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Yard Design for Goats

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When building a set of yards to handle goats, there are a number of factors to consider: efficiency, economy, the size and mix of your enterprise, the existing facilities, and the type and number of goats you want to run. These factors are all important in the planning of yards.

GOAT BEHAVIOUR

Goats do not behave like sheep. Goats should be handled quietly and without force, using only non-aggressive dogs. When you design and build a set of yards it is important to allow for these differences so that the yards are safe and efficient as possible.

Goats have the following distinguishing characteristics:

Intelligence – Goats quickly learn the run of a set of yards. If you use the same pattern of movement each time, a mob will run through many sets of gates of their own accord, but they become very wary and difficult to handle in areas where they have been stressed.

Inquisitiveness – After a short time, an open gate becomes almost impossible for goats to resist. If you wait quietly for a few minutes the whole mob will walk through without being forced.

The working capacity of goat handling facilities can be enhanced by a series of mini-paddocks or large holding areas made of conventional fencing material to reduce construction cost.

Agility – Goats can climb, crawl and some will jump. In a packed working race a rogue animal can even run over the top of the mob and out of the race. Goats can also turn in a much narrower space than sheep and move back against the flow of goats in the race.

Flightiness – Goats are agile and flighty. They can pack together very easily in small yards and working races. Heads, legs and horns can become entangled, making it difficult to extract individual animals.

Alertness – Goats are alert and very sensitive. They baulk readily at distractions such as shadows and human arms crossing the drafting race.

Aggressiveness – When goats are retained in holding and forcing yards for long periods they become aggressive towards each other.

SITE

When selecting a site, keep these requirements in mind:

- Ease of access from all parts of the property;
- It should be near the shearing shed;
- The slope of the land should ensure satisfactory drainage;
- Ease of building the yards in terms of materials, natural slope, and soil texture;
- Effect of prevailing winds on working conditions and dust control;
- Trees provide shade and wind protection.

The need for siting goat yards are the same as those for siting sheep yards (see Agfact A3.E.6, Sheep Yard Design and Construction). For goats, you should give special consideration to slope and drainage. Goats do not like running downhill, but if they are forced to do so they can use the momentum to launch into jumps or for climbing. They will also pack into downhill corners. Drainage is particularly important, as goats don't like wet or muddy conditions. A solid floor is best in the forcing yards and in the drafting and working races. In warmer climates a covered working area creates more comfortable conditions for operators and animals.

Many producers use existing sheep yards to handle goats. For ferals and goats that are handled infrequently, extra height may be required especially on perimeter fences.

DESIGN OF YARDS

When designing yards, keep the following in mind:

- Goats have wide angled vision; they can detect movement behind them without moving their heads.
- Goats should have a clear, unobstructed view towards where they are to move.
- Use wide gates wherever possible to maintain good flow.
- Goats are easier to control on a familiar route through the yards for all handling operations.
- Entrances to the shearing shed, loading ramp and dip should be placed along the route usually taken by goats through the yards.
- Goats move better on the flat; if the land slopes, they should move through the yards across the slope rather than up or downhill.
- Goats are attracted to light; try to build yards without dark areas, shadows or dead ends.
- Goats move willingly around curves and corners into narrow races.
- Goats follow one another; use see through panels to encourage them to move.
- Generally goats will want to move towards the receiving yards in anticipation of release.
- Oncoming goats must not see the operator; use closed panels on the operator's side of the forcing yard.
- Goats in the forcing yard should not be able to see behind them; closed panels on the back of a bugle-shaped forcing yard will achieve this.

Features of yards

All stock yards have two distinct areas, the **holding area** and the **handling area.**

Some producers only run small numbers of goats. In this case, think about installing a forcing yard in a paddock corner or placing working facilities inside the shearing shed.

Holding area the holding area is where the animals are assembled prior to handling or working. You need only conventional fencing materials such as Ringlock®

or Hingejoint® 8-90-30 strengthened by using a spacing of 5m for posts. The fence should be strong enough to cater for an animal density of one goat per square meter. Holding yards should have access to clean water and where possible good shade. One yard on this area may need to be large enough to hold the whole flock at once – mini paddock – but usually the holding yards are designed to accommodate a selected mob, not the whole flock.

Handling Area The handling area is constructed of more substantial materials due to the greater pressures. A suggested animal density is about three goats per square metre. Providing stock can be moved into and away easily the handling area need not be large.

The handling area usually consists of a forcing yard leading into a drafting race and working race. The drafting race leads into smaller receiving yards, while the working race is used for husbandry operations such as drenching and vaccination. Start construction by building the goat handling areas first, then add the forcing pathways and finally the holding and receiving yards and paddocks.

The working race this is the most important section of the entire goat yard.

In planning a new set of goat handling facilities consider the following features:

The single width 'V' race concept is much easier on both the goats and the operator, and prevents turning and jumping. You must decide if you intend operating from outside the race or inside with the animals. This determines the width of the race at ground level.

The pen system allows producers to handle goats individually from a pen incorporated into a set of yards. Others use a catching pen in the shearing shed. This method eliminates a lot of problems associated with the race concept, but each animal must be caught and hauled over to the gate for treatment-a labour intensive operation. The pens are about two metres by three metres and are filled to about two thirds capacity to avoid smothering.

Sheep and goat handling devices are another factor to consider. Some machines may work well at first, but the animals soon become wary and difficult to load. Other devices may seem strange to the goats initially, but prove easier to work in the long run. Your flock size and handling requirements will determine the degree of sophistication you need in a device. The number of operations and the number of animals and the amount of labour used and the quality

A sturdy set of 'U' Bugle goat yards with the force leading into a goat handler. Note the perimeter fence is higher than the internal fences.

of operation required determine how much money you can justify spending. Before you invest in a labour saving device make sure you see it working, preferably in a situation where it has been in operation for some months.

The drafting race. The most suitable race is three (3) metres long, 'V' sided with a top 600mm wide and a bottom 280 mm wide to allow easy movement for bucks and big horned does. It opens into a three way draft with see-through gates. The sides must be smooth and 900 mm high. If the race is any shorter, the operator does not have enough time to make a decision for drafting. Races longer than three metres promote baulking, interrupting the flow of goats.

Drafting gates should be 1200 mm long. Open-rail gates are preferred because they allow better vision and are light and quick and easy to use.

The direction of the drafting race should minimise the effects of sun and shadows on the operator and the goats. A south to north direction with a flat or slightly uphill grade is best. Races running east west should be avoided because of the effect of shadows.

COMBINATION YARDS FOR SHEEP AND GOATS

New Yards

Goats run, jump and crowd much more than sheep, so traditional sheep working race will present difficulties with both length and height when it is used with goats. You should think about avoiding contamination of the sheep and goat fibres.

When compromise is necessary, both sheep and goats can be worked through the same yard facility but the following points are essential for goats:

- The drafting race should be three metres long. In longer races goats turn and in shorter races they run too fast for drafting accuracy. The race must

This 'U' Bugle leads off a set of cattle yards used as holding area for goats. From the working race, the goats empty back into the cattle yards. Note the industrial belting used to line the curve of the bugle and drafting race.

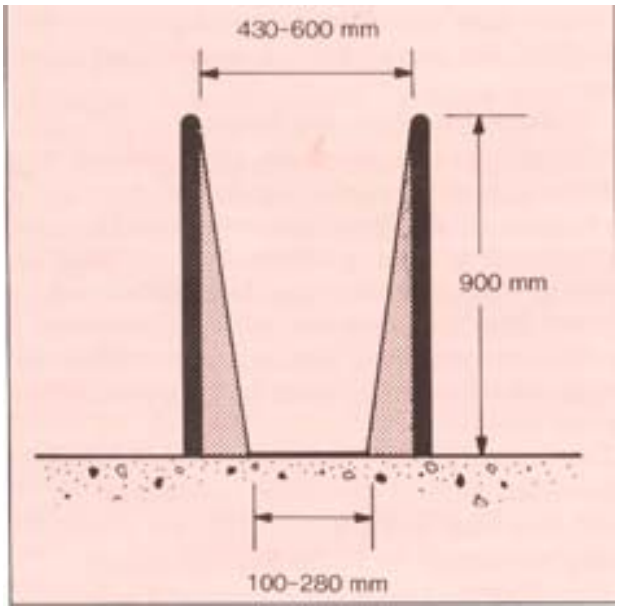

Figure 1. The narrow base of a good V-shaped drafting race encourages goats to move in the single file essential for drafting. The wide top prevents the animals, particularly bucks, from jamming.

have smooth sides, with panels higher on the far side to stop animals jumping.

- The working race should have a width of 500 mm to 600 mm and be divided by gates into sections three metres long and 900 mm high, or 100 mm higher than for sheep. Avoid using mesh construction wherever possible.
- Perimeter height should be 1200 mm, with internal heights of 900 mm. Feral goats and goats which are handled only once or twice a year will remain flighty and difficult to manage. Extra height may be needed on both internal and perimeter yards for these goats. For example, a perimeter fence of 1500 mm, with 1200 mm for the far side the draft and working races. The near side of the draft and working races can br 900 mm to 1000 mm.

A good 'V' drafting race with the animals moving towards the reader. Note the construction of the gates and their relationship with the end of the race.
Position the handles back from the end of the gate to prevent hand injury during drafting.

Modifying existing sheep yards

It is often difficult to justify building new yards specifically for goats if sheep yards already exist. Some improvements can be made to a long working race by dividing it with block gates to cut down the degree of packing. You should think about raising the height of the panels to deter jumping, particularly at the end of the race where goats can get a run up and climb over those in front. When modifying, remember to avoid contaminating sheep wool with goat fibres by using materials that do not hold fibre well like steel pipe and steel panelling or conveyor belting.

The potential problem areas when handling goats in yards designed for sheep can include:

- **Height –** when the yards perimeter is raised to 1200 mm, most reasonably managed goats will stay inside. A few will jump lower internal yards if pressed, but it is difficult to justify the expense of raising the internal panels. Training the goats and developing skill in handling them is a better remedy.
- **Drafting race –** raise the far side of the drafting race by 150 mm – 200 mm. This is an area where

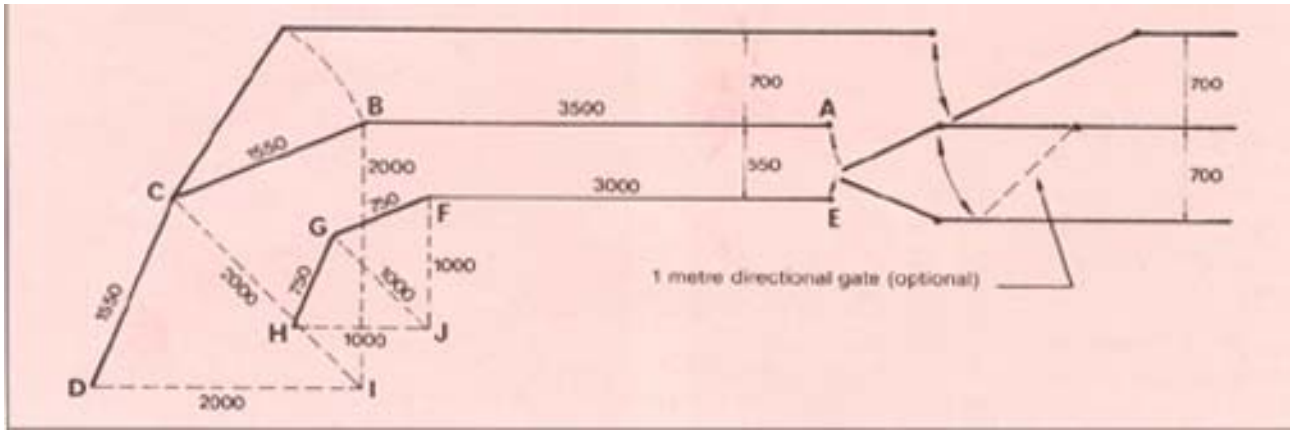

Figure 2. Bugle entry to drafting and working races, showing the dimensions for laying out the bugle. This layout is suitable for combination yards which work goats as well as sheep. The fence (C-B) is necessary for including the option of a double working race with a bypass to allow easier filling of the working race. Note: for yards used exclusively for goats the working race should be 500 mm to 600 mm wide.

animals may try to escape as they approach the drafting gate. Make the side of the draft smooth. Goats don't like walking under an arm holding a drafting gate – a bar section can be used to reach the far drafting gate so that no arm is visible as the goat turns the corner and approaches the drafting section.

- **Working race –** incorporate block gates to partition the race into a number of sections each three (3) metres long. Raise the height of panels by 100 mm to deter jumping, particularly at the end of the race, where gates should be raised to a height of 1200 mm to 1500 mm.
- **Width of forcing yard –** to overcome wide forcing yards incorporate a dummy panel to reduce the turning area to a width of no more than 2.5 metres.
- **Tight corners –** fence off tight corners into areas for shade trees.

MATERIALS

Materials used in sheep yards construction are not always suitable for goats. For example; heavy timber yards allow goats to climb and stand on the top rail, making escape possible. Mesh can cause goat fibres to be pulled out facilitating contamination of sheep wool if a common yard is used. Mesh also can cause severe horn and leg damage, particularly in smaller yards and working races.

Yards made of pipe are the first choice. This is because modifications, such as an extra rail on top or decreasing spacings at the bottom to contain kids, are easy to make. Other factors such as fire resistance, the absence of termite problems, ease of construction, availability and cost of materials are also important.

SUMMARY OF THE MOST COMMON DIMENSIONS FOR GOAT YARDS

Fence height

External: 100-1200 mm

Internal: 900-1000 mm

The main working area of the yards above, showing a block gate before the three-way draft, with a suitable length of working race and a two-way draft at the end of the working race. The major deficiency is the excess width of the forcing area at the entrance to the draft. An attempt has been made to remedy this by placing scales in this section to narrow the entry to the draft.

Drafting Race

Length: from 2.5 to 4.0 m recommend 3.0 m

Height: 900 mm

Width: 'V' shaped Draft

Top 430-600 mm

Bottom 100-280 mm

Working Race

Length: 8-10 m

Divided by gates into sections <3m

Height: 900-1000 mm

Width: 600-800 mm

'V' Working Race

Length: 8-10 m

Height:

near side 900-950 mm

far side 1000-1200 mm

top 500-600 mm

bottom 100-200 mm

Gate Width

Main receiving yards 2-3 m

Internal yards 1.5-2 m

Drafting gate (open panel) 1.0-1.2 m

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FURTHER INFORMATION

For further information contact your local NSW Agriculture District Livestock Officer (Sheep & Wool)

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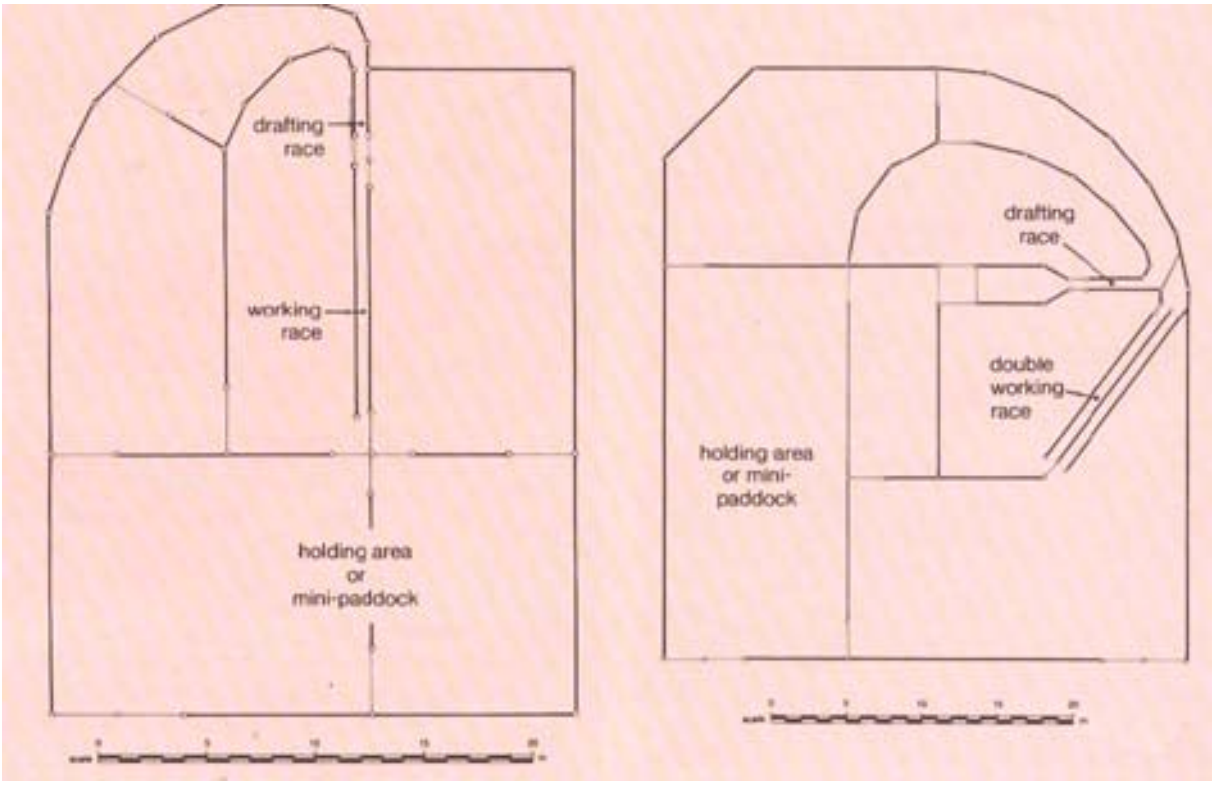

Figure 3 The two most common circular designs using the principle of circular goat flow are the 'U' bugle (left) and the 'Y' bugle (right). Note: the widths of the drafting and working races are not to scale in the above plans.

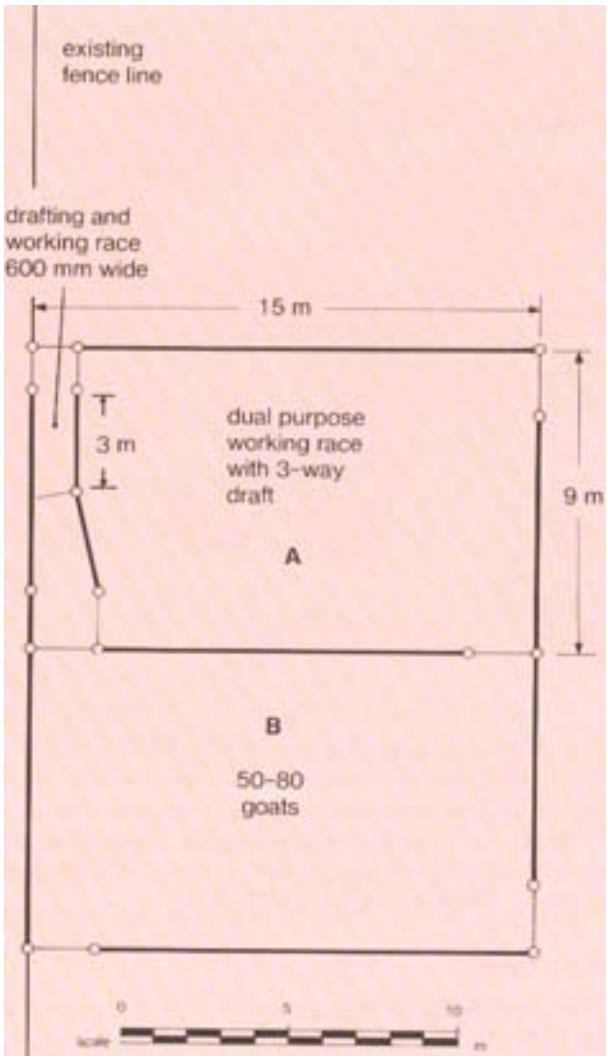

Figure 4 A yard designed for a small flock of 50-80 goats. For a smaller flock area B is optional changing the system from a three-way draft to a two-way draft as area A would be a receival and holding yard.

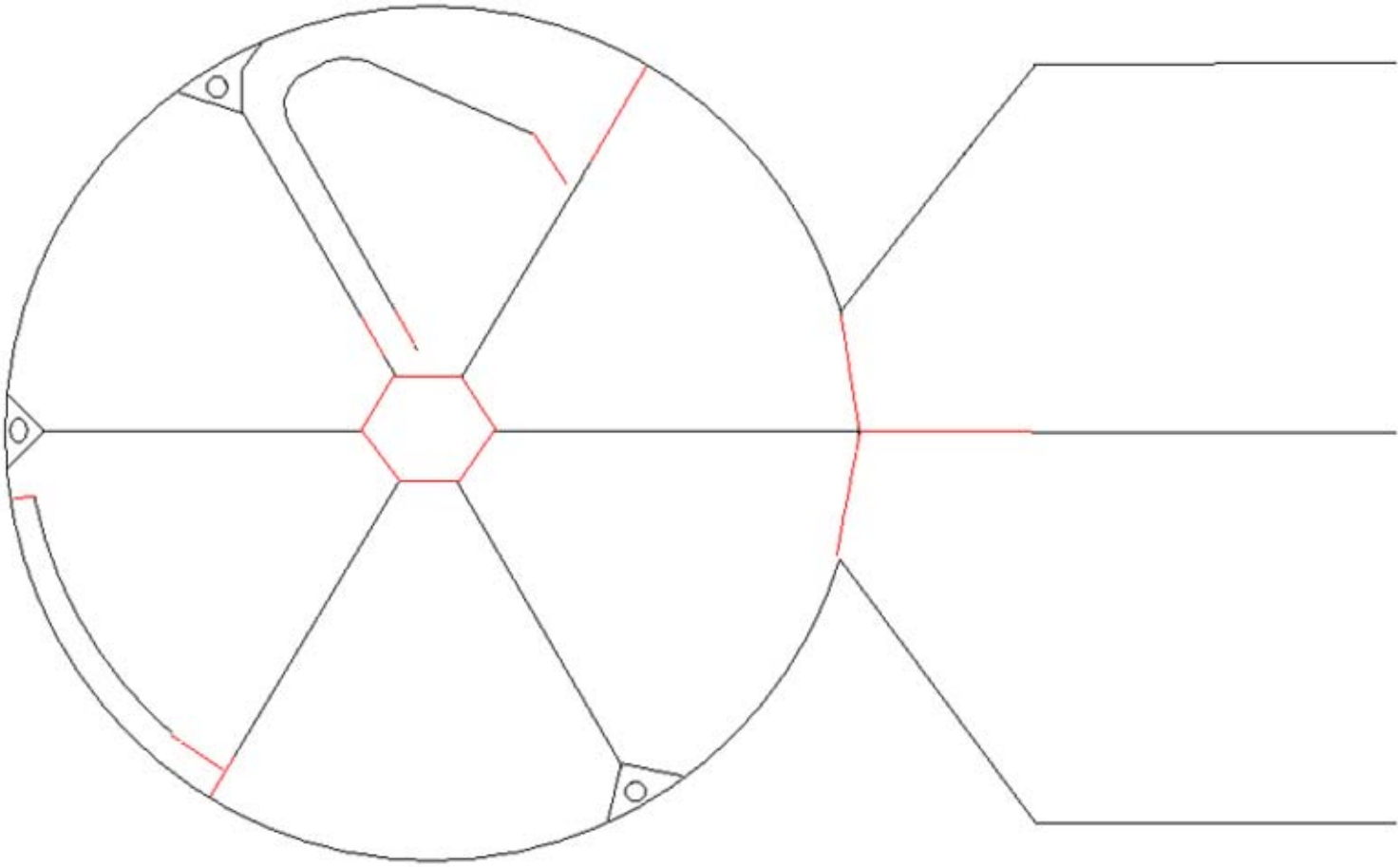

Figure 5 The Condobolin Goat Yard was designed to handle a variety of feral goats. The central interchange area was essential to the functioning, allowing stock to pass from any one yard to any other. The gates in this central area were fitted with double hinges that allowed them to open back against the radial fence in both directions. The draft and working races were both shorter and narrower than for sheep. Again these features were essential to allow reasonable flow as goats are less gregarious and more prone to stop and turn than to follow their "mates". The external fences are 1.8 m high and the internal fences 1.2 m.