EFFICIENCY IN ROTARY MILKING PARLORS

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Milking parlor efficiency is measured by construction cost, equipment cost, annual maintenance cost, performance or efficiency and owners preference. Rotary parlor success will be subjected to the same measurements and standards as other milking systems. When a new idea or product is first used there is a tendency to forget to measure the new product or idea by the same measurement we have subjected the present product or idea to. Everyone likes to have something new and different, but we must not forget economic and performance. It will be very costly for the dairyman to forget to use the same measurements of performance and efficiency on the rotary as he has subjected other parlor configerations to in the past.

The dairyman of Australia, New Zealand and Europe are using more rotary milking parlors today than five years ago. The idea for the rotary parlor which will be built in the United States will come from those countries. Construction cost and annual maintenance will be higher in the United States than most other countries because of higher labor and material cost. There are only seven rotary parlors in operation (May 1972) in the United States. More rotary parlors will need to be built before an accurate construction and maintenance cost can be assessed.

Most of the rotary parlors which have been built in the United States have not been in operation over one year. All types of new milking parlors take approximately one year for the people and cows to adjust before maximum efficiency is obtained. The use of a cow pusher in the holding pen to assist the loading of the rotary has been necessary for the present rotary parlors in the United States. The use of the cow pusher was also found necessary in rotary parlors in Australia and New Zealand which had been in operation two and three years. New ideas and equipment will need to be developed before the cow pusher can be removed from the rotary parlor where the operator works on the inside of the platform. The rotary parlor from New Zealand (turn-style) where the operator works on the outside of the platform does not require a cow pusher.

Rotary milking parlors presently being used in New Zealand and Australia have not improved efficiency when compared to herringbone parlors. Data in Figure 1 collected by Mr. Ross, a dairy advisor officer from Scotland, compares the efficiency of the herringbone and the rotary parlor. Mr. S. A. Ross's

data would agree with data collected by Michigan State University in 1972 presented in Figures 2 and 3. The data from Figure 2 on the 28 stall rotary herringbone (Peterson parlor) was the most efficient rotary in New Zealand with 92 cows per man hour. The Peterson parlor is a 28 stall rotary herringbone usually operating at 17-21 seconds per cow entry time and seven to eight minutes rotation time with two operations. One operator is on the outside at the entrance gate washing and assisting the cow onto the platform. The second operator does all the attachment and detachment. The work load is very unevenly divided between the two operators. The efficiency in the Peterson parlor would greatly be reduced by longer milking cows with high milk production and larger cows. Difficulty in loading the parlor at the increased rotary speed without cow injury will be a problem.

The major problem with the rotary parlor presently being built in the United States will be stall number and rotation time. What is the proper stall number and rotation time for our cows? You don't have to spend very long in Europe, New Zealand or Australia to realize that our milking conditions are different than other countries. We need to be concerned that the operator work sequence and cow traffic is correct for maximum efficiency. In present rotary installations I see little evidence of this concern. Figure 4 is a comparison of a rotary herringbone where machine time is shorter and with 26 pounds of milk per cow compared to a herd milked in a herringbone with milking time recorded and a production of 46 pounds of milk. A rotation time of six minutes would allow all the rotary cows to milk, but a rotation time of eight or more is necessary for the 46 pound average herd to milk. Decreasing the speed of the rotary to correct the condition will make an inefficient use of the labor, because of excessive idle time.

Questions you as a dairyman must ask when considering a rotary might include the following:

1. Construction cost
2. Equipment cost
3. Maintenance cost
4. Labor requirements
5. Parlor size (number of stalls)
6. Milk production level of herd
7. Labor efficiency
8. Cow traffic
9. Is cow traffic on the rotary satisfactory, or is a pusher necessary
10. Will future mechanization add efficiency to the system
11. Compare all the above to exsisting milking installation

Figure 1

	No. of Parlors	Cows Per Hour
New Zealand Herringbone	113	52
Turn-style	8	56
Alfa-Laval	2	47

* S. A. Ross, 1971, New Zealand

Figure 2

(Rotary Herringbone)

Size	Average Production	No. of Operators	Cows Per Man-Hours
13 Stalls	26	2	55
28 Stalls	19	2	92
64 Stalls	13-32 (5 herds)	6	55

* W. G. Bickert & D. V. Armstrong
Michigan State University, 1972

Figure 3

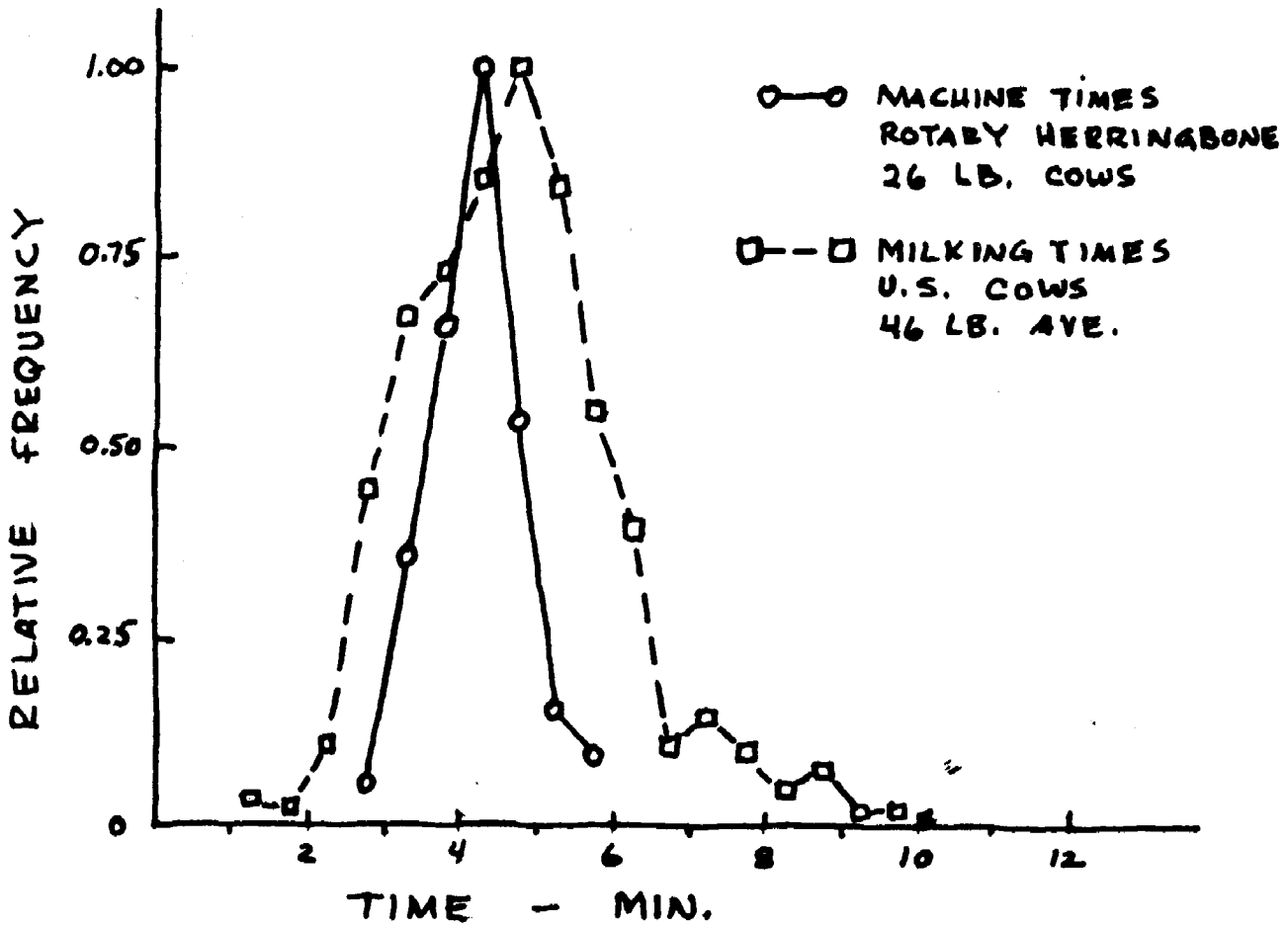
(Turn-style Rotary Parlor)

Size	Average Production	No. of Operators	Cows Per Man-Hours
14 Stalls	28	2	54
14 Stalls	35 (Holsteins)	2	48
16 Stalls	23	3	35
28 Stalls	23	3	67

(Double entry)

* W. G. Bickert & D. V. Armstrong
Michigan State University, 1972

Figure 4



*W.G. Bickert & D. V. Armstrong
Michigan State University 1972