



## PLANNING YOUR SHEEP HANDLING FACILITY

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### INTRODUCTION

Well-designed sheep handling facilities are essential if a producer is to have a successful sheep production operation. The sheep producer will find few other investments that can match handling facilities with respect to labour efficiencies and savings. Most producers will only build, or purchase, one handling facility in their lifetime, so planning is essential.

Incorporate existing paddocks, laneways and barnyards into the handling system to allow for ample space when the flock is held in the yards for extended periods of time. Sheep need to move smoothly between these areas with a minimum of fuss. To achieve this, a producer needs to understand how good design encourages the sheep and lambs to move ahead through the system without balking, thereby keeping problems for workers to a minimum. Well-designed facilities are easy to operate, saving stress, labour and their associated costs.

### PLANNING

Sheep handling in “make-do” pens is not only hard, difficult work, it is outright unpleasant, and results in important jobs like vaccinating and deworming being delayed or not getting done at all.

To ensure that the handling facility will accommodate all the required jobs, make a complete list of the operations that will be carried out, and plan how these jobs will be done.

A useful checklist includes: shearing, crutching, sorting, deworming, vaccination, body condition scoring, pregnancy scanning, foot trimming, foot bathing, weighing, loading and sale of sheep.

#### Factors to be taken into consideration include:

- best location for the facilities
- size of groups the facility will need to handle
- amount of labour available for working the sheep in the facility
- modification of existing facilities, building new facilities, or purchasing portable yards
- cost involved.

### FACILITIES DESIGN

In simple terms, handling facilities comprise the following: low density holding areas, high density holding areas, forcing (or crowding) area, drafting (sorting) race, and handling (working) race.

Most producers can use nearby pastures and laneways as their **low density holding areas**. These areas need to be secure enough to prevent escapes (particularly lambs) from one area to the next. Consider using net wire fencing with openings no larger than 15 cm by 15 cm, secured to closely spaced posts.

**High-density holding areas** need to be built with medium to strong fencing materials. Densities of 2 sheep in full fleece per square metre allows enough room to drive the group into the yards, while leaving space for gates to swing, and dogs to work where they are used. It is particularly important that these areas are long and narrow so that groups are easily controlled while being driven up into the forcing (crowding) race. Recommendations in Australia and New Zealand are that these high-density holding areas be no wider than 10 m. If greater capacity is needed, it is better to lengthen them, rather than making them wider. (Conroy and Hanrahan, 1994)

A **combined lead-up race and forcing pen** that is 3 m wide has proven very effective in many handling facilities, particularly for large flocks. It allows large groups to be broken down into smaller groups for ease of handling. The drafting and working races will lead off from this area.

**Triangular force pens** (sometimes referred to as ‘V’ force pens) are usually used in rectangular facilities and can be built in single or double forms (see *Figure 1*). Note that the single force pen has 1 fence as an extension of the race side, with the 2<sup>nd</sup> fence set at a 30–40° angle. The double-triangular force has 2-wing fences running back at similar angles and a central fence with a flip-flop gate at the race entrance to allow sheep entry from either side.

**Curved force pens (bugle)** were thought to take advantage of sheep’s inclination to follow flock mates that

“disappear” around a curve, and enable one person to efficiently process the sheep alone. However, more recent research has shown that in 1.5 m wide races, sheep move better through straight races than through curved races. Only when they move in single file do races with corners prove superior to straight races. (K. Ransom & P. Hanrahan, 1990)

Force pen designs that do not work efficiently, and should be avoided, include square-shaped and the double-triangular force pen without the central fence (see *Figure 2*). The major problem with both of these designs is that sheep can easily avoid entering the race by turning suddenly (ringing) at the race entrance. (H.M. Hamilton, 1990)

For efficient drafting (sorting), the operator needs to be able to easily identify and draft the sheep he or she wishes to separate with a minimum of errors. To do this accurately requires an even flow of sheep. For small flocks, a 2-way sort is satisfactory, but in larger scale sheep operations, a 3-way sort, using 2 gates, may be necessary.

Make the **sorting race** at least 3 m long, with the exit point showing a clear escape route for the sheep. The race walls need to be solid-sided, to eliminate sheep being distracted by those on the opposite side, to ensure continuous flow of sheep. If the race is also used for drenching and vaccinations, a producer may want to consider a slightly wider race, or one with adjustable sides.

The **draft gate** needs to be a minimum of 1 m long to allow sheep to exit the race easily. Draft gates shorter than this cause sheep (particularly heavy woolled and pregnant ewes) to jam against the edge of the race when exiting, and slow the flow significantly. There is some debate as to whether the draft gate should be made of “see-through” panels or solid sheeting. Barber and Freeman (1993), in “Design of Sheep Yards”, give the following as reasons for using “see-through” gates:

- the oncoming sheep can see the previous sheep moving away from the draft and are more inclined to follow
- see-through gates are lighter, and therefore, quicker and easier to use
- see-through gates are less affected by winds blowing across the drafting race.

As well, they list these points as reasons for using solid draft gates:

- such gates act as a continuation of the drafting race wall, thus directing the sheep into the exit pen;
- solid gates prevent horns or legs from getting caught.

A **multipurpose handling race** for drenching, vaccinating and other activities is needed in sheep yards. Most producers in Ontario will opt for this type of race over having both a handling race and a drafting race.

Several different types of handling races can be built:

- a single race 52–64 cm wide where the worker is outside the race
- a single race 70–80 cm where the worker is inside the race
- an adjustable-sided race in which the width can be varied between 45–80 cm

A suitable handling race is 6–15 m long with sides 85 cm high.

## CONCLUSION

Handling facilities are essential if producers expect to find any savings in labour and efficiencies in the management of their sheep.

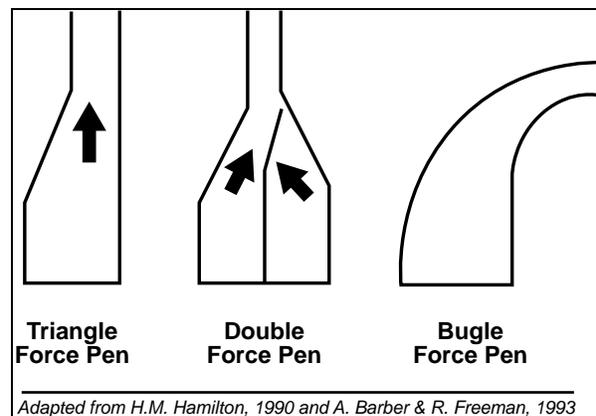
*Figure 3* shows a basic handling facility layout for sheep flocks with the key components identified. *Table 1* provides dimensions for the various components of handling facilities.

## REFERENCES

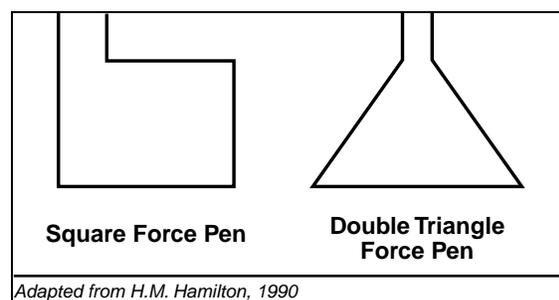
**Sheepyard and Shearing Shed Design.** Fiona Conroy and Peter Hanrahan. Agmedia. 1994.

**Yards ‘n Yakka.** Kondinin Group. 1990

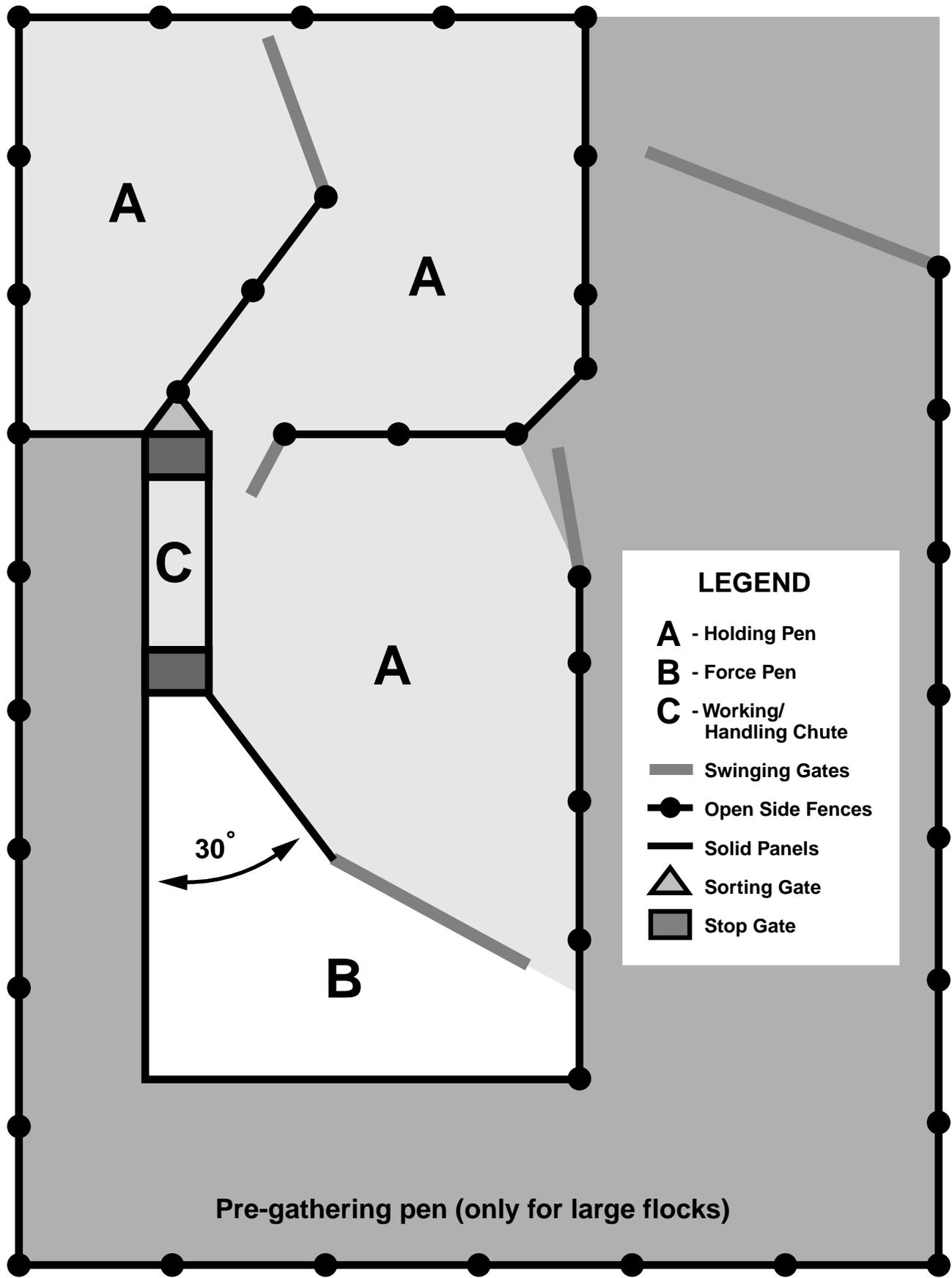
**Sheep Equipment Handbook.** MidWest Planning Services. 1994



**FIGURE 1. Examples of successful force pen shapes.**



**FIGURE 2. Examples of unsuccessful force pen shapes.**



**LEGEND**

- A** - Holding Pen
- B** - Force Pen
- C** - Working/ Handling Chute
- Swinging Gates
- Open Side Fences
- Solid Panels
- △ Sorting Gate
- Stop Gate

Pre-gathering pen (only for large flocks)

FIGURE 3. Basic handling facility layout for sheep flocks.

**TABLE 1: Yard dimensions in centimetres (100 centimetres = 1 metre)**

| Facility               | Range (cm)  | Comments  |
|------------------------|-------------|---|
| <b>Working Race</b>    |             |   |
| Length                 | 600 – 1,200 | Open or closed-in sides.                            |
| Width (fixed sides)    | 60 – 75     |   |
| (adjustable sides)     | 45 – 80     |   |
| Height                 | 82 – 90     | Keep low if sheep are worked from outside the race. |
| End Gate Height        | 110         | Sheep usually jump gates rather than sides.         |
| <b>Drafting Race</b>   |             |   |
| Length                 | 300 – 350   | Closed-in (solid) sides.                            |
| Width                  | 42 – 48     | Can be tapered at the bottom or of variable width.  |
| Height                 | 85 – 100    |   |
| <b>Fence Heights</b>   |             |   |
| Perimeter Fence        | 95 – 110    |   |
| Internal Fence         | 90 – 105    |   |
| <b>Gates</b>           |             |   |
| Perimeter              | 300 – 400   |   |
| Internal               | 200 – 300   |   |
| Draft                  | 120 – 150   | Open sides (see-through).                           |
| <b>Loading Ramp to</b> |             |   |
| <b>Truck</b>           |             |   |
| Width                  | 70 – 100    | Slope not steeper than 1:3.                         |
| Length                 | 300 – 500   |   |
| Height (fixed)         | 120         |   |
| Height (variable)      | 70 – 210    |   |

*Adapted from Sheeppark and Shearing Shed Design. F. Conroy & P. Hanrahan. 1994*

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ISSN 1198-712X

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