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Unlike horses and mules, cattle do not sweat.  
They are air cooled, like Volkswagens.



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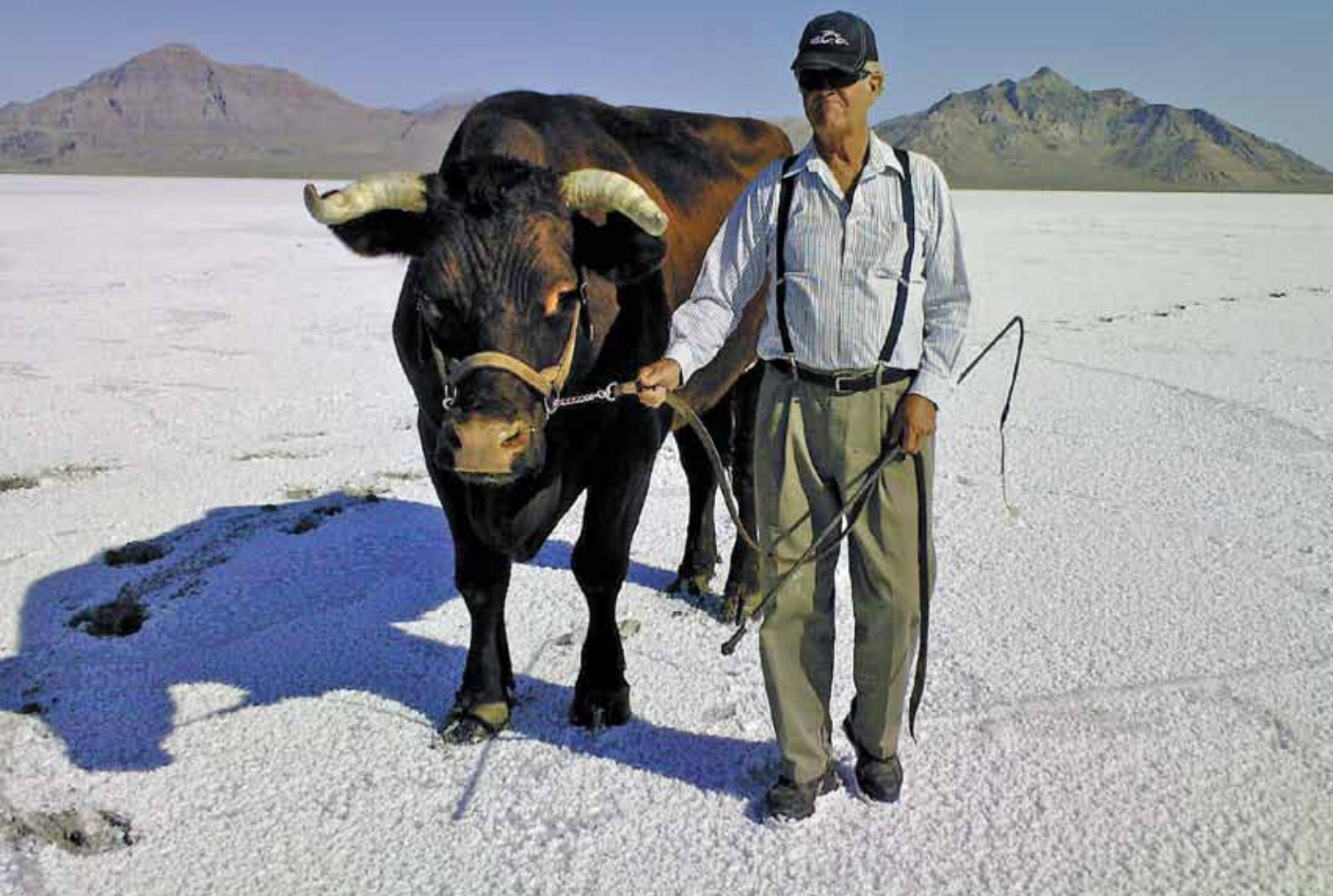
OXEN: ENGINES OF THE OVERLAND MIGRATION  
THE LOOK OF THE ELEPHANT ♦ PLUS REVIEWS AND MORE

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BY DIXON FORD AND LEE KREUTZER

# oxen

## ENGINES OF THE OVERLAND EMIGRATION

*The ox is slow, but the earth is patient.*

ANON.





OVERLAND EMIGRANTS OF THE MID-NINETEENTH CENTURY HAD TO BE PATIENT, LIKE THE EARTH. ANY PIONEER WHO WAS NOT THAT WAY BY NATURE HAD PLENTY OF OPPORTUNITY TO DEVELOP THE VIRTUE WHILE WALKING

alongside an ox-drawn wagon from the Missouri River to Utah, Oregon, or California. The journey was some fifteen-hundred to two-thousand miles across plains, mountains, and desert—at an ox pace of two miles per hour. Including rest breaks, the average rate of travel across a ten-hour day was about one and one-half miles per hour. Under adverse conditions such as severe weather, deep mud, loose sand, or steep hills, the going might be slower and the days longer.

Although horses and mules could travel faster than oxen, most emigrants chose the latter to pull their covered wagons. As a student of oxen and the emigrant trails, co-author Dixon Ford understands the reasons why; and as a lifelong ox trainer and drover, he knows firsthand, as few trail historians do, just how these animals think, learn, communicate, and behave.

Ford's Mormon pioneer grandfather, Martin Ford Jr., taught him the traditional ways of training and driving oxen. In this article, Ford shares his lifetime of specialized knowledge and clears up some points of confusion about the uses of oxen in the overland emigration.

#### OXEN ARE "EDUCATED" CATTLE

Once, while demonstrating the use of oxen to a group of students, Ford overheard a schoolteacher tell them an ox is a cross between a buffalo and a mule. He's also heard people say that the animal

is a mix of a buffalo and a cow. In point of fact, Ford says, there's no buffalo (whose scientific name is *Bison bison*), or for that matter, mule (a sterile equine hybrid) involved. The oxen that drew emigrant wagons west were just everyday domestic cattle, *Bos taurus*, that had been trained to pull under yoke. That training is what distinguishes an ox from ordinary beef or dairy cattle.

Working cattle were not even bred specifically for draft labor: most were multi-purpose breeds used for dairy and beef as well as for farm work. Since farm families typically kept just enough cattle to meet their labor and dietary needs, those animals had to be versatile.

"The Milking Red Durham, now known as the Shorthorn, made the best all-around ox team," says Ford. "Along with the Devon, they were the first cattle to be brought to America by the English Pilgrims and were the breed of choice on the farm, so they were readily available everywhere. They are a large breed, moderately fast [under the yoke]; the cows give lots of milk, and the meat is of high quality." Red Durhams were the ideal all-around animal, he notes, and the preference of Mormon pioneers. Today's familiar Jersey, Hereford, Brown Swiss, and Holstein cattle were not imported until later in the nineteenth century and so were not breeds that went west during the overland emigration period.

Another breed, however, was available to the emigrants in the mid-1800s. This was the longhorn, descended from livestock brought to North America by the Spanish some five hundred years ago. This variety, having run feral on the Southern Plains for centuries, came to be regarded as

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Opposite, Dixon Ford with his Red Durham oxen Thor (right) and Zeus. Photograph by Tom Parker.

“native,” even though no breed of *Bos taurus* is truly native to the Americas: all were introduced from the Old World. But the longhorn’s traits of intelligence and hardiness helped it survive in the wild.<sup>1</sup>

In this and the previous century, the original Devon, Milking Durham, and longhorn cattle largely have been edged out by more marketable single-purpose varieties bred specifically for the feedlot or for high-volume dairy production. Hobbyist teamsters can buy the vintage breeds (or cattle closely similar to them) from specialty farms, or they can purchase readily available modern beef or dairy cattle, such as Herefords, Charolais, and Holsteins, to train for work, show, and pulling competitions. Some teamsters even train miniature cattle for these purposes. “You can make oxen from any breed of the bovine family,” Ford says. But because he is interested in historical accuracy, most of his oxen have been Red Durham steers.

Bulls can be trained to pull a wagon, but steers (that is, castrated males) are preferred, largely because they grow larger and stronger. Thor and Zeus, a team of Durhams that Ford took along the Oregon Trail as part of OCTA’s Ezra Meeker reenactment in 2006,<sup>2</sup> weighed about 3,100 and 3,000 pounds, respectively, and Thor stood six feet tall at the shoulder. In comparison, Ford says, a typical Durham bull weighs about 2,000 pounds (one ton) and a cow can reach about 1,100 pounds. The

steer’s greater size gives him two advantages: speed (relatively speaking) and endurance.

“Because he has longer legs and he’s taller, an ox can travel much faster than a bull. Also,” Ford continues, “even though the bull may have a big burst of energy, like for fighting—because of its testosterone—, a steer would have more total muscle. So although a bull could easily kill any steer [in a fight], in working, the steer will have enduring power that lasts all day long, whereas the bull’s energy quickly burns up, and then he’s completely depleted.”

Bulls are aggressive, Ford notes, a trait that begins to emerge when the calf is just five or six months old. He points out: “Bulls will tilt their horns toward you when you approach them. They’ll turn their side toward you to show how big they are, and their eyes will bulge out, and they’ll make threatening gestures. If they feel intimidated, they’ll even roar a little bit and start to paw to try to frighten the perceived opposition. And when you get them in the yoke, they’ll be a little bit stubborn about wanting to obey commands. They want their way,” he says firmly. “That’s when you castrate them. And then they change right away.”

Although steers are generally more desirable than bulls as draft animals, many bulls went west under the yoke. Milk cows, too, helped pull wagons. “The Mormon pioneers had about 20 percent milk cows pulling their wagons. That was just because they had no other option,” Ford says. “And the cows did fairly well! But it takes two cows to equal the strength of a big steer.”

Charles Frederick True, who emigrated from Minnesota to California as a teenager in 1859, recalled in his memoir a milk cow named Starry that kept trying to run home as the True family caravan made its way across Iowa. In frustration, Charles’s father yoked her to another cow and hitched them behind his lead team of oxen, which

1 “Longhorn History,” Texas Longhorn Marketing Alliance, <http://www.thelonghornalliance.com/default.asp?contentID=1>. Accessed 02/06/2015.

2 The centennial Ezra Meeker reenactment was held from July 23 to August 21, 2006. It included both OCTA and Ezra Meeker Historical Society members, who visited many of the sites visited by Meeker in 1906 on his trip to Washington, D.C. Dressed in period clothing and with Dixon Ford as wagon master, the “reenactors” traveled the Oregon Trail for three weeks, from Puyallup, Washington, to St. Joseph, Missouri. One of their main purposes along the trail was to place and dedicate long-awaited Oregon Trail markers at key locations.





*Rock Creek Station*, painting (reversed), ca. 1859, by frontier artist, photographer, and bullwhacker William Henry Jackson. The ranch station, which stood on the California and Oregon Trails and the route of the Pony Express, is now a Nebraska State Historical Park, near the town of Fairbury. *Courtesy NPS, William Henry Jackson Collection, Scotts Bluff National Monument.*

dragged the resisting pair along. After a couple days of forced march, the cows settled comfortably into the routine of their work. Starry helped her partner haul the family wagon “in sunshine, rain, and heat over dry, rocky, muddy, sandy, level, hill mountain roads, across sloughs and swiftly-flowing creeks and river, for months,” all while being “very generous with her milk,” True wrote. When five of the family’s oxen died from overdrinking after crossing Nevada’s Forty-mile Desert, the lone remaining steer and team of cows towed the wagon through the Sierra Nevada to their destination.<sup>3</sup>

#### OXEN MUST HAVE HORNS

Because cattle sometimes gore each other and their handlers, one might think that a dehorned or polled steer (that is, one selectively bred to be hornless), would make a safer work animal. Horses and mules obviously pulled wagons while hornless, yet historical photographs and nineteenth-century illustrations of draft oxen always show horned beasts drawing the wagons. The reason wasn’t to preserve some picturesque notion of the westward experience.

“Part of the definition of an ox is ‘must have horns,’” Ford says. That is because in the U.S., oxen were hitched up with a wooden neck yoke, rather than with the leather collar, harness, and britchen used on horses and mules.<sup>4</sup>

A horse-style collar and harness may seem more humane than a heavy, wooden yoke, but physical differences make cattle better suited to pull from the neck and shoulders than from the breast, as horses do. A collar interferes with the natural, “substantial movement” of the ox’s shoulders, and rubs sores in its hide. A well-fitted yoke, on the other hand, is comfortable for an ox and allows it to pull more effectively.<sup>5</sup>

To understand how an ox pulls and why it needs horns to do its job, consider the design of the neck yoke and the way it functions. This discussion also shows why novice teamsters faced an ordeal when trying to yoke, hitch, and drive poorly trained animals.

Although styles have always varied across the world, the yoke commonly used by American overland emigrants, and still used today, consisted of a 40- to 80-pound wooden beam (depending on the size of the oxen), often made of red elm or cottonwood, carved into two gentle curves that seat over the necks of a pair of oxen.<sup>6</sup> To secure the yoke, a U-shaped wooden bow, similar to a modern bicycle U-lock, is passed under each animal’s neck. The free ends of the bows are pushed up through drilled holes in the beam, to be latched into place at the top with wooden or metal pins. The bows are not fastened snugly around the oxen’s throats, but remain loose enough to allow the beam to rock and slide along the animals’ necks.

When Ford demonstrates the historical method for yoking a well-trained team, he places his oxen

3 Charles Frederick True, *The Overland Memoir of Charles Frederick True: A Teenager on the California Trail, 1859* (Independence, Mo.: Oregon-California Trails Association, 1993), 26–27, 90–91.

4 A britchen is a system of straps that fits over the rump and under the tail of a draft mule or horse as part of the harness. On a descent, the britchen braces the weight of a wagon or carriage against the team’s haunches, helping to brake and restrain the vehicle. It is also used on pack animals to prevent the load from shifting forward.

5 Richard Roosenberg, “Yoking and Harnessing Single Cattle,” *TechGuides* (Tillers International, 1997). Available online at [http://www.tillersinternational.org/oxen/resources\\_tech\\_guides/YokingandHarnessingSingleCattleTechGuide.pdf](http://www.tillersinternational.org/oxen/resources_tech_guides/YokingandHarnessingSingleCattleTechGuide.pdf). Accessed Jan. 3, 2014.

6 The yoke used for heavy pulling (plow yoke) was more massive in cross section and made from heavier and stronger wood, such as red elm, hickory, maple, or birch.



This ox yoke, made by Dixon Ford, weighs about 55 pounds. Ford holds the key-hole shaped calabash, center, above the O-ring. Most ox yokes, like this one, are made of Red Elm because of the wood's strength-to-weight ratio. This one is a wagon yoke, much lighter than heavy duty plow yokes. There is a traditional pattern for each type, wagon or plow yoke. *Photograph courtesy of Dixon Ford.*

—in this example, Thor and Zeus—side by side in the driving position. Standing beside the team, he tells the ox on the left, or nigh side, “Move your head, Thor,” and Thor responds by swinging and holding his head far to the left. With the nigh ox’s head out of the way, Ford steps in front and places the beam over the neck of Zeus, who is standing on the right, or off side. He lifts the other end of the yoke up over the nigh ox’s neck and tells him, “Move your head, Thor,” and Thor returns his head to the natural forward position. The beam now rests on the team’s necks. Ford fits the bow under the neck of the off ox, Zeus, and secures it with a pin, then repeats the process with Thor. “This process is done very quickly and is very spectacular for the novice to watch,” he says, “since it shows the degree of exact obedience the properly trained ox team has, and it is done with

a surprisingly small amount of effort on the part of the drover.”

Next, the drover takes the team to the front of the wagon for hitching. Centered between the oxen, two iron rings hang from the underside of the yoke. The first ring to connect in the hitching process is the round “tongue ring.” The drover lifts the wagon tongue and commands the team to back up as he guides the end of the tongue through the ring. This connection causes the front wheels of the wagon to turn when the oxen change direction. About ten inches back, on the underside of the tongue, a metal projection called the “goose” blocks the tongue from sliding any farther through the ring. On a downhill slope, the goose catches the ring and prevents the wagon from rolling forward into the hindquarters of the rear team.



However, oxen do not pull the wagon by its tongue. Towing requires a heavy-duty chain. A long-link chain for that purpose is permanently attached to a solid wooden beam beneath the front end of the wagon box. The drover threads the free end of the chain through the second yoke ring, the keyhole-shaped “calabash.” Once through, a link of the chain is dropped sideways into the narrow end of the calabash, which holds it securely for pulling. Historically, two to four teams were hitched in tandem to a loaded covered wagon, one yoke in front of the other. Each team had a chain connecting its yoke to the calabash ring of the team behind it to help with the pulling; however, only the rearmost team, called the wheel team, controlled the wagon tongue.

When the drover signals “get up,” each ox steps forward, pushing with the back of its neck against the yoke and with its shoulders against the upper part of the bow.<sup>7</sup> If the teamster cues the teams to reverse the wagon, the cattle step backward, and the goose on the wagon tongue shoves the yoke forward on the necks of the wheel oxen. Those oxen raise their heads and push back with their horns against the yoke, thus driving the wagon backward. The wheel oxen control the wagon in the same manner when going downhill, says Ford. As momentum carries the wagon forward, the goose strikes the tongue ring and pushes up the yoke, and the wheel oxen raise their heads to brace the load against their horns, restraining the wagon on the descent.

Covered wagons could weigh two- to three-thousand pounds fully loaded, and some did not have brakes. Wheel oxen had to be particularly strong to control such a load, especially on a stream bank or other steep slope. On a long, steep decline, emigrants might help the oxen by looping a chain through the spokes to keep the wheels from turning, or they might chain a heavy log behind the wagon to act as a drag. Even with those aids, the oxen and their horns served as the actual braking system. If a wheel ox died along the trail, the drover had to replace it with another ox on the hitch. Therefore, all of the oxen had to have horns. A hornless steer could not do the job.

#### FROM A STEER TO AN OX

Now, suppose you have three teams of horned steers, all yoked up and pulling your wagon along the Oregon Trail. Ford will point out that you still don’t necessarily have oxen. A true ox, he explains, is a steer (or cow or bull) “with an education.” The “ox degree” is conferred when the animal reaches full maturity at age four *and* is trained well enough to be called “handy.”

“Now, handy means they’ll go anywhere you want,” Ford continues. “They’ll back up, they’ll go right, they’ll go left, they’ll spin back to the right, which is ‘back gee,’ and they’ll spin back to the left, which is ‘back haw.’” This is not as easy as it sounds: remember, the oxen are yoked together at the neck. Turning while backing means one animal must back up while the other backs up more slowly, pivots in place, or steps forward when needed to maneuver in tight places, as the drover commands by his body position and whip signals. While hitched to a wagon, both oxen must sidestep as they step back while turning, to prevent breaking the tongue. So much for the old adage, “dumb as an ox.”

7 David Kramer, “Building an Ox Yoke,” *TechGuides* (Tillers International, 1997). Available online at [http://www.tillersinternational.org/oxen/resources\\_techguides/BuildinganOxYokeTechGuide.pdf](http://www.tillersinternational.org/oxen/resources_techguides/BuildinganOxYokeTechGuide.pdf). Accessed Jan. 3, 2014; Drew Conroy, *Oxen: A Teamster’s Guide to Raising, Training, Driving & Showing* (Gainesboro, Tenn.: Storey Publishing, 2007), 112, 114.

“They also have to know the command to ‘go easy,’” Ford continues. “Plus, they have to be gentle enough that they can be yoked easily and controlled without any difficulty.”

Unlike horses and mules, oxen are not directly controlled with bridle, bit, and reins handled by a driver seated in the wagon behind them. Instead, the drover walks to the left of his teams while giving direction with voice, body language, and the whip. “The drover does not follow the oxen, as some writers seem to think,” Ford points out. “The oxen go where they think the drover wants them to go. They know they are expected to give him the room he needs to maneuver by watching the direction of his travel, his whip signals, or his silent body language, such as turning or changing pace. A properly trained nigh ox knows he must keep pace with and stay at arm’s length from the drover on his left side.” And those are just the requirements for the “undergraduate” ox degree.

Ford has much more to say about the training required of a good ox. “The oxen used by the western pioneers were trained to obey not only whip signals and voice commands,” he explains, “but also [to observe] the silent way of traveling that was slowly developed by traveling many thousands of miles under dire circumstances, where even taking an extra breath to shout a command was a chore for the drover. This degree of training is far above the normal standard of requirements to be classified as ‘handy.’”

Without all this education, you have a steer. With it, you have, at last, an ox.

*Without  
all this education,  
you have a steer.  
With it, you have,  
at last, an ox.*

#### THE EDUCATION OF AN OX

Dixon Ford, who has spent a lifetime working with oxen, possesses both a unique skill and an intuitive understanding of the animals’ natures. The kind of tractability and gentleness required of true oxen is achieved through years of work, beginning from their birth, when calves are separated from their mothers to be hand-fed, handled, and made to imprint on human beings.

Ford purchases and takes home his trainer calves when they are only two or three days old.

Knowing how to choose the right newborns is the first requirement. “I’ll go into a pen of calves and if they look me right in the face, those are the ones I want for my oxen,”

he explains. “If they look at my feet or something like that, they might be okay; if they just don’t look anywhere, if they don’t particularly look at me, I don’t ever choose them.

“It has to do with their curiosity, with their willingness to interact without fear. They don’t have much fear when they’re born anyway, but looking at me shows they have an intelligence level that’s higher because of their curiosity. . . . Thor, in particular, was one that looked me straight in the eyes immediately, and he’s the best lead ox I ever had.”

Once home, Ford keeps the calves in separate pens so that they will socialize and bond with him, not each other. After one week alone, they begin to get bored—the perfect time to begin training. The first objective is to develop the animal’s attention and obedience. Ford starts by putting a halter on the calf and facing him toward a wall.



Here Dixon Ford, as drover, demonstrates with hand signals how to command his oxen, Thor and Zeus. *Photograph by David Welch.*



“While holding the halter under his chin,” the seasoned trainer instructs, “wait until he moves his head to one side or up or down, then lightly tap that side with your fingers until he holds it straight and still. Repeat this practice for ten minutes daily for one week, then as required afterward, tapping with the butt of the whip when he begins to show any signs of disobedience.”

Next Ford teaches the calf to lead: “I’ll put a halter on him and move forward while gently pulling forward, and I say ‘Come up’ while moving the whip end forward. If he doesn’t move, then I tap him on the rump lightly with the butt of the whip, then harder and harder until he moves forward. Then I say, ‘Good boy!’ and I pat him on the cheek.” By the third try, Ford says, the calf always moves forward without any reward.

Over the next two weeks, he continues teaching the very young calves (now yoked together) to lead by pulling forward on the halter while he taps them lightly on the rump with the whip stock, saying, “Good boy!” when they obey without the tap. “‘Good boy!’ followed by the ox’s name is the best reward they can receive,” Ford explains. “The phrase ‘good boy’ or ‘good boys’ should be used only as a reward for obedience, not for expressions of affection.”

The stop, or “whoa,” is the easiest command to teach, he continues. While moving forward, Ford slaps the whip down firmly in front of the calves while saying “Whoa!” in a loud voice and stopping abruptly. “They will always stop at this combination of commands,” he relates. “The next time, slap the whip down more softly while saying ‘whoa’ in a normal voice, and stopping.” Then Ford gradually acquaints the calves with the variations of the command “whoa,” such as snapping the whip on the ground and stopping; stopping abruptly with voice; voice command only; whip only; stopping abruptly only; and dropping to

the ground. That last variation could prevent the cattle from treading on their drover if he should accidentally fall while working with them.

It is important to cross-train calves to obey voice commands, whip signals, and body movement used either together or alone, Ford says. “When oxen are cross-trained, they are much more alert and involved in the operations since they now have to watch and listen for signals.”

The whip used in training and driving true oxen is not the long, rawhide lash wielded by the professional bullwhackers who moved commercial freight across the overland trails, and it is not used to beat or coerce the animals. Rather, it is a staff or slender stick about four feet long with a braided leather “popper” on the end. The drover uses it to cue commands by motioning, pointing, and tapping, which eliminates the need for the drover continually to call out commands.

Ford once signaled his team (yoked, but not hitched to a wagon) to follow him across a beaver dam, where a misstep on that jumble of sticks and logs could have been disastrous. “I walked across and I stood at the other side and guided them with the whip,” he recalls, “telling them which way I wanted them to go and when I wanted them to go slow—and I brought them all the way across that beaver dam to the other side. You never could have done that with horses!”

The whip is also used, when necessary, to physically remind an uncooperative animal that the drover, not the ox, is in charge. Working cattle should be taught while still small enough in size that their trainer is the dominant member of the herd, and that lesson must constantly be reinforced. The ox that is allowed to “win an argument,” even a minor one, thinks he has unseated the boss; and once he thinks that, he quickly learns that his size and strength give him the advantage over a drover.



A young Rosa Blaske, of Blue Rapids, Kansas, stands beside Ford's gentle, well-trained team at Alcove Springs, Kansas. During the summer of 2006, Rosa and her family were among those who participated in the Ezra Meeker reenactment, either traveling with the wagons all the way from Oregon, or meeting them at various stops along the way. *Photograph by Tom Parker.*

“Every day those animals will give you a challenge because they want to be in your position,” Ford warns. “They want to say where we go and when we eat and when we drink and when we work. So they will challenge you for dominance.”

When an ox tilts its horns at the drover, the challenge is obvious: he intends to take charge. Other signs of trouble are recognizable only to those who “speak ox,” as, for example, when a steer holds its ears forward instead of in a relaxed position.

“When an ox has his ears forward when you have him in the yoke, you go around the front and look at him. If he keeps his ears forward, he’s not going to cooperate today,” Ford says. “So you stand in front of him and you look him right in the eyes, and if he’s trained well, he’ll put his ears back. That means, ‘Okay, you’re the boss.’ If he doesn’t, then you growl at him. If he still doesn’t put his ears back, you [need to] go around and stand beside him and you give him a real hard hit with the whip, right over the rump. A really hard one! A lot of people say, ‘Why did you hit him? He’s just standing there!’ I tell them what they don’t know about that ox: ‘He was arguing with me!’”

If a hard whack with the whip seems cruel, Ford cautions, remember: in bovine society, cattle establish dominance with their horns, which are much more serious weapons than the drover’s slender stick. Even two oxen that have been yoke-mates since birth will fight, wound, and sometimes kill each other in battles over who is boss. Cattle understand and respect physical force. To gain and maintain control over beasts of such superior size and strength, a handler must establish dominance while they are small, teach in language they understand, and occasionally review the lesson.

Also essential in the education of an ox is careful introduction to sudden, unexpected sights and sounds. Ford desensitizes his calves by exposing them repeatedly to flaring umbrellas, flapping

blankets, rolling buckets, noisy machinery, and barking dogs, first at a distance and gradually in closer proximity, so that they won’t startle when under the yoke in public. Unexpected sights and sounds along the overland trails frequently caused poorly trained draft animals to stampede, sometimes with fatal results. “Lightning would cause stampedes,” Ford notes, adding that “Indians loved to stand along the way and shake blankets to frighten the oxen to make them stampede so they could pick up the spoils. . . . Sometimes barking dogs would frighten oxen, or dogs running up to them.”

Early in their journey to Washington Territory, an 1862 Iowa company captained by John Knox Kennedy suffered several nighttime stampedes, blamed on loose horses and prowling Indians. Another stampede, attributed to barking dogs that startled the oxen, happened in Wyoming. An eyewitness recounted that the emigrants searched for three days to recover enough cattle to continue their journey. Before they resumed, the men shot all the company’s dogs.<sup>8</sup>

J. Henry Brown, an 1847 emigrant to Oregon, described an ox-and-wagon stampede that was triggered when a spooked horse darted between a wagon and its wheel oxen. The startled cattle “started on the run, bellowing as they went,” which panicked the other teams in the column. Within moments, “the whole train was dashing over the plains,” damaging the wagons and injuring those riding inside. “It is astonishing with what speed a yoke of four oxen can run,” Brown observed.<sup>9</sup>

8 Everell Cummins, *Train of Innocents: The Story of the Kennedy Train* (Bloomington, Ind.: AuthorHouse, 2005), 89–92.

9 J. Henry Brown, “Autobiography,” 13–14, U.S. Works Progress Administration, Federal Writers’ Project, Folklore Project, Life Histories 1936–39, Library of Congress, 1938. Available online at <http://www.loc.gov/resource/wpalh3.30020231/seq-12#seq-2>. Accessed Jan. 20, 2014.



When emigrants headed west, they fervently hoped to avoid such adventures. They wanted their wagons safely drawn by strong, handy oxen. That meant horned steers at least four years old, of calm and gentle temperament, accustomed to sudden movements and loud noises, and trained from birth to obey verbal and visual cues. Those who had the time and knowledge trained their own oxen or purchased animals carefully selected from reputable hometown trainers before starting west. Other emigrants outfitted at the Missouri River jumping-off towns, buying up whatever “oxen” they found for sale at the right price. Often they wound up with partly trained steers—or worse, range cattle that had never borne the yoke.

#### ENGINES OF THE EMIGRATION

Today we might reasonably ask, Why use oxen on the trail anyway? They are slow, able to walk only half to two-thirds the speed of a horse or mule. And, when an emigrant was forced to abandon his wagon along the way, he found that his oxen, with their broad, rounded backs and loose hides, were ill-suited for use as long distance riding or pack animals. Why, then, didn’t the emigrants generally choose faster and more versatile mules or horses to pull their covered wagons to Utah, Oregon, or California?

“The most compelling historical reason to use the ox as a draft animal was simply availability,” says Ford. “A milk cow was essential to own; a riding horse was a luxury.” In other words, cattle were common and readily available to most people, but only wealthy individuals kept horses.

Cash outlay also was a consideration. Emigrants who did not already own suitable livestock had to buy draft animals for the trip. Even those who owned livestock for farm work sometimes chose to buy fresh teams at their Missouri River

jumping-off town. Draft animals were the single most expensive component of an overland outfit, and the relative costs of oxen, horses, and mules were an important consideration.<sup>10</sup>

Ford draws on his historical knowledge of the period to point out the economics of buying stock. “In 1847, [when the Mormon pioneers crossed the plains to Utah], horses cost five times as much as oxen,” he explains. “A team of two horses would have cost \$100. A team of two oxen would cost \$20 in the early to mid-1840s. A team of two mules, which were much more in demand [by the army], would cost \$150 to \$125.”

Of course, livestock costs rose and fell with demand. Historian John Unruh reported that the price of a yoke of oxen at Independence jumped from \$25 in 1846, when approximately 2,700 people headed west, to \$65 in 1849, when 25,450 emigrants made the trip.<sup>11</sup> Randolph Marcy, a U.S. Army officer and author of *The Prairie Traveler*, a popular guide to the overland trails, wrote in 1859 that a six-mule team cost around \$600, whereas four yoke of oxen (the number often recommended in published emigrant guides) could be purchased for about \$200. In addition, neck yokes and chain for four yoke of oxen cost only about \$25, whereas harnesses for four to six spans (pairs) of mules or horses ran hundreds of dollars.<sup>12</sup>

<sup>10</sup> For a thorough analysis of the costs and value of draft stock during the emigration era, see Kyle D. Kauffman and Jonathan J. Liebowitz, “Draft Animals on the United States Frontier,” *Overland Journal* 15, no. 2 (1997): 13–26; see also Diana L. Ahmad, “‘I Fear the Consequences to Our Animals’: Emigrants and their Livestock on the Overland Trails,” *Great Plains Quarterly* 33, no. 3 (2013): 165–182.

<sup>11</sup> John D. Unruh Jr., *The Plains Across: The Overland Emigrants and the Trans-Mississippi West, 1840–60* (Urbana and Chicago: University of Illinois Press, 1982), 79, 84–85.

<sup>12</sup> Randolph B. Marcy, *The Prairie Traveler: A Hand-book for Overland Expeditions* (New York: Harper and Brothers, 1859; reprint, Applewood Books, 2009), 27–28; Henry Pickering Walker, *The Wagonmaster* (Norman: University of (continued)



*Yoking a Wild Bull, drawing, William Henry Jackson.  
Courtesy NPS, William Henry Jackson Collection, Scotts Bluff National Monument.*

The other end of the trip had to be considered as well. Upon arriving in California, at least during the gold-rush years, the weary, half-starved oxen could be fattened and sold to hungry miners as beef. Forty-niner William Swain recorded that these cattle brought \$150 to \$200 each in the goldfields.<sup>13</sup>

Captain Marcy further advised,

Upon good firm roads, in a populated country, where grain can be procured, I should unquestionably give the preference to mules, as they travel faster, and endure the heat of summer much better than oxen; and if the journey be not over 1000 miles, and the grass abundant, even without grain, I think mules would be preferable. But when the march is to extend 1500 or 2000 miles, or over a rough sandy or muddy road, I believe young oxen will endure better than mules; they will, if properly managed, keep in better condition, and perform the journey in an equally brief space of time. . . . Oxen are much less liable [than horses or mules] to be stampeded and driven off by Indians, and can be pursued and overtaken by horsemen [due to their slow pace]; and, finally, they can, if necessary, be used for beef.<sup>14</sup>

Emigrants routinely slaughtered their oxen for beef when the animals were no longer able to work. Horses and mules, on the other hand, might appear on an emigrant's dinner plate only if preferred nourishment was unavailable. An injured, dying, or freshly dead ox was still steak; a horse or mule in comparable condition was a total loss

because Americans simply did not regard them as food.

Another advantage of oxen was that they, being ruminants, could thrive on rough forage that horses and mules could not eat. This advantage was important when crossing the desert and during high-traffic seasons when herds of emigrant livestock had devoured the native prairie grasses down to the dust. "Oxen can do very well on sagebrush," notes Ford, "and in the spring when the sagebrush is first starting to grow, they can eat evergreens . . . but dry grass, weeds, bark off cottonwood trees, those were all very good feed for oxen. A lot of those would actually kill horses."

The ox would "seek and find his food in places where other animals will not go," observed Peter Burnett, an 1853 Oregon emigrant. Burnett wrote that an ox would "climb rocky hills, cross muddy streams, and plunge into swamps and thickets for pasture." The ox was also willing to try new "flavors." In the 1852 emigration diary she shared with her twin sister, Cecelia Adams wrote, "Last night my clothes got out of the wagon and the oxen ate them up and I consider I have met with a great loss as it was my woolen dress." No ill effects to the oxen were reported.<sup>15</sup>

Oxen's versatile palates also proved economical. Hardworking draft horses and mules, in contrast to their heftier counterparts, required grass or hay supplemented with high-protein feed grains. Bags of feed were costly, heavy, and had to be hauled in the wagons—generally, wagons pulled by oxen, Ford points out with light irony. When forced to survive on rough forage, mules—and especially horses—were susceptible to colic and other potentially fatal

Oklahoma Press, 1966), 107. According to the online historical currency converter MeasuringWorth.com, \$200 in 1859 dollars is the approximate equivalent of \$5,700 in 2014, and \$600 would have a value of about \$17,100 in today's dollars.

<sup>13</sup> J. S. Holliday, *The World Rushed In: The California Gold Rush Experience* (Norman: University of Oklahoma Press, 1981), 378.

<sup>14</sup> Marcy, *Prairie Traveler*, 27–28.

<sup>15</sup> Peter H. Burnett, *An Old California Pioneer* (Oakland: Bio-books, 1946), 60; Bert Webber, editor, *The Oregon Trail Diary of Twin sisters, Cecelia Adams and Parthenia Blank in 1852* (Medford: Webb Research Group, 1994), 19.





Wheel oxen need sturdy horns for bracing the yoke during a descent and for backing up a wagon. *Photograph by Nicola Evans.*

digestive ills. And if too many draft animals died of hunger along the trail, emigrants were forced to abandon their wagons and pack their supplies on the backs of the surviving animals, or worse, had to carry their own provisions across the desert. Under those circumstances, any member of the company who was unable to walk due to illness or injury had to be left behind, possibly to die.

The hardiness and endurance of the livestock chosen to pull emigrant wagons, then, was a critical consideration. Forty-niner William Swain mused, "Oxen will probably require some fifteen days more on the road, but what is that compared with the safety of an ox team?"<sup>16</sup>

Inexpensive to buy, cheap and simple to hitch up; strong, docile, and durable; easy to feed, and tasty and nutritious themselves, the many advantages of oxen far outweighed the tedium of their plodding pace. That is why most emigrants chose cattle over horses or mules to draw their wagons west. Oxen were the eight-cylinder engines of the emigration.

#### THE PERILS OF BUYING A SECONDHAND STEER

Emigrants planning to buy their "outfit," that is, the wagon, draft animals, and supplies, in Independence, Westport, Council Bluffs, or other Missouri River jumping-off towns often arrived to find consumer competition fierce and product quality questionable. Sometimes even an experienced teamster had no choice but to lay down his money for whatever livestock were available;

but often, Ford notes, sellers intentionally passed off an animal still in training to an innocent who did not know the difference between an ox and a mere steer. Many emigrants had no experience with oxen and did not know what to look for when purchasing a team.

"The Oregon-California Trail people signed on at Independence or St. Joseph with a wagonmaster. All he was going to do was show them how to get where they were going," Ford explains. "He would show them water and feed along the way and help them organize the guard against Indians, but he wasn't going to help them with their animals. So they were pretty much on their own." Similarly, Mormon emigrants traveling with Utah-bound church companies usually had to work with whatever livestock their cost-conscious organizers had been able to procure. There was no picking and choosing, even had they known how to make smart selections.

Depending on whether one was personally introducing untrained cattle to the yoke or was merely a casual observer, the process of yoking up the animals could be either aggravating or entertaining. Hannah Cornaby, a Mormon emigrant starting overland from Keokuk, Iowa, in 1853, watched newly arrived Danish converts trying to yoke untrained cattle for the drive to faraway Utah. She wrote:

The oxen were wild, and getting them yoked was the most laughable sight I had ever witnessed; everybody was giving orders, and nobody knowing how to carry them out. . . . But it did seem so truly comical to witness the bewildered look of some innocent brother, who, after having labored an hour or more to get 'Bright' secured to one end of the yoke, would hold the other end aloft, trying to persuade 'Buck' to come under, only to see 'Bright' careering across the country, the yoke

<sup>16</sup> Holliday, *The World Rushed In*, 96–97. Swain may have overestimated the length of the delay. According to Dixon Ford, although oxen were slower, they worked longer hours, covering the same daily mileages and allowing emigrants to stop at the same evening campgrounds as travelers using horse or mule teams.

lashing the air, and he not even giving a hint as to when he intended to stop.<sup>17</sup>

Andrew Christian Nielson, newly arrived from Denmark, was hired along with fifty other European converts to help drive a church train freighting goods from Atchison, Kansas, to Salt Lake City. He recalled, "There were between 400 and 500 wild, fat, four or five year old steers bought—only a few had ever had a yoke on and still worse, very few of the boys had ever seen an ox. Some were tailors, some sailors, most every kind of tradesmen; but mostly colliers [coal miners]. While we were fitting out, we had stampedes galore."

In his reminiscences, Nielson went on to describe the sultry July morning in eastern Kansas when the greenhorn teamsters struggled to hitch for departure "three to six yokes to each wagon, loaded with goods from 3500 to 8000 lbs. on each wagon." He wrote,

The teamsters were just as wild and ignorant about their business as their oxen. Then most of them could not understand a word of English, so the captain hollering and commanding, only caused more confusion. An hour after we had started out from the camp that memorable day with our loaded wagons, for five miles all around

the plains you could see oxen, wagons, teamsters, and a dozen horsemen going at breakneck speed, and it was a miracle that no one was hurt, nor anything broken, but under these conditions I have seen strong men cry.<sup>18</sup>

*Oxen will  
probably require  
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what is that compared  
with the safety of  
an ox team?*

William Swain and his California-bound companions in 1849 had to break and train range cattle, "a mean job," he called it, while preparing to jump off onto the trail from Independence. But after a morning's hard work, he wrote, the steers were "quite tame and would haul old logs about and not run away—unless they found a good chance." Watching another company's efforts, Swain commented, "Of all shapes and

tangles cattle were ever known to be guilty of getting themselves into, they certainly performed them."<sup>19</sup>

But like the True family's milk cow, Starry, many previously wild steers served the pioneers very well after the breaking-in period. "Pulling the wagon along the well-worn trail became a habit with them," Ford remarks. "But they were not trained to obey in every circumstance like an ox would, so at the end of the day when it was necessary to snake a downed cottonwood tree out of the riverbank for firewood, or pull a shot buffalo into camp, it was a job only the trained ox could do well."

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<sup>17</sup> Hanna Cornaby, *Autobiography and Poems* (Salt Lake City: J. C. Graham & Co., 1881), 2. Buck and Bright were very common names for oxen; many an emigrant diary mentions a team with those names.

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<sup>18</sup> Andrew Christian Nielsen, "1864 (age 24), Nielson, Andrew Christian," *Heritage Gateways*. Available at <http://heritage.uen.org/companies/Wc2bo8egf721d2.htm>. Accessed Jan. 20, 2014.

<sup>19</sup> Holliday, *The World Rushed In*, 105.





Oxen could endure lack of water during a desert crossing; it was the dust that killed them. This photo was taken at Utah's Great Salt Lake Desert during filming of Ford's documentary film about the Donner Party. *Photograph by Nicola Evans.*

### THE IMPORTANCE OF THE TEAM LINE-UP

Overland travelers needed three or four yoke of oxen to haul their wagons west.<sup>20</sup> Because some positions in the line-up had particular job requirements, the placement of those teams was important.

A pair of powerful steers worked best as the wheel yoke, that is, the team closest to the wagon, Ford says. These oxen had to be strong enough to hold the wagon back with their horns when going downhill. Often assigned to the job were heavily muscled Durham and Devon cattle. But many inexperienced emigrants made the critical mistake of hitching their biggest, tallest team in the wheeler position. Ford points out why this was a bad idea: "This position required short steers, not large, expensive oxen," due to the angle of the hitching chain between the wagon and the yoke. The place where the chain is attached to the wagon is only about 26 inches off the ground. The other end of the chain at the calabash is about 38 inches off the ground.

"This angle causes an extra amount of downward pressure on the wheelers' necks as the forward teams pull hard on the chains," he explains, noting soberly that "this downward pressure can kill a team that is not shorter and heavier-built to withstand the additional force." Some experienced teamsters, he says, preferred to use a yoke of bulls as wheel oxen because they were shorter and had smaller necks than steers. Smaller, younger, or untrained animals could be yoked in the middle positions between the wheel and the lead teams. They learned on the job because they had no other choice.

Up front as the lead yoke, Ford says, "you wanted an intelligent team, a brave team" of well-trained animals that were calm, bold, and reliably

responsive to their drover's commands. Longhorns were suited to this position—once their horns were trimmed so they would not accidentally strike the drover or stab a yokemate in the eye. The longhorn was "a very bold, tough, rangy, and fast traveler" that was valued for its courage.

"Because of their bravery, [longhorns] would not balk at crossing streams or mud and were not easily frightened by Indians waving blankets to cause a stampede," Ford notes. "But they required an experienced drover to maintain control, and they were too trim for the wheeler position." Consequently, many emigrants could not use them with their wagons, and chose the reliable Red Durham or Devon, instead.

The most important position in the lineup is the lead ox, the nigh ox of the lead team. For the lead ox, experienced teamsters select their calmest, boldest, most intelligent and reliable steer. He is not necessarily the herd's dominant animal, says Ford, "but while they're in the yoke, he's in control." The lead ox walks next to the drover, where it can see the visual commands and communicate them to the offside ox.

"Oxen are so big that the one on the right cannot see what the drover may be doing," Ford explains, "so the one on the left, the lead ox, will take on the responsibility of transferring your commands over to the other one. For instance, if I tap the nigh ox on the left shoulder to make him come to the left, he will then [swing his head to the left] very abruptly. The other ox sees him do that and feels the tug on the yoke, so that means he gets the signal." Similarly, the nigh ox signals "whoa" by dropping his head.

"You never have to teach [the lead ox] how to talk to the other one because they have a language that's much better than ours for getting the message across," Ford continues. "They don't have to put one word in front of the other and worry about

<sup>20</sup> Some, such as James Norvell's small wagon party, departed with only two yoke per wagon. It was a risky decision as the loss of just one animal—and Norvell's party had several close calls—might force them to abandon a wagon.

whether they're saying the right word. They do it by gestures and motions, mostly where they move their head."

#### SHOEING AN OX

"No hoof, no horse," as the old saying goes. The same was true for cattle: a lame ox unable to work was just a steer, and possibly a soon-to-be meal.

As a wagon train crawled steadily west over plains and mountains, its draft oxen needed several changes of shoes to prevent serious lameness. Shoeing an ox is unlike shoeing a horse in two important respects. First, oxen have split hooves, with two toes, or "claws," on each foot. Instead of four single shoes per animal, as with a horse, oxen require eight comma-shaped, iron shoes—one for each claw.<sup>21</sup> Second, unlike horses, most oxen cannot be tied to a post for shoeing while standing on three legs.

"Bovines," Ford notes, "do not like to have their feet held. They like to keep them planted on the ground." An ox in need of new shoes, he explains, is typically led into a restraint called a shoeing stock, a heavy wooden frame just wide enough for the ox to enter. Its head is then secured between two stanchions and a sling is passed under its brisket (behind its front legs) to keep the ox standing. The farrier lifts one foot and straps it to a block to expose the bottom of the hoof. With the foot in this position, he can shape the claws and nail on the prepared shoe.

Without shoeing stocks, the necessary smithy equipment, or in many cases even the basic know-how, emigrants often waited to have their animals shod by smiths at military or trading posts such as Forts Laramie, Hall, and Bridger. Sometimes, though, a wagon company included a man who

knew how to shoe an ox and carried the necessary tools in his wagon; or sometimes emigrants "shoed" an ox with a pad or crude bootie fashioned from buffalo or ox hide; and sometimes they applied boiled tar and resin to the soles of the hoof to afford some protection from the grinding sand.<sup>22</sup> When emigrants undertook these operations out on the trail, they rarely bothered to construct a shoeing stock, nor did they throw the animal violently to the ground, which could injure it or break its horns. Rather, they "cast" the ox to the ground by squeezing a loop of rope around its middle until it simply laid down. Ford explains the casting process:

"They would put a rope around his neck, loose, . . . put another half-hitch around his girth a third of the way back, and stand back and pull on that rope. The animal would just fall right down." The tightening rope around the ox's brisket presses on nerves that control its legs, he explains. Its knees buckle, and it slowly drops and rolls to its side. The farrier ties its feet and stretches out its legs so it cannot kick and struggle, and then shoes the ox while it lies on its side. Ford says he learned this method from his grandfather and has used it many times.<sup>23</sup>

#### WAGONS, HO! OXEN ON THE TRAIL

Out on the trail, the teamsters yoked up their oxen in predawn twilight while other members of the party prepared breakfast and packed tents and bedding into the wagons. At the captain's command, the line of creaking wagons rolled out with the drovers walking to the left of their teams. Sometimes another emigrant, often a wife or child, trudged along on the right to prod a shirking offside ox.

During the midday meal stop, called "nooning," a

<sup>21</sup> Conroy, *A Teamster's Guide*, 230.

<sup>22</sup> Holliday, *The World Rushed In*, 184.

<sup>23</sup> Demonstrations of the casting procedure can be found on the Internet by searching the phrase "how to cast an ox."



term now familiar to many, the drovers unhitched the teams to rest. They often unyoked one ox and reynoked him facing in the opposite direction, which allowed the animals to graze in circles but prevented them from running off. At evening camp, boys took the working cattle to pasture and turned them out to drink and graze. If the company had enough men, the wagonmaster posted mounted guards around the herd for protection from predators, both animal and human.

Along the Humboldt River ambling through Nevada, hungry Shoshone and Paiute hunters were known to approach emigrant camps at night to cripple the oxen with arrows so that they would be left behind when the wagons rolled out the next morning. Sometimes the Indians caused stampedes, then drove the cattle home to be slaughtered for food. James Norvell, traveling along the Humboldt in 1861, reported two attempted stampedes of his company's cattle. In both instances, Indian men leapt from hiding and charged, yelling among the loose oxen as the emigrants lay dozing during their nooning. Happily for the emigrants, and unfortunately for the starving Indian people, the stampeded animals were readily recovered.<sup>24</sup>

If a company had too few men to post as guards, or if the emigrants simply felt uneasy and vulnerable, they sometimes brought the draft animals inside the circle of wagons overnight for greater security. But having livestock in camp could be dangerous, Ford points out, especially during the first days of the journey when many of the cattle were still half wild. A wagon party encamped upstream from J. Henry Brown's family on Nebraska's Platte River learned that tragic lesson in 1847.

That party, known along the trail as the "Blue

Wagon Train" because of the color of its wagon covers, had just brought its cattle inside the circle for the night when the accidental pop of a pistol's firing-cap startled an ox. As Brown later described the night's events, the ox "gave a jump and bellowed, when the whole herd became panic stricken, making a general rush for the opposite side of the circle of wagons or corral, entirely going over the same, and it was said, that some of the animals actually went over the wagons, crushing everything beneath them."<sup>25</sup>

All of the company's loose stock, including milk cows, horses, and sheep, joined the rampaging oxen and thundered into the night. Some were still jogging as they passed the Brown family's camp eight miles downriver. The wagon-circle stampede left a child of the Blue Wagon Train dead, several adults seriously injured, a number of wagons heavily damaged, a dozen sheep trampled to death, and some of the larger animals crippled.<sup>26</sup>

Many emigrants also chronicled the loss of their oxen on the plains when vast herds of buffalo rumbled through a wagon train, buffeting the wagons and sweeping along loose livestock and any that were able to break away. Thus, *Bos* merged with *Bison*, embracing a new destiny. Sometimes emigrants later spotted their cattle grazing serenely among the buffalo, but the oxen, long wise to the ways of mankind, were able to avoid recapture. The wagons moved on, leaving Buck and Bright to battle the ever-present wolves and survive the approaching Great Plains winter if they could.

For those oxen continuing west with their wagons, water along the trail grew scarcer and the dust billowed thicker. Oxen could tolerate lack of water fairly well because their third stomach, the rumen, stores extra water. It was the dust that

<sup>24</sup> James Norvell, "Reminiscence's [sic] of One Who Crossed the Plains with the Covered Wagons." Manuscript [1861], 917:3 N829r. Missouri Historical Society, 1961.

<sup>25</sup> Brown, "Autobiography," 12.

<sup>26</sup> *Ibid.*, 12–13.



This view captures one of the central sculptures in Omaha's tribute to the pioneer emigrants who traveled west during the mid-nineteenth century. The 31-acre expanse in the heart of downtown Omaha includes two public parks, Pioneer Courage and Spirit of Nebraska's Wilderness, that celebrate both people and land. The oxen in this wagon train were modeled after Dixon Ford's own ox Thor. *Courtesy of the First National Bank of Omaha.*

killed them. "The worst enemy they had was dust," Ford says emphatically. "Dust killed more oxen than Indians or snakebites or anything else did." The reason has to do with the physiology of cattle.

Unlike horses and mules, cattle do not sweat. They are air cooled, like Volkswagens. "The exterior muscles, the leg muscles, the back and all those other muscles could be very hot, much above normal body temperatures. But the heart and lungs have to be kept cool by breathing," Ford says. Then, "dust on the trail starts to coat the ox's nose and nostrils so he can't cool that air." Dust in their nostrils triggers production of mucus as their bodies struggle to clear out the muck. That is not just drool from the oxen's mouths depicted in those old illustrations of wagons on the trail, but strings of mucus dangling from their nostrils. On a hot day, it is imperative to rest oxen often and keep their air passages clear. Emigrant boys had the job of clearing the animals' nostrils, says Ford, using a rag they carried in their pockets. It was an important job.

The first sign of distress, he notes, comes when an ox sticks out its tongue and begins to pant. Next

its head will drop and sway slowly from side to side. That informs the drover that the heat is building in the animal's deep tissues and organs. "And then he coughs—once—because of the dust, and he drops dead because all that heat now comes in on his heart and lungs," says Ford. "He'll just drop dead." Along the network of trails heading west, thousands upon thousands of oxen did just that.

The emigrant trails, particularly in the heat and dust of the Intermountain West, were paved with the remains of oxen that had died under the yoke. Forty-niner H. B. Scharmann of Germany was one of many emigrants who remarked on the losses. While crossing Nevada's fearsome Black Rock Desert, he wrote, "I covered seventeen miles from eleven in the morning until eight in the evening. . . . On the road over which I had travelled during the day I had counted eighty-one shattered and abandoned wagons, and 1,663 oxen, either dead or dying, but no mules." That night Scharmann's own lead oxen collapsed in the trail, and that was just the beginning. Only one of his eight oxen survived the trip to California.<sup>27</sup>

It did not have to end that way, according to Ford. Frequent rest stops and some nose wiping might have saved them.

### THE END OF THE TRAIL

Oxen were lost to many causes on the way west: dust and heat, thirst and starvation, alkali water, illness and injury, raiders and rustlers, overwork and abuse. Some emigrants grieved when a faithful animal expired along the trail. James Abbey and two companions stayed behind with a suffering ox one morning in 1850 when the rest of their company pulled out of camp. The animal died in the Sierra Nevada, just days from the party's destination. "It seemed like parting with an old friend," Abbey wrote. "He had shared with us all the vicissitudes of this toilsome journey, and now to see him expire was truly painful."<sup>28</sup>

But oxen that were driven and tended properly often did survive the entire trip. Daniel Bayley, for example, reached Oregon in 1845 without losing any of his work cattle, even though he drove only two yoke per wagon. "He would not allow them to be whipped or goaded," his granddaughter recalled years later, "and he used to wash their eyes when the alkali dust got into them, and also washed out their mouths and washed their tongues with the family drinking water when there was no water to be had for the oxen."<sup>29</sup>

Cattle that survived the trip usually were put to

work on the farm or in the mining and logging camps, or they might meet their unjust reward under a butcher's blade. Even if put out to pasture for the rest of its natural life, an ox lived only twelve to fifteen years before developing arthritis in its shoulders and hips from its labors under the yoke. Ford's own oxen performed farm work and pulled wagons, but never hauled a three-thousand-pound prairie schooner from St. Joe to California's Central Valley. Yet they, too, developed debilitating arthritis.

"Thor was the best ox I ever had," Ford recounts, thinking about the dozens of oxen he raised and trained. "He was thirteen years old, and one cold winter day he laid down on the floor of the barn in an area where it was a little bit slick, and he couldn't get up. He thrashed and thrashed, and when I found him hours later there was nothing we could do. We warmed him with blankets and put a hoist under him to lift him up, but he was gone too far then, so he eventually had to be put down."

Ford acquired another lead ox, Ruff, and worked him with Thor's life-long teammate, Zeus, for several years. Then one day Ford hauled the team by trailer from his farm to a Utah town where they were to pull a covered wagon in a parade.

"Zeus had a very hard time getting out of the trailer," Ford recalls, "and the next day he had a hard time getting up. We finally got him up and warmed him very slowly. But they pulled the covered wagon in that parade, and that's the last I was able to use him." A couple of months later, in the autumn of 2010, Ruff developed arthritis as well.

Zeus and Ruff were Ford's last two oxen, one of fifteen teams he has owned in his lifetime. He since has razed his barn, sold his pasture, and hung up the ox whip. While not a bit sentimental about his animals—Ford grew up on a farm—he clearly treasures his memories of them and speaks fondly of Thor and Zeus in particular.

27 H. B. Scharmann, *Scharmann's Overland Journey to California: From the Pages of a Pioneer's Diary*, translated from German by Margaret Hoff Zimmerman and Erich W. Zimmerman (Freeport, N.Y.: Books for Libraries Press, 1969), 32.

28 James Abbey, *California. A trip across the Plains, in the Spring of 1850* (New Albany, Ind.: Kent & Norman, and J. R. Nunemacher, 1850), 56.

29 Mrs. J. F. Galbraith [Reminiscences], in Fred Lockley, *Conversations with Pioneer Women* (Eugene, Ore.: Rainy Day Press, 1981), 243.





NOVELISTS, INTERPRETERS, AND STUDENTS OF THE Oregon, California, and Mormon trails often write about emigrants and their oxen, and artists frequently depict oxen drawing wagons along the overland trails. All sometimes find their efforts limited by the unfamiliar details of nineteenth-century working cattle and yoking and driving oxen. Firsthand knowledge, shared by experienced drovers such as Dixon Ford, will help everyone interested in the overland trails gain a clearer understanding of oxen, and create more accurate representations of these animals that were the “engines of the emigration.”

#### A DROVER'S TALE

One bright Saturday morning in early autumn, twelve-year-old Dixon Ford headed over to his grandparents' farm to practice driving his young team of Brown Swiss oxen. The boy had spent his summer gentling and training the fawn-colored twin calves, a gift from his grandfather, to pull under yoke. In 1944 few people farmed with oxen anymore, but Dixon was eager to learn the farming traditions of his Mormon pioneer ancestors, and his grandfather took pleasure in teaching him.

Approaching the farmyard, Dixon could see that his calves weren't waiting for him in their pen as usual. As the boy drew closer he realized with a shock what was wrong. Two wet hides hung dripping over the fence. Two horned heads stared blindly skyward. Dixon's gentle, obedient oxen were now mere beef.

“It's how it had to be,” he says today, and if his uncle had not butchered the pair, then his grandfather or father eventually would have—but surely after first explaining the necessity to him.

“Then and there I decided that someday I'd have enough money that I could have all the oxen I wanted without having to kill them,” Ford recalls. He did just that, earning success as a manufacturing engineer and inventor of life-saving medical devices and much more. Over the years, he has owned and trained fifteen pairs of oxen for use in public demonstrations, reenactments, parades, and movies.

In 2012, Ford sold his last team and gave up his lifelong hobby. Today he resides in semi-retirement with his wife, Rita, at their historic farm in Fruit Heights, Utah. Ford continues to invent; he is now patenting an improved trailer hitch. Recently he designed a device to prevent backyard roosters from disrupting their neighborhoods by crowing, but he abandoned the project because the implant bothered the birds. The name of the device? Cock-a-Doodle-Don't.

LEE KREUTZER

*Left, Engineer, inventor, trainer, and drover Dixon Ford. Photograph courtesy of Dixon Ford.*

Many emigrants, too, grew attached to their oxen and fondly recounted their names and characteristics decades later. Nine-year-old Joseph F. Smith, traveling with his widowed mother in 1848, yoked and drove his family's oxen all the way to Utah. Years later he related,


My team leaders' names were Thom and Joe—we raised them from calves, and they were both white. Thom was trim built, active, young, and more intelligent than many a man. Many times while traveling sandy or rough roads, on long, thirsty drives, my oxen were lowing with the heat and fatigue. I would put my arms around Thom's neck and cry bitter tears! That was all I could do. Thom was my favorite and best and most willing and obedient servant and friend. He was choice!<sup>30</sup>

Mary Medley Ackerly, of the 1852 California emigration, wrote, "I must pay tribute to our wheel oxen, Dick and Berry, who drew the family wagon all the way across the plains. They were gentle, kind, patient, and reliable. I loved them and my heart often ached for them when they tried to hold back the wagon on a steep hill. . . . I knew they suffered."<sup>31</sup>

B. F. Nichols, who traveled overland to Oregon in 1844 and later published his reminiscences of the experience, summed up the feelings of many a traveler by declaring that the oxen of the emigration "should have been decently buried at death and a monument erected over their graves."<sup>32</sup>

Nichols would be pleased to know that just such a tribute exists today. In downtown Omaha, Nebraska, stands a breathtaking, one and one-quarter life-size sculpture of a wagon train that spans several city blocks. Some of the westward-moving wagons are pulled by teams of bronze oxen, leaning into their yokes as they climb a rise beyond the Missouri River near the city's edge. Those oxen are authentic in every detail, and well they should be: they are modeled after Ford's own magnificent Thor.<sup>33</sup>

DIXON FORD is a retired inventor and manufacturing engineer who has been active in displaying oxen in an accurate 1840s historical manner. In 2006 Dixon and his grandson, Blake, took his team of oxen on OCTA's Ezra Meeker reenactment along the original track. In 2008, he produced the documentary film *The Hard Road West*, about the Donner Party, which has aired on television.

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<sup>30</sup> Joseph F. Smith, "Reminiscences," in Susan Arrington Madson, *I Walked to Zion: True Stories of Young Pioneers on the Mormon Trail* (Salt Lake City: Deseret Book Co., 1994) 36–37.

<sup>31</sup> Mary Medley Ackerly, "Crossing the Plains and Early Days in California," in Jo Ann Levy, *They Saw the Elephant: Women in the California Gold Rush* (Norman: University of Oklahoma Press, 1992), 20.

<sup>32</sup> B. F. Nichols, "Across the Plains in 1844," in Will Bagley, *So Rugged and Mountainous: Blazing the Trails to Oregon and California, 1812–1848* (Norman: University of Oklahoma, 2010), 153.

<sup>33</sup> Omaha's two downtown sculpture parks, Pioneer Courage and Spirit of Nebraska's Wilderness, together span thirty-one acres. The sculptures already completed include a spectacular forty-foot wagon train of four families starting for the West, a herd of stampeding bison, a flock of Canadian geese, water sculptures, and more. The wagon-master alone stands eleven feet tall and weighs one ton. In 1998, Omaha's First National Bank set aside the two parcels, designating the six city blocks as interactive, public green space, and dedicating the parks to the "future generations of Omaha." The parks are located between 1400 Capitol Street and 1600 Dodge Street. The award-winning project, including a preview video by PBS, can be found at <http://www.boodyfinearts.com/projects/firstnational.html>. Accessed February 11, 2015.