

A Producer's Experience With Freestalls

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Over the past 10 years, the transition to freestall facilities in the dairy industry has greatly increased the profitability of many dairies perhaps none more so than dairies in the West. Once seen as a luxury for dairy producers, freestalls are now becoming a necessity as dairy size increases and land costs continue to rise. Freestalls can provide producers with a crucial edge in today's competitive environment. Properly designed and maintained freestalls will add to the profitability and efficiency of your dairy as they have our operations. Our freestall facilities have reduced cow stress, which has increased production, improved reproduction efficiency and overall herd health. Freestalls have also improved the productivity of our labor force.

We operate three Jersey dairies consisting of 2600 registered milking cows in California's Central Valley. During the past seven years, we have transitioned two of the dairies from dry lot housing to freestall facilities. Yosemite Jersey Dairy is a 1,300-cow dairy with freestalls for 90 percent of the milk cows. Clauss Dairy is a 700 cow facility which has been converted to freestalls over the past two years now housing 80 percent of the herd in freestalls. Sunwest Jersey Dairy is an older 650-cow dairy which was purchased in 1995 with no freestalls. Our climate and location were key factors in our decision to transition the facilities to freestalls. Winters are wet and muddy. Summers can be oppressively hot and dry with temperatures over 100 degrees Fahrenheit. Milk production and reproduction results dropped significantly during the peak winter and summer months. Mastitis was also a significant problem during these peak months. Another factor in our decision to convert to freestalls was land cost. We realized that in order to grow in an area with land costs at \$6,000-\$7,000 per acre we must make better use of our existing land. Freestalls provided an excellent way to comfortably house more cows per acre.

Although freestalls were not the only option, our experience with alternative housing methods brought us to the conclusion we needed to try something different.

We had tracked both labor and material costs for several years on our drylot housing, which during the winter months included temporary fencing in adjacent fields, straw to provide dry spaces in crowded loafing barns and almond shells to maintain lanes. A review of these costs alone justified the initial capital investment of freestall barns.

One the major reasons most dairy farmers choose not to incorporate freestalls as part of their operation is the high capital investment. Freestall facilities in our area can cost between \$500-\$600 per cow for barns, lanes, stanchions, and flush systems. Constructing a 120-cow freestall facility can cost \$70,000. However, a two pound per cow increase in milk production will more than pay for the facility in less than nine years. Our cost analysis is illustrated below.

We essentially manage all three dairies the same. All

Figure 1: Cost Analysis, 120-Cow Facility

120 cows @ \$580/cow = \$70,000
Lanes/Barn/Stanchions/Walls/Flush

Annual Debt Service Of \$\$\$ Borrowed:
@10% X 15 years = \$9,026.00
@10% X 10 years = \$11,100.72
@10% X 5 years = \$17,847.48

Payback Time Based Upon Milk Increase:
2 lbs/cow = \$12,264/year = 8 yrs 6 mos
3 lbs/cow = \$18,396/year = 4 yrs 10 mos
4 lbs/cow = \$24,528/year = 3 yrs 6 mos

feeding is centralized in one facility and cows at each dairy receive similar rations based on production groups. A computer software program with an interfaced scale module on the feed trucks provides us with accurate daily feed intakes and costs. Figure 2 illustrates how our experience with production at each dairy justified the freestall investment based on increased production and feed efficiency.



Western Dairy Management Conference • March 13-15, 1997 • Las Vegas, Nevada

Figure 2

	<u>avg. cows milked</u>	<u>percent freestalls</u>	<u>avg. lbs. milk per cow/day¹</u>	<u>value @ \$14/cwt.</u>	<u>avg. daily feed cost²</u>	<u>\$ over feed cost</u>
Clauss Dairy Farms	580	80%	53.33	\$7.46	\$3.66	\$3.80
Yosemite Jersey Dairy	1,100	90%	54.00	\$7.56	\$3.66	\$3.90
Sunwest Jersey Dairy	510	0%	51.00	\$7.14	\$3.59	\$3.55

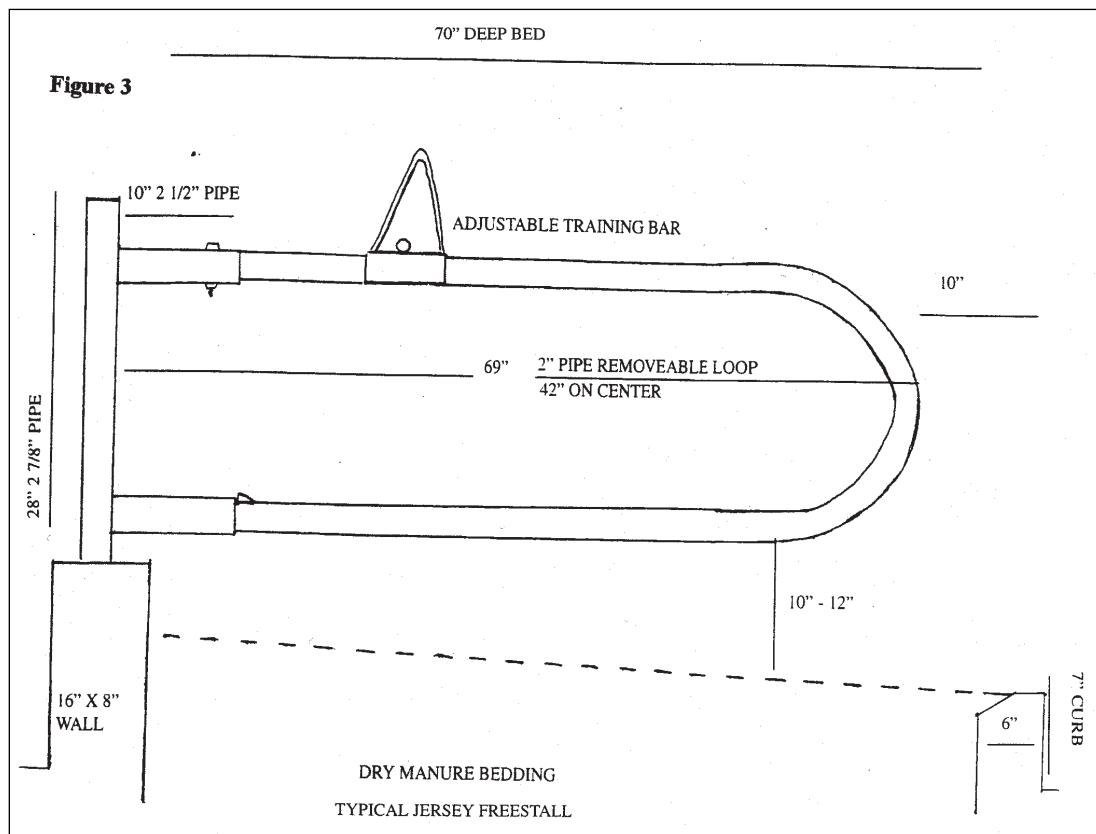
1: Daily bulk tank weights divided by cows milked 5/1/96-1/25/97.

2: EZ Feed dairy reports 5/1/96-1/25/97.

Many dairy producers cite increased problems with feet and legs as another reason to avoid freestalls. Poorly designed freestalls can be a nightmare situation for cows. Cows will continue to stand or lie on the concrete rather than struggle to maneuver in and around a difficult stall. Proper design which allows cows just the right amount of space to get up and down comfortably is the first step to avoiding feet and leg problems. Our stalls are 40 inches wide, 70 inches deep and bedded with a 2½-inch fall from head to tail. Loops are completely removable to provide for easy access to a downed cow. An adjustable training bar prevents cows from going too far forward in the stall and can be set for either cows or heifers. Figure 3 shows a cross section of our standard freestall.

A common stall dimension for Holsteins used in our area is 45 inches wide, 84 inches deep with a 78-inch loop. A grooved concrete surface provides the cows with good footing for traveling to and from the barn and feed mangers. We are also more likely to catch a cow showing standing heat on this type of surface. Rocks are routinely removed to prevent sore feet. Lanes are flushed twice daily with recycled lagoon water. We provide 1 inch per 20-foot fall on each lane. Our cows are kept locked in the freestall facility for 6 months during the wet winter. From April thru September cows have access to an exercise pen. They have access to this pen only during the evening. During the warm summer days we want them to be eating at the mangers or lying in the shade of the freestalls. Above the mangers we have a water

Figure 3



Freestalls... (continued from page 53)

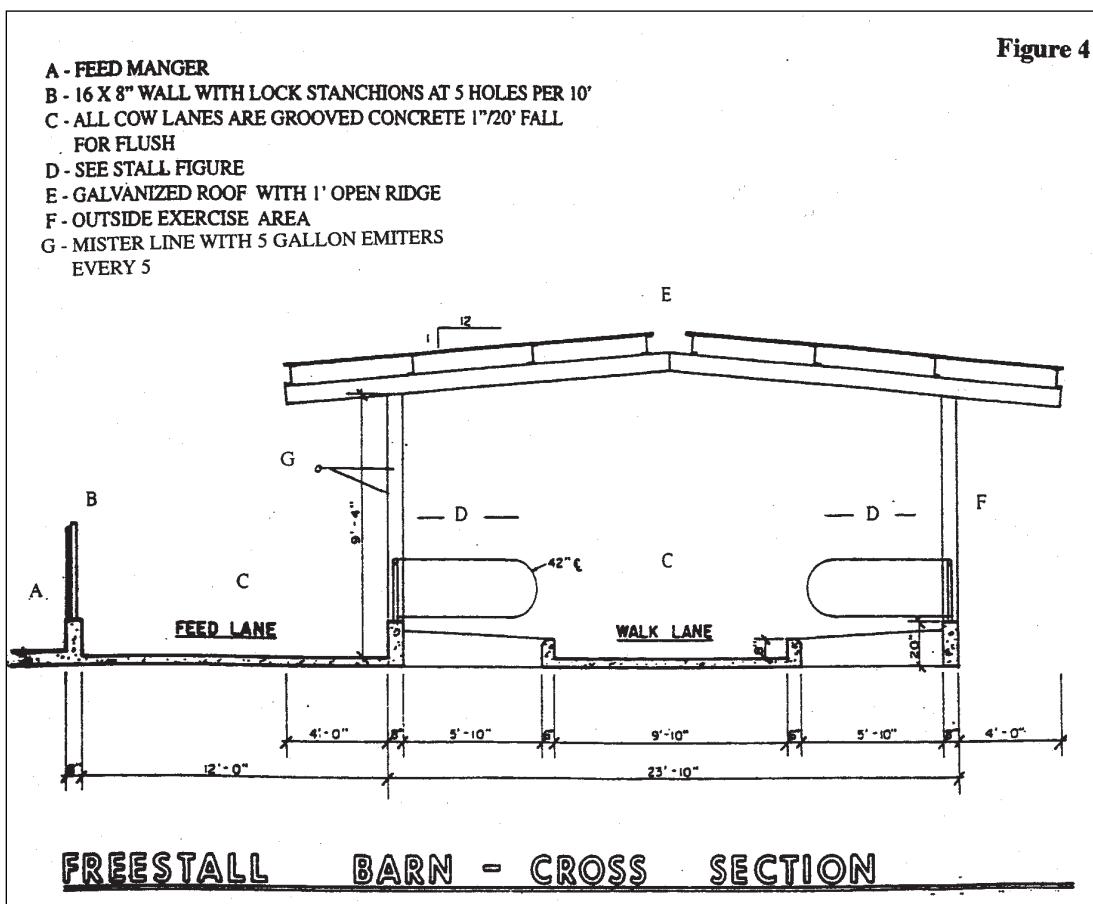
mist system which emits a continual cool mist providing relief for cows while they eat.

Concerns about maintenance are another reason many dairy producers choose not to invest in freestalls. 'Freestall' does not imply free of maintenance. A neglected freestall facility is virtually useless to you. Proper design and layout should allow room for maintenance equipment and cow traffic to and from the milking parlor. Through simple and religious maintenance practices, we are able to keep our freestalls in optimal condition for the cows. We spend an average of one man hour per 100 stalls per week. This is equivalent to 1/2 hour per year per stall on upkeep for our freestalls. Every three weeks freestalls are filled with dry manure that has been stockpiled during the summer months and allowed to go through a heat period to eliminate many mastitis causing bacteria. When the bedding is placed in the stalls it is 85 percent dry matter. By using our own dry manure for bedding there is no material cost for filling the freestalls. Each week we rake and fluff the stalls with an implement attached to the back of a tractor. This "fluffer"

breaks up any crust that might have formed as well as levels off the stall making it more comfortable for the cow to lie down. Occasionally we do need to repair broken loops. We always make these repairs as soon as possible to avoid cows digging holes between the stalls.

Freestalls need to be designed based on your specific location and weather conditions. Our barns are open sided with a 1-foot open ridge in the roof for good ventilation. Cows will choose not to lie down in a poorly ventilated environment. Roofs should be kept low as possible to prevent rainfall from entering the stalls but must be high enough to allow for maintenance equipment. Barns are positioned North to South to keep stalls dry as our weather systems come from the these directions. Figure 4 outlines our typical freestall barn design.

Because of the different housing situations at each dairy, we are able to see on a daily basis the significant impact freestalls can have on a commercial dairy operation. Freestalls are integrated as part of our overall management plan. Within the next two years we plan to complete the transition to freestall facilities. Our freestalls



have reduced cow stress. Cows are able to convert feed more efficiently. Less of their energy is spent dealing with a challenging and changing environment. They have a dry comfortable and well ventilated environment in close proximity to feed and water. This has increased production significantly. Reduced cow stress has also improved our average days open, services per conception and overall reproductive efficiency. A cleaner and drier environment has also reduced mastitis and lowered our somatic cell count. This improvement has a direct economic effect on us as our processor pays 15¢/cwt. for milk with SCC below 200,000. These trends are noted in Figure 5.

Freestalls have benefited not only our cows but also our employees. Large numbers of cows can be housed in close proximity to the milking parlor reducing the amount of time spent bringing in cows to be milked. Cows come into the parlor cleaner from freestalls saving prep time for each milking. The herdsperson is able to manage a larger group of cows in less time. We now use the lock stanchions for herd checks, vaccinations, BST and pen movements. We have also incorporated tail-chalking and breeding in the lock-stanchions as another time saving measure of our freestall facility.

Figure 5.

	<u>percent freestalls</u>	<u>average days open¹</u>	<u>SCC²</u>
Clauss Dairy Farms	80%	98	232,000
Yosemite Jersey Dairy	90%	102	182,000
Sunwest Jersey Dairy	0%	111	250,000

1: DHIA summary, 1/96-12/96.

2: Hilmar Cheese Co. weekly quality reports, 1/96-12/96.

Employees at the dairies with freestalls notice the significant improvement freestalls make on their daily routine.

Making the decision to invest in freestalls needs to include a well thought out plan for how freestalls will fit into your dairy operation. Producers need to examine all their areas of concern and determine how a freestall facility can be designed to address those issues for them. A profitable freestall facility hinges on the keys of proper location, design and maintenance. Incorporating these elements in your plan will make freestalls a successful investment for you.

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