the reins in your left hand against the horse's neck, contact with horse's mouth slightly to prevent the horse from moving. The rider should stand on the left side of the horse facing the horse's quarters. The rider's head is turned so both the horse's head and quarters can be observed. From this position, place your left foot in the stirrup, being careful not to push the toe into the side of the horse. Put your right hand on the center of the saddle. Then take one hop, and push up from your right leg and gently swing into the saddle, being careful not to brush the horse's side or quarters with the right leg. Then sit gently into the saddle.

Dismount

To dismount, place both reins in the left hand and place it on the neck of the horse. Take both feet out of the stirrups and place your right hand on the pommel. Lean slightly forward and swing your right leg over the back of the horse, being careful not to brush the horse's quarters, and land on both feet on the left side of the horse. Take the reins over the horse's head and run up the stirrup irons.

General position

The position in the saddle for English riding is basically sitting in the center of the saddle on the seatbones, sitting deep and tall with your head set squarely on the shoulders and eyes looking forward. Shoulders should be directly over the hips, keeping weight evenly distributed over the seatbones. Legs should be underneath with the inside of the calves on the horse's side. Feet should be directly under the knees with the stirrup on the ball of the foot. Heels should be down with toes facing forward at a slight angle. A general rule to measure correct stirrup length is that when the leg hangs loosely (out of the stirrup), the bottom of the stirrup should line up to the bottom of the ankle bone. Shoulders should be relaxed, elbows at the side of the rider's body and the hands just over the horse's withers.



Basic styles of English equitation

Saddleseat

Basic position. Sit comfortably in the saddle. Find the horse's center of gravity by sitting with a slight bend at the knees without use of the stirrup irons. While in this position, adjust the leathers to fit. Irons should be placed under the ball of the foot and the foot should be natural. Your body should follow a vertical straight line from the shoulder through the hip to the heel.

Hands. The distance of the hands from the withers is a matter of how and where the horse carries its head. There should be a straight line from the rider's elbow, hands and reins to the horse's mouth. Hold reins according to the equipment used, but use both hands to hold all reins at the same time. The bite of the reins (excess rein) should be on the right side of the horse.

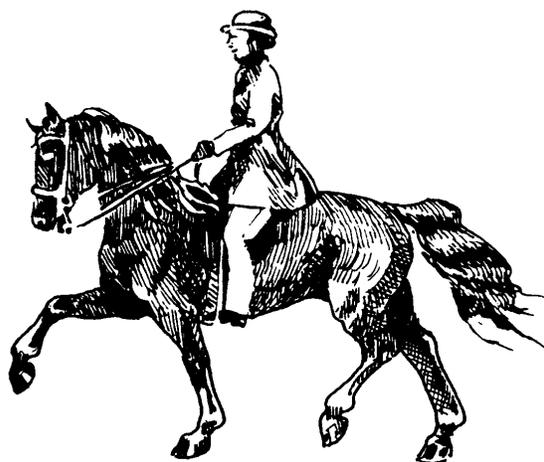


Figure 67. Saddleseat.

Dressage seat

Basic position. The rider sits deep, erect and supple in the saddle. The rider's calves should be in contact with the horse at the girth. The stirrups should be carried on the ball of the foot with a straight line from the shoulder through the hip to the heel.

Hands. There should be a straight line from the rider's elbow, hands and reins, carried just above the withers, to the horse's mouth.



Figure 68. Dressage seat.



Hunt seat

Basic position. The rider's eyes should look forward and shoulders should be back. His head should be square on his shoulders, and his weight should be distributed evenly over the seat bones. The rider's toes should be at an angle best suited to his conformation and his heels should be down and his calves should be in contact with the horse slightly behind the girth. The ball of the foot should rest on the stirrup iron, and a straight line from the shoulder through the hip to the heel should be formed.

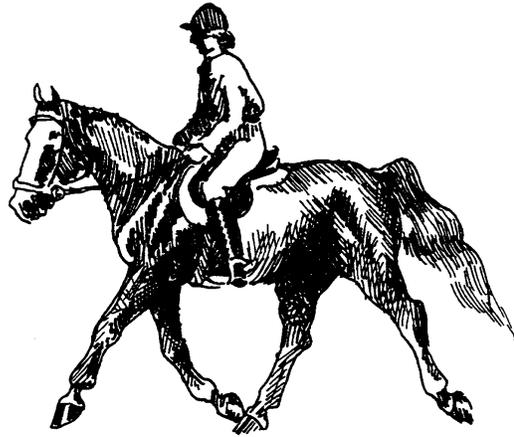


Figure 69. Hunt seat

Hands. Hands should be over and in front of the horse's withers with his knuckles 30 degrees inside the vertical and hands slightly apart. Reins may be held in various positions. Excess rein may fall on either side of the horse. However, all reins must be picked up at the same time. A straight line from the elbow through the hands and reins to the horse's mouth should be formed.

Position and motion

The rider's body should be vertical when the horse is at the walk and sitting trot, but inclined slightly forward when the horse is at posting trot, canter and gallop, with no more than 20 degrees in front of the vertical.

Jumping position

The purpose of the two-point/jumping position is to adjust the rider's balance to match the horse during jumping and galloping. This allows the horse freedom of movement through his back. The rider should remember to shorten the stirrup one to two holes from the flat length. When the horse is jumping, a straight line from the rider's shoulder, knee and toes should be formed. The rider's shoulders are slightly forward and his hips are moved slightly back, hovering over the saddle. The rider's angle closes at the hip. The rider's weight is pushed down into the lower leg and heel, with the ankle acting as a shock absorber. His eyes look forward, and his hands follow the horse's mouth while it jumps.

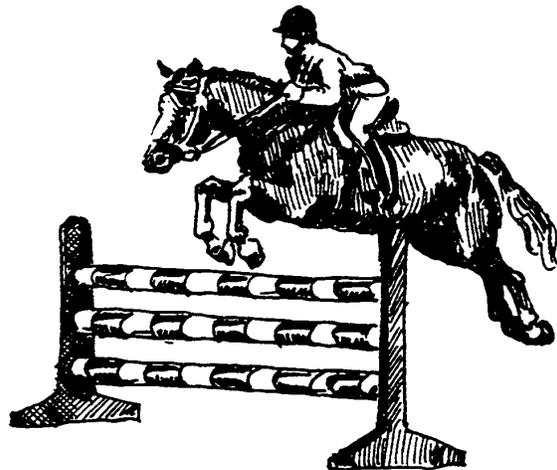


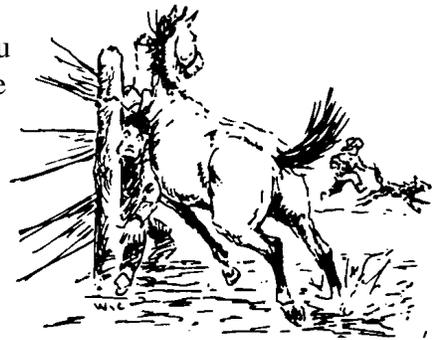
Figure 70. Jumping position.

CHAPTER 16: HORSE SAFETY GUIDELINES



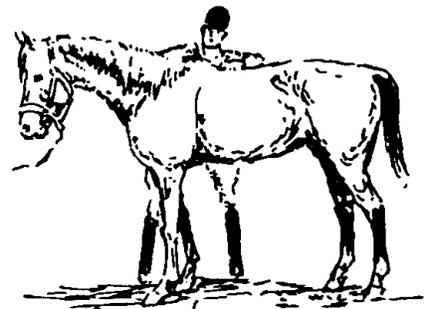
Approaching a horse

- A horse's vision is restricted directly in the front and to the rear, but its hearing is acute. Always speak to a horse as you approach it. Failure to do so may startle the horse and cause it to kick you.
- Always approach at an angle, never directly from the front or rear. Speak to the horse, let him know you are there.
- Pet a horse by first rubbing a hand on its shoulder or neck. Don't "dab" at the end of a horse's nose.
- Always walk around a horse out of kicking range, or walk close to the horse with contact. Never walk under or step over the tie rope.



Handling

- Be calm and confident around horses. A nervous handler causes a nervous, unsafe horse.
- While you work, stay close to the horse so that if it kicks, you will not receive the full impact of the kick. Try to stay out of kicking range whenever possible. When you go to the opposite side of a horse, move away from the rear of the horse and go around it, out of kicking range.
- Know your horse, its temperament and reactions. Let it know you are its firm and kind master. Control your temper at all times.
- Always let a horse know what you intend to do. When you pick up a foot, for example, do not grab the foot hurriedly. This will startle the horse and may cause it to kick. Learn the proper way to lift feet (see figures 25-28, page 63).
- When you work around a horse, the safest method is to tie or hold the head.
- Work around a horse from a position as near the shoulder as possible.
- Never stand directly behind a horse to work with its tail. Stand off to the side, near the point of the buttock, facing the rear. Grasp the tail and draw it around to you.
- A good equestrian will keep in balance at all times. An accidental slip or stumble can result in unintentional injury by the horse.
- Do not drop grooming tools on the ground near the horse. Place them where they will not be stepped on by the horse. or cause you to trip.
- Know the horse's peculiarities. If someone else rides your horse, tell him or her what to expect.
- Teasing a horse may cause it to develop dangerous habits for the rest of its life and put your safety, and the horse's, in serious jeopardy.





CHAPTER 16: HORSE SAFETY GUIDELINES

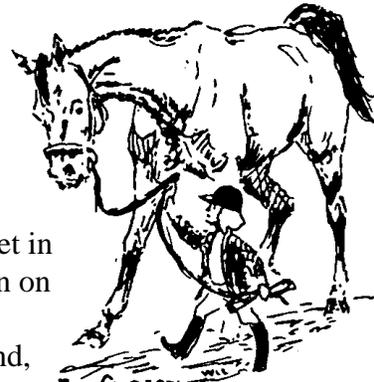
- Punish a horse only at the instant of its disobedience. If you wait, even for a minute, it will not understand why it is being punished. Punish without anger. Never strike a horse about its head.



- It is not safe to leave a halter on a horse that is turned loose. When necessary to do so, the horse should be checked daily because some halter materials shrink. Be certain to check the fit and make sure the horse can't catch a foot in the halter strap. A halter might catch on posts or other objects causing injury.
- Wear footgear that will protect your feet from being stepped on or from stepping on nails around the stable and barnyard. Riding boots are best. Never go barefooted.

Leading

- Make the horse walk beside you, not run ahead or lag behind, when leading. A position even with the horse's head or halfway between the horse's head and its shoulder is safest.
- When changing direction, it is safer to turn the horse to the right and walk around it.
- Use a long lead strap and fold the excess strap in a figure-eight style in your left hand when leading. It is customary to lead from the horse's left, or near side, by using the right hand to hold the lead near the halter. Extend your right elbow slightly toward the horse. If the horse makes contact with you, its shoulder will hit your elbow first and move you away from it. Your elbow also can be used on the horse's neck to keep its head and neck straight and controlled, and to prevent the horse from crowding you. Train the horse to be led from both sides.
- Your horse is larger and stronger than you. If it resists, do not get in front of it and try to pull. (See pages 73-74 for more information on safe areas.)
- Never wrap the lead strap, halter shank or reins around your hand, wrist or body. A knot at the end of the lead shank aids in maintaining a secure hand grip when needed for control.
- When leading, tying or untying a horse, avoid getting your hands or fingers entangled. Use caution to prevent catching a finger in dangerous positions such as in halter and bridle hardware that includes snaps, bits, rings and loops.
- Be extremely cautious when leading a horse through narrow openings such as a door. Be certain you have firm control and step through first. Step through quickly and get to one side to avoid being crowded.
- Any time you are dismounted or leading the horse, the stirrup irons on an English saddle should be run up, or dressed (slip the stirrups up the leathers). Also, be cautious of stirrups catching on objects when using a western saddle.



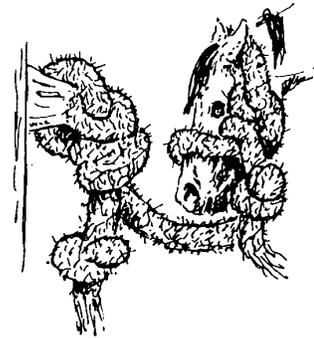
CHAPTER 16: HORSE SAFETY GUIDELINES



- Use judgment when turning a horse loose. It generally is safest to lead a horse completely through the gate or door and turn the horse about, facing the direction from which you just entered. Then release the lead strap or remove the halter or bridle. Make the horse stand quietly while you pet it. Avoid letting a horse bolt away from you when released. Good habits prevent accidents.
- Avoid use of excessively long lead ropes which can become accidentally entangled. Watch the coils when using lariats or lunge lines.

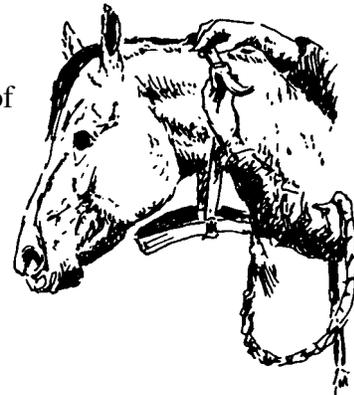
Tying

- Know and use the proper knots for tying and restraining a horse.
- Tie your horse far enough away from strange horses so they cannot fight.
- Always untie the horse before removing its halter.
- Avoid use of excessively long lead ropes to prevent the horse from becoming accidentally entangled; length of lead rope depends on the size of the horse.
- Always tie a horse in a safe place. Use the halter rope, not the bridle reins.
- Tie your horse a safe distance from other horses, tree limbs or brush where it may become entangled.
- Be certain to tie the horse to an object that is strong and secure and won't break or loosen if the horse pulls back. Never tie below the level of the horse's withers.



Bridling

- Protect your head from the horse's head when bridling. Stand close, just behind and to one side (preferably on the left side) of the horse's head. Use caution when handling the horse's ears.
- Keep control of the horse when bridling by re-fastening the halter around its neck.
- Be certain the bridle is properly adjusted to fit the horse before you ride. Three points to check are placement of the bit, adjustment of the curb strap and adjustment of the throatlatch.

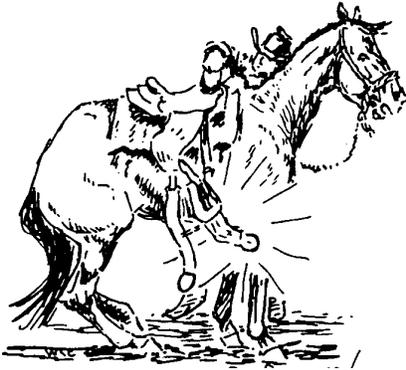


Saddling

- Check your saddle blanket and all other equipment for foreign objects. Be certain the horse's back and the cinch or girth areas are clean.
- When using a western double-rigged saddle, remember to fasten the front cinch first and rear cinch last. Unfasten the rear cinch first and front cinch last when unsaddling. Be certain the strap connecting the front and back cinches (along the horse's belly) is secure.



CHAPTER 16: HORSE SAFETY GUIDELINES



- Fasten accessory straps (tie-downs, breast collars, martingales) after the saddle is cinched. Unfasten them before loosening the cinch. On English equipment, it is sometimes necessary to thread the girth through the martingale loop before the girth is secured.
- The back cinch should not be so loose that your horse can get a hind leg caught between the cinch and its belly.
- When saddling, it is safest to keep the off cinches and stirrup secured over the saddle seat and ease them down when the saddle is on. Do not let them swing wide and hit the horse on the off knee or belly. That hurts.
- Swing the western saddle into position easily, not suddenly. Dropping the saddle down too quickly or hard may scare the horse. An English saddle is much lighter than a stock saddle. Do not swing the saddle into position. Just lift it and place it into position.
- Pull up slowly to tighten the cinch. Check the cinch three times:
 - after saddling,
 - after walking a few steps (before riding), and
 - after mounting and riding a short distance.

Mounting and dismounting

General



- Never mount or dismount a horse in a barn, or near fences, trees or overhanging projections. You may be injured if a horse sidesteps or rears.
- A horse should stand quietly for mounting and dismounting. Control its head through the reins. If your horse will not stand, ask someone who can handle horses to help you.

Using English equipment

- Immediately upon dismounting, the rider should “run up” the stirrups. A dangling stirrup may startle or annoy the horse. It is possible for the horse to catch a cheek of the bit or even a hind foot in a dangling stirrup iron when he is going for a fly. The dangling stirrup also can be caught on doorways and other projections while the horse is being led.
- After running up the stirrups, the reins should immediately be brought forward over the horse’s head. In this position, they can be used for leading.

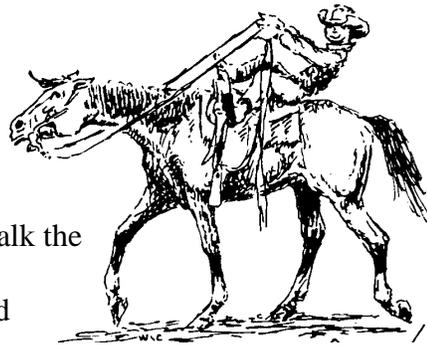


Using western equipment

- Closed reins, or a romal, should be brought forward over the horse's head after dismounting.

Riding

- Keep your horse under control and maintain a secure seat at all times. Horses are easily frightened by unusual objects and noises.
- Until you know your horse, confine your riding to an arena or other enclosed area. Ride in open spaces or unconfined areas after you are familiar with your horse.
- If your horse becomes frightened, remain calm, speak to it quietly, steady it and give it time to overcome its fear. Then ride or lead the horse past the obstacle. Do not hit the horse.
- Hold your horse to a walk when you go up or down a hill.
- Allow the horse to pick its way at a walk when riding on rough ground or in sand, mud, ice or snow where there is danger of the horse slipping or falling.
- Do not fool around. It is dangerous for you and others who may be nearby.
- When riding on roads:
 - never ride bareback.
 - always bridle the horse. Riding with just a halter does not give you control.
 - use judgment when riding in pairs or in groups. Be certain there is sufficient space between horses.
 - try to avoid paved or other hard-surfaced roads. Walk the horse when crossing such roads.
 - in areas of heavy traffic, it is safest to dismount and lead the horse across.
 - ride on the shoulders or in barrow pits, but watch for junk that can injure a horse.
- Never rush past riders who are proceeding at a slower gait. It startles both horses and riders and can cause accidents. Instead approach slowly, indicate a desire to pass and proceed cautiously on the left.
- Never ride off until all riders are mounted.
- Ride abreast or stay a full horse's length from the horse in front to avoid the possibility of being kicked.
- Walk your horse when you approach and pass through underpasses or ride over bridges.
- When your horse is full of energy, lunge it or ride it in an enclosed area until it is settled.
- Do not let a horse run to and from the stables. Walk the last mile home.
- Know the proper use and purpose of spurs before wearing them.
- Dogs and horses are both good companions, but they may not mix. Keep your dog under control at all times around horses.
- Wear protective headgear when riding. This should be strictly adhered to in any form of riding.



Riding at night



CHAPTER 16: HORSE SAFETY GUIDELINES

- Riding at night can be a pleasure, but it must be recognized as more hazardous than daytime riding. Walk the horse; fast gaits are dangerous.
- If necessary to ride at night on roads or highways, follow the same rules as for pedestrians. State laws vary regarding which side of the road you should ride. Wear light-colored clothing and carry a flashlight and reflectors. Check your state regulations for details.
- Select a location with care. Choose controlled bridle paths or familiar, safe, open areas.



Equipment and clothing

- Learn to handle a rope before carrying one on a horse. Always use caution when working with a rope if the horse is not rope-broke. Never tie the rope hard and fast to a saddle horn while roping off a green horse.
- Bridle reins, stirrup leathers, headstalls, curbstraps and cinch straps should be kept in the best possible condition; your safety depends on these straps. Replace any of the straps when they begin to show signs of wear such as cracking.
- Be sure all tack fits the horse. Adjust your tie-downs to a safe length that will not hinder the horse's balance.
- Spurs can trip you when you work on the ground. Take them off when you are not mounted.
- Wear neat, well-fitting clothing that will not become snagged on equipment. Belts, jackets and front chap straps can become hooked over the saddle horn.
- Wear boots or shoes with heels as a safeguard against your foot slipping through the stirrup.
- Keep the horse's feet properly trimmed or shod. Have the horse's teeth checked for any mouth problems.
- Gloves are a safeguard against cuts, scratches, splinters and rope burns.
- Do not wear rings or dangling jewelry around horses. They can catch on the halters and other equipment.

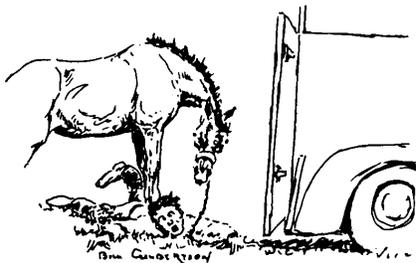
Wear a helmet

- Wear a safety approved (ASTM) helmet. There are many helmet designs available, both western and English.
- More than 17 percent of all horse-related injuries are head injuries. Head injuries are associated with more than 60 percent of all equestrian related deaths.
- Riding helmets are not child's play. Adults, aged 25 and older, account for 53 percent of hospital-treated rider injuries.
- Injuries occur most frequently around or near the home or ranch (60 percent). Wear a helmet and make sure it is fastened securely on your head.



Trailer or other hauling

- Always have at least one person help you when trailering.
- Always stand to one side, never directly behind, when loading or unloading a horse from a trailer or truck.
- Circumstances involved in loading a horse will vary, but the following methods are given in order of preference:



- train the horse so it can be sent or led into the trailer.
 - lead the horse into the left side of a two horse trailer while you stand on the right side of the center divider, or vice versa.
 - with a front loading trailer, it is least desirable to get in front and lead the horse in (never do this without an escape door or front exit; even with a door, use caution; most are awkward to get through) Also, horses have been known to follow the handler out.
- Be certain the ground area behind and around the truck or trailer affords safe footing before loading or unloading.
 - It is safest to remove all equipment (bridles, saddles and so forth) before loading. Use your halter.
 - Always speak to a horse in a truck or trailer before you attempt to handle it.
 - If you have trouble loading or unloading, get experienced help.
 - Secure the butt bar or chain before you tie the horse. Use care when you reach for it. Ease it down when you unfasten it to avoid bumping the horse's legs.
 - Always untie a horse before opening the gate or door.
 - Avoid slick floors. Use matting or some type of bedding for secure footing.
 - Check your trailer regularly for the following:
 - rotting or weakened floor boards.
 - rusted and weakened door hinges.
 - broken hitch welds.
 - when serviced, have a competent mechanic check the spring shackles and wheel bearings.
 - Be certain the trailer is of adequate construction and meets state requirements for brakes and lights.
 - The trailer should have sufficient height to afford a horse ample neck and head room. Remove or cover any protruding objects.
 - When you (or an adult) drive, always observe the following:
 - double-check all connections (lights, brakes, hitch and safety chains).
 - be certain all doors are closed and secured.
 - drive carefully. Turns should be made slowly. Start and stop slowly and steadily.
 - look far ahead to avoid emergencies. Drive in a defensive manner.



CHAPTER 16: HORSE SAFETY GUIDELINES

- When hauling a stallion with other horses, it is safer to load the stallion first and to unload him last.
- Distribute the weight of the load evenly. When hauling one horse, it is safest to load it on the left side of the trailer.
- Never throw lighted cigarettes or matches from a car or truck window because of the danger of fire or of the wind sucking them into the trailer.
- Check the horse and the trailer hitch at every stop before you continue on.
- Opinions vary on whether to haul a horse tied or loose. If you tie it, allow sufficient length of rope so the horse can move its head for balance. Use a safety release or a quick-release knot.
- If hauling in a truck or other open carrier, protect the horse's eyes from wind and foreign objects. Use goggles or some type of wind shield. Do not let the horse put its head out a window.
- Horses are like people; some get motion sickness. Adjust the horse's feeding schedule to avoid travel when the horse is full of feed and water. Feed smaller amounts or avoid feeding grain before the trip.

Trail riding

- If you plan to ride alone, tell someone where you are going and when you expect to return.
- Ride a well-mannered horse.
- Do not play practical jokes and indulge in horseplay.
- Watch where you ride – avoid dangerous ground. Note landmarks. Study the country and view behind you so you will know how it looks when you ride out.
- Courtesy is the best safety on the trail.
- Think of your horse first. Watch its condition, avoid injuries and care for it properly.
- Carry a good pocket knife to cut ropes in case of entanglement.
- Ride balanced and erect to avoid tiring the horse or causing a sore back and legs.
- Check the equipment.
 - Have a halter and rope. Hobbles are fine if the horse is trained to them.
 - Have clean saddle blankets or pads.
 - Be certain the equipment is in good repair and fits the horse.
 - Include bad weather clothing.
 - A pair of wire cutters is handy in case the horse becomes entangled in wire.
 - A lariat is handy for many needs, but know how to use one and be certain the horse is accustomed to a rope.
 - Other helpful equipment includes pieces of leather or rawhide for repairs, spare horseshoe nails and matches.
- When you unsaddle, store your gear properly. Place the saddle blanket where it will stay dry.





- Keep your gear covered overnight.
- Do not water your horse when it is hot. Cool the horse first. Water the horse out a few sips at a time.
 - Always tie a horse in a safe place. Use the halter rope – not the bridle reins. Never tie the rope below the level of the horse’s withers. Be certain to tie it to an object that is strong and secure and will not break or come loose if the horse pulls back.
 - Be extremely cautious of cigarettes, matches and fires. Know they are out before discarding them or leaving them unattended.
 - Obtain current, accurate maps and information on the area. Become familiar with the terrain and climate.
 - If you ride on federal or state land, get advice from the forest or park officials. Know their trail use and fire regulations.
 - Be certain the horse is in proper physical condition and its hooves and shoes are ready for the trail.
 - Use extreme caution at wet spots or boggy places.
 - Riding at a fast speed on the trail is unsafe. Ride at safe gaits.
 - Avoid overhanging tree limbs. Warn the rider behind you when you encounter an overhanging limb. Watch the rider ahead so a limb pushed aside doesn’t snap back and slap the horse or you in the face.

Fire safety guidelines

Most horse owners assume “it couldn’t happen to me.” Fire is the most terrible death that can happen to a horse, because the horse is penned within its corral and stable. Fire prevention and safety are the duty of every person involved with horses. Fire safety involves common sense and a trained response.

Be safety conscious at all times. Fires give little warning. Post the number of the local fire department by all telephones. Fire prevention is a vital part of horse ownership and management.

Stable fires

Almost all horse barns are made of or contain these flammable materials:

- wood;
- bedding straw or wood shavings;
- highly combustible materials such as leather, blankets, ropes, oils, and more.
- hay, bedding straw or wood shavings are also stored close to barns.

A horse standing in a bed of straw might just as well be standing in a pool of gasoline should a fire occur. The burning rate of loose straw is approximately three times that of the burning rate of gasoline. The horse in a stall where fire originates has only 30 seconds to escape. The flames spread and heat is so rapid that a fire, once started, is out of control in a matter of minutes.



CHAPTER 16: HORSE SAFETY GUIDELINES

Automatic sprinkler systems are advocated for facilities such as racetracks, large breeding establishments and other commercial-type enterprises. However, from a monetary point of view, automatic sprinkler systems generally are not included in the smaller scale operations.

Water-type fire extinguishers are effective if used within the first minute. Since stable fires develop rapidly due to the abundance of combustible materials, fire extinguishers are of little or no use once the fire has burned for 60 seconds or more.

Fire spreads rapidly, as does panic. Quick action is necessary to save the life of a horse. Trainers, organizations and parents should teach fire prevention and safety. As schools have fire drills for students, so should barn managers and trainers instruct students as to the course of action to follow in case of a fire.

The following procedures, with individual modifications, could be used.

30 seconds is all your horse may have

Plan now

- Know where fire alarms are located.
- Know where fire equipment is located.
- Know where water is located.
- Know how to use fire extinguishing equipment.

Post the fire department number in a prominent place

Plan of action

- Call the fire department.
- Begin evacuating horses.
- Open all outside access gates to the stable area.
- Keep roads clear for fire equipment access.
- Use first aid fire fighting equipment (hand extinguishers, buckets and so forth).
- Meet the fire fighters and direct them to the fire.



Procedures to be followed in the event of fire:

- Call the fire department.
- Evacuate horses.
 - Use halters and lead ropes.
 - Blindfold, if necessary, using scarves, handkerchiefs or gunny sacks.
 - Move to holding area away from barn site such as an adjacent riding arena, and out of the way of fire fighting equipment.
- Open all access gates to the barn area.
- Until help arrives, use available fire fighting equipment such as:
 - extinguishers,
 - hoses,
 - wet gunny sacks and
 - shovels and dirt.
- Keep roads clear for fire equipment.

Fire prevention measures

In the general barn area:

- clean up and dispose of debris,
- have adequate water outlets with hoses attached,
- have an outside phone with a prominent display of fire department number,
- store feed, bedding straw or wood shavings at a safe distance from barns, and
- spray for weeds surrounding general area.

Within the barn:

- ensure no smoking is allowed in the barn,
- have adequate water outlets with hoses attached,
- dispose of oily rags immediately after use, and
- check all electrical wiring periodically for frayed ends, doubled-up extension cords and so forth.

In the event of a wildfire in the area, don't wait until the last possible moment to move your horses. Brush fires travel with alarming speed and can cover many miles in a matter of minutes. Winds fan flames and can carry firebrands that cause the fire to jump ridges and spread to different areas within minutes.



CHAPTER 16: HORSE SAFETY GUIDELINES

Other possible fire situations

Trail riding in the mountains

- Absolutely no smoking on the trail.
- Advise a responsible party of your route and estimated time of return, whether you ride in a group or by yourself.
- Familiarize yourself with the terrain.
- Any organized ride, as a safety rule, should have an alternate escape route planned.
- In the event you come upon a fire, the personal safety of you and your horse is your primary concern.
 - Assess the situation and use your best judgment.
 - Under normal conditions, try to get away from the fire area.
 - Proceed to a safe area.

Horse shows

- Follow proper parking procedures. Do not block street entrances or fire hydrants.
- Never padlock your horse in a stall.

Horse safety commandments

- Buy or ride a safe horse.
- Don't be overmounted.
- Know your horse.
- Don't surprise your horse.
- Check your tack.
- Watch small children.
- Tie your horse with care.
- Know trailer safety.
- Don't crowd others.
- No clowning, please.

CHAPTER 17: 4-H ADVANCEMENT LEVELS PROGRAM



What are Advancement Levels?

The levels program is a supplement to the 4-H horse project in Colorado. It is an excellent teaching and learning tool for 4-H leaders and members. The Advancement Level program is a logical, step-by-step guide to teach youngsters horsemanship and horse care. It is a voluntary program. It should be recognized that not every youth will want to master all levels. However, the first two levels teach the basics of horse safety, riding and care for general pleasure and performance, and all members are encouraged to participate in at least Levels I and II. Level III is for the very serious horseman, and Level IV is for the youth that is interested in a career in the equine industry or very serious about his or her riding and training. Level IV is not for everyone.

There are four levels that 4-H members may advance through. These levels are:

- Novice Horseman, Level 1
- Intermediate Horseman, Level 2
- Performer, Level 3
- Advanced Horse Master, Level 4

Level I is divided into Novice western or English. Level 2, Intermediate is also divided into western or English. Level III, Performer and Level IV, Horse Master are divided into four divisions; western, saddle seat, dressage and hunt seat.

Safety and proper basics are stressed throughout the levels program. The skills learned in the beginning levels are reflected in properly mastering the more advanced levels. A solid and consistent foundation is extremely important. Passing the Level II test is required by Colorado State Fair to show in the Colorado 4-H Horse Show.

What is involved?

The Advancement Level program is a teaching guide which combines many aspects of horsemanship and horse care. Reference material for the Advancement Level program include:

- *4-H Horse Project Members Manual*
- *4-H Horse Rulebook (LA1500F)*
- *4-H Horse Judging Guide (M00000G)*
- *The Horse*, by Evans, Borton, Hintz and Van Vleck (used for Levels III & IV)

The program is designed to apply to both English (hunt seat, saddle seat and dressage) and western riding style.



CHAPTER 17: 4-H ADVANCEMENT LEVELS PROGRAM

The levels program involves a *written and riding test* in each level. A 4-H member must pass the written test with a score of 80 percent or better *before* taking the riding test. You must also pass the riding test with a score of 80 percent or better on each of the riding test performance maneuvers or requirements.

There is not a time or age limit for passing the levels other than those established for eligibility in the county 4-H program.

For safety reasons in Levels I and II, it is suggested that 4-H members use an older, well-broke horse for their project and the levels tests. It is also suggested that only horses four years of age and over may be used for Levels III and IV, since the requirements are quite advanced. There are no rider age limits. However, those trying the two upper levels need to be old enough to understand the technicalities of advanced horse care and advanced procedures of training.

Changing divisions

Members completing a level in one division (English or Western), may decide to perfect the skills in a different division. For example, if a member completed Level III in Western, but then wishes to train in Dressage, he or she must begin with Level II in English and proceed through the Dressage subdivision. A member may not move laterally from one division to another.

Tests

The written test for each level are identical for English and Western. It is not necessary for 4-H members to retake the written test once he or she has passed it for a certain level.

Ridden tests may be English or Western. A rider does not have to use the same horse all the way through the program; however, this would be most desirable. If you pass all four levels, you may take a second horse through if desired and will receive recognition for the levels passed. Take time to get the basics down properly and do not hurry through the levels.

Proper tack and attire (English or Western) for tests should meet showing standards. Wear appropriate riding attire (boots, hat or helmet, long sleeved shirt, long pants, long hair tied back, etc.).

The following pages are sample score sheets that a 4-H Levels judge would use when scoring a rider. Contact your county Cooperative Extension agent for copies of levels III and IV test for all other divisions.

CHAPTER 17: 4-H ADVANCEMENT LEVELS PROGRAM



It is recommended that a 4-H member reach at least Level II, therefore if you want copies of the Levels III and IV test, contact your county Cooperative Extension office.

WESTERN and ENGLISH NOVICE Level I Riding Test — Sample Score Sheet

Rider's Name: _____ Age: _____ Rater(s): _____
 Address: _____
 Club: _____ County: _____ Date: _____

Directions: To pass this level, the 4-H member must score 8 points out of 10 *for each section of the test*. Level I emphasizes correct and safe principles of handling and riding.

	Maximum Points	Rating Score	Judge's Comments
*Basic Handling			
A. Properly halter, lead, and tie horse	10		
B. Simple grooming; correct use of tools; pick up feet and clean properly	10		
C. *Bridling and saddling; proper adjustment of equipment	10		
D. Safety around the horse	10		
Riding			
A. *Mount, dismount, mount (mounting block may be used, if necessary)	10		
B. Correct seat, body position, and balance at walk, jog/trot and lope/canter	10		
C. Proper use of reins; hand position and action.	10		
D. Control at the walk; both directions	10		
E. Control at the jog/trot; both directions.	10		
F. Control at the lope/canter; both directions; demonstrating correct leads.	10		
G. Demonstrate balanced, gradual stop from all gaits on a straightaway.	10		
H. Equipment, dress and overall attitude.	10		

* If the size or physical strength prevents the 4-H member from actually performing the skill, verbal explanation will suffice.



CHAPTER 17: 4-H ADVANCEMENT LEVELS PROGRAM

ENGLISH Level II Riding Test — Sample Score Sheet

Rider's Name: _____ Age: _____ Rater(s): _____

Address: _____

Club: _____ County: _____ Date: _____

Directions: To pass this level, the 4-H member must score 8 points out of 10 for each section of the test. Level II asks the rider to show confidence, control and more advanced horsemanship skills.

	Maximum Points	Rating Score	Judge's Comments
*Basic Handling			
A. Properly halter, lead, and tie horse	10		
B. Fitting, grooming, clipping; use of tools on mane, tail, body, legs and feet	10		
C. *Bridling and saddling; proper adjustment of equipment	10		
D. Showmanship skills; walk, trot, stop, turn on hindquarter, back and set ups	10		
Riding			
A. *Mount, dismount, mount (mounting block may be used, if necessary)	10		
B. Demonstrate aids for the following upward transitions: 1) walk to posting trot correct diagonal; 2) walk to sitting trot; 3) posting trot to canter; 4) sitting trot to canter; 5) walk to canter	10		
C. Demonstrate aids for the following downward transitions: 1) canter to sitting trot; 2) canter to posting trot; 3) canter to walk; 4) posting trot to walk; 5) sitting trot to walk.	10		
D. Show a figure 8 at the canter consisting of two large circles showing correct lead changes in both directions through the trot starting from a walk or halt.	10		
E. Show a balanced halt from all gaits on the straightaway.	10		
F. Rein back 3 to 4 steps in a straight line.	10		
G. Show simple changes of lead on the straightaway. Do a minimum of 3 changes, through the trot	10		
H. Turn on the forehand; 90 and 180 degrees in both directions	10		
I. Turn on the hindquarter; 90 and 180 degrees in both directions	10		
J. Overall riding ability: body position, hands and legs, knowledge of diagonals and leads	10		
K. Poise and attitude.	10		

* If size or physical strength prevents the 4-H member from actually performing the skills, a verbal explanation will suffice.

CHAPTER 17: 4-H ADVANCEMENT LEVELS PROGRAM



WESTERN Level II Riding Test — Sample Score Sheet

Rider's Name: _____ Age: _____ Rater(s): _____

Address: _____

Club: _____ County: _____ Date: _____

Directions: To pass this level, the 4-H member must score 8 points out of 10 for each section of the test. Level II asks the rider to show confidence, control and more advanced horsemanship skills.

	Maximum Points	Rating Score	Judge's Comments
*Basic Handling			
A. Properly halter, lead, and tie horse	10		
B. Fitting, grooming, clipping; use of tools on mane, tail, body, legs and feet	10		
C. *Bridling and saddling; proper adjustment of equipment	10		
D. Showmanship skills; walk, trot, stop, turn on hindquarter, back and set ups	10		
Riding			
A. *Mount, dismount, mount (mounting block may be used, if necessary)	10		
B. Demonstrate aid for the following upward transitions: 1) walk to jog; 2)lope to walk; 3) walk to lope.	10		
C. Demonstrate aids for the following downward transitions: 1) lope to jog; 2)lope to walk; 3) jog to walk.	10		
D. Show a balanced stop from all gaits on a straightaway.	10		
E. Back 3 to 4 steps in a straight line.	10		
F. Show a figure 8 at the canter consisting of two large circles with lead changes through the jog in both directions. Begin maneuver from stop or walk.	10		
G. Show simple changes of lead on the straightaway. Do a minimum of 3 changes, each dropping to a jog.	10		
H. Turn on the forehand; 90 and 180 degrees in both directions	10		
I. Turn on the hindquarter; 90 and 180 degrees in both directions	10		
J. Overall riding ability: body position, hands and legs, knowledge of diagonals and leads	10		
K. Poise and attitude.	10		

* If size or physical strength prevents the 4-H member from actually performing the skills, a verbal explanation will suffice.

APPENDIX I: TERMS AND DEFINITIONS



- Action The manner in which a horse travels and moves.
- Aids, artificial Spurs, whips, martingales and so forth.
- Aids, natural Legs, hands, seat, weight and voice, as used to control a horse.
- Appointments Equipment and clothing used in showing horses.
- Artificial gaits Taught rather than natural. Includes the running walk, slow gait, rack and, in some instances, the pace. All are modifications of the walk.
- Balance Refers to the overall appearance of the horse. All parts of the body are in correct proportion to each other and result in a pleasing, balanced appearance.
- Bearing Rein Rein pushed against the neck in direction of the turn, neck rein.
- Bits The bit is the most important part of the bridle; the chief use of the other parts of the bridle is to hold the bit in place in the horse's mouth. The bit provides communication between the rider or driver and the horse.
- Bloom A condition of the hair and coat. They appear clean, healthy and fine-textured with a distinct, clear shine. Healthy appearance.
- Bosal (boh-zal) Noseband of the hackamore, usually made of braided rawhide.
- Bowed tendon An inflammation and enlargement of the flexor tendon at the back of the cannon (most often found on the front legs).
- Brace bandages Resilient bandages on the leg of horses worn in some cases to support lame legs, and worn in other cases to protect a horse from cutting and skinning its legs while racing.
- Brand A mark of identification. A private registered mark burned, frozen or tattooed on the horse.
- Buck-kneed Knees bent forward.
- By or sired by The male parent of a horse.
- Calf-kneed Opposite of buck-kneed. Knees angled backward.
- Cast To lie down or roll close to a wall so it is impossible or difficult to get up without assistance.
- Catch rope Working rope or lariat.
- Cavesson A noseband on a bridle.
- Coarse Used to express a lack of quality or a rough, harsh appearance.
- Coggins test An agar gel-immunal diffusion test to determine equine infectious



- anemia (known as swamp fever).
- Colic Various conditions of the digestive tract in which abdominal pain is the chief symptom.
- Collected Controlled gait, a correct, coordinated action.
- Colt A young, male horse under four years of age.
- Conformation The build of a horse — the structure, form and symmetrical arrangements of parts.
- Contracted heels Occurs most often in the fore feet, characterized by a drawing or contracting of the heels.
- Cribbing Biting or setting teeth against the manger or some other object, arching the neck and gulping or swallowing air into the stomach, not the lungs.
- Crossbreed The result of breeding two different breeds of horse to produce an individual that possesses the characteristics of both breeds.
- Cryptorchid A male horse whose testicles have not descended into the scrotum.
- Dental star A star-shaped or circle-like structure near the center of the wearing surface of the permanent incisors.
- Direct rein Using one hand on each rein with a snaffle bit or bosal, teaching the horse to turn and give to the pressure caused by the pull of the rein.
- Disunited or cross firing When a horse is on the right front lead and left hind lead at the same time or vice versa.
- Dressage Exercise and training that develops the physique and ability of the horse.
- Equine Of or pertaining to horse.
- Equitation Art of riding horseback.
- Farrier A horseshoer.
- Filly A young female horse under four years old.
- Float teeth Filing off the sharp edges of a horse's teeth.
- Foal A young horse of either sex up to yearling age.
- Founder See laminitis.
- Gait Describes a specific foot fall pattern or beat, i.e., walk, trot, canter.



APPENDIX I: TERMS AND DEFINITIONS

- Gelding An altered or castrated horse.
- Grooming Removal of dirt and other irritants from the horse; massages muscles.
- Gymkhana A program of competitive games on horseback.
- Hackamore A type of western headstall or bridle without a bit, commonly used in breaking horses and teaching them to neck rein.
- Hand The unit by which the height of a horse is measured. A hand equals 4 inches.
- Hand gallop Three beat gait, similar to a lope or canter but the stride is lengthened.
- Handy Describes a horse that moves quickly and willingly. Always in control of its movements in a balanced, rhythmic, alert manner.
- Headstall Part of a bridle or hackamore that fits over the horse's head.
- Heaves Pulmonary emphysema. A condition in which the lungs do not work efficiently. Reduced elastic recoil reduces the amount of air that can be forced out of the lungs. A "heave line" may develop due to this condition.
- Hinny Cross between a jenny and a stallion.
- Hobbles Straps fastened to the front legs of a horse to prevent him from straying.
- Honda Eye on the working end of a lariat or riata through which the rope passes to form a loop or noose.
- Jack Male donkey.
- Junior horse Any horse four years old or younger.
- Laminitis Founder. Noninfectious inflammation of the sensitive laminae of one or more of the hooves.
- Lead In canter or lope, the horse is on the right or left lead as indicated by the inside or leading foreleg; also the third beat in the stride.
- Lunge A long line, about 20 to 30 feet, used to train and exercise a horse.
- Mare A mature female horse four years of age and older.
- Martingales Two types: *standing* and *running*. The martingale prevents the elevation of the horse's head beyond a certain level without cramping the horse. The *standing martingale* consists of a strap which extends from around the girth, between the forelegs, to the noseband. The *running martingale* is not attached to the horse's head, but terminates in two rings through which the reins pass. It permit



- more freedom of movement than the standing martingale.
- Mecate A hackamore rein and lead rope. Also called a McCarty rein.
- Monkey mouth Opposite of parrot mouth, the lower jaw protrudes in front of the upper jaw.
- Mule A cross between a mare and a jack.
- Natural gaits Walk, trot, canter and gallop and, in some horses, pace and running walk.
- Near side The horse's left side.
- Neck rein A signal to the horse with the weight of the rein against the neck.
- Off side or far side The horse's right side.
- Open class A show class in which any horse of a specified breed may compete.
- Out of or dam of Refers to the female parent of a horse.
- Parasite A small organism that lives on or in and at the expense of a larger organism called the host.
- Parrot mouth Opposite of monkey mouth, the upper jaw overhangs the lower jaw, the incisors do not properly meet and cause uneven wear and growth.
- Parturition The act of giving birth.
- Piebald The black and white coat color of the Pinto horse.
- Posting The rising and lowering of a rider with the rhythm of the trot.
- Purebred Bred from members of a recognized breed without mixture of blood from other breeds.
- Quality Fineness of feature, fine hair and lack of coarseness.
- Rein chains Light weight chains attached from the bit to the rein. Used to counter balance the weight of the spade bit.
- Reins The reins afford direct contact between the hands and horse's mouth. They regulate impulsion: slowing, stopping or backing the horse. The reins, acting through the mouth and the neck, are also used to change direction of travel or to turn the horse to either the right or left.
- Restraint Usually tying, to prevent escape or injury.
- Riata Braided rawhide rope.



APPENDIX I: TERMS AND DEFINITIONS

- Ribbon colors First place — blue; second — red; third — yellow; fourth — white; fifth — pink; sixth — green; seventh — purple; eighth — brown.
- Roached A mane that has been cut short.
- Roached back A convex back, one that forms an outward arc.
- Roller A surcingle, or form of girth, used to hold a blanket in place.
- Romal A braided rawhide terminating in a single or double tapered strap, usually between 3 and 4 feet long, and attached to the end of closed, braided rawhide reins.
- Saddlebred Breed originated in the United States. Developed as an easy-riding, general purpose horse historically for plantation use. Used today as a show horse. Can be three- or five-gaited.
- Seat and hands A term that refers to the ability of a rider to sit in the saddle with grace and control the mount.
- Senior horse Any horse five years old or older.
- Short-coupled Describes a horse having a short distance (not more than four-fingers width) between the last rib and the point of the hip.
- Skewbald Coat color other than black, such as bay, brown or chestnut, combined with white of the Pinto horse.
- Slicker A raincoat made of oiled canvas or plastic.
- Slobber chains Light weight chains attached between the shanks of a curb bit.
or straps Sometimes it is a solid metal bar called a slobber bar.
- Smooth mouth Refers to the smooth, biting surface of the upper and lower teeth after the cups have disappeared at 12 years of age.
- Sound A term that means the horse is physically fit and shows no signs of weakness or illness which interfere with its usefulness.
- Splitear headstall A western headstall with a slot for only one ear to go through.
- Spoon The port mouthpiece for exerting pressure on the mouth which rises from the center of the mouthpiece of a curb bit, much like the port of the Weymouth curb bit. The spoon may vary from less than an inch to 2 or more inches in length.
- Stallion A mature, uncastrated male.
- Stud Refers to a horse-breeding farm or ranch; corrupted in common



- usage to mean stallion.
- Stylish To have a pleasing, graceful, alert general appearance.
- Suppleness The ability of the horse to bend and flex its entire body.
- Sway-back A concave or sagging back that forms an inward arc.
- Tack Riding equipment or gear for the horse such as saddle, bridle, halter, and so forth.
- Tapaderos or taps Leather covering or shield over the front of the stirrups.
- Thrush A disease of the frog in which a black discharge and foul smell are emitted.
- Type The arrangement of body parts into distinct recognizable patterns. All horses have the same basic conformation, but each breed has distinct conformation types that make it differ from other breeds.
- Vice A bad habit that may affect a horse's usefulness, dependability or health.
- War bridle An emergency bridle made of rope for use in leading unruly horses.
- Warm-blood Result of crossing heavy horses with fine thoroughbreds, mainly uses for pulling carriages. Today used in dressage, show jumping and eventing.
- Weanling A foal, colt or filly under one year old, that has been taken away from its mother that is no longer nursing.
- Wolf teeth Small pointed teeth that sometimes appear at the base of the first premolar tooth.
- Yearling A foal that is between one and two years of age. A foal is considered one year of age on January 1, regardless of what month in the year it was born.

APPENDIX II: BREED ASSOCIATIONS



Akhal Teke Registry of America

21314 129th Avenue, SE
Snohomish, WA 98296
(425) 485-4970
FAX: (360) 668-4302

American White and American Creme Horse Registry

Rt.1, Box 20
Naper, NE 68755-2020
(402) 832-5560

International Andalusian and Lusitano Horse Association

101 Carnoustie North, Box 200
Birmingham, AL 35242
(205) 995-8900
FAX: (205) 995-8966

Appalossa Horse Club, Inc.

P.O. Box 8403
Moscow, ID 83843-0903
(208) 882-5578
FAX: (208) 882-8150

Arabian Horse Registry of America, Inc.

P.O. Box 173886
Denver, CO 80217-3886
(303) 450-4748
FAX: (303) 450-2841
www.theregistry.org

International Arabian Horse Association

10805 E. Bethany Dr.
Aurora, CO 80014-2605
(303) 696-4500
FAX: (303) 696-4599
www.iaha.com

North American Shagya-Arabian Society

9797 South Rangeline Road
Clinton, IN 47842
(765) 665-3851

American Buckskin Registry Association, Inc.

P.O. Box 3850
Redding, CA 96049-3850
(916) 223-1420
FAX: (916) 223-1420

International Buckskin Horse Association

P.O. Box 268
Shelby, IN 46377-0268
(219) 552-1013
FAX: (219) 552-1013

Cleveland Bay Horse Society of North America

P.O. Box 221
South Windham, CT 06266-0221
(860) 423-9457
FAX: (860) 439-1731

Clydesdale Breeders of the U.S.A.

17346 Kelly Rd.
Pecatonica, IL 61063
(815) 247-8780
FAX: (815) 247-8337

Colorado Ranger Horse Association, Inc.

Rd. 1, Box 1290
Wampum, PA 16157-9610
(415) 535-4841
FAX: (412) 535-4841



American Connemara Pony Society

2360 Hunting Ridge Road
Winchester, VA 22603
(540) 662-5953
FAX: (540) 722-2277

The American Donkey and Mule Society, Inc.

2901 N. Elm St.
Denton, TX 76201-7631
(940) 382-6845
FAX: (940) 484-8417
www.donkeys.com

The Friesian Horse Association of North America

P.O. Box 11217
Lexington, KY 40574
(541) 549-4272
FAX: (541) 549-4770

American Hackney Horse Society

4059 Iron Works Pkwy., Suite 3
Lexington, KY 40511-8462
(606) 255-8694
FAX: (606) 255-0177

Haflinger Association of America

14570 Gratiot Rd.
Hemlock, MI 48626-9416
(517) 642-5307
FAX: (517) 642-5358

Haflinger Registry of North America

14640 State Rt. 83
Coshocton, OH 43812-8911
(614) 829-2790
FAX: (614) 829-2322

American Hanoverian Society, Inc.

4059 Iron Works Pike, Bldg. C
Lexington, KY 40511
(606) 255-4141
FAX: (606) 255-8467

The American Holsteiner Horse Association

222 E. Main St., #1
Georgetown, KY 40324-1712
(502) 863-4239
FAX: (502) 868-0722
www.holsteiner.com

Icelandic Horse Association of America and Gaited International Association

507 N. Sullivan Rd.
Veradale, CA 99037
(509) 928-5690
FAX: (509) 928-2392
www.iceassoc.org

Lipizzan Association of North America

P.O. Box 1133
Anderson, IN 46015-1133
(765) 644-3904
FAX: (765) 641-1205
www.astralite.com/www/lipizzan

United States Lipizzan Registry

707 13th St., SE, Ste. 275
Salem, OR 97301
(503) 589-3172
FAX: (503) 362-6393
www.lipizzan.com/uslr.html



APPENDIX II: BREED ASSOCIATIONS

American Miniature Horse Association, Inc.

5601 South IH 35 W
Alvarado, TX 76009
(817) 783-5600
FAX: (817) 783-6403

Missouri Fox Trotting Horse Breed Association, Inc.

P.O. Box 1027
Ava, MO 65608-1027
(417) 683-2468
FAX: (417) 683-6144
www.mfthba.com

American Morgan Horse Association, Inc.

P.O. Box 960
Shelburne, VT 05482-0960
(802) 985-4944
FAX: (802) 985-8897

American Mustang and Burro Association

P.O. Box 788
Lincoln, CA 95648
(530) 633-9271
FAX: (916) 632-1855

National Native American Gaited Horse Registry

P.O. Box 4326
North Ft. Myers, FL 33917
(941) 543-5252
FAX: (941) 543-2489

Norwegian Fjord Horse Registry

8539 13 Mile Road
Marshall, MI 49068
(616) 781-4970

International Sporthorse Registry and Oldenburg Registry North America

939 Merchandise Mart
200 World Trade Center
Chicago, IL 60654
(312) 527-6544
FAX: (312) 527-6573
www.ourworld.compuserve.com/homepages/ISREG

American Paint Horse Association

P.O. Box 961023
Fort Worth, TX 76161-0023
(817) 439-3400
FAX: (817) 439-3484
www.apha.com/

Palomino Horse Association

HC 63, Box 24
Dornsife, PA 17823
(717) 758-3067

Palomino Horse Breeders of America, Inc.

15253 E. Skelly Drive
Tulsa, OK 74116-2637
(918) 438-1234
FAX: (918) 438-1232

Paso Fino Horse Association, Inc

101 North Collins, St.
Plant City, FL 33566-3311
(813) 719-7777
FAX: (813) 719-7872
www.pasofino.org



Percheron Horse Association of America

P.O. Box 141
Fredricktown, OH 43019-0141
(614) 694-3602
FAX: (614) 694-3604

Peruvian Paso Horse Registry of North America

3077 Wiljan Court, Suite A
Santa Rosa, CA 95407-5702
(707) 579-4394
FAX: (707) 579-1038
www.pphrna.org

Pinto Horse Association of America, Inc.

1900 Samuels Ave.
Ft. Worth, TX 76102-1141
(817) 336-7842
FAX: (817) 336-7416

Pony of the Americas Club, Inc.

5240 Elmwood Ave.
Indianapolis, IN 46203-5990
(317) 788-0107
FAX: (317) 788-8974
www.poac.org

Foundation for the Preservation and Protection of the Przewalski Horse

Dept. Of Animal & Dairy Science, Univ. Of Georgia
322 Livestock-Poultry Building
Athens, GA 30602-2771
(404) 542-0976
FAX (404) 542-0399

American Quarter Horse Association

P.O. Box 200
Amarillo, TX 79168-0001
(806) 376-4811
FAX: (806) 349-6401
www.aqha.com

Foundation Quarter Horse Registry

Box 230
Sterling, CO 80751
(970) 522-7822
FAX: (970) 522-7822

National Foundation Quarter Horse Association

P.O. Box P
Joseph, OR 97846
(541) 426-4403
FAX: (541) 426-4206

Racking Horse Breeders Association of America

Rt.2, Box 72-A
Decatur, AL 35603-9735
(205) 353-7225 or (800) 558-7225
FAX: (205) 353-7266

Rocky Mountain Horse Association

2805 Lancaster Rd.
Danville, KY 40422
(606) 238-7754
FAX: (606) 238-7754
www.naturalgait.com

American Saddlebred Horse Association

4093 Iron Works Pkwy.
Lexington, KY 40511-8434
(606) 259-2742
FAX: (606) 259-1628



APPENDIX II: BREED ASSOCIATIONS

American Shetland Pony Club

81-B E. Queenwood
Morton, IL 61550
(309) 263-4044
FAX: (309) 263-5113

American Shire Horse Association

35380 County Rd. 31
Davis, CA 95616-9430
(916) 757-2742
FAX: (916) 758-2742

National Show Horse Registry

11700 Commonwealth Dr. #200
Louisville, KY 40299-2344
(502) 266-5100
FAX: (502) 266-5806
www.nshregistry.org

International Trotting and Pacing Association, Inc.

P.O. Box 751
Moravia, NY 13118-0751
(315) 497-3960
FAX: (315) 497-0828

United States Trotting Association

750 Michigan Ave.
Columbus, OH 43215-1191
(614) 224-2291
FAX: (614) 224-4575
www.ustrotting.com

American Suffolk Horse Association

4240 Goehring Road
Ledbetter, TX 78946-9707
(409) 249-5795

Tennessee Walking Horse Breeders' and Exhibitors' Association

P.O. Box 286
Lewisburg, TN 37091-0286
(615) 359-1574
FAX: (615) 359-2539

The Jockey Club

821 Corporate Dr.
Lexington, KY 40503-2794
(606) 224-2700 or (800) 444-8521
FAX: (606) 224-2710
www.jockeyclub.com

American Trakehner Association, Inc.

1520 W. Church St.
Newark, OH 43055
(614) 344-1111
FAX: (614) 344-3225
www.horsecountry.com/trakehner

Walking Horse Owners' Association of America

1535 W. Northfield Blvd., #3A
Murfreesboro, TN 37129
(615) 890-9120
FAX: (615) 890-2070

American Warmblood Registry, Inc.

P.O. Box 15167
Tallahassee, FL 32317-5167
(904) 893-4089
FAX: (904) 893-8255
www.americanwarmblood.com



American Warmblood Society

6801 W. Romley Ave.
Phoenix, AZ 85043-6906
(602) 936-6621
FAX: (602) 936-4790
www.aws.com

North American Department of the Royal Dutch Warmblood Studbook of the Netherlands

609 E. Central
P.O. Box 0
Sutherlin, OR 97479
(541) 459-3232
FAX: (541) 459-2967
www.nawpn.org

Welsh Pony and Cob Society of America, Inc.

P.O. Box 2977
Winchester, VA 22604-2977
(540) 667-6195
www.scendtek.com/wpcsa

APPENDIX III: BALANCE YOUR HORSE'S FEED



Balance your horse's feed nutrient total to your horse's requirements

Enter only Mcal and grams per day (see horse's nutrient total, *Chapter 5: Feeding Horses*, page 42).

	Feed per Day (lbs)	Digestible Energy (Mcal)	Crude Protein (grams/day)	Calcium (grams/day)	Phosphorous (grams/day)
Roughage					
Grains					
Supplement					
Total					

Compare to horse's requirements (same as your horse's nutrient values from Horse Analysis Worksheet, *Chapter 5: Feeding Horses*, page 38).

Digestible Energy	Crude Protein	Calcium	Phosphorus

Differences (+/-) or balanced if close to requirements.

	Feed per Day (lbs)	Digestible Energy (Mcal)	Crude Protein (grams/day)	Calcium (grams/day)	Phosphorous (grams/day)
Feed ration excess/lacks					
Add/subtract to the ration					
Balanced ration					