In Search of the Perfect

Now may be the time to invest in a working facility upgrade and some low-stress cattle-handling demonstrations.

*by **Troy Smith,** field editor*

The time might be right. For cattle folk contemplating improvements to existing processing pens or the construction of brand new working facilities, there may be no better time than the present.

"Never before have livestock producers come under so much scrutiny because of the growing public awareness of animal welfare issues. It's in their own best interest, and that of the industry, for beef producers to have facilities that allow cattle to be processed safely and with the least stress possible," says Tom Troxel, University of Arkansas animal scientist.

"Investing money in improved working facilities is good for the well-being of both animals and their handlers. It's an investment in efficiency, and it may be most affordable right now," adds Troxel. "Cattle prices are high, and the cattle business has been profitable. This might be a good time to put part of those profits into new or improved working facilities."

PHOTO COURTESY OF MELISSA ARHART

►From a Bud Box at right, cattle enter this single-file alley leading to a squeeze chute to the left and outside the photo. Located on the Emery, S.D., farm owned by Greg and Dwight Pullman, the alley originally had sides that were solid top to bottom so cattle could see only straight ahead. "We removed sheet metal from the upper near side of the alley," explains Greg Pullman. "Cattle seemed to flow through the system better. They entered (from the Bud Box) and moved toward the chute more readily."

If there is a working facility design that's likely to fit all or most cattle operations, Troxel hasn't seen it yet. A working facility should fit the needs of the individual operation. He has visited a good many operations and seen wide variation in working facilities. However, most fall within one of three basic design types, based on the kind of animal-processing area the facility employs.

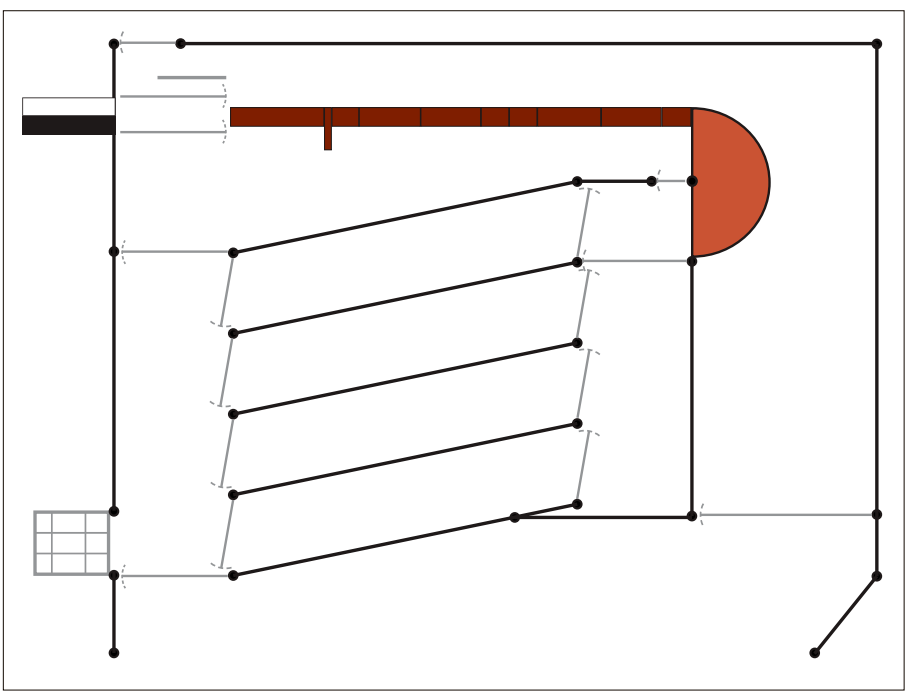

ILLUSTRATION COURTESY MATT FLYNT

►This diagram sent by Lonoke, Ark., producer Matt Flynt illustrates holding pens, sorting alleys and tub system — a general pattern he plans to follow when building an additional working facility at a remote location. Flynt plans to make the single-file alley leading to the chute curved instead of straight.

Three designs

Many operations still use a traditional kind involving a pen that's narrow at one end, so cattle can be funneled into a single-file alley. The alley leads to a headgate or squeeze chute where animals may be restrained individually.

Gaining popularity for several years has been a processing-area design incorporating a semi-circular pen, often called a crowding tub or sweep tub, from which cattle are directed into a single-file alley. Tubs typically utilize a sweep gate that hinges at the midpoint of the tub's flat side. Animals placed inside the tub are urged to enter the single-file alley by pressuring them with the sweep gate. The single-file alley leading to the headgate also may be curved, according to design principles advocated by Colorado State University professor, animal behaviorist and facility designer Temple Grandin. Many commercial manufacturers market tub and alley systems inspired by Grandin's designs.

Another type of processing-area design utilizes the Bud Box popularized by the

Cattle-Working Facility

35 Keys to Success
Facilities

35 Keys to Success
Cattle Handling

PHOTO COURTESY OF MELISSA ARHART

►The Pullman operation has two Bud Box working facilities. Dwight Pullman constructed one of them by himself, using prefabricated tubular steel fencing panels, like those shown here, mounted on posts cut from used utility poles. Taken from the alley leading to the Bud Box, this photo shows the entry gate open and flush against the fence at right. After cattle enter and the gate is closed, the animals turn back from the far blue gate. A handler positioned on the left side of the Bud Box can direct cattle into the single-file alley leading to the squeeze chute.

late Bud Williams, a noted stockman and livestock-handling consultant. The Bud Box consists of a small rectangular pen, from which cattle are directed to a crowding alley extending, at a right angle, from one corner of the pen.

According to Troxel, cattle producers typically choose one of these processing area designs based on personal preference. From there, however, working facilities often are customized, incorporating many variations relating to the number and arrangement of enclosures for collecting, sorting and holding groups of cattle. Numbers of animals processed, frequency of processing and the various practices performed influence facility features. In addition to a headgate or squeeze chute, a facility may be adapted to include a livestock scale or a loading chute. Constructing all or part of a working facility within a building, or at least under a roof, can add a measure of comfort to man and beast.

"Facility design is important to our goal of keeping cattle as calm and quiet as possible during processing, and to promote efficient administration of animal health products and other management practices. However, I don't think there is a 'perfect' facility design," states Troxel. "Regardless of the type of facility available, the stockmanship techniques used by the handlers will be key to successful cattle processing."

Troxel advises producers contemplating construction of new working facilities to glean ideas from their peers. Looking at different facilities at a variety of operations often helps a producer determine whether certain design features may enhance his or her own facility. It proved useful to Matt Flynt, who maintains a cow-calf operation near Lonoke, Ark. His reasoned approach to working-facility design earned Flynt an invitation to share his experience with other producers during a University of Arkansas beef conference on animal welfare.

Fit your purpose

Flynt makes no claim to discovery of the perfect setup, but certain features do fit his operation. One thing he emphasizes is careful consideration of the site where a working facility will be located.

"Ideally, a working facility is built on high ground, or a site that is well-drained. It helps if it is centrally located for bringing in pasture cattle," offers Flynt. "Availability of electrical power is a plus, as well as accessibility to a well-maintained road. The ability to bring in semi-trucks may be important to marketing."

Flynt favors a crowding tub with a sweep gate that swings at least 120°, but 180° may be even better. He prefers that the tub direct cattle into a curved crowding alley leading to the squeeze chute. Flynt likes solid sides or walls on both tub and alley, to limit the animal's view of potential distractions that may cause them to balk or become nervous. Solid sides are often adopted for facilities located near areas of heavy traffic or other activity.

The curved alley is based on the premise that cattle move more freely in circular fashion, and especially if they think they are going back toward the direction from which they came. Also, a curved arrangement of the crowding tub, single-file alley and squeeze chute creates a smaller working area for handlers. Fewer steps may be required to move from one end of the processing system to the other.

"I prefer a curved alley, but I like a straight section at the entrance from the crowding tub," explains Flynt. "If the alley curves too soon, it looks like a dead end and animals may be reluctant to enter. If the alley is straight for two to three cow lengths, cattle seem to flow into the alley better."

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PHOTO COURTESY MATT FLYNT

►Matt Flynt and daughters, Carolyn and Kendall.

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Flynt recommends that all working-facility fences be at least 5 feet (ft.) in height, though 5½ ft.-6 ft. is advisable for cattle of large mature size. His single-file alley measures 28 inches (in.) in width. However, alleys whose width is the same, from top to bottom, can allow calves to turn around. Alley sides that slope to a narrower width at the bottom — no more than 16 in. — will accommodate cattle of different sizes, and often save handlers time and frustration.

For Flynt, ease of cattle processing is enhanced when a facility includes one or more sorting alleys and multiple holding pens where cattle can be sorted by sex, age or whatever reason, and held before or after processing. When Flynt gathers a pasture, cattle are brought into a catch-pen large enough to confine the entire herd. He recommends that a catch-pen allow 75 to 100 square feet (sq. ft.) per animal. From there, smaller drafts of animals can be moved into an adjacent sorting alley.

"For sorting, I like an alley that's 12 feet wide and 60 to 80 feet long. From that alley, I can sort cattle into my holding pens. For those, I like to allow about 40 square feet per animal," says Flynt. "I like to be able to sort before or after cattle are processed, or both, so my facility allows animals to be sorted back into holding pens after they exit the chute."

Having an ample number of holding pens also allows Flynt to sort cattle into relatively small groups that can be handled efficiently. Each group can be processed quickly, spending only a short time in the single-file alley.

"More animal injuries occur when cattle spend too much time crowded up and waiting their turn in the chute," Flynt says. "I want to get them through the chute and back out where they have more room and experience less stress."

Bud Box example

Minimizing stress is a concern for the VanDusseldorp family, too. Located near Platte, S.D., the VanDusseldorp operation includes cow-calf, stocker and finishing enterprises. The application of synchronized artificial insemination (AI), routine animal health practices and ultrasounding of fed cattle mean cattle must be worked frequently.

"We had a crowding tub system and [single-file] alley with all solid sides, and it worked okay," says Mark VanDusseldorp. "Sometimes, though, the cattle wouldn't flow through the system easily. It didn't always work as well as we'd like."

About two years ago, the VanDusseldorps replaced the tub and solid-side alley with a Bud Box and open-side alley. The new facility is housed in a 60-ft.-by-125-ft. building at headquarters, and two smaller Bud Box facilities are used in remote pasture locations. The latter are constructed of portable panels and can be relocated as necessary.

When correctly handled cattle are brought into the rectangular Bud Box, they come to a dead end and must turn back toward the entry gate, which has been closed behind them. As they approach the gate, the only escape is through the single-file alley whose opening is adjacent to the Bud Box entry gate. Depending on the producer's preference, the alley may be straight or curved.

PHOTO COURTESY MARK VANDUSSELDORP

►Here is one more view from inside the Bud Box, looking toward the entrance to Mark VanDusseldorp's double single-file alley.

"We work cattle through our Bud Boxes on foot and on horseback. Our Bud Box gates have slam-latches that we can operate from a horse. We've made the gates solid, so cattle can't see through them, and that makes cattle look for (the entrance to) the alley," VanDusseldorp explains.

Once cattle have entered a single-file alley, forward motion has been easier to control when cattle can see their handler. Therefore, VanDusseldorp alleys do not have solid sides.

While producers don't always agree on the ideal Bud Box dimensions, VanDusseldorp says a Bud Box that's 12 ft. wide and 24 ft. long has worked well. A little more room (14 ft. by 26 ft.) might be desirable when cattle are worked from horseback.

"We learned that however you do it, you have to handle the cattle right. You can't try to fill up the Bud Box and pack your alley full of cattle. We can keep things flowing by bringing in just two or three animals at a time," adds VanDusseldorp.

All about technique

Melissa Arhart has watched and lent a hand while cattle were worked by VanDusseldorp's crew and those of other clients. An ultrasound technician and former extension educator, Arhart has seen working facilities ranging from plain to fancy. She's seen cattle processed with difficulty and with relative ease. Her own family has experienced both.

Arhart and husband Andrew, along with Andrew's brother (Jonathan) and sister-in-law (Joy), run a diversified cattle, swine and farming operation near Alpena, S.D. Several years ago, the family designed a cattle-working facility built inside a barn and utilizing a crowding tub and alley with solid sides.

"That kind of system was gaining popularity at the time, especially on larger operations that frequently handled large numbers of cattle. We thought we had built a nice system, but we still struggled at times," tells Arhart.

"Too often we found ourselves doing a lot of pushing with the tub's [sweep] gate and urging cattle with paddles, while the cattle milled around inside the tub. We had to work way too hard to get forward movement. I saw some of the same things happening to other people, even on operations that had awesome facilities."

Then, at an area cattlemen's meeting, Arhart watched veterinarian and stockmanship clinician Tom Noffsinger demonstrate the low-stress cattle-handling methods originally taught by Bud Williams. Later, Arhart attended a second demonstration and visited at greater length with Noffsinger. He advised against replacing

PHOTO COURTESY OF MELISSA ARHART

►Pictured with husband Andrew, ultrasound technician Melissa Arhart's exposure to many different working facilities has influenced her preference for facilities that include a Bud Box. Still, replacing her family's crowding tub system wasn't practical. With a few modifications and a focused approach to cattle handling, the existing system works fine. Believing stockmanship is key, regardless of facility design, Arhart has developed a DVD that demonstrates low-stress handling methods.

the existing Arhart facility and urged the family to focus on stockmanship.

Noffsinger urged the Arhart clan to practice low-stress cattle-handling techniques whenever animals were gathered, moved and sorted — even outside the working facility — to get cattle "trained" for handling in close quarters. He emphasized the concepts of handler position and timely application and release of pressure. Arhart says adoption of better handling methods made the biggest difference in how well cattle flowed through the working facility.

"We wouldn't have thought that cattle would voluntarily walk into the shed and right down the alley. It took a change in how we handled them outside, and a change in how we used our tub to get these results," says Arhart.

Now, just two or three animals at a time are brought into the tub, and the sweep gate remains open. Instead of crowding animals into the single-file alley with the gate, the cattle handler positions himself or herself to direct the animals through the tub and into the alley.

Inexpensive modifications to the working facility included adding windows to allow more natural light in the barn. Additionally, some sheet metal was removed from along the top of the alley sides. Arhart believes it helped cattle feel less claustrophobic. It also allowed cattle to see handlers move along the outside of the alley to initiate forward movement.

A number of Arhart's clients have adopted working facilities that utilize a Bud Box. While she and her family thought it impractical to replace their existing tub system, she believes producers starting from scratch should consider the Bud Box concept. They probably won't be satisfied, however, unless they apply appropriate cattle-handling techniques.

Jason Cater, a veterinarian and University of Arkansas-Monticello assistant professor, believes good stockmanship is key to consistent success, regardless of the kind of working facility used. That said, Cater agrees that proper use of a Bud Box probably requires a higher level of skill. Acquiring that skill is worth the effort, considering Bud Box advantages — particularly to small operations.

"For one thing, a sturdy, long-lasting facility with a Bud Box can usually be constructed for considerably less money than a tub system," says Cater.

Noting that a modest cattle operation typically doesn't warrant expansive and expensive working facilities, Cater says his own cow-calf operation is well-served by a facility including a few pens for sorting and a Bud Box measuring 12 ft. by 20 ft. The Bud Box directs cattle into a single-file alley long enough to hold four cows at a time. Cater doesn't like alleys with solid sides, preferring that waiting cattle be visible to him while he works at the chute, and that cattle be able to see him walk toward the rear of the alley to move animals forward.

"I think a facility like mine is user-friendly when applying proper cattle-handling methods. I can work cattle by myself and that's an advantage," states Cater.

Cater agrees that no facility design will be perfect for all or even most producers. Personal preferences vary too much, and satisfaction with any particular design will vary according to the people who actually use the facility.

"We've stepped up our educational efforts to make producers and our student population more aware of the advantages of better cattle-handling methods," he adds. "It's important to have useful working facilities that are safe for handlers, as well as cattle, but facility design is no substitute for good stockmanship."

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Editor's Note: *Troy Smith is a freelance writer and cattleman from Sargent, Neb.*

►This would be mounted Mark VanDusseldorp's view looking toward the interior of his family's cattle working barn. Upon entering the building, the alley leads to a Bud Box whose solid, sheeted gate stands open and flat against the right-hand wall.