

Three Quarter Boxes | 11 Frames Per Box

BILL BOSANQUET has been keeping bees for 15 years, accumulating knowledge through reading, listening to others and experimenting. He likes constructing and devising new systems, trying to think “outside the square - laterally and backwards”. He describes a system he believes could benefit many.

Our old ideas on beekeeping have to change with the arrival of varroa mite.

We need to utilise the best ideas that have been tried around the world. For instance, Russian beekeepers suggested 50 years ago that hives with closely-spaced brood frames were more productive than the traditional spacing.

Yet, 50 years later some of us are still working with nine 35mm frames to the brood box.. Are we slow or what? One reason may have been beekeeping-equipment suppliers are reluctant to produce one-off equipment. Even with the presence of varroa, there seems a reluctance. However, in Tauranga alone there has been enough stainless steel wire bought to make 9000 screen floors. So maybe beekeepers will now look at alternative methods.

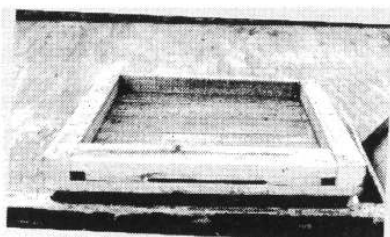
For an efficient hive, I suggest:

- Deep floor boards from the United Kingdom
- A 31mm-32mm frame spacing from the Soviet Union
- Migratory lid, from Tauranga, New Zealand.

With small modifications and no extra work, I have some hives with no drones or drone comb..

Floors

Let's start with a deep floor, using a 35mm to 50mm (whatever you have available) solid bottom. Some apiarists even use false floors, with slats to stop the bee drawing drone comb.



*A deep bottom board fitted with entrance block.
The side holes were closed off, except
when an external pollen trap was fitted.*

An entrance block, permanently kept on the hive, is made from 90mm timber with a 100mm x 8mm entrance tunnel, which acts as a wasp and mouse guard.

Compared with the largest wild hive entrance I have seen (about 25mm x 25mm), commercial hives' typical 365mm x

20mm entrance is huge. Some of my best hives have an entrance the size of a match box - 60mm x 8mm with no outside clustering.

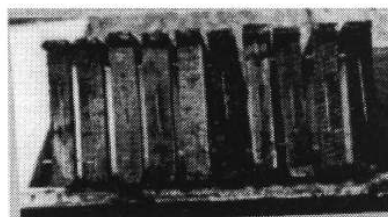
I can hear the cry already: what about ventilation? I'll answer later.

Landing boards

I see no need for a landing board as wild hives never have them. Landing boards are a water trap, filling with water and running through that nice, wide entrance most of us have into the hives. Take the board away and bees coming home land on the side of the box and walk down into the hive. Much more natural.

Brood boxes

My hives are single, three-quarter brood boxes with a queen excluder on top. I keep it on all year. Inside the boxes are 11 simplicity frames with 32mm spacings, fitting nicely into the box. Simplicity frames are 25mm wide and I use 90 series staples (four to each frame) to give the required 32mm spacing, ensuring a bee space the whole length of the frame. The 32mm is critical, as 11 33mm frames will not fit in a standard box. With no propolis build-up, the 32mm spacing can be retained.



Three-quarter depth simplicity frames. Note spacer staples.

Even using wax foundation with a slight gag at the bottom, the deep floor allows the bees to draw perfect worker comb all the way to the bottom bar. Any drone comb will be built under the bottom bars, almost down to the floor.

Worried a single three-quarter box is not big enough?

Consider a queen laying 1500 eggs a day. That is 31500 per brood/cycle, filling seven full-depth frames with 60% of brood. This is equal to seven three-quarter frames 85% full of brood. My 11-frame brood box has the equivalent of five frames to spare. To fill it, the queen has to lay more than 2500 eggs a day.

Because of the tight 32mm spacing, fewer bees are required to maintain the brood nest. The bees move out to the next available frame, followed by the queen. The brood nest starts expanding quickly. In spring there is a quick build-up to at least eight frames - three frames more than the old 35mm spacing. A MAF agent I once spoke to believed the great brood area was a result of extra insulation.

That is one reason. But the main one is what the 1951 research in the Soviet Union revealed (see "Let's Put the Squeeze On Our Bees", *NZ Beekeeper*, April 2001).

Honey supers

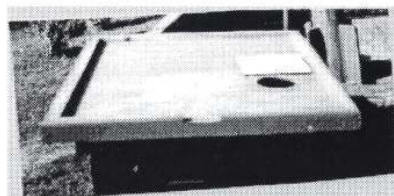
All honey supers have 10 frames per box, added above the excluder during the honey flow. Use your own method to super up. You can put foundation above the excluder and the bees will easily draw it out.

I usually keep the first super on the hive all year as a feed super, one full box over winter means you will not have to feed sugar in the spring. Because the brood takes over most of the bottom box, pollen is stored above the excluder.

Top board

My top board is very handy and every hive should have one. It is not simply a top board but has three other possible functions:

- Hatch closed - split board
- Hatch open - dry sugar feeder
- Placed above a syrup feeder the hatch can be opened for refills.



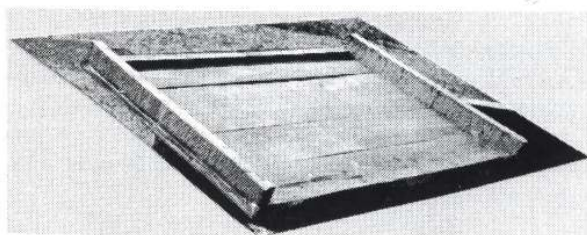
Multi-purpose top board. Note swivelling hatch cover.

The top board is made from untreated ply set into 35mm x 20mm runners to give a 10mm bee space over the top of the frames. This gives the hive good air movement and a dry roof, due to lack of condensation.

The top space is deep enough to be used as a dry sugar feeder when the hatch is open.

Migratory lid

This is very simple and light, made from 10mm timber with 7mm side runners. With simplicity frames and no top board, this gives a 10mm bee space above the frames. End runners are 20mm x 50mm deep. Even with the top board in place, there is an overlap to the top box.



Underside of migratory lid.

If the lid is made 548mm long, a 2mm space is formed across the width of the hive which ensures excellent air circulation and ventilation. The bees will not propolis up the gap but will stick the lid to the top box and if the top board is in place, will eventually propolis the lid to the top board. In this instance, remove the lid and top board as one unit when working the hive.

This is the lazy and poor man's hive. Lazy because there is little propolis-maintenance to do. Poor, because there is little propolis to sell.

Examining, inspecting hive

Working the brood nest is better to do in early spring when there are fewer bees in the box. Because my bees are quiet and gentle, I prefer to work without smoke.

Remove the lid and, leaving the top board on, place the lid upside down on the ground. Then close the hatch in the top board and place the feed super on the inverted lid. Any bees in the super are now closed in a bee-tight box. While shifting the super, I have assessed the weight of stores available.

If you must use smoke, split the hive above the excluder, then follow the above procedure.

Now remove the excluder, check for the queen and shake the bees in front of the hive. Smoke gently through the entrance so the queen moves out of the drone comb under the bottom bars into the frames and out of harm's way.

Stand the brood box, on its end, on the floor. Don't worry about the frames moving. The tight spacing will hold them firm. Now, scrape the drone comb from the bottom of the frames. You will have to do this every time you do a brood inspection.

Remove the drone comb from the floor, ensuring you do not take the queen, then put the brood box back on the floor.

Remove the first frame and place it in front of the hive. Remove the second frame and check for disease. This will now become frame 1. Frame 3 becomes frame 2 and so on, until frame 1 becomes frame 11.

To carry out an inspection once the bees have expanded to nine or 10 frames, remove two frames so that the brood nest moves over two spaces. You have to be careful, because if the bees are rolled while removing a frame, you could kill the queen. Some common sense is required.

Cleaning the queen excluder

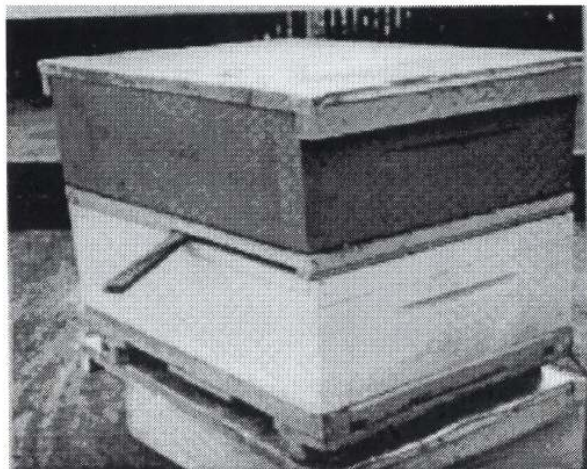
I usually leave mine on all year and clean it only once, in the spring, by scraping off excess wax. I burn the rest off (with one of those hand-held gas bottles), then replace the excluder and the feed super.

Requeening

With only 31-32mm spacing, it is impossible to requeen without removing a frame from the brood chamber and putting it in the feed super. Now put in your caged queen or queen cell and close up. Don't wait too long before going back.

After seven to 10 days, remove the queen cage/old queen

cell without smoke as you do not want the bees to ball the queen. Replace the frame from the feed super and close up.



A complete hive. Don't worry about the modified excluder. I'll report on that experiment next year.

Splits

Splits made using this system will over-winter well in a single box, either on a floor or over a split board.

Conclusion

You will find an 11-frame, single three-quarter brood nest hive out-performing anything else in your apiary by at least one box, maybe two. Once the honey flow has stopped, the queen slows down and the bees start storing honey in the bottom box, becoming reluctant to go through the excluder. This locks the queen up early.

I wish I could take credit for this, but all I'm doing is taking and using ideas that other beekeepers developed 50 or more years ago. There is nothing new in beekeeping that has not been tried before - maybe for a different reason. These ideas should help cope with varroa because having no drone brood in frames reduces the reproductive rate of the mite. By regularly removing the drone comb in deep bottom boards, varroa numbers are further reduced.

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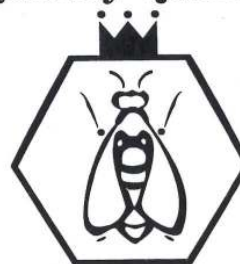
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