

Cows and calves can be sorted with only one pass through this curved corral system. Cows go through one of the diagonal pens into the large post working pen. Bull, heifer and steer calves are separated into three different pens. The curved sorting lane has a 24 -inch wide solid metal belly rail to prevent calves from becoming spooked.

# Efficient Curved Corrals 

by Temple Grandin, Consultant and Designer Grandin Livestock Handling Systems, Tempe, Ariz.

A V-shaped single-file lead-up chute with solid sides can handle a variety of cattle sizes. Jim Uhl of Agro Construction, Scottsdale, Ariz., demonstrates that the handler should work from a catwalk that runs along the inner radius


This is an over-all view of a corral system designed by the author that almost eliminates square corners in which cattle can bunch up. Cattle are held in the curved sorting reservoir lane and sorted back into the diagonal pens.



DIAGRAM 1. This is a general purpose corral system for shipping, branding, sorting and A.I. It can handle 300 cow-calf pairs or 400 mature cows. Capacity can be increased to 1,000 pairs by adding more diagonal pens and holding pen space.

## A designer of livestock facilities offers some advice on corrals.

Acorral constructed with round holding pens, diagonal sorting pens and curved drive lanes will enable you to handle cattle more efficiently because there are few square corners for cattle to bunch up in.
The principle of the corral layout in Diagram 1 is that the animals are gathered in the big round pen, then directed to the curved sorting reservoir lane for sorting and handling. The curved sorting reservoir lane serves two functions. First, it is used to hold cattle being sorted back into the diagonal pens. And it also is used to hold cattle waiting to go to the squeeze chute, loading chute, calf table or A.I. chute.

Three or four people can easily gather and sort the cattle. With the corral system shown in Diagram 1, it usually takes less than three hours to gather and sort 300 cow-calf pairs. For pregnancy testing, working calves or synchronized breeding of large numbers of cows, one or two people can keep the squeeze chute supplied with cattle.

## Diagram 1

The corral shown in Diagram 1 is a general purpose system for shipping calves, working calves, sorting, pregnancy testing and A.I. It can handle 300 cow-calf pairs or 400 mature cows. It is equipped with a 2 -way sorting gate in front of the squeeze chute for separating pregnant from open
cows. Depending upon your needs, you can position either the squeeze chute, A.I. chute or calf table at this gate. The corral also has a trap gate to aid in catching cows for A.I. or doctoring. If cattle are watered in the large gathering pen, they will get used to coming in and out of the trap gate. Then if you need to catch an animal, you merely shut the gate and she is directed up the curved reservoir lane to the chutes.

The curved sorting reservoir terminates in a round crowding pen and curved singlefile chute. The crowding gate has a ratchet latch that locks automatically as the gate is advanced behind the cattle. In order to load low stock trailers easily, you simply open an 8 -ft. gate that is alongside the regular loading chute. This gives you the advantage of the round crowding pen for stock trailers.

Diagram 1 also can be adapted for use with a prefabricated steel circle crowding pen and half circle single-file chute. Since the prefabricated units have a $12-\mathrm{ft}$. radius instead of the $16-\mathrm{ft}$. radius shown in the drawing, you will have to move the sorting gate. If you plan to build the entire setup yourself out of either wood or steel, it is recommended to keep the $16-\mathrm{ft}$. single-file chute radius. This is especially important if you have big cows.

## Diagonal Sorting Pens

When cows and calves are being separated, the calves are held in the diagonal
pens and the central drive lane, and the cows are allowed to pass through one of the diagonal pens into the large post working pen. The diagonal pens and the central drive lane in Diagram 1 can hold 300 weaned calves overnight or 500 weaned calves crowded. Each $70 \times 12$-ft. diagonal pen holds 60 weaned calves overnight or 85 weaned calves crowded. If the mother cows are put in the diagonal pens, each pen can hold 40 cows overnight or 50 cows crowded. These capacities may vary depending on the size of your cattle.

To expand the corral system to handle more cattle, you can add more diagonal pens. Do NOT increase the length of the diagonal pens, because if they are too long, the cattle will tend to bunch up. You can increase the diagonal sorting pen capacity to 1,000 calves. It is NOT recommended to increase the size of the round gathering pen beyond the $55-\mathrm{ft}$. radius shown. If the round gathering pen is too large, you may have difficulty getting the cattle into the curved reservoir lane.

In order to increase the cattle gathering area, you can build a wire fenced holding pasture connected to the pasture entrance. After the first 300 pairs are sorted or worked, you can bring in 300 more pairs. The post working pen can be enlarged to hold cows after sorting or handling in the squeeze or A.I. chute.


DIAGRAM 2. This is an economical corral system for smaller operations or a pasture corral on a large ranch. It can handle 200 cow-calf pairs of 250 mature cows, and it can be expanded to handle 300 cow-calf pairs.

## Diagram 2

The layout in Diagram 2 is designed for smaller ranches as a main working corral or for larger operations as a pasture corral. It is economical to build but still retains many of the features of Diagram 1. It can handle 200 cow-calf pairs or 250 mature cows. By increasing the radius of the gathering pen to 55 ft . and lengthening the central drive lane, it can be expanded to 300 pairs or 400 cows.

In Diagram 2 you can sort two ways out of the squeeze chute and sort three ways from the curved reservoir lane. Groups of cattle held in the curved reservoir lane can be sorted into the post working pen, the central drive lane or the round pen that is formed by the inner radius of the curved reservoir lane. When calves are being separated from cows, the cows can be cut into the post working pen and the calves into the central drive lane.

## Corral Construction Tips

Five-foot high fences are usually sufficient for Angus cattle. If you have Brangus or exotic crosses in your herd, it may be advisable to build $6-\mathrm{ft}$. high fences. Solid fences that do not permit the cattle to see through, under or over should be used in the single-file chute, round crowding pen and loading chute. If your budget permits, it is also recommended to use solid fencing in the curved reservoir lane. Solid fences im-
prove the efficiency of cattle handling because animals do not become spooked or distracted by moving objects outside the facility. If solid fencing in this area is too expensive, you should at least install a wide belly rail along the fence.

Cattle have a strong instinct to follow the leader. Sliding and 1 -way gates in the sin-gle-file chute should NOT be solid. Cattle approaching the entrance of the single-file chute should be able to see other cattle in front of them moving down the chute. If the entrance gate is solid, they are likely to balk and turn back because it looks like a dead end. It is important, however, that the sides of the crowding pen and the crowding pen gate be solid. The cattle should see only one path of escape.

## Catwalk

The catwalk around the single-file chute should be on the inner radius. Since cattle have $360^{\circ}$ panoramic vision, they can see all around themselves without turning their heads. When you walk into a pen of cattle, you probably notice that they tend to circle you while keeping a safe distance. A catwalk along the inner radius takes advantage of this natural tendency to circle. The catwalk should run alongside the single-file chute-NEVER over it. The recommended dimension is 42 inches from top of the single-file chute to the platform on which the person stands. This brings the top of the
single-file chute to belt buckle height on the average person.

- Many people make the mistake of building working and loading chutes too wide. A $V$-shaped single-file chute that can handle both mother cows and calves should be 16-18 inches wide at the bottom and 32 inches wide at the top. The 32 -inch measurement is taken at the $5-\mathrm{ft}$. level. If the chute has straight sides, it should be 26 inches wide for cows, 18-20 inches for small calves.


## Loading Chute

The loading chute should be $28-30$ inches wide. This will handle the largest bulls. If the chute is going to be used for calves only, it should be narrower. The best loading chutes have a stairstep ramp. The recommended dimensions are a 4 -inch rise and a 12 -inch tread width. In order to prevent the animals from slipping in areas paved with concrete, the concrete should be scored with deep grooves. A grid constructed from 1 -inch steel bars will keep the cattle from falling when they leave the squeeze chute.

In areas with a solid fence, small man gates should be installed so people can get away from charging cattle. The best type of man gate is an 18 -inch wide spring-loaded metal flap that a person can quickly step through because there are no latches to fool with.

