

# Observing Dairy Cattle in Freestalls - Stop, Watch, Listen, Think, and Change

By: Jeffrey Bewley, Ph.D.



**STOP** your normal routine for a few minutes

**WATCH** how your cows behave within your barn

**LISTEN** to what they tell you about your freestall barn

**THINK** (critically) about how you can correct any problems you observe

**CHANGE** your existing freestalls to better meet your cows needs

You'll be amazed at how much these five steps can improve cow comfort on your dairy farm. Often, dairy producers wonder why their cows do not spend as much time lying in their freestalls as they should. This situation is particularly problematic when cows choose to lie in manure-covered alleys rather than in the freestalls (Figure 1). In comfortable, well-designed freestalls, cows will spend most of their time lying or standing straight (parallel to the length of the stall) in the stall (Figure 2). Approximately 2 hours after milking, about 90% of the stalls should be occupied. Continuous monitoring of stall use and cow behavior while getting into and out of stalls is essential for assessing cow comfort. By understanding what behaviors to look for, you can learn what minor adjustments need to be made to the standard recommendations to best fit the needs of your cows in your facilities.

Watch the cows as they lie in the stalls. Think about how a cow gets up when she is on pasture. Her behavior in freestalls should be similar to this. Typically, a cow will first shift to move her front knees beneath her body. Then, she lunges her head forward transferring weight to the front of her body which also allows her rear end to be easily lifted. Next, she shifts weight to one knee and straightens the other front leg with the foot in front of the shoulder. Finally, she shifts her weight to the straightened leg pushing up and straightening the other front leg to finalize her standing position.

Do the cows enter the stalls with ease and with minimal hesitation? Do they come into contact with any part of the stall while lying down? Watch cows as they rise from a resting position. Do they come into contact with any part of the stall while getting up? Is there adequate lunge space for their heads as they rise? Do you see any potential for injury as the cows get into and out of stalls? Do cows spend considerable time standing in the stall, showing hesitation, before lying down in the stall? Do they push their nose or mouth against pipes or stall structures? Do cows stand in the freestall, swinging their heads to the left and right? Once cows are lying, do they appear calm or restless? Restlessness, or frequent changing of positions while lying, may be another sign of potential cow comfort shortcomings. Finally, spend some time looking at the cows focusing on the hocks, knees, and rumps. Do you see any evidence of injury, abrasions, abscesses, bumps, or bruises that may have resulted from getting into and out of the freestalls? If you stand in front of the stall and drop to your knees, is it a painful process? If so, how do you think this "knee test" reflects the cow's experience in using the stall? All of these observations may indicate potential improvements can be made through freestall modifications.

Once you have observed the cows, use a tape measure to assess the dimensions of your existing stalls. Be sure to collect measurements for all types of stalls in your barns. For

example, the dimensions may be different for stalls on the outside walls or if a different type of loop is used in one row versus the others. Once you have collected this information, compare your dimensions to the recommendations listed below (Table 1). Select freestall dimensions for the largest cows in your herd. Varying cow sizes within a herd should lead to varying stall sizes. A one-size-fits-all approach to freestall design is not conducive to optimal cow comfort. When possible, first lactation cows should be provided a separate pen with smaller freestalls to accommodate their smaller frame size.

**Figure 1.** When a high proportion of cows choose to lie in the freestall alleys rather than in the stalls, this may be an indication that the freestalls do not provide a comfortable resting area.



**Figure 2.** In well-designed and well-maintained freestalls, most cows will be observed resting comfortably or standing straight in the stall. In both positions, cows should be located parallel to the length of the stall.



**Table 1.** Recommended freestall dimensions by cow size (Graves et al., 2005, Cow Freestall (Cubicle) Types and Details).

Animal Weight (lbs)	Total Stall Length Closed Front (in)	Total Stall Length Open Front (in)	Length to Brisket Tube or Board (in)	Length to Neck Rail (in)	Stall Width Center to Center (in)	Height to Top of Partition (in)	Height to Top of Neck Rail (in)	Brisket Tube or Board Height (in)
900-1100	90 - 96	78 - 82	64 - 66	62 - 64	41 - 43	42 - 44	42 - 44	4 - 6
1100-1300	96 - 102	80 - 86	66 - 68	64 - 66	43 - 45	44 - 46	44 - 46	4 - 6
1300-1500	102 - 108	90 - 96	68 - 70	66 - 68	45 - 48	46 - 48	46 - 48	4 - 6
1500-1700	108 - 114	96 - 102	70 - 72	68 - 70	48 - 52	48 - 52	48 - 52	4 - 6