

## In the Workshop

By Karl Colyer, Cheshire BKA

*An often overlooked item in a beehive is the entrance. All bees get to use the entrance, with each worker bee using it many dozens of times during their short, busy lives. Some thought and experimentation could be given to your hive entrance(s) and what suits your bees and beekeeping best.*

So what is the optimum size and shape of an entrance? I have spoken to many beekeepers about this and there has been just as many variants of answer confidently offered to me.

### Purpose of the entrance

An entrance hole must ideally satisfy as many of the requirements below:

- Large enough to allow all the bees through on busy days
- Small enough to be defensible on non-busy days
- Deterrent/proofing for wasps and mice
- Ventilation (if using solid floors)



A selection of entrance blocks of various sizes and designs. Home-made designs to the right.

### Understanding the size of entrance hole required

Tom Seeley offers a considered view on an entrance size for a bait hive (Type *Bait Hives for Honey Bees* - *Cornell eCommons* into your preferred internet search engine), suggesting 1¼" (32mm)

diameter as a minimum and 2" (51mm) diameter as a maximum. A drilled hole is one of the easiest entrances to make but anything above 30mm diameter is large enough for small birds, mice or opportunistic wasps to potentially enter. Also, the bees don't often fly directly into the entrance so we should be considering the circumference of a hole and not the area of a hole. Transposing the same hole diameter information, you end up with an equivalent slot that is only 6-8 cm wide for a full sized hive. I'm sure many of you will insist that such a small slot width is inadequate for your bees in the summer. I ask you to consider three thoughts;

1. Tom Seeley thinks that a 5cm wide slot is adequate to attract a swarm of bees to a bait hive. Thousands of bees enter that small hole with no problems at all when a swarm arrives.
2. I have seen many free-living colonies in buildings and the holes between bricks, behind a fascia or soffit board are sometimes only 1.5cm wide and this is still adequate for a full-sized colony for all seasons. OK, it causes some congestion at the entrance on warm, busy days but no bees get stuck inside or outside the hive for too long.
3. Have a think about the London Underground during rush hour. Masses of people get off a train at peak times and go up a single, narrow escalator. A small delay sometimes but no problems at all.

### Benefits of a landing board

The bees need somewhere to land. Where a landing board exists, the bees tend to land on the landing board rather than the vertical sides of the hive. For the beekeeper, it's a wonderful enhancement to help observe the bees and pollen as they come and go on busy days. If you can fit a landing board, please go ahead and do so. It need not be large, as the picture below shows.



A simple, small entrance (8mm x 40mm) with equally small landing area used year round on a full-sized colony for 5+ years.

### Commercial entrance blocks

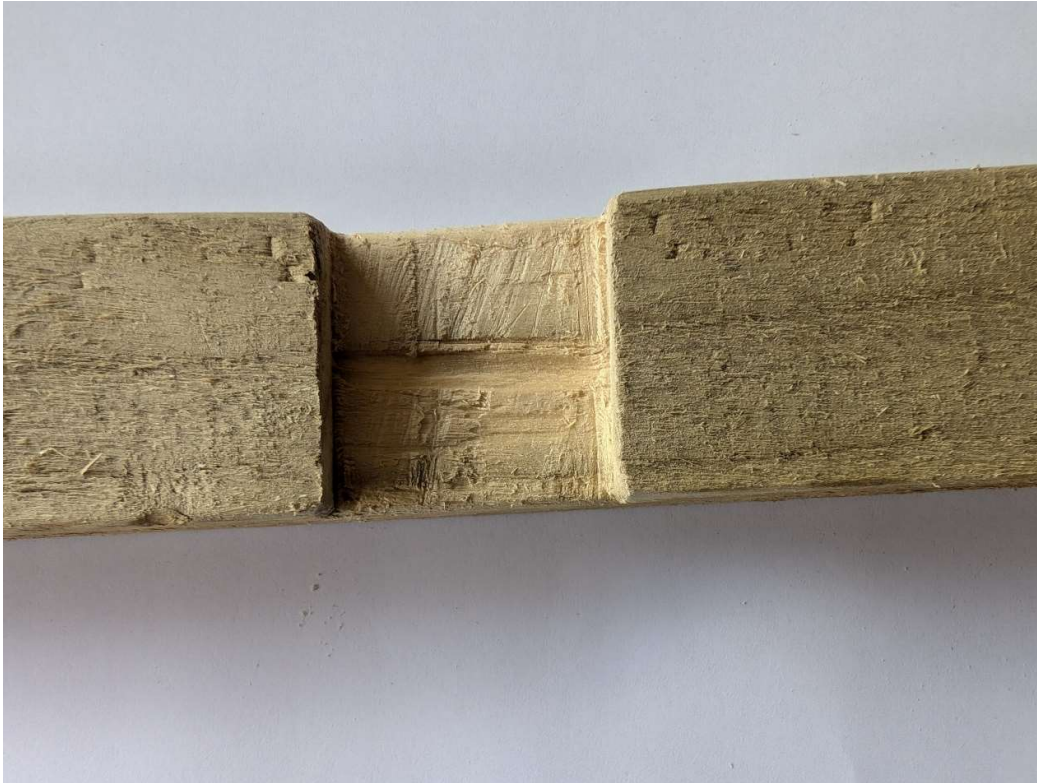
An entrance can be simply viewed as that; a doorway for the bees. Many commercial blocks have two entrances cut into them; one wider opening for the summer season and a smaller opening for the colder months. By default, these entrance blocks must have a square cross section in to allow them to be rotated. However, looking at the cross-section of an assembled hive, there is plenty of spare space for an entrance block to use, as can be seen in the picture below.



Cross section of a brood box. Entrance here is made with the dark wood, showing the elongated entrance tunnel.

## Deciding on your entrance design

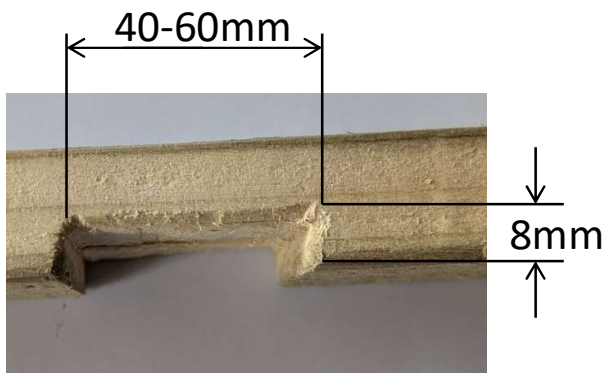
So, knowing all this information about entrances, consider having a go at making entrances yourself for your bees to use and benefit from.



Entrance block, 45mm wide with a single, central bee entrance and rounded corners

45mm wide block – The longer ‘tunnel’ in the entrance makes it more defensible against wasps that don’t seem to like to have to run the gauntlet past the extra guard bees and bee traffic.

Rounded corners – Cut or sand off the sharp corners to your entrance block. It just makes it a little easier on the bees as they enter and exit the tunnel from each end.



8mm tall entrance – This dimension is perhaps more important that we realise. Bees are used to moving through an 8mm gap (think ‘bee space’ between combs). They will happily use the top and bottom sides of the entrance hole and have little or no spare space for other insects to come in. In

addition, the 8mm hole is normally too small for an adult mouse to squeeze through, effectively giving you a mouse guard on your hive all year round.

40 – 60mm wide entrance – The entrance slot can be smaller than most people realise. Your bees will cope with a 40mm wide bee space all year round, even during the peak flows at the height of summer. Think about it, if a swarm can exit in a few minutes, the 'normal' traffic should have no problem. If the entrance does cause some queuing at peak times, it is another opportunity to watch the bees at the entrance to see what resources they are bring in and what condition they are in.

Rough finish – The entrance notch can be sawn or chiselled out. Please don't be concerned about making the wood finish as smooth as a table top; the bees are perfectly happy and probably prefer holding onto a rougher wood finish.