

# Polynuc landing board with integrated varroa floor

By Steve Davies

Most hives now incorporate varroa floors but none of the suppliers provide these floors for polynucs. With many beekeepers over-wintering a nuc or two, it makes sense to manage and treat these colonies accordingly.

The instructions below are specifically for the Maisemore Polynuc but include measurements for the Paynes Polynuc at the end. Once the design concept is understood, the measurements can be amended for any size of nuc.

## Materials required:

Framework: two 555mm lengths of 25mm x 100mm prepared timber  
- two 250mm lengths of 25mm x 100mm prepared timber  
Varroa tray: 450mm x 270mm 5.6mm plywood  
Landing board: 300mm length of 25mm x 140mm prepared timber

40mm nails  
20mm panel pins  
Wood glue  
Wood filler

Prepared timber is easiest to work with but is currently quite expensive. These could easily be made with any spare timber you have available.

Where possible, have an empty nuc available to use as a template throughout construction.

## Method:

- Cut all timber to size leaving the plywood slightly longer than required. This will be trimmed back once the framework has been assembled.
- On the longer lengths, mark a point 450mm from one end; draw a line from that point down to the bottom corner forming an incline. Cut off the surplus wood.



*Every polynuc should have one of those – a landing board with an integrated inspection board (and in the HWBKA aparies all have them thanks to Steve –editors note).*

- We now need to create a groove for the varroa tray to slide along. If you have the equipment, a router is the most efficient. I found that a 6mm routing bit to be a too tight for 5.6mm plywood, especially when painted. On this version, I used a 10mm routing bit.
- The routing bit was set up so that it was 15mm up from the bottom edge of the timber. Technically, the groove only needs to go as far as the sloping edge, but my routing skills have not progressed that far! I cut the groove along the complete length and later used wood filler where required. 😊
- If you don't have a router, all is not lost – just tack a pair of frame runners along the bottom edge again 15mm from the bottom edge. Be aware that the runners are designed for inside a brood box and do not go the full length. Aligning them with the back edge makes it easier to insert the tray.



- Take one of the 250mm lengths and cut along the longer edge 60mm from the top. Do not throw away the off cut, it will form the lip of the varroa tray.



### Assembly time!

- Mark a pencil line down the front edge of the sides just where the incline starts (see previous photo). Make sure it is perpendicular to the top. This will help align the cross bars.
- Glue and nail the front bar to one of the sides. Repeat with the back bar aligning it with the top face. Ensure both are square to the side bar.
- Glue and nail the remaining side bar onto the unit.
- On a flat surface (e.g. worktop) make sure the frame is level and square. Slight adjustments can be made by persuading the frame into line before the glue sets (not something you could do if you chose to use screws). Test it on the polynuc and adjust if necessary.



- Take the 25mm x 140mm timber and cut a bevel along one long side. This bevel should be in line with the top of the sides and in this example, it was 45 degrees.
- Glue and nail the landing board to the sloping faces of the side boards then nail through the top of the front bar into the underside of the landing board.



### Next, the varroa tray

- Slide the plywood along the grooves until fully in place. If necessary, trim slightly to ensure smooth passage.
- Check the plywood meets the front bar along the complete width. If the bar was square to the sides all may be fine. If not (mine wasn't), then trim the plywood to fit.
- Once satisfied, trim most of the excess from the protruding edge of the plywood leaving a small overlap.
- Turn the complete unit over so the plywood sits on the bottom of the runner groove in its normal position.
- Using the 25mm x 250mm off-cut, place it on the plywood on the inside of the end bar. Mark it along its length level with the bottom of the end bar. Cut off the excess and discard; the remainder should be around 12mm in height.
- Mark the plywood tray in line with the grooves and the end of the framework. Glue and pin the 12mm off-cut between these marks (make sure the off-cut aligns with the end bar). This now forms the lip of the tray.
- Slide the tray back into the grooves and make sure it fits easily. You will probably need to sand down the top face of the lip but leave a slight gap to accommodate the paint layer. Sand down any surplus plywood ensuring it is flush with the 'lip'.



Effectively, the unit is almost complete. However, the feet of the Maismore design are flush with the edges of the Polynuc. When put on to the landing board, there is a large gap between the landing board and the nuc – big enough for bees/wasps to enter. My solution was to add a couple of off-cuts of timber to the end bars.

- Place the landing board on the upturned nuc and mark where the feet are positioned. Glue and pin the timber off-cuts level with the top surface of the landing board.



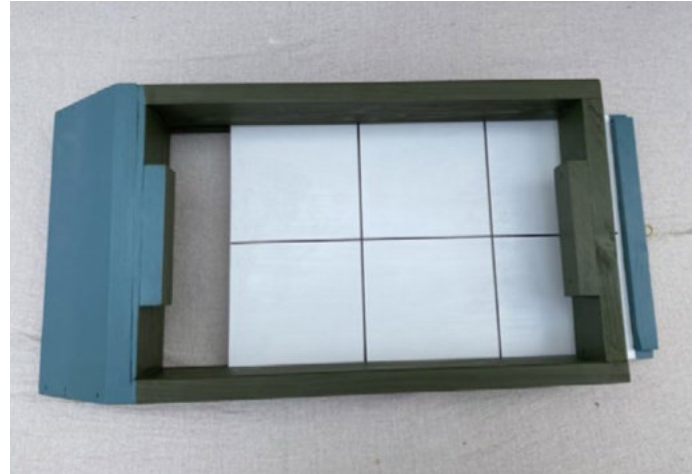
If you have only one or two nucs it is possible to adjust the framework to provide a better seal. However, if you have several nucs it may be advisable to leave some tolerance as I've noticed slight variations between nucs. NOTE: Paynes Polynucs have the feet recessed further into the body and you don't need to add these off-cuts.

#### Nearly there ...

- Sand down all faces especially the bevel along the top of the landing board. Once satisfied, fill in all cracks with

good quality wood filler. In my case, copious amounts to fill in the excess groove I created when routing!

- Once dry, sand down fully and paint in the colour of your choice. I would recommend using a good quality white gloss for the top face of the plywood tray (primed and under coated as well). This will make it easier to sweep off the debris and keep clean during inspections. Add a screw eye to the middle of the tray lip to help pulling in/out.



Finally, the reason I have aimed for specific measurements of the grooves and tray lip are for those who sublimated their bees. At the appropriate time, simply turn the tray over and re-insert upside down. The lip should not catch on the hive stand and you will be able to insert your applicator in the gap above the tray. 