

THE BEHAVIOUR AND MOVEMENT OF CATTLE THROUGH SINGLE FILE HANDLING RACES

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Significant improvements in handling efficiency have been recorded in yards incorporating a curved race of six metre radius compared with straight races of traditional design (Vowles and Hollier 1982), but the individual effects of race radius and cladding material are unclear.

Two experiments were undertaken to study the movement of naive cattle in races varying in cladding and race plan. In the first experiment, three replicates of 19 Angus heifers were moved through each of three treatments (straight or curved with 7.0 or 4.5 metre radii). In the second experiment 27 groups of 17 Hereford horned steers and hornless heifers were used in a 3 x 3 factorial experiment with three replicates, comprising three race plans as in experiment 1, and three variations in race construction types above 900 mm (fully clad, open inside curve, open both sides). The cattle were encouraged to move into the race treatments from a standard forcing yard by a handler operating in a standardized manner. Cattle movements were recorded on video tape from which data was taken for analysis.

Table 1 Mean movement times (sec) for hesitation time before entering race (A), overall time (B) and net race movement time (B-A) for race shapes; straight (S), or curved with a 7.0 (C7) or 4.5 (C4) metre radius, and race construction above 900 mm; fully clad (C/C), open inside curve (O/C) and open both sides (O/O)

Measurement	Treatment								
	Experiment 1			Experiment 2					
	Race Shape			Race Shape			Cladding Type		
	S	C7	C4	S	C7	C4	C/C	O/C	O/O
A	1	4	4	7	12	4	8	5	10
B	28	37	34	48	58	46	51	50	51
B-A	27	33	30	41	46	42	43	45	41

There was no significant difference in movement time between treatments or significant interaction between race shape and cladding. An interaction between replicates and race shape approached significance in Experiment 2 as the horned steers tended to move more slowly in curved races, while the polled heifers moved at similar speeds in all treatments.

The difference in operational efficiency found between yards incorporating circular or straight races by Vowles and Hollier (1982) is more likely to have been due to forcing yard design (Vowles, Eldridge and Hollier 1984) or the interaction between race design and operator behaviour, than to race per se. Race design maybe important for some types of cattle eg. horned or relatively large animals.

VOWLES, W.J. and HOLLIER, T.J. (1982). *Proc. Aust. Soc. Anim. Prod.* 14:598.

VOWLES, W.J., ELDRIDGE, G.A. and HOLLIER, T.J. (1984). *Proc. Aust. Soc.*

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