



WOOL
HARVESTING
NOTE

NO: 1.131

DECEMBER 1980

WORKING RACES

The working race is a focal point of the sheep yards because it is the place where much of the work associated with sheep handling is carried out. Activities such as jetting, drenching, classing, branding, vaccinating, ear tagging and weighing are all normally carried out in the race. Additional activities such as drafting, crutching and foot trimming can also be performed in the working race.

A well built race will have a long life. Since it will be frequently used, a little extra expenditure to improve working conditions is worthwhile.

SITING OF THE RACE

The site of the race is usually determined by the site of the shearing shed and associated facilities. Ideally the race should be located so that sheep move away from the shearing shed or dip. If the race is not to be roofed, it should run on a north to south axis to minimise the affect of shadows. Additional information regarding behavioural aspects of sheep and yards is given in Wool Harvesting Note No: 1.01.

Drainage is a most important point, and enough slope should be available to keep the area well drained.

WIDTH OF RACE

A race narrow enough to allow the operator to work outside the race offers advantages. Firstly, working outside the race can save time, and is generally less tiring on the operator. Secondly, sheep do not move around in the race as much if the operator works from the outside.

However, working outside the race can be awkward if the operator is short, and/or the width or height of the race makes it difficult to reach or control the sheep. From another point of view, wide races are easier to fill with sheep.

Thus, the width of the race is influenced by:-

- ease and speed of work
- ease of filling,
- operator stature,
- breed and condition of sheep,
- activities to be carried out,
- height of the race.

Because of these variables, adjustable width races should be considered. However, if a fixed race is built, it should generally be no wider than 800 mm and no narrower than 600 mm, with 700 mm the width normally chosen for large framed Merino and Crossbred breeders.

LENGTH OF RACE

Long races are difficult to fill tightly, but less time is taken in hustling sheep when treating a mob. On the other hand, short races can be easily filled, but this has to be done more often.

Lambs are likely to crowd together and smother, and this is aggravated by using long races. A block-off gate halfway along the race is desirable to control this.

In addition, the amount of time and labour available for yard work, and the total number of sheep to be treated, has a bearing on race capacity.

Current practice is for races to be between 9 and 20 metres long, with 13 metres the more generally preferred length. Double races are generally shorter than single races and are, for example, 10 metres long.

HEIGHT OF RACE

The race should be at least 800 mm but not more than 900 mm in height. Fences between 800 mm and 850 mm in height will contain most sheep, and are easier for the operator to step over. Sheep which get out over the sides usually do so by climbing up on other sheep first. Higher sides will not eliminate this. Sheep that jump out generally do so at the end of the race, and this is usually prevented by increasing the height of the gate at the end of the race.

SIDES OF THE RACE

The sides of the race should be of open construction as obtained with pipe or timber rails.

Steel mesh is not recommended because:-

wool, horns and legs catch in the mesh, and this makes it difficult to move sheep along the race;

the shadows cast by the mesh do not encourage sheep to flow smoothly or quickly.

For a race approximately 900 mm high, the suggested sizes and spacings for pipe rails (either five or six) are given in Diagram 1. If timber rails are used, spacing is given in Diagram 2.

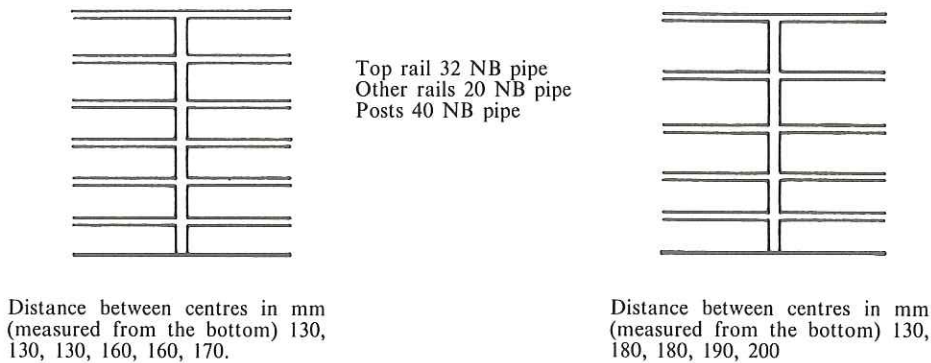


Diagram 1. Spacing of pipe rails

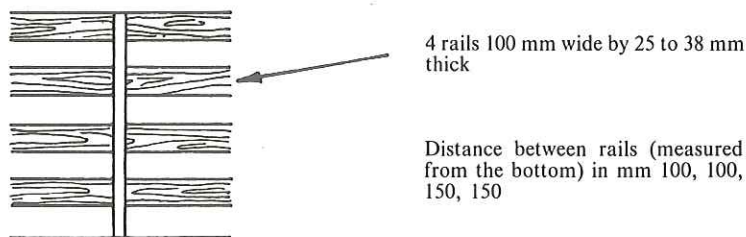


Diagram 2. Spacing of timber rails

An alternative to having a side of fixed height is to have one side which can be adjusted to give different heights. The top rail is separately attached to smaller posts which slide inside those for the remainder of the side. The top rail can be lowered some 150 mm when sheep are being classed, or when working from outside the race on small sheep or lambs. The principle is shown in Diagram 3.

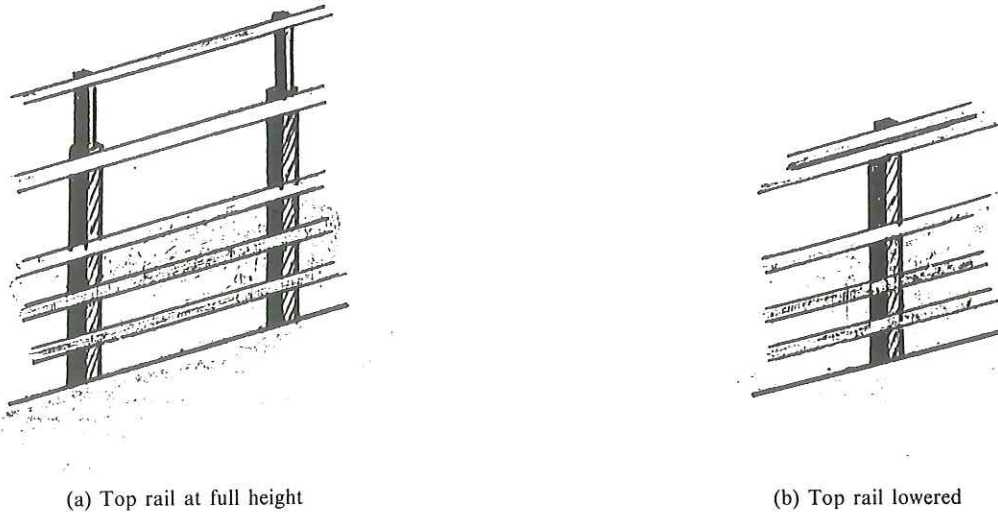


Diagram 3. Race with top rail on one side able to be adjusted for height

WORKING RACES WITH CLOSED IN OR SHEETED SIDES

A working race closed in or sheeted on both sides has been used by some producers. The races are ideal for jetting, as the sheep flow better by having their vision restricted to the straight ahead position. Construction may also be cheaper.

There are however several disadvantages:-

- it is more difficult to see daggy sheep, sheep which are fly blown on the side, and sheep that are down (especially lambs);

- with an open race, the sight of an approaching man or dog is often sufficient to encourage the sheep to move forward and so fill the race tighter, whereas in a closed race this advantage is lost as their vision is restricted;

- in an open race, the sheep entering the working race are encouraged to move by the sight of the sheep in the holding yard beyond the end of the working race, whereas in a closed race this attraction is not so apparent;

- a closed race is not as good as an open race when sheep are to be classed;

- a closed race makes it difficult to locate or retrieve any equipment which may be dropped.

FLOORING

As the race is subject to considerable use, some treatment of the floor is required.

Timber grating, expanded metal or woven wire mesh all offer good drainage and clean the other alternatives allow light to pass through the flooring that can cause the sheep to baulk.

Brick or concrete floors are also used. Both are relatively cheap, permanent and effective, provided there is adequate slope to allow water to drain away.

Whatever flooring is used, it should be extended beyond the width of the race at least 300 mm on one side to provide a walkway for the operator.

ROOF OVER RACE

A roof over the race means improved working conditions for men, sheep and dogs. It gives shelter, and if correctly located, ensures an even light along the race. The strong contrasts in lighting due to direct sunlight and shadows are eliminated.

The roof over the race should:-

- be high enough to allow an overhead shearing unit to be installed (and at this height the radiant heat load on the operator in summer is reduced),

- be located so that direct sunlight will not fall on the working race during normal working hours,

- have supports wide enough apart to allow free movement along the full length of each side of the race,

- incorporate a shelf on which items needed for treating sheep in the race can be stored.

When designing the roof to avoid direct sunlight falling on the race, the following points should be kept in mind.

If the working race has a north-south direction, then the centreline of the roof will coincide with the centreline of the working race, as in Diagram 4. Furthermore, the roofing material can be continued down the west side to give additional protection, and provide a convenient place for the shelf.

For a race with an east-west direction, the roof will need to project a greater distance on the north side of the race than on the south to ensure the race remains in shade. The shelf can be fitted on whichever side is most convenient for the operator.

Having a roof over the race allows equipment to be kept at the place where the work is done. Thus drenching equipment, ear pliers and tags, toe clippers, and veterinary supplies can be stored on the shelf.

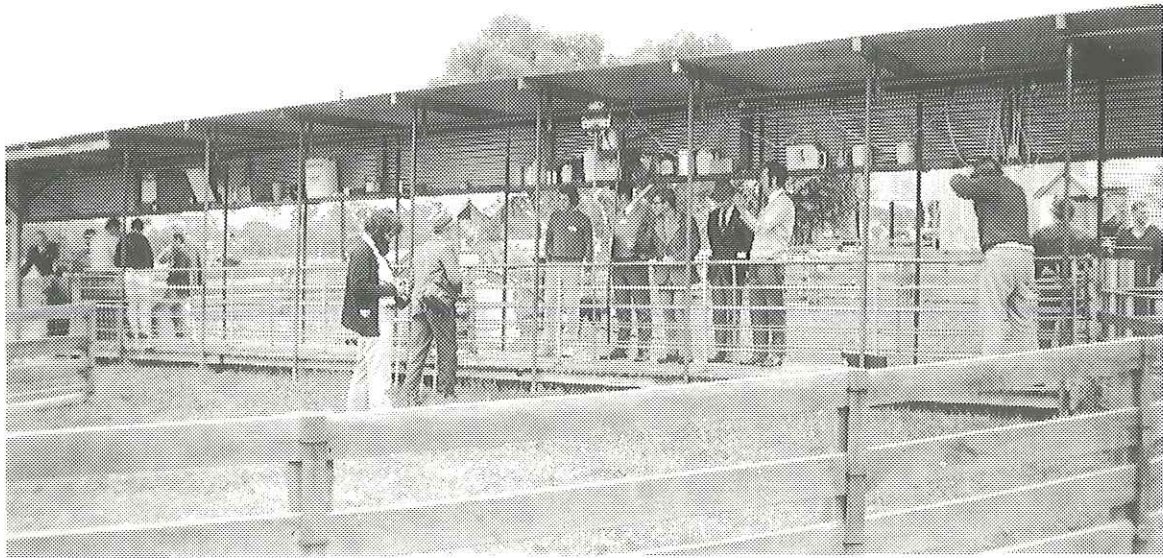


Photo 1. Roofed working race with equipment shelf

A shearing unit can be fitted to run on an overhead track, so that a handpiece can be used for crutching or dagging along the full length of the race. A flexible downtube is required instead of the normal rigid jointed unit.

Another item which has proved useful is a small box for holding tools needed for treating occasional sheep. The box is arranged so that it runs along the top rail of one side of the race. A rope is used to pull the box from place to place along the race as it is required.

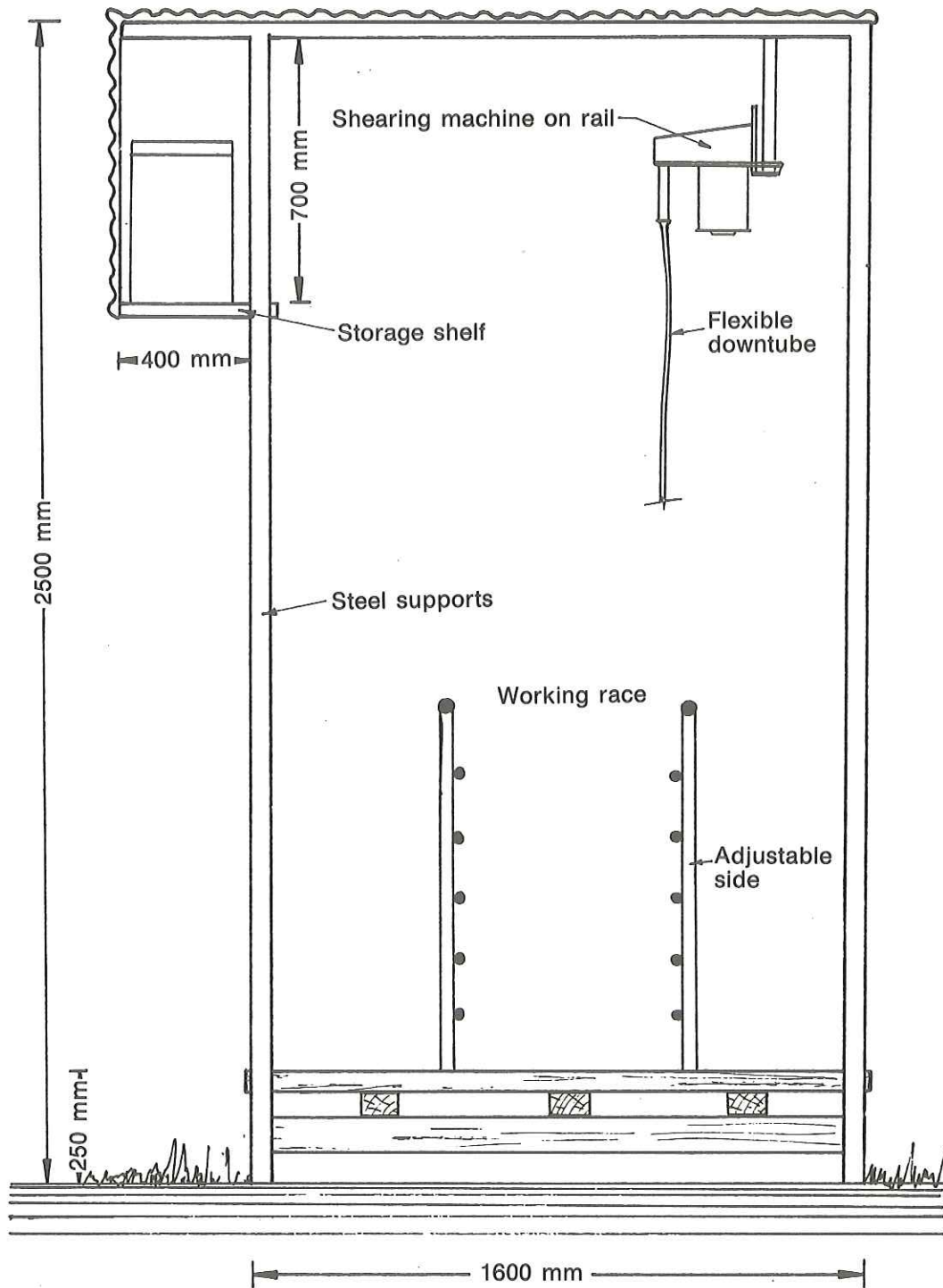


Diagram 4. Details of a roof for a working race oriented in a north-south direction

DRAFTING FROM A WORKING RACE

A drafting gate at the end of a working race can be an advantage. It allows sheep to be drafted after inspection or treatment in the race. One type of gate which allows this to be done is illustrated in Diagram 5.

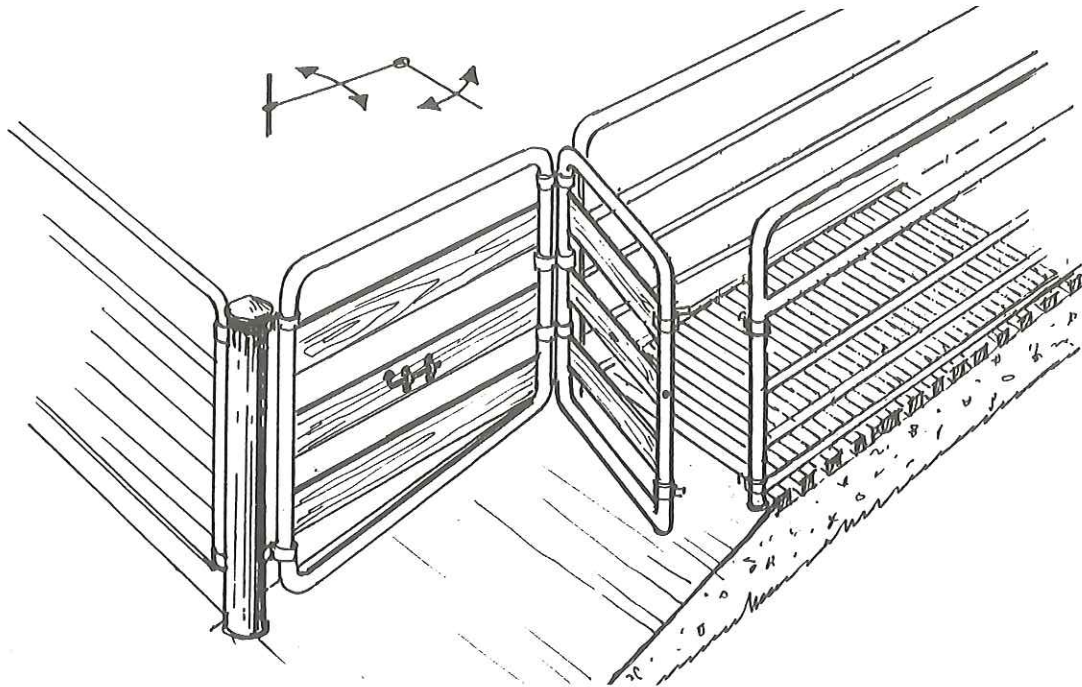


Diagram 5. Double hung block gate for drafting from a working race

DUAL RACES

This arrangement has two races built side by side.

Where adequate labour is available, or the dogs are well trained, double races may be preferred because of the belief that sheep can be handled faster and easier than in a single race. Some producers, especially those working by themselves, have found dual races difficult to operate because the first race separates the operator and the dogs from the other race. This requires extra effort and time to climb over the races.

Because of this problem, some properties (particularly in Queensland) have built "triple" races. The two outside races are filled with sheep, and the operator uses the middle race as a walkway.

CLASSING RACE

On some properties, a separate race is desired for classing and inspecting sheep. This race should be just wide enough for a single file of sheep in the wool (450 to 550 mm). The floor of the race should also be raised above ground to give a better view of the sheep and provide a more comfortable working position. The height of the floor depends largely on the height of the classer, but normally is between 250 and 400 mm.

The working race itself can be used as a classing race. When the working race is raised and a walkway provided on one side, the other side can be used as the classing side.

FORCE PEN FOR THE WORKING RACE

The capacity of the force pen should be a little greater than one or two times the capacity of the working race. The aim is to always have a few sheep left over after the race is filled to assist in bringing in the next lot of sheep into the force pen. Usually a force pen that holds over 100 sheep can be difficult to start.

Two types of pen are commonly found.

(a) Triangular Force Pen

The better types of triangular force pens are usually regarded as having one fence as an extension of one side of the race, and the second fence at an angle to the first. For angles between the fences of less than 30 degrees, the sheep tend to jam. For angles more than 60 degrees, there is a tendency for sheep to turn across the race entrance and escape through the wide front that the operator is trying to control. An angle of about 40 degrees is generally satisfactory. This kind of force pen is usually used in rectangular yards.

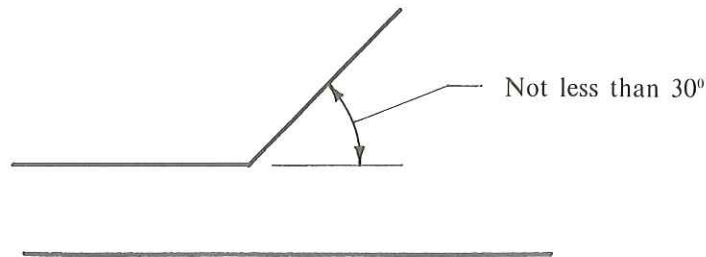


Diagram 6.

(b) Bugle Force Pen

This is a curved and tapering pen usually associated with circular, dee or bugle yards. The bugle turn at the entry to the working race is intended to:-

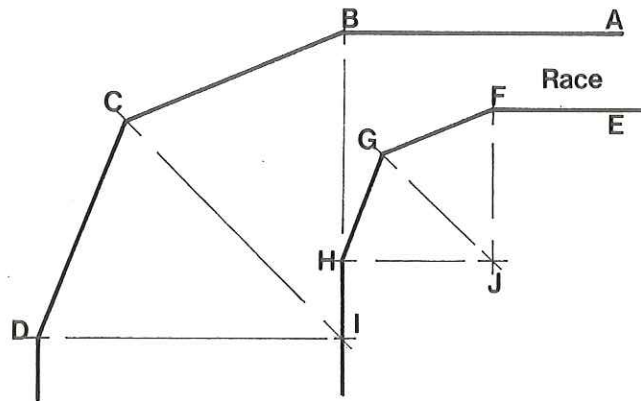
- allow the operator easy and quick access to the sheep being worked,
- reduce the number of points where sheep can become jammed,
- turn the sheep back in the direction from which they entered the yards (i.e. towards "home"),
- keep the sheep from moving towards the operator until they actually enter the bugle,
- save on material and yard space, as there is little duplication of material or facilities since the same forcing area can be used to serve both the drafting and working races.

(c) Bugle Force Pen together with a Drafting Race

In this system, the sheep come through the draft to fill the working race. The working race becomes the middle outlet when sheep are being drafted three ways.

The advantage of this system is that the sheep become familiar with moving through the entire system along one pathway, and this training generally results in better sheep flow. This approach has been found particularly suitable for many operators who work alone. However, it can be difficult to move rams through this system, although it is possible to make the draft adjustable in width so that it can be widened out when the working race is to be used.

One procedure for setting out a bugle force pen is given in Diagram 7.



Post D - measure 2000 mm BI at right angles to BA, then measure 2000 mm ID
 at right angles to IB line
 Post C - measure 2000 mm IC at 45° to line IB
 Post H - measure 1000 mm FJ at right angles to FE then measure 1000 mm JH
 at right angles to JF
 Post G - measure 1000 mm JG at 45° to line JF
 Length of fence panels - BC = 1550 mm
 - CD = 1550 mm
 - FG = 750 mm
 - GH = 750 mm

Diagram 7. Procedure for setting out a bugle force pen

DIMENSIONS OF A WORKING RACE

Length	9 to 20 metres (commonly 12 metres)
Height	800 to 900 mm (commonly 850 mm)
Width	(a) with fixed side, 600 to 800 mm (commonly 700 mm) (b) with adjustable side, 450 to 1,000 mm
Flooring	(a) timber grating 38 mm thick with 15 to 20 mm gap between (b) concrete 75 to 100 mm thick with slope for drainage and grooves or texture to reduce slipping.