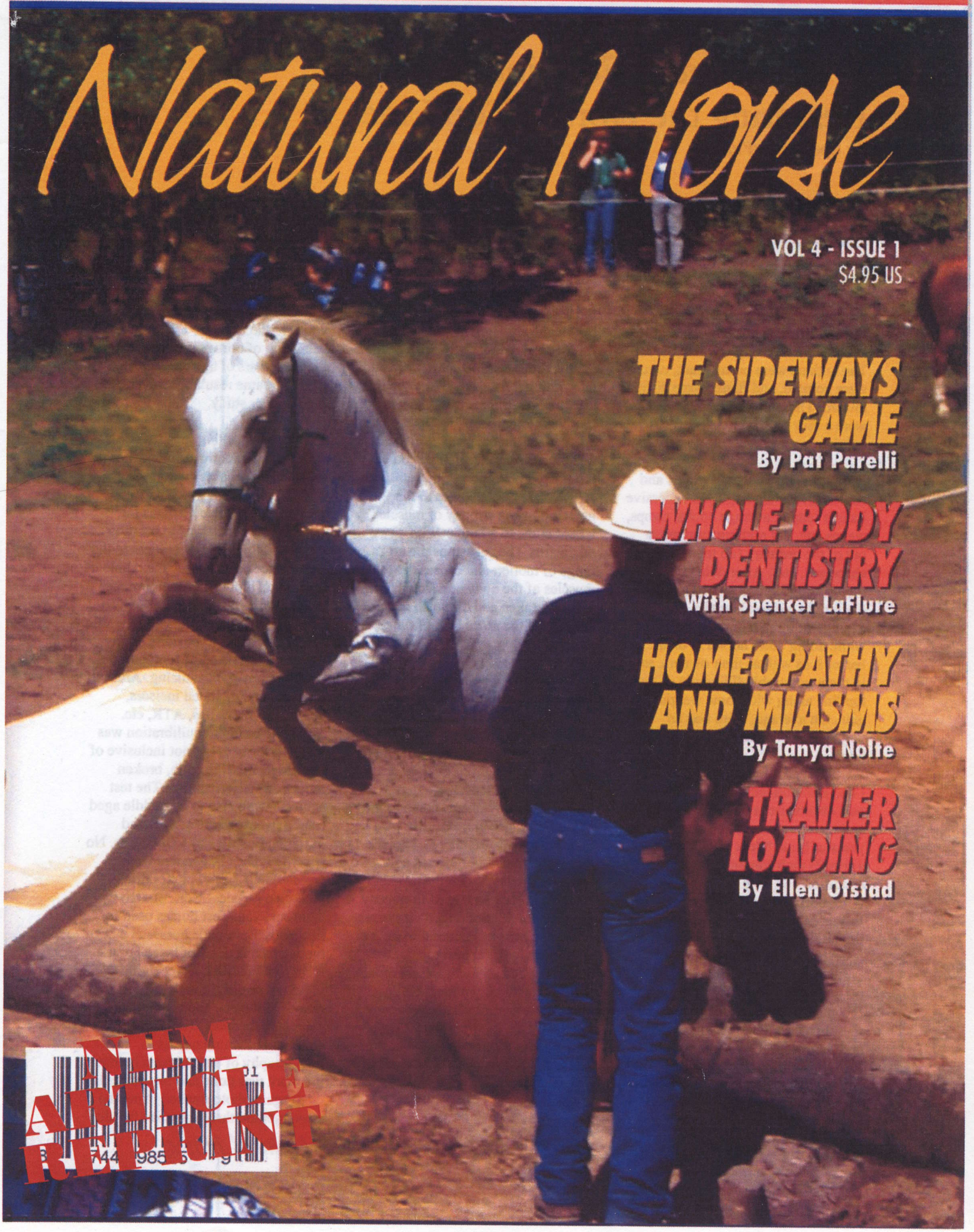
A PUBLICATION FOCUSING ON HUMANE AND NATURAL CARE FOR HORSES AND OTHER ANIMALS

Natural Horse

VOL 4 - ISSUE 1
$4.95 US



THE SIDEWAYS GAME
By Pat Parelli

WHOLE BODY DENTISTRY
With Spencer LaFlure

HOMEOPATHY AND MIASMS
By Tanya Nolte

TRAILER LOADING
By Ellen Ofstad

Whole Mouth Equilibration: Restoring the Horse's Top Line

By Spencer LaFlure

INTRODUCTION

Throughout my travels during the past few years as a Certified Equine Dentist, I have noticed that with my new patients, especially those ten years of age and older, in many cases the entire top line of the horse showed extreme atrophy, especially at the withers, croup and flank areas. The withers were protuberant, croups were pointed, and flanks were dished inward. These horses' body scales were a four or even five in my opinion.

During the initial dental exams and charting, they all displayed excessive incisor length, average hooks, ramps, waves, etc, but nothing extreme or out of the ordinary (no tooth loss, abscesses, etc). After doing whole mouth equilibration and balancing (including incisors), within an average of three months time, and while doing other horses at their barns, I, as well as their owners, saw in them noticeable filling out of the top line along with some weight gain. On average, there was an upgrade of two scale points for each horse.

I had also noticed, through my own past observations of horses aged ten and up at my ranch, that after several years of basic "float work" (done by a friend) their top line muscular condition had little or no change. After becoming a dentist, I did Whole Mouth Dentistry (most importantly incisor work and equilibration of molar tables) in order to facilitate the freedom of motion of the lower jaw. Within a few months time I visually saw the muscle increase in the withers, croup and flank as well as some weight gain. In addition to our horses, I constantly observed, in repeat visits to customers, the same results, which led me to this study.

I believe proper equine dentistry will take an out-of-condition horse with a weak top line and restore the physical condition of the body. I feel when the lower jaw or mandible of the horse does not have forward-backward-left-right movement to its fullest range of motion, it hangs up the movement of the entire head and neck going right through the top line, affecting the trapezius thoracis muscles along to the gluteus medius and then to the biceps femoris and quadriceps femoris. Hence, you get a top line with atrophy of muscle. This atrophy of muscle comes to the horse's body as atrophy of muscle would come to a human with a cast on an arm. The cast stops the arm's range of motion and causes the other muscles of the body connected to the arm to weaken and diminish in size because of the arm's lack of range of motion.

I also feel that a horse with a body scale of between five and seven (exempt of any clinical ailments) with more muscle mass would be healthier and perform better than one that is underweight or overweight with atrophy of muscle.
I have had many clients come to me in the first place to do dentistry on their horse because they had horses that were under-conditioned and underweight, also with the top lines atrophied. They first tried to remedy the situation by flooding their horses with supplements resulting in little or no change in the appearance of the horse. I ended up doing whole mouth dentistry with very noticeable changes in the horse's body, especially the top line. They then told me that they realized the cost of the dentistry was cheaper than all of a year's worth of expensive supplements.

In this study, my intent was to show through a unique measuring science called "terrestrial photogrammetry" that a routine equilibration and proper balancing of a horse's mouth, including incisor reduction, will result in a noticeable increase in the width of the top line. I think proper balancing of horse's mouths younger than ten years of age would also have the same result. However, that is for a later study.

The duration of this study took place over a three-month period of time only because that is what my busy schedule would allow. This study was the tip of the iceberg, as they say, and my intent was to bring to the general public's awareness to the importance of balancing the whole of the horse's mouth as I feel it relates to the whole of his body.

The dental work to be done on my test cases consisted of routine equilibration and balancing. Areas to be addressed included incisors, hooks, waves, ramps, ATR, etc. Moderate or light equilibration was to be performed, but not inclusive of abscesses, missing teeth, broken mouth or malformations. The test subjects were also to be middle aged (ten to twenty years of age) and initial body scales of four or five. No specific breeds or genders were targeted. Also, only horses doing moderate physical work or activity were selected. Test horses used for this study were dude horses at a near by ranch resort. All of these horses were first qualified as receiving regular worming, consistent food, rations and diets, and routine exercise schedules. The testing consisted of simultaneous photography of test subjects before the work was done and test subjects were again photographed using the same method three months after the

work was done. The photography was done with two cameras taking two views of the same subject at the exact same time. Points to be measured were the withers, barrel, croup and flank areas.

In total, I projected there would be a minimum of 10% overall mass growth on test subjects in the specific points of measurements as stated above, from the initial measurements to the final measurements. While this is not an overall body mass percentage of growth, the areas targeted (withers, croup and flank) are specific to maximizing development and enhancing the physical capability of the horse. These are the areas, I feel, that should be of primary concern to the horse owner (i.e., stronger top line equals better performance and stamina). These areas are where the rider is carried, and better strength and flexion are qualities that are all necessary to have the horse perform to the best of his athletic ability.

DENTAL RESTORATION

The nature of pathology of each test subject, generally speaking, involved excessive incisor length and angle. Some subjects displayed wedged incisors, others excessive smiles and some had waved incisors.

A range of lack of lateral excursion was from forty-five percent at its best, to eighty-five percent at the worst. Molar tables had hooks, ramps, protuberant molars, and waves, some more so than others. Also, on average, horses lacked forty-five percent occlusion of molars. One horse (Nose) had a fractured molar, but the tooth was healthy and did not need to be extracted.

TMJ's showed stress and strain. Some TMJ's were protuberant and some clicked. Some had a little heat. A number of lower mandibles had retained dental cysts. Charlie had two wolf teeth extracted. Donnie had a blind wolf tooth that was extracted.

For the purpose of this study, the typical work done was incisor realignment and re-balancing of molar tables. I achieved ten to twelve degree angles in the incisors and ten to fifteen degree angles of molar tables. Molar tables were restored to seventy percent occlusion or better in all test subjects.

A variety of hand and dremel instruments were used to perform the work along with the Jeffrey gag speculum and full mouth speculum. On average, work took from one hour to one hour and a half to do. There were no complications. All mouths were fine three to five days after the work was done.

TEST SUBJECTS

A total of fourteen test subjects were used for this thesis. They were horses owned by Thousand Acres Ranch Resort in Stony Creek, New York. All were grade horses with similar builds and heights, ranging in ages from ten to twenty years of age. All happened to be geldings. These horses had been at the ranch for four years or more. During this time, they had received no dentistry of any kind, let alone Whole Mouth Dentistry. These horses had less than average physical builds, all with body scores of four and five. For these reasons they were selected for this study by the corral boss, Jack Rowe. None of these horses had any physical disabilities and or ailments before or throughout the course of this study. Regular hoof care, shots, and worming had been done with rotations of wormers at proper intervals.

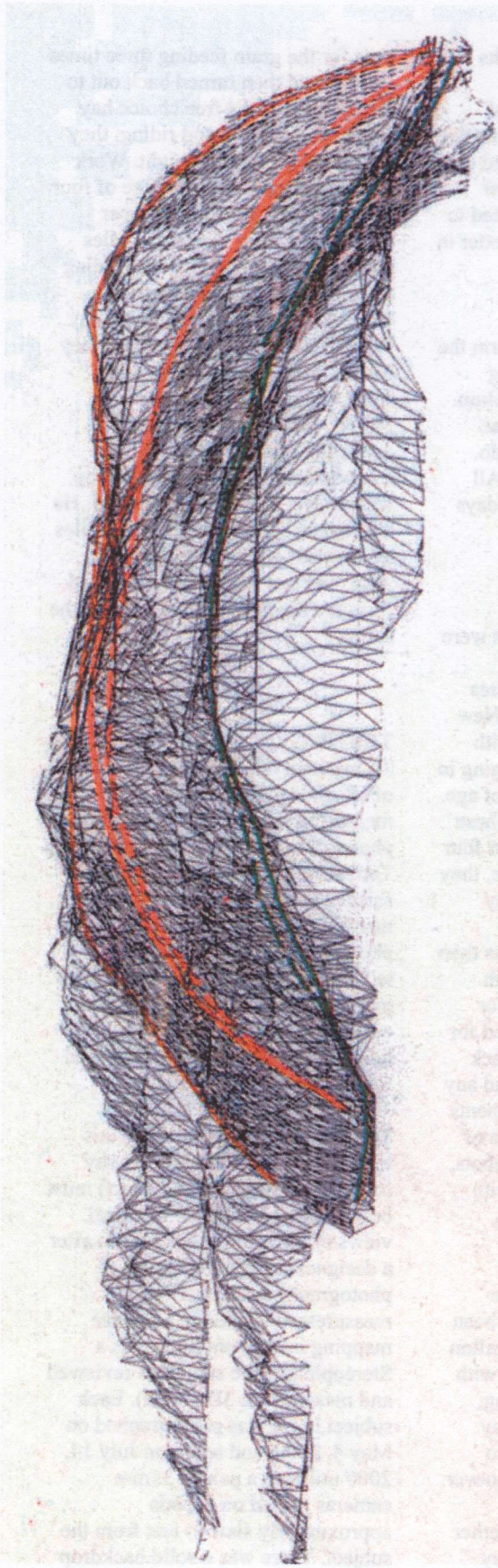
All horses maintained the same feeding program that they had been receiving – 12% protein, one gallon and a half per day of the grain with three feedings per day (morning, noon and night); free choice hay consisting of mixed grasses. No supplements were given whatsoever.

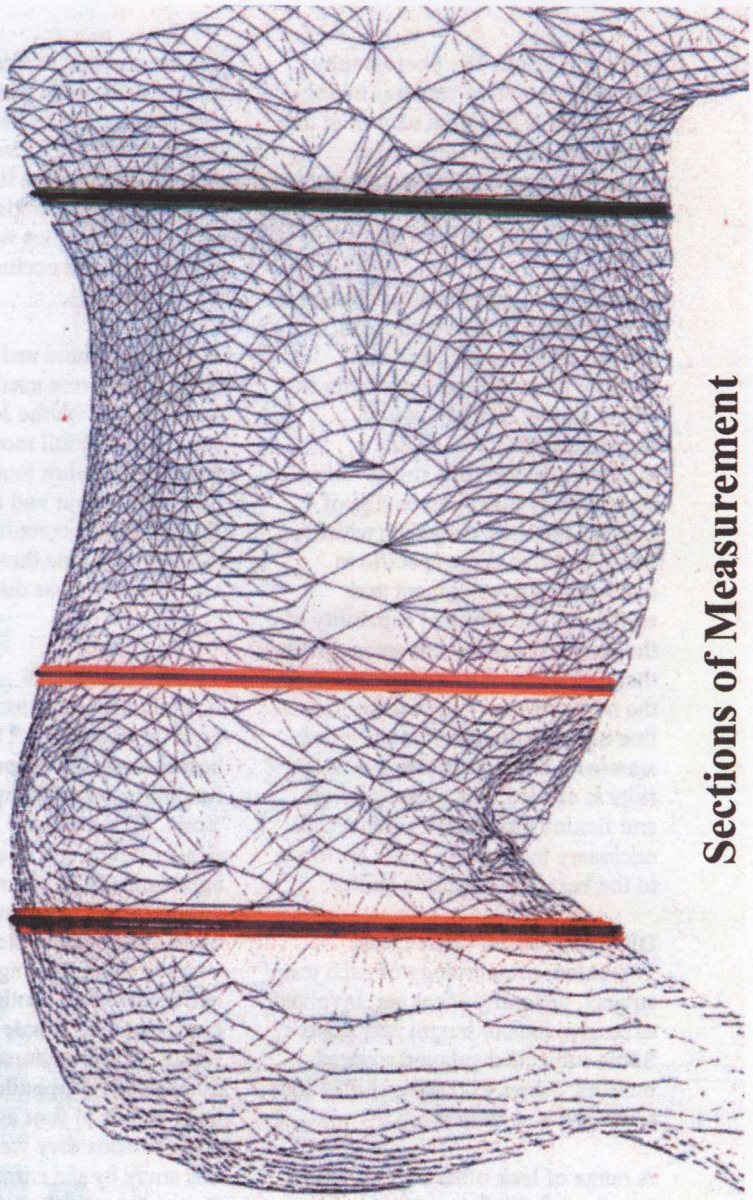
All horses were turned out together in several acres of pasture. They were run into straight stalls in the barn for the grain feeding three times per day and then turned back out to the pasture for the free choice hay. Other than feeding and riding, they stayed out all day and night. Work for these horses is an average of four hours per day, for four days per week. They wear western saddles and do light to moderate trail riding on hilly to mountainous terrains. They ride the same trails every day. We chose these horses because they had so many constants: feeding, work, living conditions, care, etc. NOTE: Just before the final collection of test results, our test subject Jack's Horse began to drop weight. He, only, was rewormed. He also began showing many cuts, bites and bruises on his body and legs. Also, one test horse was purchased from the ranch prior to the end of the study.

TESTING

To measure the changes in body type of all subject horses, a unique measuring science called "terrestrial photogrammetry" was utilized. Terrestrial photogrammetry is the science or art of obtaining reliable measurements by means of photography. This measuring technique is widely used in the medical fields for monitoring and evaluating body types in both humans and animals. It is also used for special effects for TV.

To evaluate change, utilizing this technology, pairs of photography (two views of the same subject) must be compared to pairs of identical views of the same subject taken after a designated period of time. All photography is viewed and measurements taken in a precise mapping instrument known as a Stereoplotter (the subject is reviewed and measured in 3D vision). Each subject horse was photographed on May 4, 2000, and again on July 14, 2000 utilizing a pair of 35mm cameras placed on tripods approximately sixteen feet from the subject. There was a solid backdrop behind the subject. The cameras



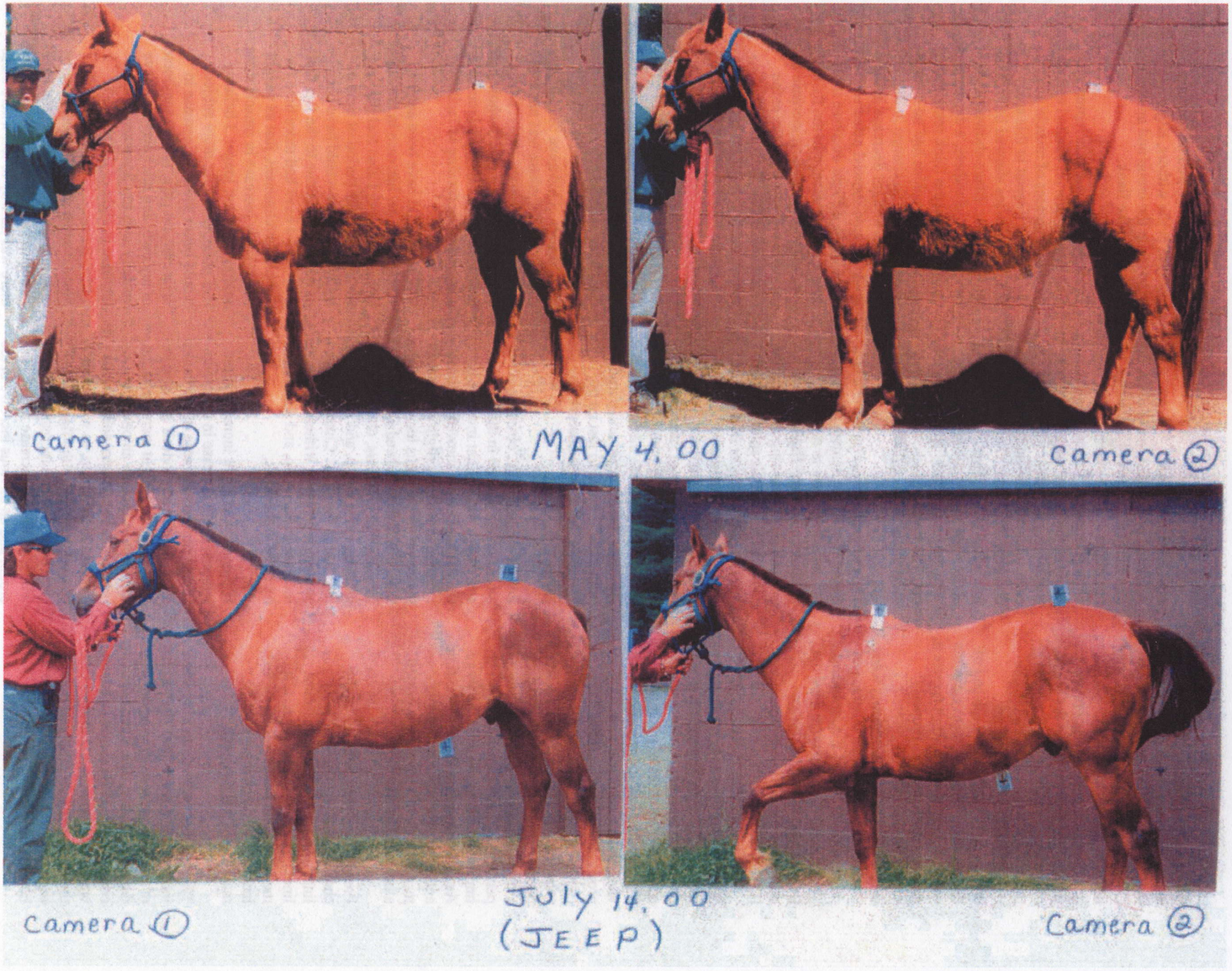


Sections of Measurement

Subject horse = Jeep

Profile ——— May 4,2000

- - - - - - July 14,2000


Camera ①
MAY 4, 00
Camera ②
Camera ①
July 14, 00
(JEEP)
Camera ②

were placed approximately six feet apart. This resulted in photography that was later viewed as a 3D image. Control targets were placed on each horse at precise locations. These locations being: first target placed five inches dorsally from the break of the neck, the next target placed at the highest point of the croup, and the next target placed at the underside of the barrel at the end of the rib cage. Then the measurements were taken between control targets to ensure each horse was properly scaled for comparison measurements. Measurements were taken on one side of each horse and reduced to X, Y, and Z coordinates. These X, Y, Z coordinates were then transformed to true 3D images utilizing Digital Terrain Modeling (DTM) Software.

Software profiles were taken at three locations of each subject horse, plotted by computer and compared to each other by dates of photography. The results of all gains or losses were shown graphically as 3D profile lines. These profile lines (withers, croup and flank) were selected to be measured in this study because these areas of the horse, after whole mouth dentistry was performed, have shown visual improvements to me over the years. As I have watched these horses time and again, the same noticeable muscular development was present along the top line.

Profile lines were denoted on the charts as withers (forwardmost lines), croup and flank (rearmost lines). Another area that was also measured, the barrel (middle lines), had little or no change in the majority of test subjects.

The results of tests from May 4 are indicated in a solid line. The results of the July 14, tests are shown on a dotted or broken line. Then the comparisons of these measurements were made through 3D images that the computer superimposed upon each other to show the differences of before and after.

CALCULATIONS

As stated previously, calculations of this study were arrived at through the use of the science of terrestrial photogrammetry. Printouts were made of the tins of each individual test subject as well as pictures of each subject before and after dentistry was done. The tins of each individual are as if you were looking at the right side of the horse in 3D, with the hindquarters slightly angled out. The focus of these calculations is on the top line of the horse.

The designated areas on the chart Sections of Measurement Chart are the areas important to this test (withers, croup and flank), which one can see by viewing each section of dotted line versus solid line, the increase, sameness, or decrease in measurement. Calculated measurements from these computer images were those of fractions of an inch. The computer could calculate and spit out all those measurements. However, for all intent and purpose of this test, I opted to just go by spaces between lines observed by the naked eye.

For the subject Billy, obvious increase was noticed in the withers and croup, and a slight increase in the flanks. Donnie showed obvious increase in withers, slight increase in the croup and obvious increase in the flanks. Whiskey showed slight increase in the withers, obvious increase in the croup, and slight increase in the flank. Charlie showed obvious increase in withers, slight increase in the croup, and slight increase in the flank.

Hippy showed slight increase in the withers, slight increase in the croup and an obvious increase in the flank. Nose showed an obvious increase in the croup and a slight increase in the flank. Jiggs showed an obvious increase in the withers and obvious increase in the croup, as well as an obvious increase in the flank. Jeep showed an obvious increase in the withers, obvious increase in the croup, and an obvious increase in the flank. Diesel showed an obvious increase in the withers, slight increase in the croup and an obvious increase in the flank.

These nine test subjects represented 69.3% of the horses studied and all showed increases of muscle mass in the areas of interest in this study. The following horses showed little or no improvement: Blaze showed a slight increase in the withers, a decrease in the croup, and the flank remained unchanged. Freckles had no change in the withers, no change in the croup, and a slight decrease in the flank. Roanie showed a decrease in the withers, a slight decrease in the croup, and no change in the flank. Jack's Horse showed an increase in the withers, but a decrease in the croup and flank. These four test subjects with little or no increase represented 30.7% of the horses tested.

PROJECTED RESULTS

The results obtained (of 69.3% of my subjects showing increase in the top line) were satisfactory enough for me to support my theory. However, I think results could have been higher if test subject Ledeux was not sold before the end of the study. Ledeux was purchased out of the whole herd because of his healthy and muscular appearance, according to Jack.

I feel he would have been another subject to show increase in the three areas measured. I also feel that had we extended the period of time of study, increases would have been more noticeable due to the fact that they would have had more time for muscle development, just as weight lifters show increase in muscle mass as they work out longer. I believe that possibly testing more subjects would better show an increase in measurement gain. (I have ten horses of my own, and after dentistry have visually seen top line muscle mass increase in eight of the ten).

Since the test subjects used were only about one sixth of the total herd turned out at Thousand Acres Ranch, there was no way to tell where these

horses were in the pecking order. Had I used more horses with less of them on the lower end of the order, results in a gain might have been higher.

I would suspect in the case of Blaze, Freckles, Roanie and Jack's horse that they were all on the lower end of the order. Instead of being able to relax and enjoy time in the herd getting enough food and allowing for all food intake to go toward nutrition and muscle mass development, these individuals are pushed around by the higher end of the order causing anxiety, stress, etc, thus affecting gain.

On the other hand, I think that horses who didn't have to compete for food and space (individually separated horses, but not necessarily and included stalled horses) would show more consistent gains in these areas due to lack of stress, anxiety, etc.

SUMMARY

To me, it stands to reason that if a horse is unable to move the lower jaw forward and backward and right and left and his neck freely from side to side, and up and down as they were intended to move, the muscles along the top line of the horse connected with and affected by the lack of movement of the head and neck will not be able to get strong and developed. Without these strong, well-defined and developed muscles, how could a horse be at the peak of his performance and ability?

I am continually hearing from my clients about how much better their horses are performing in their particular disciplines of training. I get many letters of testimonials of horses winning reining events, threeday events, races, etc., after I did Whole Mouth Dentistry on them.

To me, it seems obvious that if a horse has a stronger top line to support the rest of his body, he would have more power to execute a jump, support a spin or sliding stop, etc.

In talking to my fellow dentists all over the world, they have been stating that they, as well as myself, have noticed in the training barns in which they work, that where there used to be one champion in their particular discipline, now there are many more after Whole Mouth Dentistry has been done.

I feel that horses, especially performance horses of the future, in healthy environments free of stress and excessive herd peer pressure, given proper food and provided with the benefits of whole mouth dentistry (freeing up the lower jaw, head and neck), will be stronger and more willing, and their athletic abilities will be enhanced by greater flexibility and a more developed top line muscle.

I would like to take a few lines to express my appreciation to some individuals that helped me with this study. I want to thank:

Tom Novellino from Southbridge, MA. He and his engineering firm did all the computer work and photogrammetry.

Tom's wife, Nancy, who helped take all the pictures.

Thousand Acres Ranch's corral boss, Jack Rowe, who supplied the horses for my study.

All the horses from Thousand Acres who made this study possible and who cooperated wonderfully while getting their teeth done.

Dale Jeffrey who made this study all worthwhile.

About the author:

Born during a pack trip through Ticonderoga, NY, Spencer grew up on his parents' Adirondack Mountains dude ranches. Spencer has had a lifetime of experiences with all kinds of horses. After a successful rodeo career, he trained horses, but decided he could better help the horses through dentistry. He received his certification in equine dental equilibration from the Academy of Equine Dentistry, in Glenns Ferry, Idaho. He practices and lectures extensively, and returns often to the Academy to lecture, serve as an assistant instructor, and continue his own education, He and his wife Judy own and operate a ranch in Thurman, NY. The ranch is an educational riding facility. They practice and promote Parelli Natural Horsemanship, and specialize in children's summer camp.

For more information:

Spencer La Flure, EqD/Adv. Cert.
aka "the Tooth Fairy"
Gentle Equine Dental Care
Circle L Ranch
869 High St.
Athol, NY 12810
518-623-9967
The Academy of Equine Dentistry
P.O. Box 999
Glenns Ferry, Idaho 83623 USA
208-366-2569, 208-366-2550
Fax: 208-366-2870
academy@micron.net
www.equinedentistry.com