



At the Hoard farm . . .

# Sizing free stalls involves tough decisions

by Hoard's Dairyman magazine and farm staff

**STALLS FOR COWS** are 48 inches wide. Those for heifers are 46 inches wide. Installing the right free stalls for any herd is a balancing act involving stall length and width, neckrails, and brisket positioners if you have them. Note our stalls also include a plastic, web-like material that helps reduce sand use.

**F**REE stalls have been in use roughly 60 years. You would think that, after six decades, there should be more of a consensus on how to design and size the stalls. But no such luck.

There are many guidelines for stall sizes and designs, but there are about as many differences of opinions on the details as there are people writing down the guidelines. Just ask anybody who has had to say, "O.K., this is what we're going to do."

Even after you visit, ask, and research, you still won't know if you've done the right thing until the cows start using the barn. The entire process would be a lot easier if all cows were the same size and got up and down the same way.

We have deep-bedded sand in our stalls. Originally, we did not plan to have sand, but the more farms we visited and the more we thought about it, sand seemed to be the way to go. (More about the decision on using sand and our experiences with sand in a future issue.)

## No brisket board . . .

We chose to make our face-to-face stalls 16 feet from outside curb to outside curb. Our cows are good-

sized Guernseys. We estimate dry matter intakes on the basis of 1,400 pounds of body weight. We also chose to not install a brisket board or brisket positioner.

Frankly, we probably would have been better off with a curb-to-curb dimension of 15-1/2 feet or even 15, and that may be how we go in the second free stall barn.

Our cows actually stay quite clean, but there are more manure piles at the rear of the stalls than we would like to see. From the udder health-milk quality standpoint, this is not good. However, average somatic cell count in the new barn runs between 190,000 and 260,000.

As an experiment, we placed lengths of 8-inch drain tile in front of some stalls to serve as a brisket positioner. Those stalls do not get as heavily used and do not appear to be as comfortable for the cows.



Nigel Cook and his colleagues at the University of Wisconsin vet school like to see the top of a brisket board or positioner no more than 4 inches higher than the rear curb. The thinking is that cows like to put their front legs over the brisket positioner when lying down. Just placed in the way they were, our drain tiles probably were 6 to 8 inches above the rear curb.

Do free stalls of the proper length need a brisket positioner? We're not convinced they do and probably won't use them in the future barns either. We tend to place a mound

of sand toward the front of the stalls. In a sense, this acts in much the same way as a brisket positioner.

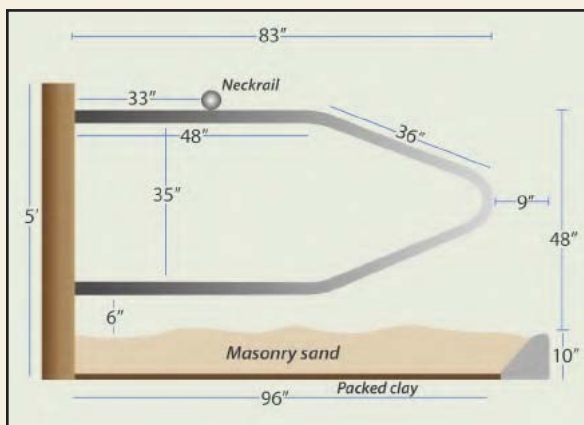
Our neck rail is positioned approximately 42 inches above the sand in the stalls and 33 inches away from stall fronts. When first installed, the neck rails were closer to the front, but we moved them back 2 inches or so to help keep the stalls cleaner.

We installed a plastic web-like product in the stalls to help reduce sand loss. With our once-a-week bedding, there are times when the webbing becomes exposed. We see cows avoiding those stalls and probably can attribute at least one injured teat to the webbing, although that still would be a big improvement over the old stall barn.

Sand use runs about 20 pounds per cow per day. We are pleased with that and believe the web-like product helps cut sand use. We had budgeted for 35 pounds of sand use per stall per day.

We use masonry sand. At the present, it costs us \$11.50 a ton, so bedding cost runs about 12 cents per cow per day.

We probably will use the web-like product in our next stalls. However, we will try to lower the top of the clay base so we can keep 5 to 6 inches of sand over the web, rather 3 or 4. We also will



**DIMENSIONS OF THE STALLS** for our 1,400-pound Guernseys. Our next stalls probably will be 6 inches shorter. Note that there is not a brisket positioner.

position the web farther to the front of the stalls so it covers only the front half. It is in the front of the stalls that the cows do their pawing. They stop pawing when they sense the web so it, in a sense, trains them to not kick sand out of the stalls.

The web costs about \$16 per stall. If it saves 3 pounds of sand per stall per day, it cuts sand use by more than \$6 per stall per year. But, just as important, it reduces the amount of sand that needs to be dealt with downstream.

The drawing shows our free stall partitions. Our contractor and dairy equipment supplier, the Scharine Group, Whitewater, Wis., also is in the metal fabrication business. The partition design was one we all agreed upon, and the results have been very good, in our opinion. The partitions position cows well in the stalls and have not caused any injury that we know of.

Our free stall partitions for the cows are 48 inches apart. For the pen with first-calf heifers, they are 46 inches apart. These widths would have worked well. We probably would make stalls for a close-up group about 50 inches wide.

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