

INTRODUCTION AND ACKNOWLEDGEMENTS

This manual is primarily intended for new endurance riders and people considering beginning endurance riding. It covers the basics and makes no effort to provide in-depth information on any topic. Even the most experienced veterans, though, may find a tip or two here that is useful, and such advanced topics as racing for First Place and Best Condition are covered. For those readers wanting more information, a bibliography is provided at the end of this manual.

It must be stressed that endurance riding is a young sport and new discoveries on conditioning methods, nutrition, veterinary care, shoeing, etc., are being made every day. There are also differing opinions on some of these topics. The material presented here is, to the best of the authors' knowledge, accurate and up to date, but the American Endurance Ride Conference and the authors are not responsible for errors or obsolete information.

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CHAPTER ONE

Introduction to the

American Endurance Ride Conference

The American Endurance Ride Conference was founded in 1972 as a national governing and record keeping body for long distance horse riding. Over the years, it has developed a uniform set of rules and guidelines designed to provide a standardized format and strict veterinary controls. At the same time, it has striven to avoid the rigidity and complexity that characterize the rule books of many other equine organizations, and has in fact encouraged individualism in its members and diversity in its competitions.

Basically, rides sanctioned by the AERC must abide by the following simple rules:

1. The ride must be at least 50 miles in length per day.
2. The horses must be under the control of veterinarians experienced with horses or endurance rides.
3. The ride must be open to any breed or type of horse or mule.
4. Equines entered in the ride must be at least five years old from date of birth. (4 years for LD rides)
5. There is no minimum time limit for completion.
6. All riders who successfully complete the ride must receive an award.
7. The winner is the rider who successfully completes the ride in the fastest time.
8. An award must be available for the horse judged to be in the Best Condition.

9. A junior rider is a rider under the age of 16 as of the first day of the competition season (Dec. 1). All juniors must be accompanied by an adult throughout the ride.

Endurance rides have five divisions. There are four weight divisions for senior riders: featherweight (up to 160 lbs.), lightweight (161 to 185 lbs.), middleweight (186 to 210 lbs) and heavyweight (211 lbs. and up). These weights include tack. The junior division is for children under 16. Riders earn points for year end awards in their weight divisions. Individual rides usually provide awards for weight divisions as well as for overall placing, up to top ten. The Best Condition Award is earned by the horse judged by the veterinary team to have finished in the best condition, based on a score which is derived from a combination of considerations, including riding time, weight carried, and physical state. Only the first ten horses to finish are eligible for this award.

Endurance riding is a sport which has many levels of appeal. For some it is a highly competitive and challenging athletic endeavor. For others it is a recreational activity combining a camping trip with a trail ride. For yet others it involves a search to experience our American heritage, to discover the country as our forefathers once did, from the back of a horse. Because endurance riders recognize the prime importance of finishing the event on a sound and healthy horse, the motto of the association is "TO FINISH IS TO WIN."

Chapter Two

Attending a Ride:

A General Overview

Throughout this book you will find detailed information about all aspects of endurance riding. This chapter will give a general overview of the format of a competition. It is specifically designed for someone who has never attended a ride and doesn't know what to expect when he gets there.

Reduced to its most basic explanation, an endurance ride is a marathon for horses. It is run over a pre-marked, pre-measured trail. Although awards are based on the fastest riding times in the different divisions, many people compete not to win, but to finish within the maximum time allowed (twelve hours for a fifty miler and twenty-four hours for a hundred miler). There are designated holds along the way, with veterinary examinations required at each one. In the course of a fifty mile ride there will be from one (required) to as many as four checks (including the post ride check), with roughly twice that number being common for a hundred mile ride. At the checks, the horse must show that he is able to continue safely with that judgment being made on the basis of specific metabolic and mechanical recovery factors known to be significant (among other things, the pulse must recover to predetermined ride pulse criteria, usually between 60-68. The temperature must be no higher than 103 degrees F., and the horse must be sound at the trot). The length of time allowed for the vet checks varies with the weather, terrain, and distance covered up to that point; most commonly it ranges from fifteen minutes to one hour.

Anytime within the hour after crossing the finish line, the horse must pass a final inspection, with recovery factors based on the same requirements as those of the vet

check. To stand for Best Condition, an honor designed to reward superior care during the competition, the first ten finishers are required to return after the full hour for the BC judging.

Aside from the open rides of at least fifty miles, there are novice rides of twenty-five to thirty-five miles designed for beginner horses and/or riders. The rules for Limited Distance, as this category is called, are slightly different and somewhat stricter. See rule book for LD rides.

IT IS YOUR RESPONSIBILITY TO BE FAMILIAR WITH AERC RULES!

1. MAKING PLANS

A successful ride begins long before the competition, not only with proper conditioning of the horse, but also with planning and preparation for the trip. You should contact the management well in advance of the ride date and get an application with information about it. You want to be sure it is still being scheduled, to find out if there are any special requirements, and to clarify the directions. Some rides have an entry limit or a pre-registration deadline, and if you just show up you might not be allowed to enter.

All states require you to have a health certificate and proof of a negative Coggins test; some require a brand registration. If you are stopped by the authorities and don't have what you need, you will be fined and you might even have your horse and trailer impounded. Ride management also usually requires a negative Coggins test. Be sure your paperwork hasn't expired. Health certificates are only good for a few days, and a Coggins is valid from six months to a year, depending on the state. Your veterinarian can provide the health certificate and Coggins papers; brand registrations are provided by state authorities. Your horse doesn't actually need a brand to get a brand registration; it's just a document showing ownership of the horse. If your horse is registered, bring along a photocopy. Check with ride management to see if the area into which you are traveling requires "weed-free" certified hay!! Failure to do this may find you dumping all your hay at the border line of certain states, even if you are just passing through!

After you have your paperwork in order, start packing your truck and trailer. Refer to Appendix I for suggestions as to what you will need. It's a good idea to use a checklist to make sure you don't forget something important. After a while you will probably organize all of your endurance ride gear in tack boxes and the like to make the packing and unpacking chores easier. Don't forget to take along all of the things you need for your own comfort.

Remember to take along your AERC membership card,
or expect to pay a day membership fee

Trailering to the ride is covered in Chapter Seven. Give yourself ample time to get there, allowing for unforeseen problems such as flat tires. It helps considerably to arrive at the camp site well before dark.

II. PRE-RIDE ACTIVITIES AT CAMP

When you arrive, check in with ride management before parking your rig. It's a real pain to finish unpacking everything only to be told you've parked in a restricted location and have to move. Then, set up your camp.

Be sensitive to the ecology of the area, especially if the camp is on public lands. Follow any "keep off" directions to the letter, and never tie your horse to a tree. Nothing seems to alienate a forest ranger faster than finding a tree damaged by a horse's having chewed off the bark, or by long nails or screw eyes having been pounded deep into the trunk. Actions speak louder than words when it comes to showing the authorities that endurance riders are responsible custodians of the land and its resources.

Once you get set up and have your horse comfortable, go and check in. There will be a table or tent where you submit your application, show your AERC membership card and pay your entry fee if you have not mailed it in advance. You will pick up any ride materials there. On a "no frills" ride this could be nothing more than a vet card; if it is a big ride there could be a packet full of programs, free samples, maps, etc. Be sure to read over any printed ride rules you are given, as they could contain important changes from what you expected. Be sure you know where and when to bring your horse for the pre-ride check, and also the time and location of the riders' meeting.

At most rides you can present your horse for the pre-ride exam as soon as the veterinarians get there. It's a good idea to go early and get this over with, as there could be a long line later. If you do find a long wait and your horse is "antsy," show some courtesy and keep him off to the side so he won't be a problem or a hazard to the other horses. Don't forget to bring your vet card or booklet. Your horse must be presented in hand, un-tacked. If the weather requires a blanket, you will be asked to remove it during the exam. Full details on what the vet looks for and how the exam is conducted are covered in Chapter Twelve.

Sometime during the afternoon it's a good idea to saddle up and go for a short ride (a couple of miles is sufficient). This loosens the horse up after his trip, helps settle him into the camp routine, and gives you a look at the start and finish of the trail. If you've come very far, you should do this before the vet exam; the exercise will limber your horse up and reduce any filling that might have built during the trailer ride. Another benefit of this excursion is that you will find out early if you brought all of the necessary tack and equipment. If not, you will still have time to beg, borrow or steal substitutes. It will also make you locate where you put everything and have it all adjusted and ready to go well in advance of the signal to start.

There will be some kind of pre-ride meeting, usually held the evening before the competition. Bring a chair, light, pen, paper, and something on which to write. Listen attentively and if there is anything you don't understand, don't hesitate to ask. Sometimes at the pre-ride briefing the management will ask first time riders to stand up and introduce themselves. This is a nice way to say welcome, and serves to assure new people that everyone will be on the alert to help them out during the ride if they should need it.

The briefing usually covers the trail (and informs you of any special conditions or hazards); the number, type, and location of the vet checks (and the length of each leg of the ride in miles); vet check and crew procedures; vet check criteria; and any special rules or requirements. All of the vital information is supposed to be supplied in writing, but don't count on it. Some rides give you little, if any, information in writing, and depend on the riders' meeting to cover it all. A misunderstanding here could result in your taking a wrong loop or getting lost. Pay particular attention to the way the trail is marked and to the vet check procedures. If you're still unclear about anything, contact ride management after the meeting and ask for further information.

There is usually a central campfire built in the area where the briefing takes place, and if you have everything in order for the next day, you can enjoy a few hours of socializing before you go to bed. Don't hesitate to pull up a chair, even if everyone there is a stranger. It won't take long before you're part of the group. Endurance riders love to re-hash anecdotes, and they're always happy to have a fresh ear to bend! Don't stay up too late, however. It's pretty hard to enjoy an endurance ride without having had a good night's sleep.

III. RIDE DAY

Allow yourself plenty of time to tack up in the morning before the ride starts. Many rides begin before dawn, so you might have to get ready in the dark. If you've never done this before it can be quite an experience. Things look altogether different by flashlight, and feeling around for that errant piece of equipment isn't likely to get your day off to a good start. If it's getting down to time to go and you have to hurry to get ready, it's all too easy to get a pad on crooked or to get a buckle in the wrong hole. Messing up here could cost you an accident.

Allowing plenty of time also helps to keep YOU calm. You don't want hyper feelings transferred to your horse, who is all too sensitive to your emotions! Keep COOL!

“COURAGE IS BEING SCARED TO DEATH, AND SADDLING UP ANYWAY.” -
John Wayne

You should begin warming up your horse about fifteen minutes before the start. Just lead him around at a walk for a few minutes, then mount up and ride first at a walk and then at a trot. Alternate walking and trotting, perhaps a bit of backing, and then keep walking until the start. That's enough if you plan to do a slow ride (which, if you're reading this chapter, is what you should be doing!) Experienced riders planning a fast pace will want to do a more thorough warm-up.

Don't get in the front of the pack just before you start - you could get run over, especially at some of the fast fifty milers. A few people will take off as if they were on the way to a fire. Another danger with being up front is that many horses, especially if they are green, can be unexpectedly difficult to control. If your normally quiet horse is magically transformed into a raving lunatic at the start of the ride, get out of the way and dismount.

Let the crowd get out of sight and wait until your horse gets a grip on himself. Then you can remount and proceed in a more dignified manner! Pacing the ride is covered in Chapter Ten, but at this point the main thing for you to remember is to take it slow. If you trot the easiest parts of the trail and walk the tougher ones, you usually will be able to finish within the maximum time allowed.

TO FINISH FIRST, FIRST YOU MUST FINISH!

Always be on the alert for the trail markings, even when you're riding back in a long line of horses, especially when you're in a long line of horses. It's not unusual for a group of riders to go miles out of the way because the rider in front missed a ribbon and everyone else just followed along.

Many kinds of ribbons are used. Because you listened closely at the riders' meeting (you did listen, didn't you?), you will know what to expect on the trail. You might be following surveyor ribbons hung from tree branches (when there are trees), or surveyor ribbons stuck on the ground. The management might use limestone arrows on the ground to point the way, or put lime stripes across the trails you don't take. Signs, permanent or temporary, might be used, such as paper plates with arrows, or U.S. Forest Service signs denoting official horse trails. Ribbons might be color coordinated for different loops of the trail (although some rides use up leftover ribbons and have all colors of the rainbow out there). Most rides try to put all the ribbons on the right side, except for when you are turning left. Many rides use three or more ribbons close together, or three ribbons tied on the same branch, to denote a turn. If you are unclear on any of the details of how the trail is marked, be sure to ask for a clarification before you begin.

It seems that getting lost happens most often in the first five miles, when people are bunched up and sometimes moving too fast (and when the rising sun is blinding at the crucial turn), or late in the ride when they are tired and not paying attention. If you do find yourself off the trail, turn around and go back to the last marker you saw and then go forward again looking carefully for the marker you missed. Don't try to make up the lost time all at once; you will just tire out your horse and make matters worse. If you should become hopelessly lost, the best plan is to stay in one place and wait for someone to rescue you (see Chapter Nine).

One of the things that characterize endurance riding is a high degree of sportsmanship, and that includes courtesy to other riders on the trail. Basically, the "golden rule" applies - treat others as you would like them to treat you. For example, if riders overtake you as you are riding along a narrow trail, ask if they would like to pass. If yes, pull over to the side and allow them to pass safely. If you overtake other riders and plan to pass, always call ahead and let them know. A simple "passing on your left" works fine. (It's a good idea to give warning of side you want to come around!) If your horse has a tendency to kick if another horse runs up on him, put a red ribbon in his tail; if he bites, put a red ribbon in his mane. Then, try to cure him of that obnoxious (and dangerous) habit! Remember that according to the rules, unruly horses can be dismissed from the ride!

If you are riding with other riders and you come to a creek, try to let everyone have access to the water. Don't drop your sponge right next to another horse's muzzle. Most

important wait until all the horses are finished drinking before riding off. Many horses will not drink if their buddies are leaving them. If ride management has provided water buckets, it is bad manners to dip your wash sponge into the horses' drinking water!

If you're leading your group and you see a hazard, call a warning to the riders behind you. For example, "hole on the right" or "slick rock." Of course, if you come upon a downed rider or a rider having some kind of problem, try to help out or ask if you can notify anyone at the next vet check.

As the ride progresses, try to estimate how far you've gone, and keep an eye on your time so you will have some idea of when you should be coming into a vet check. When you see the check up ahead, slow to a walk so that your horse will come in to it with his pulse already down or close to criteria. Remember, you don't win any trophies for being first into the timer at the vet check. Your time to RECOVER is what's important!

Most vet checks are run as "gates" into a hold. This means that your hold time begins as soon as your horse is "down" to the pulse requirement; in other words, as soon as he passes the "gate" (see Chapter Eleven, Pit Crewing, for details). Your mission is therefore to spend as little time as possible getting through the "gate," and hence the suggestion that you should come into the check at a walk.

IV. AFTER THE RIDE

After you finish, remember that your horse must pass a post ride vet exam and be judged fit to continue before you qualify to complete the ride. Cool him out carefully, keeping him moving enough to prevent stiffness or cramping from setting in. If you have gone slowly, your horse will probably already be cool and dry when you arrive at the finish. As soon as the pulse is down to criteria, you should go for your completion check. Standing around too long can allow the horse to get stiff so get this exam over with ASAP. Don't use any liniments or medications until after this exam. If your horse isn't recovering as fast as you think he should, or if he looks as if he won't recover by the deadline, don't hesitate to ask someone for advice and help.

After the final exam, you can apply liniments or a body brace if you want (unless you are eligible for the Best Condition award, in which case you will have to wait until this exam is done). Blanket the horse if appropriate for the weather conditions, and in general try to make him comfortable. Provide him with plenty of hay, water, perhaps a small amount of "slurp" and free choice salt. (See Chapters 4 and 11).

If you have a long trip home ahead of you after the ride, it's best to camp over. The next morning both you and your horse will be rested and in a better frame of mind to face the drive. In the unlikely event that your horse has had any trouble during the ride, especially if he needed veterinary attention, it is foolhardy to leave camp the same day. Transporting an ill or exhausted horse often results in an intensification of the condition, and laminitis (founder) is not an uncommon sequel to serious cases.

In the event that your horse does seem okay, it is nevertheless recommended that you stay around for at least two hours after you complete to give him rest and to be sure that no undetected problems arise.

V. AWARDS PRESENTATION

Most rides provide a meal after the competition, and awards are usually handed out at this time. For the twenty-five and fifty milers there will probably be a dinner presentation; for the hundreds, it will normally be a breakfast presentation the next morning.

The number, quality and diversity of the awards will vary greatly from ride to ride, depending on the budget and size of the event, and to some extent, on the whim of the management. Everyone who successfully completes the ride will receive an award of some kind. Anything from a certificate to a silver belt buckle might be given, and items like flashlights, t-shirts, brushes, key chains, etc., are common. An award will be available for the horse judged to be in the best condition, and this is a highly coveted honor. Most rides provide awards for the first place winner overall, and some give top ten overall awards. Others provide awards based on the AERC weight divisions, and there will usually be junior awards. Sometimes, rides give recognition to various breeds, to the rider who came the greatest distance to attend, etc.

At the presentation, people sometimes say a few words when they accept their awards. Everyone has a tale to tell about the day's trials and tribulations, and after the dinner people often linger to visit and 'kick back'.

Even though you've taken good care of your horse throughout the day, you should not neglect to see to his needs periodically through the evening. Keep water, hay and salt at his disposal at all times. If he is confined to a picket line or to the trailer, take the trouble to walk him for ten minutes or so at least a few times before you go to bed.

VI. PACK IT IN: PACK IT OUT

At a moment in our history when there is great competition for recreational trail use, it is very important that endurance riders act responsibly when using public land. Before you leave camp, be sure to clean up after yourself and your horse. Collect all your garbage, and if there is no disposal site, back home with you it goes. Scatter piles of hay and manure. In short, leave the area at least as nice as you found it. If the park ranger or land owner should drop in while the ride is going on, be courteous and express your appreciation for being able to use the place. Rangers have many user groups to accommodate, and their authority must be respected. They are usually happy to work with you if you give them a chance, and very often they take real delight in seeing the area in their jurisdiction being appreciated and enjoyed.

VII. THE TRIP HOME

Be considerate of your horse on the trip home, making sure that he is neither too hot nor too cold. Give him periodic breaks (at least every four or five hours), and offer him water frequently (see Chapter Seven and Eleven). When you get home, it's a good idea to unpack the rig and put everything away so you can find it again. Clean up the tack and clean out the trailer, too. Putting off this chore will just make it more difficult and unpleasant when you finally get around to it. Turn your horse out for a few days of pasture rest before you resuming conditioning. Then, start planning for the next ride!

TRAIL RIDERS NEVER DIE—THEY JUST KEEP GOING OVER THE NEXT HILL

Chapter Three

Selecting an Endurance Horse

Ask a dozen successful endurance riders what they look for in an endurance candidate, and you will probably get a dozen different answers. Ask them how they found their star performers, and if they are truthful they will probably admit that it was just plain dumb luck. The scientific mind might well ask why this is so, given the fact that so much is known about the relation of form to function. Couldn't a knowledgeable person just measure all the horse's physical components for ideal proportions and angles, add it up and make the right choice?

Unfortunately, the problem is much more complicated than that, for regardless of how well the horse is put together, no matter how well he moves, and no matter how nicely the personality seems suited to endurance work, there is no way (short of testing at a university or sports clinic that specializes in such things), to anticipate how efficiently the metabolic system will respond to the rigors of the hundred mile endurance test. We can't know in advance how well his heart will be able to pump; we can't measure the way the lungs will respond; we can't foretell the way the body chemistry will function.

Although there have always been a few riders who, for their personal satisfaction, have bred endurance horses, it is only recently that rising prices for the potentially good horses make breeding economically feasible. And while there are a few bloodlines that consistently perform above average, truly outstanding individuals tend to pop up out of nowhere rather than to be predictable products of certain gene pools.

With no real statistics on bloodlines that are especially prominent, and with so much that is vital to performance being hidden from view, what guidelines can then be used when shopping for an endurance horse? There are a number of empirical theories: generally they are highly speculative and, inevitably, glaring exceptions can easily be brought to mind. Nevertheless, empirical theories usually have at least some degree of merit, so it would be worthwhile to mention a few of the more popular ones. You can make of them what you will.

I. OLD ENDURANCE RIDERS' TALES

Some very successful (but perhaps foolhardy) riders regularly scan the classifieds for ads that might read, "spirited, for experienced rider only." Just how "spirited" the horse is might become apparent as soon as you meet the prospective seller, who is wrapped in casts and covered with stitches! The reasoning behind the endurance riders being interested in this type of situation is that (1) the price will be right, and (2) the horse is a renegade that has successfully thwarted anyone's efforts to conquer him. He has a fighting spirit. Such a horse might simply be bored to distraction with the job his owner

has picked out for him (perhaps dressage, western pleasure, or some other tedious enterprise). It's possible that the horse just needs a career change, and if this is the case, endurance might be his cup of tea. On the other hand, reclaiming a horse with an attitude problem is a very risky business. A novice rider on the wrong side of thirty might be well advised to beef up his hospital and disability coverage before undertaking this particular type of project!

Some riders look for a horse that has a dominant personality in the company of other horses, one that leads the pack. Some feel that an aloof attitude is preferable. Perhaps a socially independent horse might be a better bet than a domineering one, if for no other reason than he would be less likely to quit when he got by himself on the trail.

Many people feel that a very low resting pulse rate (less than 30) indicates an exceptionally efficient metabolic system. However, it seems that many (perhaps most) top endurance horses seem to have more average counts.

A hearty appetite is an important asset to an endurance horse. Nobody would argue that point. Running hundreds of miles requires huge amounts of fuel, and it stands to reason that a horse that is easily thrown off his feed will not be able to function satisfactorily. There are some big exceptions to this rule, however, and you should think twice before writing off a finicky eater.

Another popular theory, especially among people who raise horses in the higher altitudes, is that horses raised where oxygen is in short supply will develop a superior ability to use whatever is available. Indeed, ever since the Olympics were held in Mexico City, altitude training has become a standard tool for human athletes. On the other hand, if a mountain raised horse were faced with dealing with other extreme climatic conditions, such as heat and humidity, the advantages of the altitude training might be more than offset by that individual's unpreparedness to face the problem of heat dissipation.

Now that you have been introduced to a few of the more or less questionable theories, let's move on to more concrete considerations. We will start with breeds, age and personal background, and then move on to conformation.

II. BREEDS

When it comes to breeds, it's obvious that as a group Arabians do the best. On the other hand, individuals from any breed can excel in endurance, and not all Arabians are suitable candidates.

III. AGE

The optimum age for a green prospect is probably somewhere between three and four. A younger horse is too young to break, and a mature one doesn't respond as fully to conditioning. An eight-year-old, overweight individual that has spent his life standing in a stall, stuffing himself on alfalfa and sweetfeed, is going to take a long time to get fit. Still, if you see a horse that you really like, don't dismiss him simply because of age. Endurance horses often compete well into their teens, so there might still be time to get a lot of enjoyment from him.

MANY TOP NOTCH RIDERS LIKE TO START A HORSE IN COMPETITIONS AT AGE 5 THEN SLOWLY INCREASE THE WORK AND SPEED FOR THREE YEARS TO REACH THE PRIME YEARS FROM AGE 8 to AGE 17!!!

IV. SIZE

There is no ideal size for an endurance horse. Ponies can do very well, as can horses of sixteen hands or so. Most good endurance horses run around fifteen hands, but since this is a common height for Arabians, this measurement probably has no special significance. The size of the horse should be appropriate for the size of the rider, however. No one could expect a pony to be competitive carrying a two hundred pound man. Small, lightweight riders obviously have an advantage in that they have a greater range of sizes from which to choose.

V. ENVIRONMENT

The environment in which a horse is raised can have a significant impact on his future performance. An endurance horse should have grown up in a situation that allows him to express his equine nature. In other words, it is good for the horse to have grown up with plenty of room to play with others of his kind. He should have had plenty of good grass and hay from which to choose, but not have been overfed. He should have been allowed to defend himself against the elements and otherwise to have developed in a way that has prepared him to cope with hardship and discomfort. This is not the same thing as having grown up neglected in somebody's back lot, or in an overgrazed field, with no attention to regular deworming and hoof care.

VI. MEDICAL HISTORY

When selecting an endurance prospect, it is very helpful to know his medical history. Has he been wormed regularly? Has he ever had any serious injuries? Has he ever had any mysterious bouts with colic? Has he ever had any pulmonary infections? Such problems might be caused by, or be the result of, internal abnormalities that could affect future performance.

VII. CONFORMATION

A horse with a great metabolic system will be able to excel in endurance, at least for a while, even if his conformation is faulty. On the other hand, perfect conformation will never be able to make up for a poor metabolic system. Nevertheless, if the horse is going to remain sound for very long he will have to be well put together, and the higher your competitive goals, the more important correct conformation becomes. Although space does not permit a thorough discussion of all aspects of conformation, there are some points that need to be made.

If good conformation could be summed up in one word, that word would probably be balance. The horse should give the impression that all of his parts fit together smoothly and in proportion to each other. A moderately long neck with a nice shape might help the horse to carry himself in a more balanced way, at least to some extent, but by and large the head and neck are important more from an esthetic point of view than from a functional one. A deep heart girth is traditionally thought to indicate large heart and lung capacity, but beware of too wide a chest as it creates a bull dog effect with shorter stride. Hindquarters should be large in proportion to the rest of the body, and should give the impression of strength even in the unconditioned individual. The back should be shaped in such a way as to enable it to hold a saddle comfortably. An extremely long back tends to be weak and prone to soreness. The bony structure should be sturdy, perhaps even somewhat coarse. The muscles should not be thick or bulging. We are looking for a marathon runner, not a weight lifter, and the body build should reflect that.

The feet of the endurance horse are very important. The walls should be dense and thick, with a smooth, waxy surface rather than a ridged, split or chalky one. Even in a foot that has been neglected, there should be no significant splitting and cracking. Viewed from the front, with the foot still on the ground, look for a foot that is shaped like a cow bell (gradually getting wider from the coronary band to the ground). In addition, there should be no dishes, flares, etc. The heels should be wide apart, and the frog should be prominent and rubbery. Viewed from the bottom, the hoof should be slightly longer than it is wide. A sunken frog and contracted heels might be indicative of a serious problem, navicular disease for example, or might only mean that the farrier has been doing some bad shoeing for a prolonged period of time. How the horse moves, the size and shape of the hoof, and the angle of the pastern might provide further clues about the seriousness of the condition.

A symmetrically shaped foot is necessary for the leg column to operate correctly. Such a foot reflects that the horse is landing evenly, as he should, over the center of that structure. This in turn means that with every stride the impact is being taken up through the middle of the leg column rather than off to one side or the other. Over a period of time, uneven impact is extremely destructive to joints, ligaments and tendons. A symmetrical foot means one that is bisected by the frog, with each half being a mirror image of the other.

Finally, size is an important consideration when judging the endurance foot. A disproportionately small foot is a disadvantage because the weight carrying area will not be as adequate for handling the concussion.

Scanning the conformation of the forehand, you should look for a big shoulder, a long forearm and a short cannon. The knee and ankle should be large and bony, without mushiness or filling. The knees should face clearly forward, not be put on the leg column with an outward or inward twist. Viewed from the front of the horse a vertical line dropped from the top of the center of the forearm should pass through the center of the knee, ankle and pastern, and end up at the center of the toe. Knees that turn either in or out are likely to cause some degree of uneven breakover and faulty flight path of the legs. Ankles present the same problem if they are crooked. Base narrow or base wide legs are structurally faulty. Offset knees are fairly common in Arabs, but they usually do not pose too great a problem, especially if the condition is not extreme. Calf knees are also common in Arabs, and this, unfortunately, is more likely to cause trouble somewhere

down the road. Similarly, a horse that is “tied in” below the knee is more subject to unsoundness.

Good pasterns are important and the ideal ones are medium in length and have the same angle as the hoof (this is known as an unbroken hoof/pastern axis). Pasterns that are extremely sloping place an undue amount of pressure on the supporting superficial flexor tendon and suspensory apparatus. On the other side of the coin, too steep a pastern usually produces a jarring effect on the legs and feet (especially if the other joint angles don't help compensate).

The master principle to keep in mind when considering conformation is that the front legs act as support columns and must absorb, with as little trauma as possible, the impact of landing. Like any support columns, they are only as strong as their weakest part. Imperfections that would never be a problem to the soundness of a show horse might be disastrous to the endurance horse; you have to be picky if you want a good one.

Moving to the hindquarters, you should keep in mind that the primary function here is to propel rather than to support. Good size relative to the rest of the body is very important. Viewed from the side, hocks should be wide and set on the leg fairly low. Sickie hocks predispose the horse to injury because of the excessive strain they place on the back of the legs. Cow hocks, unless they are so extreme that they cause the horse to hit his ankles, are not really a problem.

Assuming that the horse has passed the standing inspection, the next step is to see how he moves. The trot is the most important gait to consider. If there are any breakover problems, this is where they will show up. The way the horse stands and the shape of the foot should have already given you some good clues as to the flight path that the leg will follow, but watching the actual movement will provide the proof.

What you hope to see is that the foot breaks over at the center of the toe as it leaves the ground. The leg should then follow through with a straight flight path, with the hoof hitting the ground evenly over its center. Horses with irregularities in their way of going, such as winging in or out, crossing over, etc., have a lot of wasted movement. Furthermore, they are likely to impact the ground to the side of the hoof, causing strain to the leg. If deviations in the flight pattern are extreme, they might even result in one limb striking the other.

Watching the flight of the hind limbs, the main concern is that the horse travels widely enough so that he does not interfere with his other hind leg and does not overreach and grab either of his front legs. While it is true that a number of successful endurance horses interfere, you must realize that this problem will be a difficult one with which to contend.

Looking at the horse from the side as he moves, you want to see a long, low, forward sweeping stride: high knee and hock action are a waste of energy. The horse should look free and loose in his shoulders and hips, and he should have a good overstride at the walk. Short, tight strides will get you nowhere, and will work you and the horse both to death. An average stride is acceptable if the breakover is correct, but a really big, powerful, floating trot that covers a lot of ground with effortlessness is a thrill to ride.

However, the use of heart monitors in the past few years have shown us that most hearts work at lower rates at the canter. A strong trot can be like driving your car at 80 miles an hour in second gear, while shoving into a canter, using his strong hip muscles, is OVERDRIVE!

VIII. PERSONALITY

If the horse trots out in hand to your satisfaction, the next move is to take him for a spin, and this is where matters of personal preference take over. Because of the tremendous amount of time you will be spending with your endurance horse, it is imperative that you like his personality as well as his mechanical and metabolic make-up. If you don't enjoy riding him, whether he is gifted or not, the partnership is never going to jell.

Some people like a relaxed, laid back sort of fellow, while others prefer one that is more "ready." Most endurance riders don't consider a lazy horse much fun to ride, but on the other hand, a very tense horse that is on the borderline of being out of control, even in a non-threatening situation, is likely to come unglued in a real competition. Many beginners think that an uncontrollable horse is one that just "loves to run." Nothing could be farther from the truth. The best horses are generally self-possessed and businesslike about their work. They can concentrate on the job at hand and, when they are well trained, will usually leave the rider with little to do but steer and otherwise stay out of the way.

Look for WILLING, not WILD!!!!

IX. PRE PURCHASE EXAM

After riding the horse, if you are in love and know you can't live without him, the next move is to get the veterinarian to check him over. Be sure he understands how you intend to use the horse. Ideally, the vet should be familiar with endurance riding and the demands that it involves. In addition to the usual tests, ask that he do a CRI on the horse. Vets with a lot of practical field experience will be able to give you better advice than a team of experts from a research facility.

I USED TO HAVE MONEY.

NOW I HAVE A HORSE.

CHAPTER FOUR

Feeding the Distance Horse

Although feed manufacturers would like to convince you that top performance is only obtainable through buying another bucket, many a champion endurance horse has competed successfully for years on nothing more than good pasture, water, salt and a little grain. There are very few absolutes in nutrition and infinite ways to adjust a

program to meet individual preferences and needs. Use this section and its suggestions as a guideline, not a rulebook.

I. Feeding for Training

Which fuel the body uses for work varies, based upon the intensity and duration of exercise demands. The short, intense bursts of (anaerobic) speed seen in quarter horse racing, for example, utilizes almost exclusively carbohydrates (sugars) stored within the muscles and liver. Endurance (aerobic) exercise relies almost entirely upon fats, with a small amount of carbohydrates used as a “pilot light” to help burn fats efficiently. The body maintains a relatively limited supply of carbohydrates (in the form of glycogen) within the liver and to a lesser extent, within the muscles themselves. If utilized exclusively, energy supplies would quickly run out before the end of an endurance ride, resulting in fatigue and metabolic trouble. Fats, on the other hand, can be stored almost without limit within the body, and supply more than sufficient energy for endurance exercise. Therefore, fats and their metabolic products are the primary fuel source for the endurance horse, with small amounts of carbohydrates to help maintain the “pilot light.”

Fats are derived as a digestive product from the fiber in forages such as hay, beet pulp and pasture. Beneficial microbes in the horse’s cecum and colon ferment fiber to produce volatile fatty acids, which in turn, are absorbed and utilized as a fuel source within the muscle cells, or stored away in the form of adipose tissue (body fat). Additional dietary fats can be added directly in the ration in the form of vegetable oil or animal fats. As fats contain 2.2 times the calories of an equivalent amount of either carbohydrates or protein, adding moderate amounts of fat to the diet is an excellent way to help maintain a good body weight in hard-working endurance horses. Although human marathon athletes perform best with minimal body fat, endurance horses seem to do better with a reasonable amount of body fat cover. Field research on 100-mile endurance horses has strongly suggested that horses in reasonable body condition have a better chance of completing, with fewer metabolic problems, than do excessively “lean, mean racing machines.” Therefore, the ration should provide sufficient calories so that ribs can be easily felt, but not clearly seen, and hip bones are not visible. If you feel you need to apologize or “explain” your horse’s appearance in non-endurance company, he’s probably too thin! High-fat rations have also been suggested to provide other metabolic benefits, such as decreased heat load (useful during a hot summer ride season) and more efficient utilization of the short-supply glycogen. However, to fully gain such benefits, the average 1000 lb. horse needs to consistently consume approximately 4 cups of vegetable oil per day for an extended period of time, an amount not all horses will willingly consume.

Grains are digested differently from forages, in that enzymes in the small intestine break down their starch (carbohydrate) content, which are then absorbed into the bloodstream as glucose. Research indicates that the digestive system of most horses cannot optimally handle more than about 4-5 pounds of grain at one time. As the digestive enzymes are overwhelmed by the largesse, excess undigested grain is passed along to the cecum, where it is fermented as though forage. Resulting changes in the microbial populations can have profound deleterious effects. At best, too much grain decreases the efficiency

by which nutrients are derived from the feed. At worst, the shifts in the microbial population can release toxic substances, which in turn can cause colic and laminitis. For these reasons, horses should not receive more than 50% of their total ration in the form of grain and preferably no more than approximately 4 pounds at any one time.

The average 1000 pound horse needs approximately 15 megacalories (Mcal = 1000 calories) of energy per day for maintenance, not including the added energy demands needed for exercise. There are several complicated formulas that estimate the additional caloric requirements of exercise, but a reasonable approximation can be obtained by using the figure 0.07 Mcal per mile per 100 pounds of weight (both horse, rider and tack weight combined) traveling between 4 and 8 mph; and 0.10 Mcal per mile per 100 pounds at approximately 12 mph. At higher speeds, energy costs increase dramatically. As an example, an average horse and rider conditioning at relatively slow speeds for 35 miles a week can expect to require an extra 4.2 Mcals of energy per day (the cost of riding 35 miles divided by seven days). When added to the daily maintenance requirement of 15 Mcals, this horse would need a total of 19.2 Mcals per day to supply his energy demands. When you calculate that a 100-mile ride may use upwards of 80 Mcals for exercise alone, it becomes much more apparent why so much attention is paid towards supplying sufficient calories to these hard-working athletes.

Most horses are only capable of consuming between 2-3% of their body weight per day, thus a 1000 pound generally cannot consume more than between 20 to 30 pounds of feed on a dry matter basis (the amount of feed after disallowing for water content). Most hays and grain are 90% dry matter, therefore you can expect a maximum intake of between 22 and 33 pounds of feed per day. Horses consuming green pasture, with its 75-80% water content, must consume much more on a pound for pound basis to obtain the same nutrition. Formulate your ration so that, ideally, at least 1.5% of the horse's body weight is provided in the form of forage to maintain adequate bulk in the diet. Always provide a bare minimum of 1% of the horse's body weight in the form of forage. Example, a 1000 pound horse $\times 1.5\% = 15$ pounds; allowing for 90% dry matter, provide 16-17 pounds of forage daily. At least half of the forage ration should be in the form of long-stem hay, or pasture. If desired, the other 50% can be in the form of beet pulp, hay pellets or hay cubes. Using the above example, at least 8 pounds should be long-stem hay, and 8 pounds could be fed as pellets, cubes or beet pulp

Most grass or cereal grain hays contain between .7 and .8 Mcal per pound, and alfalfa contains approximately .9 Mcals per pound. Using the above estimate of 19.2 Mcal daily requirement, a horse would have to consume more than 27 pounds of grass hay to maintain weight. Many horses would be unwilling or unable to consume this amount, so more energy-dense concentrates must replace a portion of the ration to provide sufficient calories. Most grains contain between 1.3 and 1.5 Mcal per pound, while fats contain approximately 4 Mcals per pound. Replacing six pounds of hay with five pounds of a good quality grain mix and a cup of vegetable oil, split into two equal meals, will raise the total calorie content of the ration to approximately 23 Mcals, sufficient for most horses on a moderate conditioning program. Err on the side of caution when feeding grain on non-work days, especially if your horse is confined to a stall or small pen. A good rule of thumb is to reduce the grain ration by half on days when the horse is not exercised in some manner. To avoid digestive upset, grain should constitute no more than

50% of the total ration. Example, if your horse's total maximum daily intake is 20 pounds, do not feed more than ten pounds of grain per day—look into other ways of increasing calories by the addition of fats or beet pulp. If you are feeding a substantial amount of grain or fat (more than four pounds daily), splitting the concentrates into two or more meals minimizes likelihood of digestive upset and maximizes efficiency.

The dietary addition of fat can be provided in several ways. Although some horses prefer the taste of corn oil, any good-quality vegetable oil is satisfactory. There is no significant difference in nutrition or caloric content between different types. Depending on the conditions, vegetable oils may begin to oxidize and go rancid within a week of being exposed to light, heat and oxygen, significantly reducing its nutritional value and increasing free radicals and peroxides. Many horses that refuse fats in their diet are simply objecting to rancidity in elderly vegetable oil. To keep fats as fresh as possible, keep it in a cool, dark place (the refrigerator is ideal) and in containers which only hold a 7-10 day supply. If larger quantities are purchased for the lower cost, pour a week's supply into smaller containers and keep the main supply container separate and tightly closed.

Contrary to common belief, horses are very capable of efficiently digesting and absorbing fats from animal sources. Due to its saturated molecular structure, animal fats also do not go rancid quite as quickly as vegetable fats. The most common source of animal fat available for equine diets is the prilled "dry" fat available from feed suppliers catering to cattle and swine producers. Many horses that object to the texture of liquid fats in their ration will accept the addition of dry fats. As with the addition of any new feed, start adding fats slowly and increase over time. If feeding more than two cups of fat per day, try to split the added fat into two or more meals to maximize digestive efficiency.

Another forage to consider is beet pulp, the forage by-product remaining after the sugar is fully extracted from sugar beets. The fiber it contains is highly digestible and palatable to horses, and because it is digested in the hindgut similar to grass or hay, can safely be fed to horses in amounts up to half of the forage ration (about 10 pounds dry weight for most horses). Its inclusion is an excellent way to increase the calorie content of the ration without the risks of excessive grain. Although dry (unsoaked) beet pulp has been safely fed to many horses without incident, some horses (especially greedy eaters) may choke on any small, pelleted feed, including dry beet pulp. As additional fluid intake is always a benefit to endurance horses, soaking for a half hour or so before feeding is a good idea. Adding water is not necessary with beet-pulp-based commercial mixes, but mashes of any type should ideally be provided wet and soupy during competition to maximize fluid intake and help avoid dehydration.

Although alfalfa hay is plentiful and cheap in many parts of the country, it is generally not the best primary forage for endurance horses. The high protein content (significant in even poor quality alfalfa) produces metabolic waste heat that must be dissipated through sweat loss during hot weather, potentially contributing to dehydration during rides when water consumption may not be optimal. This metabolic heat may help during cold weather to "stoke the furnace," but is a hindrance during hot weather and sustained exercise. In addition, the high calcium content when fed in large amounts has been suggested to inhibit the body's ability to mobilize calcium stores in bone tissue during exercise, thereby contributing to the incidence of tying-up and synchronous

diaphragmatic flutter (“thumps”). While small amounts of alfalfa do no harm, and may help prevent calcium depletion during rides, it should ideally be viewed as a supplement to good quality grass hay, and not a replacement. Try to minimize alfalfa in the diet to less than 50% of the ration, and ideally, less than 25%.

Protein is probably the most overused and over-rated nutrient in the adult horse’s diet. Mature horses, even at hard work, only require approximately 10% crude protein in the ration. Additional protein provides no additional benefits to performance and in fact, has been implicated in increased incidence of metabolic failure in other equestrian disciplines. Sufficient protein is easily provided by a diet of reasonable quality grass hay or pasture and a good-quality balanced grain mix from a reputable company. More is not better!

Always provide free-choice salt and fresh, clean water. While electrolytes formulated for endurance horses may be beneficial during rides, they are not necessary at home, nor is fancy “designer” salt or mineral mix. Plain, iodized salt is sufficient. Block salt is convenient, but if possible, loose salt in a box or in the bottom of the feed manger allows for adequate consumption without long periods of licking or biting a block. A recipe for home-made electrolytes consists of equal parts iodized table salt and Lite salt (a mix of half and half potassium chloride and sodium chloride). Mix three parts of this mixture to one part calcium carbonate (ground limestone). While this recipe is sufficient for home use or during transport, ongoing research at several universities is providing ever-increasing knowledge about the exact role of electrolytes in endurance competition. As your miles and experience build, consider using specific endurance formulas during competition, especially if you or the ride vet suspect electrolyte depletion may be affecting performance and health. As with everything in endurance, try different methods until you determine the best program for you.

Avoid the urge to provide your horse with a variety of vitamin and mineral supplements to improve performance, add a shiny coat, boost the immune system or just because “he might need it.” Nutritional problems among horses are almost always caused by excess rather than deficits in the diet. Rely on obtaining the best quality hay possible, supplement with a high-quality balanced grain mix from a reputable mill and provide salt and fresh water. In general, unless specifically prescribed by a veterinarian, the only exceptions to the no-supplement rule of thumb are:

1. Inquire as to whether your area is low in selenium. An inexpensive serum blood test may be helpful to establish selenium status. As selenium can easily be fed in sufficient amounts to produce toxicity as well, determine whether a deficiency exists before adding a supplement.
2. Research has suggested that the addition of 20-25 mg of biotin on a daily basis may improve the quality of hoof tissue. As biotin is a water-soluble B-vitamin, excesses are excreted quickly through the kidneys, and are not stored in the body. Therefore, feeding more than 20-25 mg daily will only add to the costs, not benefits. Clinical trials indicate that biotin improves the quality of hoof tissue, but not the rate at which it grows—therefore, daily and consistent supplementation and patience is necessary before noticeable improvement will be seen.

3. The daily addition of 1000 IU of vitamin E may be helpful in reducing oxidative damage to body tissues produced by free radicals. This is especially relevant if a significant amount of fats are fed on a regular basis.
4. Healthy horses are capable of synthesizing sufficient vitamin C within the liver. However, recent research is indicating that additional vitamin C may be helpful specifically during periods of stress, such as prolonged transport. Ten grams twice a day is a sufficient amount. Daily supplementing with additional vitamin C as part of the normal routine during non-stress periods does not provide additional benefits to the immune system, and may suppress the body's ability to synthesize its own supplies.

II. Feeding during competition

The two most important things you'll give your horse on ride day are DIRECTIONS and WATER.

The rule of "never try out anything new at a ride" also applies to nutrition. Try not to provide more than a few pounds of any feed which is not routinely fed at home, as abrupt changes in feed, along with the stress and dehydration which often accompanies any competition, may contribute to incidence of colic.

Begin nutritional preparation for a ride several days before leaving home. Encourage maximum intake of forages, especially beet pulp, as clinical trials have demonstrated that a combination of hay and beet pulp provides a significant reservoir of fluid and electrolytes in the hindgut to draw upon during exercise. As the movement of forages through the digestive tract takes several days, forages should be provided in abundance several days prior to the ride. Continue to provide forage free-choice during transport, as soon as you arrive at base camp and throughout the night. Long stem hay is preferable over cubes or pellets as the added bulk will help maintain gut motility.

It is best not to feed large amounts of grain within four hours of the start of the ride, as the glucose peak produced during digestion of simple carbohydrates adversely affects the utilization of body fats needed during a long day of exercise. Providing a few pounds of grain for a day or two prior to the ride is more than sufficient to "top up" glycogen stores within the liver and muscles. However, adding a handful or two of grain for flavor to an overnight beet pulp mash will do no harm. The point is to avoid large grain meals immediately before exercise.

Pay the utmost attention to maintaining hydration and gut motility before worrying about boosting energy. Assuming your horse is fit for the job at hand, a well-hydrated horse with ongoing gut motility will outperform a dehydrated and colicky horse every time, regardless of the amount of "rocket fuel" on board. Plan your day so that your horse can snack his way throughout the ride, rather than exercise non-stop and then eat only while at vet checks. Take the opportunity whenever possible to stop for a few minutes of

grazing along the trail or carry a few pounds of hay with you between vet checks. Doing so will help avoid dehydration, maintain good gut motility and thereby maintain energy and performance. At vet checks, provide plenty of free-choice forage and ideally, a sloppy mash well-soaked beet pulp. Grain, wheat bran, carrots, etc can be added to the mash to increase palatability and supply additional energy. Do not rely upon wheat bran to act as a laxative and avoid colic – bran provides bulk in some species (such as humans), but does not have the same benefits in herbivores.

Do not add fats immediately before or during the ride. Although it would seem like a good source of energy, a high fat ration tends to decrease forage intake needed to maintain motility and hydration. The relatively small amount of fat in commercial grain mixes (even “high fat” formulations) is not a concern.

Especially in hot, humid weather, significant amounts of electrolytes are lost in the sweat. Sodium, chloride and potassium are the primary ions lost, along with smaller amounts of calcium, magnesium and other trace minerals. Increasing scientific data indicates that supplementing during exercise, and thereby minimizing depletion, is beneficial in possibly averting metabolic problems such as thumps, tying-up, poor gut sounds and other symptoms associated with “exhausted horse syndrome.” The body does not store excess electrolytes against future need, therefore “pre-loading” several days before a ride will not replace supplementation during the ride itself. However, orally syringing a day or two before the ride (especially before and during transport) may help trigger a ‘thirst response’ to encourage drinking. Likewise, supplementing throughout the day may encourage drinking as well as replace electrolytes lost through sweating. As with every other feed supplied throughout an endurance ride, small and frequent amounts are usually preferable to large and infrequent. Electrolytes are often added to feed or water, but some horses may refuse too salty a flavor, and therefore also refuse much-needed food and water. Although horses do develop an appetite for needed salt to replace depleted stores, this is not an instantaneous response. Don’t rely on this mechanism during a ride! Oral syringing is a good alternative that has worked well for many horses and riders. Take advantage of the increasing body of scientific data and consider the use of research-based electrolytes formulated specifically for endurance horses.

III. Feeding after the competition

Once you’ve successfully crossed the finish line and received your final vet check, don’t assume the energy demands of the day are over for your horse. Depending on the length and intensity of your ride, it can take days or even weeks to fully replace the fluids, calories and nutrients used during competition. Allow your horse plenty of opportunity to drink his fill to replace lost fluids, including during the trailer ride home. Provide plenty of forage free-choice. The ‘stress hormones’ produced during exercise may continue to deplete the body of electrolytes for several days following the ride and continued supplementing with electrolytes may help ensure a quick recovery. Research has suggested that glycogen repletion is increased during the 24 hours following strenuous exercise and may help avoid sore or stiff muscles. Small amounts of grain every few hours, not exceeding his normal accustomed amounts is helpful, as long as your horse is not unduly dehydrated or experiencing metabolic trouble. If you are in

doubt about gut motility, check with the ride vet before feeding anything other than forage and water.

Even though a 100-mile endurance ride can use upwards of 80 Mcals to provide needed energy, don't try to replace the expended calories overnight. Giving your horse access to all the forage he can eat, moderate amounts of grain and judicious amounts of fat over the next week or two will gradually replace the lost calories without risking digestive upset.

Formulating the best nutritional strategy for you and your horse is as individual as any other aspect of a successful conditioning program. Absolutes such as "always" and "never" are rarely applicable—for every horse that does well on one program, an entirely different strategy will work just as well for another. Use these few baseline suggestions along with your own common sense and knowledge of your horse to create the feeding and management program that works best for you.

CHAPTER FIVE

Tack

Using the right tack can make the difference between finishing a ride with a happy, healthy horse and finishing (if you finish at all), with a horse suffering from a sore back, girth galls, or worse. It can also make the difference between an enjoyable ride for you and an experience akin to a session in a medieval torture chamber. Endurance riders have learned much about what works and doesn't work, and this chapter will try to pass along some of that experience.

At a typical endurance ride you'll see nearly every kind of saddle known to man or beast. Many beginners ride a traditional Western saddle, but it is a poor choice. First it is heavy, and any extra weight is a penalty for a horse going 25 to 50 miles or more. Worse, most Western saddles put the rider's weight too far to the rear, leading to early fatigue and soreness. They are designed to keep the rider in place while working cattle, not to provide balance and comfort for miles and miles. Roping saddles are even worse in this respect. Another flaw of Western saddles is that the rigging is too far forward, contributing to girth soreness or galls. Again, the heavy double-rigged roping saddle is the worst of all in this regard. The stiff fenders and stirrup leathers of the Western saddle might wear like iron, but can rub a rider's legs raw. Finally, the saddle horn, necessary for roping, just gets in the way on endurance rides and is a hazard in a fall.

English saddles are lighter and put the rider's weight more forward than Western saddles. They offer closer contact with the horse than Western saddles, but riders sometimes feel less secure in them. Some English types are more suited to endurance than others, i.e. the dressage saddles (deeper seats with the rider's leg under, rather than forward.) The biggest shortcoming of English tack is a lack of proper distribution of the rider's weight; that is, many of them don't spread the rider's weight over a large enough area of the horse's back.

Australian stock saddles have a strong following. Most of these are high quality, give the rider a firm seat, and seem to work well for endurance riding. But some riders find that the thigh fenders bruise their legs unmercifully. McClellan saddles have a lot to offer the endurance rider, but comfort is not one of them. This saddle was used by the cavalry, and

was designed to be good for the horse with no compromises toward rider comfort. In fact, it's been said of this saddle's designer that he loved horses and hated men.

There are a number of saddles on the market today specifically designed for endurance. They fall into three broad categories: those based on Western designs, those based on English designs, and those based on McClellan designs. In the last few years treeless saddles have become popular with many riders, though some riders feel insecure in them and some horses get sore backs. With the growth of endurance in the past ten years there are many innovations on the market. See the ads in Endurance News and ask other riders for their opinions.

So which saddle is best for you? There's no easy answer for that. First of all, the saddle must fit your horse, and every horse is an individual. Weight might or might not be an important consideration for you, but no endurance tack should weigh over thirty pounds - unless you're trying to make a minimum weight for a ride with those requirements.

There are many improvements today on the traditional western stirrups or English "irons." There are several lightweight designs with extra-wide platforms for your foot; a narrow stirrup is likely to cut off the circulation to your toes resulting in painful cramps and numbness. Some designs use springs, rubber blocks, or flexible materials to add shock absorption to the stirrup. Others include safety features such as open sides or breakaway fastenings to prevent being dragged in a fall. Almost any of these special designs will be lighter, safer, or more comfortable than traditional stirrups.

Pads are another important concern for your horse's back. The traditional Western blanket doesn't work very well. It has little resiliency and covers too large an area. As to material, natural wool pads with a foam lining often work the best. If you can't afford wool, Kodel can be good. Several manufacturers make pad liners that vary in thickness and/or density over different parts of the horse's back, and these might help the saddle to sit level and therefore aid the rider in maintaining a balanced seat. Some saddles have a custom made pad built in to achieve the same result.

Don't make the mistake of thinking "more is better" and use two or even three pads; thick pads won't cure problems caused by an ill-fitting saddle. Too many pads or pads which are too thick allow the saddle to roll. A stack of pads can also cause the back to retain a lot of heat.

Whatever type pad you use, the shape of the pad should match that of the saddle. Especially in hot weather, you don't want to cover any more of the horse's back than necessary.

Breast collars, cruppers, bridles, halters, and halter-bridle combos come in nylon, leather, and Bioplastics. Ordinary nylon gets stiff from absorbing salt and dirt, and is hard to keep clean. Bioplastic is nylon with a smooth plastic coating; it washes clean easily, doesn't become stiff, and usually does not rub the horse. It is available in many widths and colors, and more and more suppliers are making horse tack out of it. Traditional leather can cause chafing and will need regular care to stay soft and pliable. However, leather will break in case you have a fall, and this is a good safety feature. Serious accidents can result from the rider being caught in the tack.

A good breast collar can help hold the saddle in place, preventing its sliding back or rolling sideways. However, any breast collar which goes straight across the chest of the horse can make the shoulder muscles sore (especially on a 100-mile ride). These don't do much to prevent the saddle from shifting sideways, either. You should use a design in which the collar is shaped like the letter "Y," with the stem of the "Y" between the front legs, and with the branches going up the front of both shoulders to the saddle. This works much better without discomforting the horse.

Most horses don't need cruppers, but if your horse has low withers a good crupper can keep you from finding yourself riding his ears on a steep downhill! If you decide to use one, be sure to accustom your horse to it at home. In fact it's not a good idea to try out any new equipment at a ride.

There are as many different bit and bridle designs as there are riders. Combination halter and bridles are very convenient at vet checks. There are riders who prefer a hackamore to a bit for endurance riding as it allows the horse to drink and graze easily on the trail. And there are some brave souls who ride with nothing more than a halter. Nevertheless, bits, however mild, aid a rider in "collecting" a horse and can help put a tired, strung-out horse back together.

Girths run the gamut from leather to string to neoprene – from Western to English to dressage. They can ALL rub galls and cause great discomfort. Whatever you use, don't fasten so tight as to cut off horse's wind. Coat with lubrication if necessary.

Of course, whatever tack you use, be sure it fits the horse and that you keep it clean and in good repair. A little thought, planning, and care in choosing and fitting your tack will make a big difference in performance on the trail.

CHAPTER SIX

Conditioning

I. PRELIMINARY CONSIDERATIONS

In conditioning, the ultimate goal is to develop to maximum potential whatever natural athletic ability any given individual possesses. The object of this chapter is to acquaint the reader with the basic principles of conditioning and to suggest some methods and time frames appropriate for preparing a horse for competition in an endurance test.

Science, methodology and time charts are not the whole story, however. Conditioning horses is as much an art form as a science. Trainers concern themselves with more than pulse rates and blood counts, although these things are surely important. The best trainers have developed an intuitive "feel" for how the horse is doing overall. They know whether an individual prefers routine or diversity. They know the difference between the horse being lazy or being bored, between being eager or actually being fearful. They know if the horse likes his work - and if he doesn't they worry about how to get him to like it. "Know your horse" is the best piece of advice you'll probably ever get, although it might

be some time before you understand what it means. You should also occasionally ask yourself what your horse thinks of you.

Finally, all the knowledge and intuition in the world won't count for much unless the conditioning program is conscientiously applied. Everyone has duties that will sometimes interrupt the schedule, but it is all too easy to let the whole program to become haphazard. If you skip one day you can't make it up by riding twice as hard the next. If you are serious about what you are doing, you must maintain your momentum.

Before getting started, the rider should realize that any endurance prospect has a limit to his innate ability, and that this limit might not be sufficient to satisfy the rider's competitive goals. Recognizing this problem and coming to terms with it is perhaps the most difficult thing any horseman will ever do. You can't make a Kentucky Derby winner out of a plow horse, no matter how hard you try. If your goal in endurance riding is to find a companion that can carry you quietly across the miles while you enjoy the beauty of the countryside, your needs will be quite different from the ambitious individual who plans to win next year's national championships or to try out for the international team. Decide honestly what you want to do and choose your weapons accordingly.

If you are in satisfactory health, you should consider some type of exercise other than riding to improve your own fitness, because when you become fatigued you will not ride as well. Someone who is off balance or tense from pain will adversely affect the performance of the horse, causing him to tighten or twist his back, or compensate in other ways. This added effort accelerates fatigue and increases the likelihood of injury.

Aside from developing your overall fitness, cross training can also acquaint you with how it feels to work hard physically. It gives you a much better empathy with your horse when you are both undergoing the same remodeling. Lack of time is no excuse because you can walk or run alongside your horse as you warm him up every day. However, just as with the horse, your exercise program should be carefully constructed and implemented. Consult a knowledgeable person to help you get started with a schedule appropriate to your present state of fitness.

While it is true that many successful endurance horses have never seen the inside of a schooling arena, and that many successful endurance riders hope never to see one again, there can be no doubt that such work is beneficial if correctly done. Joggers often notice that while they get fit from their activity they also tend to get stiff. The same holds true for endurance horses. Elementary schooling in an arena (dressage) is a good way to get the horse to stretch and bend. Specific exercises can also help strengthen specific physical weaknesses, resulting in a horse that is better balanced overall and therefore less prone to injury. Last but not least, it trains the horse to be more disciplined and responsive to your demands.

Teaching your horse to jump a small course of fences or cavallettis can also be beneficial. Like dressage, it helps the horse learn to use his body in different ways and to handle himself better. Besides, you are bound to encounter obstacles on endurance rides from time to time, and if your horse has at least been exposed to the basics, you are less likely to get stranded someday on the wrong side of a log.

II. WHERE TO BEGIN: 0 TO 90 DAYS

Before you begin any conditioning program, be sure your horse has been recently wormed and has his feet in good working order. Assuming he is already broken to ride, and assuming that he is healthy and neither too thin nor obese, you can start by riding 2 or 3 miles at about 5 m.p.h. If you have already been riding the horse on a fairly regular basis for sometime, then you can probably double the beginning mileage.

Most people prefer to work five days a week, allowing two rest days. All of your work for the first two to three months will be slow, rarely faster than a trot. Depending on your personal preferences and what is available, you may want to ride trails, make some rounds in a field, or hack down a country road. Don't forget to do a certain amount of basic arena schooling. This need not take up your whole days routine, but 20 or 30 minutes twice a week incorporated into the other work will be of great benefit. Concentrate on teaching transitions from one gait to another, prompt (but smooth and calm) reactions to the aids, lateral and longitudinal bending, etc.

Offer as much variety as you can in your program. Riding over hills is excellent exercise, requiring somewhat different muscular effort than flat terrain. The more places you can go to work, the better. At these early stages, however, take it easy. Young, unfit horses have neither the balance nor the strength to negotiate difficult terrain well. Be especially conservative as you tackle downhill grades; they are very destructive to juvenile joints.

On days that you add distance to your mileage, compensate by cutting back on the speed you usually travel. On days when you go a little faster than yesterday, cut back on the total mileage. If you go for a tough, hilly ride, don't make it the longest distance your horse has ever attempted. Just use common sense whenever you up the ante.

The most accurate single indicator of condition is the horse's pulse rate, and this is why endurance riders are so preoccupied with their stethoscopes and heart monitors. A necessary first step in learning to condition a horse is in learning to take his pulse. To use your stethoscope (which you can purchase at most drug stores or through your veterinarian), stand on the left side of the horse and put the round flat piece behind and slightly above the elbow. Some individuals are easy to hear; others are more difficult. If you cannot pick up the ticking sound with your horse at rest, exercise him and try again. Exercise will make the beat louder and faster. Most horses will have a resting count of 32 to 44 beats per minute (BPM), but after a short canter it will probably double. As you listen you will hear a "lub-dub" sound. This counts as one beat, i.e., lub- dub, lub-dub, lub-dub, = 3 counts.

Many endurance riders use heart monitors both when they condition at home and when they compete. These monitors are a costly \$125 and up piece of equipment, but they can be very useful. They are a big step up in determining working rates, because by the time you stop your horse, dismount, and get out your stethoscope and watch, the rate will have already dropped significantly. A heart monitor is also essential if you want to do interval training later on (see phase 2).

How quickly the heart rate drops when you stop work reflects the capacity of the horse to perform at that level. No matter what the horse is doing, he should be able to recover to

the low seventies within ten minutes of the time he finishes his exercise. If he drops to sixty or so within ten minutes after a conditioning ride, it may mean that he has not worked hard enough to produce any cardiovascular conditioning. However, during a competition, you should expect to recover to the low sixties within ten minutes of coming into a vet check. If it takes you much in excess of 10 minutes to recover to the low seventies on a ride, then you are probably going faster than you should. If you do not recover during a ride within 30 minutes of the time you arrive in a check, you will be eliminated. Aside from overwork, a poor recovery can indicate pain from illness or injury. If your horse usually recovers to 60 or 68 within ten minutes of a particular workout, and then one day hangs at 86, you'd better try to determine why.

Don't be unduly alarmed if a poor recovery should pop up on the first spring day that the temperature soars. Winter coats and hot weather make poor bedfellows. Boggy footing is another reason your horse might not recover within the usual time frame. Use common sense to try to get to the bottom of uncharacteristic responses. If a 'poor recovery cannot be readily attributed to weather, footing or other such variables, it is very likely that you've pushed harder than you should.

When you begin conditioning your horse, you should have at least one place to ride where you know exactly how far you are going. You can measure a spot with a surveyor's wheel (you can rent one from a rent-all), a vehicle, or even rolls of string (use cotton - it is biodegradable.). Experiment and see how long it takes your horse to cover the distance at different gaits. Does he walk at 3 m.p.h.? Does he trot at 8 or 12 m.p.h.? How slowly can he canter? How fast is his hand gallop? You must develop a feel for times and distances so that you can pace yourself in competition. You should also check your horse's pulse reactions at various times. Become so familiar with how they work that you can accurately estimate what the rate will be. It's all part of knowing your horse.

The basic principle in conditioning is called progressive loading. It means systematically exposing the horse to small but steadily increasing levels of demand. Once complete adaptation to a particular level has been achieved, no further training effect can be expected of that level. Only increased demands will result in further progress. Your job each day is to determine how much more difficulty to add, and to recognize when adaptation has been achieved. Keep in mind that while you want to constantly challenge the horse's metabolic upper limits, if you go too far too fast, constructive stress becomes destructive strain. Breakdowns usually occur after a series of strains finally overpowers the body's ability to adopt.

It is a good idea for you to use the CRI during or at the end of your training sessions to be sure that you are not overlooking some problem that may be lurking. This simple to use test gives remarkable insight into the condition of the horse. (See Chapter 11, sec. 3)

The backbone of any conditioning program is Long Slow Distance (LSD) work. LSD is jogging for horses, involving use of a steady rate of energy expenditure over increasing distances. It is aerobic work, meaning that the body is able to perform at that level without going into oxygen debt. LSD teaches the body to use more oxygen, increasing both its ability to carry it to the cells and also to extract it once it gets there. As training progresses, the maximum rate at which the heart can perform aerobically moves upwards

(from below 120 up to about 150 or so). In other words, the fitter the horse becomes, the faster he can go without becoming fatigued.

In the beginning, the “S” in LSD will be about 5 m.p.h. Gradually you will be able to increase this to around 12 mph, depending on your horse. Distances will also increase, starting with two or three miles and moving to 15 or so. Aside from speed and distance, you can increase the difficulty of LSD work by increasing the difficulty of the terrain.

Throughout the first three months of work, the primary objective is to lay down a solid foundation for developing not only the cardiovascular and muscular systems, but also the bony frame (including the tendons, ligaments and cartilage).

All the horse’s systems strengthen and thicken in response to progressively increasing demands, but they vary in the speed of their responses. Soft joints, tendons and cartilage are just beginning to respond when the muscles are already up to full power (bony structures take four to five times as long to condition as muscles), so you must make haste slowly. Pushing too hard early in the program is the easiest way to put a quick end to a promising prospect. Just be patient.

If your endurance prospect is a fully mature animal, his bones will be less subject to improvement by conditioning than those of the adolescent. However, to some extent, you can still strengthen the elasticity of the joint cartilage, tendons and ligaments through the principle of progressive loading. As with the young horse, figure on roughly ninety days of LSD before you get into more demanding work.

Always be on the alert for signs of excessive stress. If a normally eager horse becomes dull, if he goes off his feed or if his stride becomes a little shorter than usual, you should be on full alert. Most horses express how they feel very honestly. Your logical response to these signs is to give a few days off and then come back with more modest demands. Drop back to whatever level of work the horse can comfortably accommodate.

It is very tempting during these first months of rather boring work to convince yourself that it would be just as beneficial to do the recommended amount of mileage, but at a faster than recommended speed. You are strongly cautioned against this, inviting though it might be. Increase distance if you feel that your horse can do more but do not imagine that faster works will serve your long term goals. It must be repeated that joints, tendons and ligaments are very unforgiving of abuse. Once damage has been done, a truly full recovery is unlikely.

III. PHASE TWO: NINETY DAYS TO NINE MONTHS

After two or three months of long slow distance rides, you can begin to incorporate an occasional day of more strenuous work into your program. The object is to increase the horse’s anaerobic threshold, or the point at which his system must go into oxygen debt to perform (pulse of 150 or so). If you train at this level twice a week for 1/2 hour, it will dramatically increase your horse’s cardiovascular proficiency.

Start off with easy gallops and gradually increase the level of difficulty by adding to the length and number of repetitions. For example, on the first day you might want to do 2 miles of warm- up, then gallop 1/3 mile. Follow with 2/3 miles of easy canter to allow for

partial pulse recovery. Repeat the gallop-canter sequence three more times for a total of four miles. Finish by trotting a mile or two to allow for gradual cooling off. By the end of the month you might have worked up to 6 gallop sets, utilizing the format of 1/2 mile gallops and 1/2 mile canters.

Another term frequently used in sports medicine is “fartlek”. Roughly translated from Swedish it means “speed play.” It involves a random assortment of stresses at the anaerobic level (sprints, hill work, galloping), intermixed with periods of aerobic recovery (target pulse = 80). Almost any kind of trail ride or venture across country can be adopted to fartlek conditioning. You can also use these opportunities to expose your horse to as many different types of footing as possible. Trot down a gravel road, canter up a hill, walk down the other side, gallop across a field pick your way through a bog trot down a narrow forest path, etc. Aside from the cardiovascular benefits of this work, you will learn a lot about your horse’s personality. Different individuals have different preferences and talents. Some like to pick their way through the woods; others like to gallop down long stretches of dirt roads. Some can handle mud but not rocks; others are like mountain goats but hate to get their feet wet. It’s part of the fascination of the sport to see what each horse enjoys or dislikes.

As you condition you will simultaneously be training your horse to take natural obstacles, like logs and creeks, in stride. You should also make sure he has been introduced to cattle and other farm animals, as well as to traffic, joggers, dirt bikes, and motorcycles. Riding with an older, quiet companion is the best way to introduce your youngster to the terrors he will encounter once he is away from the security of home.

Towards the end of the first six months of training you can begin to trot and canter down some moderate hills. Go carefully, however, because this type of activity is still very stressful to joints. Practice only until you are comfortable that you and your horse can manage to maintain control. Later on, in competition, you can use this skill to gain ground. Some horses are naturally well balanced and are easily able to scamper down a hill like deer. Others, probably due to conformation, never get very good at it. If your horse doesn’t seem to improve with practice, he is probably the latter type. In this case you might as well leave the problem unsolved. Repeated efforts are not likely to make matters better, and may in fact lead to lameness.

As you experiment with times, distances, and training techniques, always bear in mind that it is of no use to have a cardiovascular fit horse if he is not also a mechanically sound one. The longer and harder you ride, the more careful you must be about watching out for signs that anything out of the ordinary is going on. You should memorize the way your horse’s legs feel when you run your hands down them. Is there a small swelling there today that wasn’t there yesterday? Does one leg feel a little warmer than the others? Do the hooves show signs of unusual stress? Does the stride seem a little choppy or uneven? Is the appetite failing off? Does he play with his companions in the pasture, or is he too tired to bother? Do the CRI numbers show a brewing problem? Even if you can’t point your finger to anything specific, when your “horseman’s intuition” tells you something is about to go sour, give your horse and yourself a few days off.

Perhaps the best known “new” technique for conditioning at the anaerobic level is called interval training. Simply stated, “intervals” are repeated, controlled speed works,

separated by slower jogging periods. These periods allow for partial pulse recoveries. The physiological goal for interval training is to stimulate the energy pathways the horse will need for speed competition. It is the repeated raising of the pulse rate past the anaerobic threshold (approximately 150 and up) rather than the length of time that it is maintained that is supposed to achieve the training effect. During the jogging interval the pulse is allowed to return to 100 to 120. It is critical to the program that these intervals are repeated only until a higher relief pulse during the relief phase or a higher working pulse during the work phase signals fatigue. There are three variables that can be utilized to increase difficulty: 1) the speed of each bout, 2) the length of each relief period, and 3) the total number of repetitions.

The beauty of the interval training concept is that the work is tailored specifically to the individual's pulse recoveries, not to a pre-set time or distance.

While extreme bursts of speed are rarely required for endurance riding, there are occasions when anaerobic ability is called for. Interval training has the potential to help with that. The rider should take care, however, not to overdo speed work. He must also be aware that to be effective, interval training requires a heart monitor for precise pulse monitoring.

Experiment with all the tools of conditioning - gallop sets, interval training, fartleks, heart monitors, blood counts, etc. It's fun and fascinating, but it's also very easy to get so wrapped up in charts and monitors that you lose touch with your horse. Be aware of the methods, but be conservative in their use: one day a week of speed work is enough, even with a veteran athlete, and two really strenuous days of work should be separated by a lighter day. No matter where you are in your conditioning program, rely heavily on LSD. Also, once a horse has achieved a certain level of conditioning and started competing, you will be approaching the point at which rest can be more beneficial than more work.

If your horse ever develops a lameness problem, consult a good equine veterinarian. If you question his diagnosis, get a second opinion. Give the horse whatever time off is recommended, and when you resume work, start back gradually. Don't get discouraged when you encounter some "down time." Everyone goes through a certain amount.

Remember to be flexible and imaginative in tailoring a program to your individual horse. Every one is different. Some horses thrive on a heavy work schedule, others can't handle it and don't need it. Some horses don't show much of an aptitude for endurance work at first, but eventually come around and develop into real stars. Remember that the "eye of the trainer" makes all the difference.

Extremes in weather pose special hazards to horses in a strenuous conditioning program, and as such deserve to be noted separately. The effects of a combination of high heat and humidity, especially early in the spring when the body has not yet had a chance to adapt, can be devastating. Even veteran riders are sometimes shocked by the extent to which these factors can influence performance. Any time that the combined temperature and humidity total 150 or more, you should consider conditions to be dangerous. If you notice that your horse's breathing is becoming very rapid (130 breaths per minute or more), he might be overheating. Take his temperature, and if it is 104 degrees F or more, you'd better quit whatever you are doing. A temperature much above this is getting dangerous, and you should take steps to remedy the situation as fast as possible. Cold water, even

ice water, applied to the veins of the legs and neck, is usually an effective course of action.

If you have a horse that is unfit, overweight, heavily muscled or thick bodied, or if he is a "senior citizen," be especially careful when heat stroke season comes around.

Make sure that your horse has an ample supply of water and salt at his disposal at all times, but especially in the hot weather. You will also want to supplement the free choice salt with extra electrolytes in the feed.

The other side of the coin is wet, cold weather, and this also requires some special precautions. Warm up and cool down more carefully under these conditions. When you get back to the barn, if your horse is still steaming, cover him up and walk him dry. Keep in mind that stress from the extremes of conditioning can make the endurance horse more prone to chills and colds. Give him the extra consideration he has earned when the weather is extreme.

After about six months of steady conditioning you should be ready to scout out a fairly undemanding 25 mile competition. The object of the mission will be to see how your horse handles the unfamiliar situation, as well as the distance. You'll want to see how he behaves in company, whether he will eat and drink away from home, etc. Relaxation, even boredom, is your goal. No matter what happens, don't speed up or lose your temper. Perhaps your horse is perfectly capable of covering this particular 25 miles in 1-1/2 hours, but that isn't the issue. You are teaching him that endurance riding is a non-threatening situation, that he can trust you to keep him safe, and that it doesn't matter what is going on around him. The ideal scenario is to find someone who plans to go slowly and is on an old veteran endurance horse. Pace with them, and your horse will probably calm down as the day unfolds.

If your horse goes ballistic at the beginning of the ride, you might have to let the herd get out of sight before you even mount up. Once you get started down the trail keep everything as low key and as relaxed as possible. This is not to say that you should dawdle along, however. On the contrary, be businesslike. Aim to keep your horse trotting at a steady rate. Gauge it so that when you arrive at the vet check the horse's pulse will be right on target. If you have been practicing at home, you will know just how fast to go to do this. If your horse has not recovered to normal ranges within the rest period, you've been going too fast.

You can expect that things will be a little rough at first. Perhaps your horse will shy at everything in the woods. Perhaps he will whinny at night at camp and keep everybody awake. Perhaps he will refuse to drink any water all day and will view every creek crossing as a threat to his life. Just be patient. Remember that it's all new to him. Give him a chance to understand how you expect him to behave. It may take only a few rides, or it may take a lot, but until you feel like you have the situation under control you should not try to move up to the more taxing 50 milers.

IV. MOVING ON: NINE MONTHS AND UP

If your horse is now 5 years old by the calendar, and you have given him 9 to 12 months of steady conditioning and 3 or 4 novice rides you should probably be able to handle a 50

miler, both physically and emotionally. However, at this point it would be wise not to have any fixed aspirations as to your placing. Be very aware of how your horse feels after he completes a ride; that will be your signal about how soon to do it again and whether you can be more demanding next time.

Somewhere in your second season you can tackle your first hundred miler, and if you finish in good shape you can pat yourself on the back for a job well done. You have now arrived as a real endurance rider and proved your competence as a horseman.

Once you let your horse go out of training at the end of the season, the first thing he will begin to lose is his speed. Studies have shown that this process begins to take place after about the first three weeks. Within about four to six weeks he begins to lose muscle tone, and between three and six months his endurance will have begun to decline.

To bring the horse back into a work program after he has already been fully conditioned at some previous time, you should schedule 30-45 days of LSD for gradually building back up, and another 30-45 for coming back into full performance mode.

CHAPTER SEVEN

Trailerling

The basics of good trailerling are not complicated, but only too frequently they are overlooked. One of the realities of endurance riding is that you must frequently haul your horse long distances to competitions, so you should have a good understanding of how to make travel as safe as possible for your horse and yourself. Beyond that, because of the extremely stressful nature of the sport, it is vital for optimum performance that the horse arrives in camp as fresh as possible for the start of the ride, and that he is not subjected to unnecessary trauma and discomfort on the trip home.

During the trip, one of the most important things to consider is ventilation. If the weather is cold, the doors and windows should be closed, and only the vents open to allow for air circulation. In hot weather it is absolutely imperative to have enough air flow to keep heat from building inside the vehicle. No matter how expensive or attractive your trailer is, unless it has a design that allows for ample movement of air, it is unsuitable for your horse. A hot trailer is inhumane and potentially even life threatening.

Thick rubber floor matting is also an important consideration. Most trailers do not have a system of shock absorbers, and thick matting can serve to alleviate concussion. In addition, heavy mats do not roll up and slide around on the floor like thin ones can, and they therefore provide much more secure footing. It may also be a good idea to bed the trailer down in straw or shavings if your horse is unwilling to urinate on a bare floor mat.

Take care that your trailer allows your horse enough room to be comfortable. He should be able to stand without having his face jammed into the front of the vehicle, and without having to have his tail crammed up against the back door. Since most rides take place during the fly season, either put a fly sheet on him or be sure he has room to use his tail to brush them away. Keeping the trailer sprayed will also help control this problem. When

you hang up a hay net in the trailer, don't stuff it so full that it takes all his head room away.

During the trip it is very important to get your horse off the trailer from time to time. Many people feel that it is best to unload every four hours or so. During these breaks the horse should be watered, walked, allowed to graze and relieve himself, and trotted a few times in hand. Horses frequently will not drink while on the trailer, and especially in hot weather, water loss can have serious consequences. Also, many horses will not urinate in the trailer, resulting in discomfort and unnecessary stress. Another reason for getting the horse off is the accumulation of detritus in his airways. A horse must lower his head below the level of his shoulders to cough and clear his throat, and he may not be able to do that in the trailer. Regular breaks are especially important for poor haulers, giving them a chance to relax tense muscles and stretch a little.

Since many of your breaks are likely to be at rest areas on the interstate, there are some points of etiquette that you should keep in mind so that you will avoid getting in trouble with the public in general and the highway patrol in particular. First, try to get off to yourself to unload. Sometimes people will want to come over to talk and look at the horse, and frequently children will be anxious to pet him. Be polite, but assume that they are unfamiliar with equine behavior, and remember that you are responsible if they should get stepped on, kicked, etc.

As you water your horse and walk him around, stay away from the picnic area or anywhere that the grass is kept mowed. Dump any leftover water down a drain or around shrubbery. Once you have re-loaded, be sure you shovel up any manure and hay.

Many campgrounds allow you to stay overnight with a horse and this is truly a privilege you should not jeopardize. By all means be considerate. The manager will show you where you can park and you must follow his directions to the letter. Don't assume that the other campers like your horse as much as you do. Be especially thorough in cleaning up manure and spreading out any piles of leftover hay. Give the area a good dousing with fly spray before you leave.

Since unloading and re-loading during trips is often done in frightening surroundings, it is imperative that the horse be well schooled in this before being taken away from home. He should step right up into the trailer when asked, with no fuss, every time. The effort spent on this will be well worth it and should not be neglected.

Leg wraps or shipping boots are good ways of protecting your horse during trips. If using wraps, however, be sure to put cotton quilting underneath them; otherwise they might be so tight that they cause circulation impairment. Also, be sure to cover the coronary band, as horses frequently step on themselves in this area.

To tie or not to tie the head – this depends. Some horses trailer so well they don't need it; others require restraint, especially when there are two traveling together. However, if you should have an accident, the horse is more likely to be hurt if he is tied. Always use a "panic snap" on the rope and a safety breakaway or leather halter. Get in the habit of always releasing the horse's head before opening the trailer doors. A horse that starts to back out only to hit the end of the rope can panic and be seriously hurt. Conversely, always latch the door before tying the horse when you load.

If your horse is a poor hauler, constantly having trouble keeping his balance, you should experiment to see if you can improve the situation. Many horses can't seem to keep their footing in a two horse trailer with a partition. If you travel alone you might try taking the partition out or fastening the end of it over to the side. This gives the horse an opportunity to spread his legs out so that he can brace himself, especially on turns. Even if you are trailering with two horses, as long as they are compatible, you might be better off without the partition. Given a free choice, horses will usually stand kitty-cornered, perhaps because it allows them a little more room. They also enjoy being able to see out, just as you do. Many horses travel better in a stock trailer than in the confines of a two horse trailer or van. Do whatever it takes to make your horse a happy traveler, even if it means getting a new trailer or remodeling the old one.

Another important consideration in safe trailering is good driving habits. Because of the physics involved in a towed vehicle, a trailer sways more than the truck pulling it and consequently puts more lateral force on the occupants, like "cracking the whip." Moreover, since the horse can't anticipate stops, starts, or turns, he is likely to get off balance. Perhaps the worst jolt you can give him is not slowing down for dips going into driveways or gas stations. If you've never ridden in a moving trailer, try it sometime. It can really open your eyes.

If your horse has to constantly fight to keep his feet and brace himself against repeated jostling, he'll arrive at the ride already used up. Taking an hour or so longer on the road may therefore make a lot of difference in his performance. Likewise, when you go home, you can turn an already tired horse into an exhausted and sick one unless you are careful. The key to good trailer driving is to anticipate, start and stop smoothly, slow down gradually before sharp curves, and enter driveways with caution. Watch well up ahead and practice defensive driving.

Regardless of how well you drive, there is always the possibility that you could have an accident. It is therefore a good idea to be prepared. Be sure to carry the tools you might need to break open a damaged door. Carry a long, stout rope that can be tied to the horse to pull him free. Take along an emergency vet kit, including some injectable tranquilizer. Be sure you know how to use it. Finally, always carry a fire extinguisher.

Most people who have traveled extensively with horses have had some misfortune directly related to failure to see about routine maintenance of their trailer. This need not happen to you. Perhaps the most common problem is rotting boards in the floor. Be sure you check this from time to time, especially around the back door and the edges where moisture accumulates. When you have flooring replaced, ask the repairman to leave a space between the boards so water and urine can drain through. Use wood that resists rotting, oak for example; avoid pine or other softwoods.

Make sure the brakes and lights work every time you get ready to go somewhere. Trailer lights are notoriously unreliable. The trailer hitch should be bolted to the truck frame, not merely attached to the bumper. After a good deal of wear the inside of the hitch can wallow out over the ball to the point where the trailer can jump off. Have this checked regularly by someone who specializes in trailers. Safety chains must be heavy duty to be any real help.

Because trailers often sit for long periods of non-use, you may have what looks like a good tire in reality be a dry rotted one. Make sure your tires are in good shape, and always carry a spare. Since flats often occur on the side of the trailer where the horse is riding you might want to make a practice of carrying a spare on the right side. This means that if you do have a flat, you will be more likely to be changing it on the side of the vehicle that is away from passing traffic.

Whole wheels sometimes can and do shear off trucks or trailers. At stops, you should check the heat of the tires and also the heat of the hubs. If the hub is too hot to touch, your brakes may not be working properly. Get help at a garage as soon as possible.

What kind of vehicle you use to pull your trailer will depend largely on your pocketbook, however, there are some bare minimums you should keep in mind. Be sure your vehicle is heavy enough to pull the weight of your horse and trailer. Full-sized trucks or motor homes equipped with a towing package are usually the best bet. Extra large cooling systems and heavy duty shocks are necessary features. You should also be sure that your brakes will be adequate to stop the weight you're pulling. Compact trucks and cars are not very satisfactory, even for pulling a light trailer.

You should also pay attention to where the exhaust from your truck goes. Does it spew right into your trailer? Do you think you could run fifty miles after inhaling carbon monoxide for eight hours? You may have to re-route your exhaust pipe if you feel that this is a problem for you.

All too often trailering to the ride is something people undertake without the planning or consideration that go into many other aspects of endurance competition. But problems here can jeopardize not only the enjoyment of the weekend but the horse's very life. A little attention to detail here can not only prevent an unpleasant experience for your horse, but will give you an uneventful and happy trip.

CHAPTER EIGHT

Camping with Your Horse

I. CAMPING SUPPLIES

Camping with a horse is a little more involved than camping by yourself, but with planning and practice you can devise ways of doing it safely and comfortably.

Facilities at ride camps vary widely. Some camps are set up at commercial stables or state recreation areas with all the amenities, while others are held in open fields with no amenities at all. Unless you know in advance what will be available, it is safest to assume that you will have to provide everything, including drinking water for your horse. Always bring an ample supply of hay, grain and electrolytes with you; it's better to have some left over than to run short.

Be sure to bring along horse blankets, fly sheets, and insect repellents. Some camps are infested with flies, and without protection your horse will be miserable. On other

occasions, the weather can take a sudden turn for the worse, and without a blanket your horse will be shivering while his blanket is home in the barn.

For many people the camping part of endurance riding is very enjoyable, while for others it is just a necessary inconvenience. The former are likely to put a lot of time and money into outfitting and erecting their ride camp, devising complicated tent arrangements, complete with “patios” and lounge chairs, picnic tables, barbecue grills, etc. The latter are more likely to sleep in the back seat of their pickup trucks and bring a bologna sandwich. No matter what your preferences, however, you will find that you will require an alarming amount of equipment and supplies to camp with your horse. It’s also very likely that you will find yourself forgetting at least one vital item per trip. One practical way of avoiding this aggravation is to make out a checklist of things you will need and then refer to it as you pack up. Rookie campers may want to use Appendix I in this manual as a guide.

II. TYPES OF CAMPS

There are many ways to keep your horse at a ride. The most obvious and easiest is to simply tie him with a lead rope to the horse trailer but that is by far the poorest method, as a horse tied to a trailer cannot move around much and he cannot lie down. The newly devised metal swing-outs with stretchy tie ropes are a vast improvement and give the horse more room to move about.

Another method to be considered is a high picket line., sometimes called a high line. This involves the use of a stout rope tied six feet or more off the ground. A steel ring is placed on the rope, and the horse is tied to the ring. This allows the horse to walk the length of the line, which is much more comfortable for him. Feed and water buckets can be hung at each end of the line for safe and easy access. You can tie several horses to one picket line by putting “stoppers” in the rope (short pegs that won’t allow the rings to pass) to keep them separated. If you use a picket line, be sure to tie the horse short enough that he doesn’t get his legs tangled. Any horse that is tied, whether to a trailer or a picket line, should have some form of emergency release; a “panic snap” or safety halter is very important.

Arguably the safest and most comfortable arrangement is a corral or paddock. Corrals can be made of metal or PVC plastic pipe. These can be transported on the side of the trailer and erected in a few minutes at the campsite. However, they do not allow much room for movement, and unless they’re staked down a horse can lift them off the ground. Some riders prefer an electric fence corral. Such a corral is made by using electrically charged tape, strung on plastic or fiberglass poles. The tape is made of nylon with fine wires woven in to carry the electricity; a battery operated fence charger electrifies the tape. This kind of paddock can be any size or shape desired, can be put up or taken down easily, and allows the horse maximum freedom to move about with the least chance of getting tangled in something. The only drawback is that a panicked horse can run through the electric fence so the paddock might not be secure for animals with this tendency.

There is no foolproof way to contain a horse, especially in a strange environment. Sleep in your clothes and have your boots and a flashlight near the bed!!

III. LOCATING A CAMP SITE

When picking out your camping spot during hot weather, try to anticipate where the sun will be in the afternoon, and look for a shady place. If you're using a paddock, it's ideal if part of the paddock is out in pasture and part in the woods for shade. It's a good idea to find out before you park where the water supply is; it's not fun carrying water buckets a quarter mile back to your camp!

Another consideration, especially if you have a big, heavy rig is getting out again if there is a rainstorm. Many camps turn into a sea of mud after a storm, and if you park at the bottom of a hill you'll need a tractor to tow you out. Parking where you have a clear downhill run back to the road can save you a lot of trouble.

Ride management often ropes off the most desirable areas, to keep people from parking there. They are not being inhospitable; they just need to have central areas with enough open space for ride briefings, vet checks, awards presentations, and the like. They need to reserve space for their workers, too, and they like to keep them together. You must respect these flagged-off areas even if you have to go a little farther to a less desirable spot.

Before parking, locate the finish line and avoid parking close to it. The additional traffic and noise there can be bothersome to you, and is likely to be upsetting to your horse. It is also unwise to set up camp close to the trail, since sometimes in a fast finish horses will unexpectedly slam on the brakes when they recognize they are going past their living quarters. More than one ride has been lost because a horse got "home" before he got to the finish line!

If you have a big rig with a generator, remember that one of the attractions of endurance rides is the peacefulness of camping out in the wilderness. Don't spoil that for everyone around you by running a loud generator at all hours. Few people mind a generator running during the day, but by the time people are going to bed at night generators should be shut off. If you just can't live without your AC power, park off away from the rest of the camp where you won't bother anybody.

There are many variations on camping styles, and all veteran riders have their own little tricks. Look around and ask questions; people are eager to help.

CHAPTER NINE

Rider Survival

Most endurance riders are in good physical condition. Those who are not usually eliminate themselves after a few physically demanding rides. However, staying in good condition, especially for the duration of a difficult hundred miler, requires the exercise of common sense. This begins with eating appropriate amounts of carbohydrate loaded foods, and drinking adequate amounts of appropriate fluids to maintain good hydration. Avoid drinking diuretics such as soda pop, coffee and alcohol -plain water is a good choice. Considering that getting lost is always a possibility, anyone requiring medication should carry enough in a secure pocket to last at least 48 hours.

Beyond these usual practices, riders should consider in advance how best to deal with an emergency and take precautions accordingly. If you should become hopelessly lost and/or thrown from your horse, and you have taken no precautions, the consequences could be disastrous. A major problem for such a rider can be hypothermia (subnormal body temperature). In bad weather, at night (especially in the mountains), hypothermia can become critical and even life-threatening.

One obvious defense against hypothermia is appropriate clothing. Arrange for tie-downs on the saddle by which you can secure most of your clothing, but you should also carry something extra on your body. If you are thrown from your horse and he gets away from you, the extra gear on the saddle isn't going to be very useful. For an under layer, next to the skin, the rider should wear silk or polypropylene, which you can find at a skiing supply store. Cotton will hold perspiration and just make you colder when the temperature drops. Over your regular clothes, you should wear a warm, lightweight jacket (down is good), and on top of that you should wear something waterproof (such as Gortex). A helmet is not only useful for protecting your head from injury in a fall; it is also waterproof and will help conserve body heat.

In addition to clothing, you can carry a lightweight survival kit attached to your body. It should include a whistle (you can blow for help long after your voice gives out), a large plastic garbage bag (it's waterproof), a mylar blanket (the kind football spectators like to use- it retains heat and yet it is very small and lightweight), a small can of lighter fluid, a box of waterproof matches, a small metal cup (you can heat water in it), and a glowbar (it is much lighter than a flashlight and will last longer). All these items together weigh less than one pound.

Now let's assume that you have been thrown from your horse and that he has gotten away. Although unhurt, you are hopelessly lost. The temperature is dropping fast and it is late at night. You should hang up your glowbar where it can be seen from as far away as possible. Build yourself a fire with your waterproof matches and lighter fluid, and wrap yourself up in all your clothing, your mylar blanket and the garbage bag. Stay wrapped up and stay put. It is easier for rescue teams to find you if you are a stationary target. Also, assuming that you are suffering from some degree of fatigue and fear, it is very unlikely that you will have the presence of mind to improve your location. You could, in fact, wander farther off course, and in the darkness you could have an accident and become injured. Blow your whistle from time to time; the sharp sound carries for quite a distance. Once it becomes apparent to your pit crew or the ride management that you are seriously overdue at a check, a search party will be sent out to look for you. It is only a matter of time until you are found, but until then you should stay calm, stay in one place, and stay as warm as possible.

THOU SHALT NOT WHINE

CHAPTER TEN

Pacing In Competition

I. HAVE REALISTIC EXPECTATIONS

Having realistic expectations simply involves not asking your horse for more than he is able to give safely, either in competition or in training. Some horses are so naturally talented that they can run up front and even finish in first place with only a little conditioning. The problem is that such a horse has not had time for his bones, ligaments, joints, and cartilage to come up to maximum strength. Breakdowns are very common in those individuals whose natural cardiovascular superiority lulls their riders into the false impression of preparedness. Studies suggest that it takes the bony frame four to five times as long to come to full fitness as the muscular system (which takes about 90 days). So, if you want your horse to have the best possible chance of maintaining long term soundness, you will have to give him the required time to develop (see Chapter Six).

Assuming that you have conditioned thoroughly and well at home, you will probably have a very good idea of your horse's capacity to perform in competition, especially if you are an experienced rider. It does not make sense to imagine that your horse can maintain a 10 mph average on a 50 mile ride if he is unable to do 25 miles at that speed at home. Adrenaline and herd instinct may carry him along with the fastest moving group early in the ride, but it is unlikely that these factors will account for much after the first vet check.

II. RIDE YOUR OWN RIDE

“Ride your own ride” has been preached by more people – and gone straight in and out more ears – than any other advice in endurance riding. Time and time again, even the most experienced riders fail to heed this advice, even though they might have frequently given it to others. Every horse is an individual, and each has his own optimum pace. In addition, every horse has some kinds of trail over which he does best, and other kinds of trail where he is not as competitive. If your horse is strong in the hills but does not have a lot of speed, then make your time in the hills. If your horse can maintain a relatively fast pace over flat terrain, then flat terrain is the place to move out. If you have a surefooted, flexible horse that can fly through a narrow, twisting woods trail, make sure you're first in line going into the woods.

By knowing your own horse's capabilities, his strengths and weaknesses, and by pacing to take maximum advantage of the strength while minimizing the penalties of his weaknesses, you can finish much better than by just following the leader. If you want to ride with others because its more fun than riding alone, choose companions who are going at a pace within your horse's capabilities.

TO FINISH FIRST, FIRST YOU MUST FINISH!

III. KEEP ENERGY EXPENDITURE CONSTANT

Keep energy expenditure constant during the ride. This is one of the most important keys to success, and one another one that is often violated. To understand why this is so important, you need to know something of how a horse's muscles work. Simply stated,

there are two types of energy production, aerobic and anaerobic. In aerobic metabolism, enough oxygen is delivered continuously to the muscles for the complete burning of carbohydrates (glycogen), free fatty acids and triglycerides. The maximum pulse rate at which a fit horse can work aerobically is in the range of 150 beats per minute. Aerobic work can continue for long periods with little or no need to rest. Anaerobic metabolism comes into the picture when the fit horse works hard enough to produce a pulse rate over 150 or so (in the unfit horse, the cross over into anaerobic metabolism will come at a lower pulse. See Chapter Six). Work of this nature depends on stored muscle enzymes to burn glycogen fuel. Because oxygen is not fully utilized, waste products like lactic acid accumulate rapidly and the body tires quickly. Anaerobic metabolism, as you can easily deduce, is a wasteful way to use the “fuel” your horse has in his tank. Your job is to set your cruise control at the optimum aerobic level and keep it there.

The maximum speed at which your horse can run aerobically varies with the elevation, grade, footing conditions and weather. You must go more slowly uphill, even on a gentle grade; the steeper the grade, the more slowly you must ride to maintain constant energy expenditure. Even though horses commonly prefer to rush up a steep hill, you as the rider must insist on a slower pace. You might even need to get off and lead up very steep grades to keep your horse within the aerobic boundary.

Don't be lulled into not adjusting your speed for a long gentle climb. If you run yourself, you know how failing to slow down a little for a slight grade can take its toll. It is a common mistake for endurance riders not to compensate for a long gradual incline, so be sure to look ahead and pay attention.

Trail conditions also affect the energy requirements. A rocky winding trail takes more energy than a straight smooth trail. Soft footing takes more energy than firm footing, with deep sand and mud the most tiring of all. Going too fast in deep footing also risks serious injury, particularly late in the ride when the horse is already quite fatigued.

Watch the trail ahead, evaluate its effect on your horse, and adjust your speed accordingly. The only time in the entire ride your horse should run anaerobically is in the sprint to the finish line. If you have a heart monitor you will be able to more accurately evaluate your horse's stress level. However, to use a monitor wisely takes practice and knowledge of your horse - you can't ride only by the numbers from a book.

IV. LISTEN TO YOUR HORSE

This brings us to the last rule; namely, listen to your horse. A good horseman doesn't necessarily need any special equipment to know how things are going, because the horse communicates in many ways. As horses tire, their strides will generally shorten and they will cover less ground at the same gait. They often stumble more, and recover with less agility (one reason tired horses are more prone to injury). There could be attitude changes, although some horses are so competitive that they will run aggressively until they drop, while others will act tired when there is plenty left in the tank. Common attitude changes include less willingness to respond to the rider's aids and reduced desire to keep up with the other horses (resulting in the need to constantly urge the horse on).

There are other more subtle signs of fatigue that you must learn to interpret, and this is where intimate knowledge of the personality and habits of the individual horse are important. For example, if your horse normally drinks water before the first vet check and then one day fails to do so, you should be on your guard. If your horse is normally eager and then for no apparent reason suddenly loses interest in the contest, he is probably in pain or discomfort of some sort. If a normally pleasant horse turns crabby and ill-tempered, there must be an explanation somewhere. It's up to you to be able to interpret your horse's "language."

By listening to your horse you will probably be able to avoid letting a borderline problem become serious. Usually you can regroup, slow your pace, and complete the ride safely. However, if you have reached the point at which your horse has lost interest in his surroundings or has stopped eating or drinking, he is already dangerously fatigued and could be in need of veterinary attention (see Chapter Twelve).

Your job as a horseman is to select an endurance candidate whose talents suit him for the job at hand, train him conscientiously and well, and ride sensibly according to the rules outlined above. There is never any guarantee in long distance competition, and "bad luck" strikes even the most caring and competent riders. However, if you let common sense and compassion be your guides when technical knowledge or experience fail you, you should have little trouble finishing your endurance day with a smile and a healthy horse.

CHAPTER ELEVEN

Pit Crewing

Although some riders take great pride in their ability to perform "solo," most prefer to have the help of a pit crew. The crew can consist of one or more people, usually family members or friends. The crew assists the rider in many ways over the course of the event, primarily, he takes over the care of the horse at the vet checks, leaving the rider free to see to his own personal needs. The pit crew's job can be quite casual if the rider's goal is a nonchalant scenic tour of the countryside. On the other hand, for a very competitive rider, the pit crew can easily make all the difference in the outcome.

For the novice pit crew, the easiest way to learn the trade is to find out who the most successful riders are, watch what their crews do, and ask a lot of questions. Word gets around quickly about who has the best crews. Offer to help one of these a few times. Most would love to have an extra hand.

The difficulty of the pit crewing job can be vastly complicated if the ride is a hundred miler where all the checks are scattered over a mountain range and up virtually impassable, rutted out, dry creek beds that pass, more or less, for roads. Its even more challenging if there is no water, if none of the "roads" have names, if there are no gas stations for the next hundred miles, and if the ride management forgot to do the vet check maps. Like endurance riders, pit crews must cultivate an unorthodox sense of humor to survive. With any luck the novice crew will have as a first mission, a fifty miler where all the checks are in camp.

I. PRE RIDE CARE

The pit crew's day begins with the pre-ride feeding for the horse. To get the maximum benefit, and to avoid an insulin surge, grain should be given the night before, or at least four hours prior to the start of the ride. (see Chap. 4) Naturally the horse should have all the water and hay through the night that he wants, and most people also give a couple table- spoons of electrolytes with the feed.

What you will need during the day will depend to some extent on the weather. If it is cold and wet, the horse will need blankets and a rainproof cover. The rider will probably want a full change of clothes (especially dry socks), an extra jacket, and towels. If the weather is hot and dry, you will need water by the barrel. You will need a stethoscope, a thermometer, sponges, buckets, electrolytes (and some means of administering them), hay, a halter and lead rope, clean saddle pads, spare tack (in case anything breaks), and lots of drinks and food for the rider. It's also good to have an extra set of horse shoes and the tools required to put them on. Incidentals such as aspirin or Advil, Vaseline (for tack rubs or skin burns), duct tape (for all kinds of instant repairs), and tissue will also come in handy. If the ride is a hundred miles, a few flashlights and extra batteries might be necessary. If you are going to have to do a lot of driving during the day to get to the vet checks or to meet your rider at points in between, make sure you've got a full tank, and that your vehicle is in good working order. The ultimate humiliation for a pit crew is to run out of gas somewhere in the middle of the wilderness.

Most vet checks are run as a gate into a hold. This means that your required hold time does not begin until after your horse has recovered to a pre-specified pulse count, or passed the "gate." Usually this count is somewhere between 68 and 60. After the horse has had his pulse checked and his time marked on a card, he will proceed to the vets who will do a CRI as they continue to evaluate his metabolic and mechanical fitness more fully. The rider and crew are then free to do whatever they like until the hold period is over. The duration of the hold time varies greatly, depending on how many miles have been covered up to that point, the length of the ride, and the weather conditions. Most commonly, the hold time runs between fifteen minutes and one hour.

As soon as the ride starts, you should begin getting everything ready for the first vet check. You should position all your equipment as closely as possible to the vetting area, but out of the way of the traffic flow. Sometimes it's a bit tricky to get a good spot, and the early bird has the best chance. Don't wait until it's almost time for the horses to be arriving before getting set up. If the day is going to be hot, a shady spot is imperative. Get oriented to which direction the sun is going, and decide where it's going to be when the horses come in. Get everything you think you could possibly need and organize it in one place. You don't want to waste your vet check running back and forth to get forgotten items. Set up at least three buckets of water, two for drinking and one for sponging. Have more water handy if the weather is hot, because you're going to be using a lot. Set out a fat flake of hay and slurp if your horse likes it. Line up your electrolytes, a halter and lead, and the drinks and food you think your rider is most likely to want. Put the stethoscope around your neck or you will probably misplace it, and get a fix on how the vet check is laid out. Where are the in timers, the pulse takers, the vets, and the out timers? Sometimes it takes a while to comprehend the overall picture, as things are not always clearly demarcated.

If other horses begin to come in and you don't expect your rider for a while, watch how they are doing. See if you can figure out which vets seem the most competent. This might seem like an odd piece of advice, but the reality of endurance riding is that vets vary widely in their ability. You'll want to go to a good one and stick with him all day if you can.

II. CARE OF THE HORSE DURING THE VET CHECK

As soon as your horse comes in, immediately get his vet card marked with his "arrival time" and take a pulse. If it's already down to the requirement, say 64, call for your time to be recorded by the "in timer." If the count is pretty close, say 68, and you anticipate that it will reach 64 any second, just keep the stethoscope on him while the rider quietly offers him water. If the pulse is running in the high 70's or 80's, it's going to take at least a few minutes before it gets down. In this case you should go ahead and take the tack off and start sponging. If the day is hot, lots of water, even iced water is the best way to get a pulse down quickly. However, if the day is chilly, be on guard about using any water, especially cold water from a mountain creek or hose. Also, some horses are very prone to cramping if they get much water on the muscles of the croup and back. If you know your horse is like this, it's best to blanket these areas and only wet the neck and legs. If the horse takes as much as ten minutes or more to get down, it's a good bet that he's going too fast for his present ability. Your rider needs to know how long the recovery time is and adjust his goals accordingly. A recovery time of around five minutes or less is an indication that the horse is being ridden sensibly.

Any equine that takes more than 15 minutes to recover is probably headed for trouble, and by AERC rules any equine that takes over 30 minutes to recover is disqualified as "not fit to continue."

It is not a good idea to let the horse eat anything or to give electrolytes until after he gets vetted, as this often causes the pulse to hang. Sometimes it's best to walk him around slowly rather than letting him stand, especially if the pulse is still quite high.

Vets normally aren't concerned about the respiration count; it's the quality of the breathing rather than the rate that is important. A panting horse is preferable to one taking long gasping breaths. Panting could indicate, however, that the horse is overheating, so a temperature may be taken. Temperatures below 103 degrees are usually considered safe enough for the horse to pass the vetting. A few rides still require a specific respiration count to be met before getting an "in time." If you have a horse that pants you are always well advised to call the ride management ahead of time and find out how they intend to handle it (See Chapter Twelve).

Although some rides who have enough helpers in the PR area will give "courtesy checks," the usual practice at endurance rides is to have your "in time" written on your vet card as soon as you call. If the pulse timer counts you over the required maximum, then you may get a penalty of some sort. For example, you may not be allowed to ask for a check for another five /ten minutes. So be sure you are down before you call. If you are sure and you know the timer has miscounted, don't hesitate to ask for a re-check. Most

people will accommodate you on this. If they won't do so, you must accept their decision and try again later. You might also want to avoid that pulse timer for the rest of the day.

When you call for time, be as close as possible to whoever is going to check you. If you are right on 64 and have to walk more than a few steps, you may be up to 68 when you get there. Walk slowly and quietly to where you must go, and try to stay away from any commotion. Don't let the horse drop his head to eat, as this could also put him over. Attention to these details can get you a minute or more advantage over someone who isn't so careful, and sometimes this can ultimately be very significant.

After passing the pulse taker, the next step is to present the horse to the vet. Pay careful attention to his remarks, and if he asks you any questions, be completely honest in your answers. Always pass on any comments to your rider. When you get your vet card back, look it over. Usually there are spaces for all the various metabolic and mechanical factors to be graded. If you notice any low marks, you might want to ask the veterinarian how concerned he is about these conditions. What constitutes a "C" to one vet might be a "B" or a "D" to another, so it's best to ask if you have any doubts.

Interpreting metabolic conditions is not as easy as counting a pulse or knowing when a horse is lame, but the rider and crew should make it their business to learn as much as they can about it. Sooner or later you will find yourself in a situation where you will need to make your own judgments. In particular you should know if your horse is behaving uncharacteristically. What could normally be a cause for concern in most horses might not be significant with yours, and vice versa (See Chapter Twelve).

The Cardiac Recovery Index, or "Ridgway Trot" has proven to be a very useful tool for determining when a horse is becoming overstressed. Its unique value is that it detects problems at their onset, before other indicators register that a danger zone has been crossed.

The CRI is performed as follows. The horse's pulse is taken and the time is noted (for example, pulse 64; time=1:03:07). The horse is then trotted in hand approximately 125 feet (about 45 steps) away from a point and then turned around and trotted back. After 60 seconds have passed from the initial pulse taking, the pulse is re-checked. It should be no higher than the first reading (for example, pulse 64; time=1:04:07). An accurate pulse count is imperative or the test will not be valid. If the pulse has increased the second time it is checked, there is cause for concern. While a four beat per minute increase (64 to 68) is not alarming, as the increase grows so should concern. A 64 to 72 reading, for example, would be fair warning that the horse is in enough distress that continuing the ride would be risky. Generally speaking, if the veterinarian gets a poor CRI reading, he will ask the rider to come back again for a re-check. At that time the CRI would be repeated, and unless it had normalized, the horse would probably be pulled from the ride. The veterinarian would most likely evaluate the horse as a whole before making his decision, but poor metabolic readings or lameness inevitably seem to accompany a poor CRI.

Assuming that you have passed the vetting and everything is within normal ranges, you should take your card to have it marked for your out time. Be sure that your watch is synchronized with the official ride time, and that when you get your card back the correct time is entered. Even at the best of rides mistakes are sometimes made, so it pays to

check. Make a point of putting your card in the same place all the time. It's very easy to lose it in the rush of getting everything done.

If you haven't already done so, you can take the tack off now and give your horse electrolytes. (See Chapter 4.) As the horse sweats, he loses water and electrolytes (sodium, potassium, calcium, magnesium, and chloride). Losses and imbalances commonly result in cramping, and occasionally in colic and tying up. In the most extreme cases, death can result. Supplementation is designed to offset these problems just as drinking fluids such as Gatorade is designed to help human athletes. While there is some disagreement as to the dosage because of the impossibility of determining accurately the horse's needs during the ride, recent studies definitely show that the horse is losing water and body salts in large amounts. Naturally the dosage depends on the horse's constantly changing metabolic state. Theoretically there is a danger of over-concentration of the salts in the horse's stomach. In such a situation, osmosis would draw precious fluids out of already dehydrated tissues and into the gut, making matters worse.

If the horse is significantly dehydrated and has quit drinking, dosing with electrolytes could certainly be unwise; but when this state has been reached, it is time to withdraw from the ride in any case. Most veterinarians feel that under any other circumstances electrolytes do help. Further, many believe that it is dangerous to compete without them, especially in hot and/or humid weather. Even though there is no laboratory on the trail to measure the horse's exact needs, we know that he is losing water and salts. If the process goes on too long, imbalances could reach dangerous proportions. As long as the horse is still drinking, it is very unlikely to overdose by giving a few tablespoons at each check (See Chapter Twelve).

The most common method of administering electrolytes is by dissolving the powdered form with water. The mixture is put in a coke bottle, syringe or other convenient container and the horse is dosed with it. Molasses, applesauce, or other sweet tasting substances can be used instead of water to make it more palatable. For some horses it works best to mix powdered electrolytes with a small handful of feed. Usually it is more acceptable when it is dampened with water. Occasionally a horse will resist all efforts to give him electrolytes, and if he is forced to take them, will promptly sulk and refuse to eat or drink anything else for the remainder of the vet check. With this kind of horse it's best to wait until almost time to go back out on the trail before electrolyting. If the horse has not drunk very well at the check, it is probably best not to electrolyte him.

You can buy commercially prepared paste electrolytes that are more convenient to use, but they are expensive. Also, such products are usually designed for use on horses recently sick from disease. The reason for concern here is that such preparations are intended to correct a state of acidosis, whereas dehydrated endurance horses are in a state of alkalosis. Also, there are no indications on the tube of what dosage to use. Again, this would depend on the horse's current state of hydration.

A good procedure for the remainder of the rest period is to adjourn to the nearest patch of green grass and let the horse graze. If there is a creek or pond nearby, the grass along the banks is ideal. Such grass is especially high in moisture content, besides being a rich source of potassium. Particularly on hundred milers, when the horse goes virtually all day and part of the night with little to eat, grass is the best and safest way to keep the intestine

working. If no grass is available, dampened hay is a good second choice (see Chapter Four).

You should check the pulse at least once after the initial vetting to make sure that it is continuing to come down. Ideally, it should return to the 40's before time to go back out, but it's not unusual for some horses to hang in the high 50's or so, especially towards the end of the ride. Anything over the low 60's is a good indication that the horse has done about all he can, so beware of further stressing him. If you vetted out at 64 and you later find that the pulse has gone back up, especially if the increase is marked (72 or higher), it's very likely that you have real trouble brewing. In such a situation you should ask for veterinary help.

The color and flow of a horse's urine is an important indicator of his condition. Some horses won't urinate until they get off to themselves a little, and usually they prefer to be in tall grass or underbrush of some sort. The power of suggestion can also work wonders, so if your horse hasn't gone yet and you're concerned about it, be on guard for another horse that is urinating and then lead yours to that same spot. Watch especially for unusual color. Dark amber is probably OK, but coffee color is not. Port wine color is caused by the presence of myoglobin and is a result of tissue breakdown associated with cramping and tying up. Under no circumstances should you leave camp if your horse is in this condition. Ask a veterinarian for help (See Chapter Twelve).

Be aware that just because your horse is bringing up the rear in an endurance ride, it doesn't necessarily follow that he is under less stress than the others. There is so much variation in ability and conditioning that it can be harder for one individual to do five mph than for another to do fifteen mph. Actually horses running off the pace are just as likely to get into trouble as the leaders.

When it's about five minutes before time to go, tack up and get to the area where the trail leaves the vet area. Your rider can go as soon as he is released by the out timer. Once he is off, you can clean up the mess you probably made and start getting ready for the next check. If you plan to meet your rider at a road crossing somewhere between checks, get together the things you'll need and allow plenty of time to find the spot. Take a lot of extra water if you have containers, in case you encounter other competitors who might need some. In these cases, it adds to the fun of pit crewing if you share a ride with another crew whose horse is pacing with yours. Sometimes crews combine forces to cover several points where the riders cross roads. For example, one crew can meet riders at point A; another can meet them at point B. One of the attractions of endurance riding is that participants and crews generally can be relied upon to help each other out, even when it's inconvenient or downright dangerous. Loaning tack, shoeing the competitor's horse, braving the wilderness to retrieve a lost competitor during storm in the middle of a night, sacrificing a placing to help a junior rider finish - it's all part of the endurance riders' brotherhood. Hopefully, in our rapidly evolving sport, this is one feature that will not change.

III. PASSING FINISHING CRITERIA

As soon as the horse crosses the finish line, the crew should get the tack off and do the usual routine for getting the pulse down. Although you have up to an hour to reach criteria, it's wise to proceed as soon as possible to get your completion exam. Keep in mind that after any ride, but especially after a hundred miler, you are dealing with a very tired animal. Fatigued, dehydrated muscles are very prone to cramping and chilling. As soon as the pulse is down, it's wise to proceed immediately to get your completion exam, as the longer the horse stands around, the more likely he is to become stiff and sore. This final vet check will be like any other. The horse will do a CRI, must be metabolically and mechanically sound, and "fit to continue."

IV. BEST CONDITION

If you have finished top ten, you will also be eligible for the Best Condition award, and you will have to present your horse again one hour after finishing. How you deal with your horse during this period can be quite individualized. For example, if your horse has a tendency to cramp, you will want to walk him, massage him, put warm covers on his back and croup, and do whatever else you can to keep him loose. If your horse's pulse hangs until he urinates, and he won't go until he's left alone, you will want to put him in a secluded spot and go away. If your horse overheats easily and the day is hot, you are going to be looking for a lot of water. In short, you must cater to your horse's particular needs, and try to make him as comfortable and happy as possible.

If you don't have any special problems or concerns, the best thing to do is to let the horse wander and graze, just as you did during the checks. Take a few minutes to wash off the trail grime and brush out his mane and tail. Keep water at his disposal and give him a final dose of electrolytes (unless this upsets him, in which case you should postpone it). Provide dampened hay if there is no grass-dry feed can cause a dehydrated horse to choke. From time to time have him trot to warm him back up a little. Since BC judging involves trotting your horse in a straight line and circling in both directions, be sure you have schooled him at home in preparation for these tests.

V. POST RIDE CONSIDERATIONS

After the final vetting, if the pulse has returned to 60 or less, it's time to give the horse some hay and secure him for the night. You should also re-check the pulse at least one more time to make sure all is well. Before going to bed, give the horse his grain. Many people like to make a sloppy bran mash or beet pulp mixed with carrots, apples, and other treats, and the horses seem to love it. Even regular grain mixes can have water added and this also seems to meet with a favorable reaction. Naturally, plenty of water should be constantly available. A dry blanket will help keep the horse comfortable if the weather is chilly or wet.

If the horse's pulse begins to rise again after his post ride exam, it will be necessary to monitor his condition very carefully. Occasionally horses finish reasonably well only to develop problems later. The first warning sign is a rising pulse, and a vet should be consulted. Early detection and treatment can keep a minor problem from becoming serious.

The morning after the ride, you should trot the horse out. Give him at least ten or fifteen minutes of exercise before loading him up for the trip home. Look for any unusual filling or swelling, and in general try to get a fix on how he feels. Notice, for example, whether he ate his breakfast and how his stool looks. You expect an endurance horse to be tired after a ride, but if he looks exhausted you know he's been asked to do too much.

VI. TRAILERING HOME

If you have a long trip home, it's best to stop every four or five hours and give the horse an opportunity to get out of the trailer and walk around a little. Offer water and give him a few minutes to graze at these stops. If the weather is hot, be sure that the trailer is well ventilated. If you stop at a restaurant to eat, open all the windows and half doors to maximize air flow. By all means park in the shade. If the weather is cold, be sure the horse has a blanket.

As you can see, there is much more to pit crewing than carrying a bucket of water. The crew is an integral part of the team, and once you've mastered the trade you will have a job for as long as you like - possibly longer. And what is your return for this undying devotion? You'll get the satisfaction of knowing that the horse likes you a lot better than he likes his rider.

PIT CREWING...

THE MAKING OF IMMORTALS

CHAPTER TWELVE

Veterinary Considerations

Because of the potential for extreme stress that distance riding entails, it is vital that competitions be monitored by veterinarians experienced in this particular athletic pursuit. Their word is final in all matters pertaining to the safety and welfare of the horses. However, while their primary responsibility is to keep risks within reasonable boundaries, they function as much more than policemen or emergency room doctors. They also serve as counselors and coaches for the riders, helping them to get the best performance from their horses on any given day, and at the same time educating them on how to improve future efforts.

I. PRE-RIDE EXAM

The rider's first experience with the veterinarian will be at the pre-ride exam. This exam is usually performed on the Friday afternoon prior to the Saturday competition. The veterinarian's responsibility at this point is very simply to judge which horses are in satisfactory condition to start and which ones are not. The pre-ride exam is also the time when the vet familiarizes himself with each horse, noting on the rider card any peculiarities in gait or preexisting conditions that he feels might become more significant

as the ride progresses. From the rider's point of view, the pre-ride exam provides the first impression of the vet's expertise. Ideally it is a time for the establishment of mutual respect and good will.

Because it is so important for the rider to understand the significance of all the various tests that the vet can perform to determine the horse's condition, this chapter will attempt to explain it all in some detail. Once you understand how things work, it will be possible for you to make sound evaluations of your own when there is no vet around to help you.

At the beginning of the exam, a temperature may be taken. Normal temperatures range from 99 degrees F to 101.5 degrees F, with most horses at 100 degrees F to 100.5 degrees F. Any horse with a significantly elevated temperature will be closely evaluated to determine if that temperature is due to possible illness, or if it is more likely due to recent exercise or some other innocent factor.

The vet will next listen to the heart and lungs with a stethoscope. Most horses have a heart rate of 32 to 44 beats per minute. Anything over 44 would probably be viewed with concern unless the elevated rate could readily be attributed to excitement and "nerves." Many horses have some slight irregularities in their heartbeat, and these usually are not significant. Typically, the vet would simply make a note of it on the rider's card, and monitor it for adverse changes during the ride. If the vet detects any congestion in the lungs when he listens to the horse's breathing, he would doubtlessly inform the rider and disqualify the horse.

The hydration of the horse is checked by looking at the mucous membranes, capillary refill time, and skin elasticity. Sometimes horses arrive at camp already significantly dehydrated, and this can give the vet cause for concern. In these cases the rider would probably be given an opportunity to encourage the horse to drink over the next several hours and then have him checked again. During the course of an endurance ride, even a fit, healthy and fully hydrated horse is bound to undergo a great deal of fluid loss. Starting with one that is already in a deficit would not be safe, particularly if the dehydration were accompanied by other signs of metabolic incompetence.

For your part, in order to avoid having the horse arrive in camp in this condition, be sure he always has fresh water at home. Many riders like to give a dose of electrolytes before leaving home to encourage the horse to drink the water you should offer at least every four hours. Finally, don't make the mistake of overriding your horse the week before a competition. Always give him two or three days of very light exercise before a ride so that he will arrive at camp rested and at his fighting best - not exhausted from eleventh hour conditioning efforts.

The skin pinch is one method of determining hydration. It is performed by pinching the horse's skin with the thumb and forefinger over the point of the shoulder (not over the neck). In a fully hydrated horse, the skin will pop back immediately. As the horse becomes progressively more dehydrated, the skin will stay puckered up for progressively longer periods.

A capillary refill test is performed by applying thumb pressure to the gums, removing the thumb, and then observing the time it takes for the blanched area to return to the same color as the surrounding membrane. This test indicates the ability of the heart to replenish

its capillary system, and is a very important tool in assessing metabolic condition. Recovery normally takes less than two seconds at the pre-ride exam.

The mucous membranes that are observable are those of the inner eyelids and gums. Pink moist gums indicate proper blood perfusion of the tissue. Variations in normal include paler membranes, or membranes with a yellowish or grayish cast. Frequently the gums and membranes around the eyes do not coincide in color, with the gums being paler. Changes from the base line are usually significant.

Gut sounds are heard in the flank and abdominal areas. These sounds are perceived as slight, gurgling or rumbling. They will be recorded in the vet book as normal, hyperactive, slight, diminished, or nonexistent.

During the pre-ride exam the horse will be observed for tack related sores and palpated for excessive tenderness. Legs should be checked for overt problems, such as filling in the joints or tendons, interference marks, or other swellings suggesting that the horse might suffer harm from competing. Any minor problems will be noted in the vet book and observed through the ride for signs of degeneration. Progressive deterioration could be cause for elimination from the ride.

In evaluating soundness, the vet will want to see the horse trot in a straight line and perhaps in a circle to both the left and right. Grossly lame horses are not permitted to start a ride, but horses with slight irregularities of movement may be allowed to go. In the latter case, the veterinarian would try to determine whether competition would be likely to make matters worse. Horses with tendon, ligament or joint problems would be poor risks; horses slightly “off” because of muscle soreness or a cut would probably perform adequately.

In examining horses before the ride, obviously lame or sick ones are readily eliminated. In borderline cases, the vet is likely to let the horse start but keep a close watch on him during the ride. Most distance horses show some degree of wear and tear, and they are able to safely compete in spite of their accumulated liabilities. Endurance vets are aware of this and tend to make allowances.

II. RIDER BRIEFING

The veterinarian’s next responsibility before an endurance competition is to conduct a pre-ride briefing. During this briefing he explains how the vet checks will work and what recovery criteria the horse must meet before being allowed to continue. Usually rides require a pulse recovery somewhere between 60 and 68. The vet will specify the length of hold time for the various checks, a consideration which is usually worked out with the management. If the vet has any special concerns (bad weather, for example) he will advise the riders accordingly. Finishing criteria will also be explained at the pre-ride briefing, and any questions answered.

III. VET CONTROL DURING THE RIDE

A. Metabolic Factors

During the ride the vet will rely heavily on pulse recovery to assess fitness to continue, using the CRI as a valuable tool. (Chap 11). As a rule, a fit horse that is being ridden comfortably within its ability to perform will recover very quickly, often within a few minutes, to a heart rate of 64 or below. All horses not being overridden should recover to 64 or less within ten minutes. After a 30 minute rest, if the horse has not recovered to whatever pulse that particular ride requires, he will be eliminated. A more subtle indication of a horse's condition is the quality of the heartbeat. The pulse should be regular and strong, not wandering, faint or erratic.

Respiration rates vary widely depending to some extent on weather conditions. Some horses are "panters," and will show elevated breathing rates even at rest when the weather is hot and humid. Panting is not necessarily an indicator of trouble, but temperature should usually be taken on such horses to make sure they are not overheating, and the lungs should be auscultated (listened to with a stethoscope). As long as the temperature is below 103 degrees F, and as long as pulse and other signs of recovery are prompt and progressive, elevated respiration rates are generally not considered a problem.

All horses at work develop elevated temperatures: 102 degrees F to 103 degrees F is common and expected. However, once the temperature exceeds 105 degrees F there is cause for concern, especially if it fails to drop after the horse has had a chance to rest. Water can be effectively used to help the horse cool. In extreme cases ice water might be employed with good effect. Ice water, however, should be applied only to the large vessels of the neck and legs, as it is likely to cause cramping if used over the croup or back. Most rides require the horse to be no higher than 103 degrees F before he goes back out on the trail.

Some fit and otherwise competent endurance horses do not regulate heat very well; you will find out very quickly whether yours is one of these. Poor heat tolerance can manifest itself in many unpleasant ways, from cramping to colic or worse. It is a condition inherent in the individual and will probably become more pronounced as he ages. Horses that compete in hot climates, particularly if high humidity is also likely, are especially subject to risk.

The vet will check all the horse's hydration factors at each stop during the ride. You will find that when one of these metabolic indicators is poor, then the others will likely also be poor. Of all the hydration factors, capillary refill is probably the most significant. Capillary refill time prior to the ride is typically one to two seconds. During the ride, refill time of two seconds or less is ideal, but 2-1/2 to 3-1/2 seconds is usual and expected. A refill time of 5 seconds or more is alarming.

Mucous membranes in the fresh horse will usually be pink and moist, although slightly yellow or grayish gums are also sometimes noted. Variations from normal would be a paler, whitish color indicating inadequate perfusion; a bluish, cyanotic color suggesting inadequate oxygenation of the blood; or a dark brick red color suggestive of severe congestion of the membranes, with inadequate movement and oxygenation of the blood within these tissues. The brick red membranes associated with an extremely prolonged capillary refill is cause for great concern, because at this point the body's circulatory system is greatly compromised.

The skin pinch test on the shoulder as an indicator of hydration is usually not considered as important as either the capillary refill time or mucous membrane color. Generally speaking, however, the skin can be expected to rebound within 3 seconds, even at the end of the ride.

During a ride, especially during a 100 miler when horses go for long periods with little to eat, gut sounds usually diminish. However, reduced or absent gut sounds, if accompanied by other obvious signs of fatigue or distress, may indicate gut paralysis caused by clinically significant fluid loss and/or electrolyte imbalance.

You must remember that the heat produced by endurance exertion elicits huge amounts of sweat. When percent of humidity and degrees of temperature together total over 150, enormous and even critical amounts of fluids and electrolytes are lost. Hemoconcentration (decrease in the volume of plasma in relation to the number of red blood cells) reduces perfusion (oxygen and fuel delivery; waste and heat removal) and is the largest contributor to general exhaustion syndrome. Calcium depletion leads to muscle hyperexcitability as evidenced by “thumps” (synchronous diaphragmatic flutter) and muscle cramps. Potassium depletion leads to weakness and eventually to prostration.

Cramping and accompanying muscle pain generally take two forms. The first is a form still often referred to as “azoturia” and is usually the more serious. It commonly takes place early and suddenly after the onset of exercise. Its cause is multifaceted and still poorly understood. It can be related to feed program, hormone balance, mineral and electrolyte balance, or inability to remove lactic acid buildup rapidly enough from the muscles. In extreme cases, the horse will be very reluctant to move, and, if forced, will show great distress. The urine may appear port wine in color because of the release of myoglobin from damaged muscle cells. If this severe form occurs on the trail, you should send for help and wait where you are for it to arrive. Deep massage of affected muscles is helpful while you are waiting. If your horse urinates at a vet check and you notice that the urine is dark in color, you should ask a vet to take a look.

The less severe and non-life threatening form of muscle pain exhibits itself as muscle spasms or cramps and is most often noticed in the hind legs. This form usually occurs late in the ride and is commonly triggered by loss of fluid and electrolytes from heavy exertionally induced sweating. Massage, careful replacement of fluids and electrolytes, and rest, will usually take care of the problem. With early recognition and care the horse might be able to continue.

A very useful tool for determining whether or not to let borderline cases out of a vet check is the Cardiac Recovery Index, otherwise known as the CRI or the Ridgway trot. A full and detailed explanation of the CRI is given in Chapter Eleven. Aside from the various tests that can be used to evaluate the condition of the horse, the veterinarian will also use his powers of observation, just as you should. Some degree of dullness in expression and manner, some loss of spring to the gait, and some inattention to the rider's aids, for example, are signs of general fatigue that can be expected. However, when these signs progress to the extreme, disaster can result. Obvious indications of crisis include dark red, congested gums, cold extremities, capillary refill delayed beyond 5 seconds, gasping respiration, pulse persistently above 70, disoriented behavior, unwillingness to

move, obliviousness to pain from insect bites or the rider's aids, and loss of interest in food or water.

B. Mechanical Factors

Just as is the case at the pre ride exam, an obviously lame horse is readily disqualified at the vet check, while a marginally lame one will require a judgment call. There are occasions when a horse that only takes one or two questionable steps will be eliminated because the vet feels that continuing the ride could cause irreparable damage to the horse (by damaging a tendon or ligament, etc.) On the other hand, a horse that shows a consistent slight limp might be allowed to continue if the lameness is clearly due to a superficial injury, loss of a shoe, or some other temporary and relatively insignificant factor. Any lameness that increases in severity during the ride is cause for disqualification.

IV. POST RIDE VET EXAM

All horses must pass a post finish line vet check in order to earn a completion. According to AERC rules, all horses should recover to a pulse of no greater than 68 within one hour of finishing the ride. (Some rides announce stricter rules before the start.) They must not have required veterinary treatment and they must be sound at the trot. In all AERC sanctioned limited distance rides, the horses must recover to a pulse no greater than 60 within 1/2 hour of finishing. Additionally, novice horses must be judged "fit to continue." This means that they must have satisfactory recovery in all metabolic parameters, and they must not have "an irregularity of gait consistently observable at a walk and/or a trot...." if that "irregularity is thought to cause pain or threaten the athletic future of the horse."

V. BEST CONDITION EXAM

The highly coveted Best Condition award is decided according to a formula which takes into account the riding time, weight carried during the ride, and condition as determined by the vet score. Only the first ten horses to finish are eligible for this award. The veterinarian may elect not to give a Best Condition award if he feels there are no horses in good enough shape to deserve it. The weight and time is included to account for the amount of work the horse was required to do. Clearly, a horse that finished a ride in four hours worked harder than one that finished in six. Likewise, one that carried 200 lbs. worked harder than one that carried 120 lbs. The weight/time/vet score formula tries to balance all the factors, but the emphasis is heavily on the veterinary evaluation.

There is a total of 800 points available, that is, a horse who finished first, carrying the heaviest rider, and who received a perfect vet score, would get 800 points. 100 points of this is in the weight category. A horse carrying the most weight automatically gets 100 points. All others get deducted 1/2 point for each pound less than the heaviest rider weighed. For example, if the heaviest rider weighed 230 lbs., that horse would get 100 points in the weight category. If the next heaviest rider weighed 170 lbs., that horse would get 70 points (because he would get $230 - 170 = 60$; $60/2 = 30$; $100 - 30 = 70$).

There are 200 points in the time category. The horse that finishes first gets maximum points. All others get a deduction of 1 point for each minute they finish behind the first horse. For example, if the winner finished in 4 hours he would get 200 points. If the second place horse finished in 4 hours and 30 minutes, he would get 170 points ($200 - 30 = 170$).

The remaining 500 points are in the vet score. The BC form for this section is broken down into two major divisions; namely, standing evaluation and moving evaluation.

The standing evaluation is subdivided into:

- | | |
|--------------------------------------|----------------|
| 1. Recovery | 1 to 10 points |
| 2. Hydration | 1 to 10 points |
| 3. Lesions Producing Pain/Discomfort | 1 to 10 points |

The movement evaluation is sub-divided into:

- | | |
|------------------------|----------------|
| 4. Soundness | 1 to 10 points |
| 5. Quality of Movement | 1 to 10 points |

Each of these scores is multiplied by 10, so there is a 100 point maximum in each subdivision. Totals from these 2 divisions are added to weight and time scores to arrive at the final grand total.

Although the weight and time factors are entirely objective, this is not the case for the veterinary evaluation. The degree of subjectivity of this award obviously varies, not only according to the ability of the attending veterinarian to recognize the horse's true metabolic and mechanical condition, but also according to that vet's opinions about which factors are more important and which ones are less so. Having put those cards squarely on the table, let us turn to the Best Condition form and review some of the ways horses logically earn or lose points.

1. Recovery: As you have already learned, the ability of a horse to recover promptly and progressively to a low heart rate is an excellent indicator of both his immediate condition and of his fitness to continue. Thus a horse that could recover to a rate of 56 at the one hour post ride B.C. check would get a better score than one that recovered to 60. Further, the AERC Veterinary Committee recommends that the Cardiac Recovery Index (taken either 10 or 15 minutes after crossing the finish line) be used as an adjunct in scoring pulse recovery. This measurement is not usually used to eliminate the horse from the rest of the B.C. exam; however, if the recovery pulse were borderline to start with (for example, if the recovery pulse was 68 in a ride requiring a recovery to 68), and then the CRI were also poor (68-72 for example), many veterinarians would not feel the horse should be considered. Respiration rate per se is of little value in the scoring. However, evidence of pulmonary congestion or difficulty in breathing is scored heavily against the horse. Body temperature, like respiration, is of limited value in scoring recovery unless it remains over 103 degrees F. at the one hour exam.

2. Hydration-The parameters used to evaluate hydration include mucous membranes, capillary refill, gut sounds, skin rebound and jugular refill. How to evaluate these factors has already been discussed. A fully hydrated horse should receive maximum points and a severely dehydrated one should receive few points, if any. Once again, the vet has the discretion to excuse any horse from BC judging that he finds to be overstressed.

3. Lesions Producing Pain- In determining the horse in best condition at the time of examination, the exhibition of pain is of marked consequence. It is not totally a question of whether the pain is long or short term, but how much pain the lesion is creating at the time of examination. In the case of B.C., the horse is being compared with the other eligible horses, as well as against the standard of a sound and metabolically normal horse. Swellings and/or heat in joints, tendons, ligaments, and backs are considered in this category. Also important are cuts and burns from tack rubs, interference marks and collisions with trail debris. Clearly, damage to bones, ligaments and tendons is extremely significant, although horses with this type of problem would likely be lame and therefore not eligible for consideration in the first place. A back raw from tack rubs or sore from muscle strain, though not life threatening, can cause a horse great pain and discomfort and therefore is normally scored strongly against him for purposes of B.C. Interference marks can be slight or can be extremely painful. In some cases interference can be so severe as to be crippling. Scratches from close encounters with sticks and stones are not especially significant; on the other hand, deep cuts or collisions so severe that they cause pain and swelling can't be ignored.

Different veterinarians are obviously going to attach different clinical significance to some of these items - based on their experiences and philosophies - and thus are going to score differently in this category.

4. Soundness: A lame horse is automatically disqualified from B.C. consideration, so it may seem odd that this category exists at all. An explanation is in order. For the sake of convenience, equine veterinarians classify lameness into grades. Grade I is the mildest form; Grade V is the most extreme.

Grade I is defined as: lameness difficult to observe. Not consistently apparent regardless of whether the horse is circling, going up or down a hill, trotting on a hard surface, etc. Grade II is defined as: lameness difficult to observe at a walk or trot on a straight line, but consistently apparent under certain circumstances (such as circling etc.). Grade III is defined as a consistently observable lameness at a trot under all circumstances. Grade IV is defined as an obvious lameness with marked nodding. Grade V is defined as: minimal weight bearing on one leg, or inability to move.

Grades III to V are automatically excused from BC judging; Grades I and 2 usually are not. The "soundness" score should reflect the significance of the gait impairment as well as the degree of impairment at that moment. A horse that merely has a peculiar way of going may appear slightly "off," so it is very important for the vet to have made notes, whether mental or otherwise, about how each horse moved at the pre-ride exam.

5. Quality of movement: This category judges the amount of impulsion or "spring" left in the horse's gait, as well as his willingness to trot in hand. A horse that drags back or needs outside urging to trot will be penalized. It's up to the rider to school the horse to trot out promptly in hand so that he doesn't lose points unnecessarily in this category.

The horse should trot freely both in a straight line and in a circle. In judging impulsion, the vet must be able to differentiate between a tired horse and one that is just a poor mover. Once again, he will have to compare the post-ride trot with the pre-ride trot to arrive at a valid deduction.

VI. CONCLUSION

The object of this chapter has been two-fold. First, it has attempted to enumerate the veterinarian's duties from the pre-ride exam through the Best Condition evaluation. Secondly, it has sought to explain, as specifically as possible, the various metabolic and mechanical factors and their relative importance. As the ultimate guarantor of the horse's safety, it is important that the rider understands these evaluations and takes on the responsibility for learning how to make them himself. Remember, the horse you save may be your own.

The Endurance Rider's Prayer...

"Lord, let me ride this ride in such a way so that afterward, when I tell about it, I won't have to tell a lie."

APPENDIX II

GLOSSARY

Aerobic: A horse's muscular system getting energy from a chemical reaction using oxygen, delivered by the blood. Can continue as long as enough fuel and oxygen are available.

Anaerobic: A horse's muscular system getting energy from a chemical reaction not using oxygen. Used for short burst of high speed, quickly builds up toxins and exhausts the muscles.

Anaerobic threshold: The speed at which a horse's muscular system changes from aerobic to anaerobic reactions; the highest speed he can maintain for a long distance.

Anal Tone: The muscle tone of the anus; loss of anal tone is a sign of fatigue.

Arrival Time: The time a horse and rider physically arrive at a vet check.

Azotouria: see Tying Up.

BC: Best Condition.

Best Condition: An award based on the horse's physical condition as determined by the ride vets, riding time, and weight carried.

Borium: a hard material applied to horseshoes, for greater wear and traction.

Cantle Bag: A storage pack attached to the cantle of the saddle.

Capillary Refill: The time, in seconds, it takes the horse's gum to return to a pink color after it has been blanched with thumb pressure.

Cardiac Recovery Index: A metabolic evaluation where the horse's pulse is taken, the horse is trotted out 125 feet and back, and the pulse is taken again exactly one minute from the beginning of the trot. Failure of the pulse to recover to or below the original value is an indication of potential problems.

CRI: Cardiac Recovery Index, explained above.

Crupper: A device attached to the saddle and running under the horse's tail to keep the saddle from sliding forward.

Dehydration: Loss of bodily fluids through sweating, without adequate replacement by drinking. An endurance horse on a hot day can lose over 50 pounds of water. Necessary electrolytes are lost, too. Excessive dehydration can be life-threatening.

Easyboot: A clamp-on, nail-less alternative to iron horseshoes. Easyboots are used in place of or over iron horseshoes for cushioning, traction and protection. Most riders also carry an Easyboot as an emergency spare tire for when a horse loses a shoe.

Electrolytes: Ions of Salts, necessary for bodily functions and lost in the sweat. Excessive loss can cause cramping, "thumps," and even become life threatening. Commonly these are Calcium, Sodium, Potassium, Magnesium, and Chloride.

Elevator: A ride which allows riders starting one distance to change to a longer distance ride upon completion of the shorter.

Endurance Ride: A ride of 50 or more miles length, held over a specified course under strict veterinary control, with no minimum time limit.

Fanny Pack: A storage pack carried around the rider's waist.

Fartlek: speed play, a type of conditioning utilizing randomly mixed speeds and distances.

Fixed Hold: A type of vet check where the horse remains a fixed amount of time between his arrival time and his out time.

Founder: see laminitis.

Gate: A type of vet check where the hold time does not start until the horse recovers to the set pulse criteria.

Grade I Lameness: A barely discernable lameness seen inconsistently or intermittently while the horse is being trotted.

Grade II Lameness: A slight, inconsistent lameness that usually is more consistent when the horse is trotted in one direction and is non-existent or almost unobservable when the horse is trotted in other directions.

Grade III Lameness: A consistently observable lameness when trotted in all directions resulting in disqualification.

Gut Sounds: The sounds of the intestinal system (random gurgling noises). Often diminishing with fatigue, their total absence can indicate a serious metabolic problem with the horse.

Hold Time: The time a horse and rider must remain in a vet check.

Interval Training: Repeated short bursts of high speed interspersed with recovery periods; an advanced conditioning method for horses that already have a solid LSD foundation.

IV: Fluid given intravenously to a sick or dehydrated horse; may contain electrolytes and/or medications.

Laminitis: Inflammation of the laminae of the hoof. Extremely painful condition requiring immediate veterinary treatment, as it is life-threatening. Early signs are heat in the hooves and a “tucked up” stance where the horse holds his hind hooves close in under himself and the forefeet out in front.

Limited Distance Ride: A ride of 25 to 35 miles length, held in conjunction with an Endurance ride as a training ride for novice riders and young horses.

LSD: Long Slow Distance, the fundamental conditioning tool.

Novice Ride: See Limited Distance Ride.

Mucous Membranes: The inside of the mouth, eyelids, etc. Their color and moisture are signs of dehydration and fatigue.

Out time: The time a horse and rider are authorized to leave a vet check.

Panting: Rapid, shallow respiration that a horse uses to help cool himself. Not a sign of any problem if the horse’s other parameters are good.

Pit Crew: People who assist the rider and help care for the horse.

Post-Finish Vet Check: The vet exam after the finish line; the final exam before a horse qualifies as completing the ride.

Pre-Ride Vet Check: The vet exam before the start of the ride, where the fitness of the horse to compete is determined.

Pulled: Disqualified from the ride; not permitted to continue riding.

P&R: Pulse and Respiration. Although the term P&R is generally used to describe recovery at gates, only the pulse is required to reach a fixed criteria for the hold time to begin. As some horses pant, respiration is evaluated by the vet during the vet exam.

P&R Crew: Ride officials who check the horse’s pulse and respiration rates at a vet check.

P&R Time: At gate type vet checks, the time the horse is presented for his exam.

Road Founder: Founder (laminitis) caused by concussion, usually from too much high speed on hard surfaces during a ride. May take several days to show up after a ride, and in severe cases is life threatening.

Riding Time: The time from the start of the ride until the horse and rider cross the finish line, excluding the hold times.

Skin Pinch Test: A test for dehydration; pinch a fold of skin between your fingers and note the number of seconds it takes to flatten back out. The longer the time, the greater the dehydration of the horse. Over three to four seconds indicates potentially serious dehydration. To be accurate on endurance horses, this test should be applied at the point of the shoulder, not up on the neck.

Stop & Go: A gate type vet check with no hold time; as soon as the examination is successfully completed the rider can leave.

Thumps: A rhythmic contraction of the diaphragm muscles, in time with the horse's heartbeat. Caused by electrolyte imbalance.

Timer: Ride official who records arrival and P&R times and clocks riders out of vet checks.

Trot-By: A vet check where the riders ride past at a trot and stop only if asked to do so by a ride official. Vets observe the horses as they pass, primarily for lameness.

Trot-Out: A process where the horse is trotted in hand for inspection by the vets, usually done at vet checks.

Tying Up: A life-threatening condition (azotouria), usually occurring in the first few miles of a ride, where a horse's muscles cramp so badly he can barely move. An emergency requiring immediate veterinary care, and not moving the horse. Not to be confused with cramping, which occurs after many miles of stress.

Vet Check: A checkpoint along the trail where the horses are examined by ride veterinarians to determine their fitness to continue. See Chapter Nine.

APPENDIX III

ADDITIONAL SOURCES OF INFORMATION

WEBSITES

Since the publication of the last handbook, there has been a wealth of horse-related information added to the web. A few are listed here to get you started.

www.freerein.com/haynet. A nearly exhaustive list of equine resources.

www.horse-country.com. A gigantic list of veterinary resources.

www.equiresource.com/Equiresource/index.htm. Expert shoeing, training and veterinary advice.

National Trail Page - www.mindspring.com/~n9giv/trlmain.htm. Listing of riding trails by state.

www.endurance.net. Endurance riding resources and ride camp.

For ride results - www.doublejoy.com/rides/rideresults.asp

BOOKS AND PERIODICALS

Beating Muscle Injuries for Horses, Meagher, Jack (1985). Hamilton House Associates, Hamilton, MA.

Chronicle of the Horse, P.O. Box 46, Middleburg, VA 20118

Complete Guide to Endurance Riding and Competition, Donna Snyder-Smith, Howell Book House. Available at tack shops, bookstores and the AERC office.

Endurance News, American Endurance Ride Conference, 11960 Heritage Oak Place, Suite 9, Auburn, CA 95603

Endurance Riding from Beginning to Winning, P. Ingram and Lew Hollander, P.O. Box 100, Richmond, OR 97756

Equus, P.O. Box 420077, Palm Coast, FL 32142

Improve Your Horse's Well Being, Steps to TTeam Training, Linda Tellington-Jones, Trafalgar Square Publishing, North Pomfret, VT 05053

Veterinary Manual for the Performance Horse, Nancy Loving, DVM, Equine Research, Inc., P.O. Box 535547, Grand Prairie, TX 75053

The Horse, P.O. Box 4690, Lexington, KY 40544-9944

Trailblazer, 4284 N. Gelding Dr., Prescott, AZ 86314

The Southeast Horse Report, P.O. Box 10329, Brooksville, FL 10329

Winning Strategies for Endurance Racing, Courtney Hart. Available for sale by contacting the AERC National office.