

# Implementing a Queen Castle

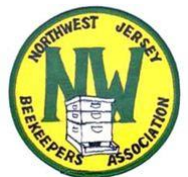
*Bob Kloss - Kevin Inglin*

February 6<sup>th</sup>, 2015

# Rearing vs. Breeding

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- ▶ Rearing vs. Breeding
  - Rearing
    - The bees raise the queen in normal hive conditions
  - Breeding
    - The beekeepers intervenes to 'grow' a queen via a method like instrumental insemination
- ▶ Rearing is often about maintenance & growth
  - Replacing or adding queens
- ▶ Breeding is about goals and genetics
  - Creating queens with specific attributes



# Queen Castle

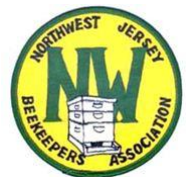
- ▶ Simple Deep Box Divided into 4 Sections
  - 4 chambers which are like 4 two frame Nucleus Hives



# Why Rear Your Own Queens?

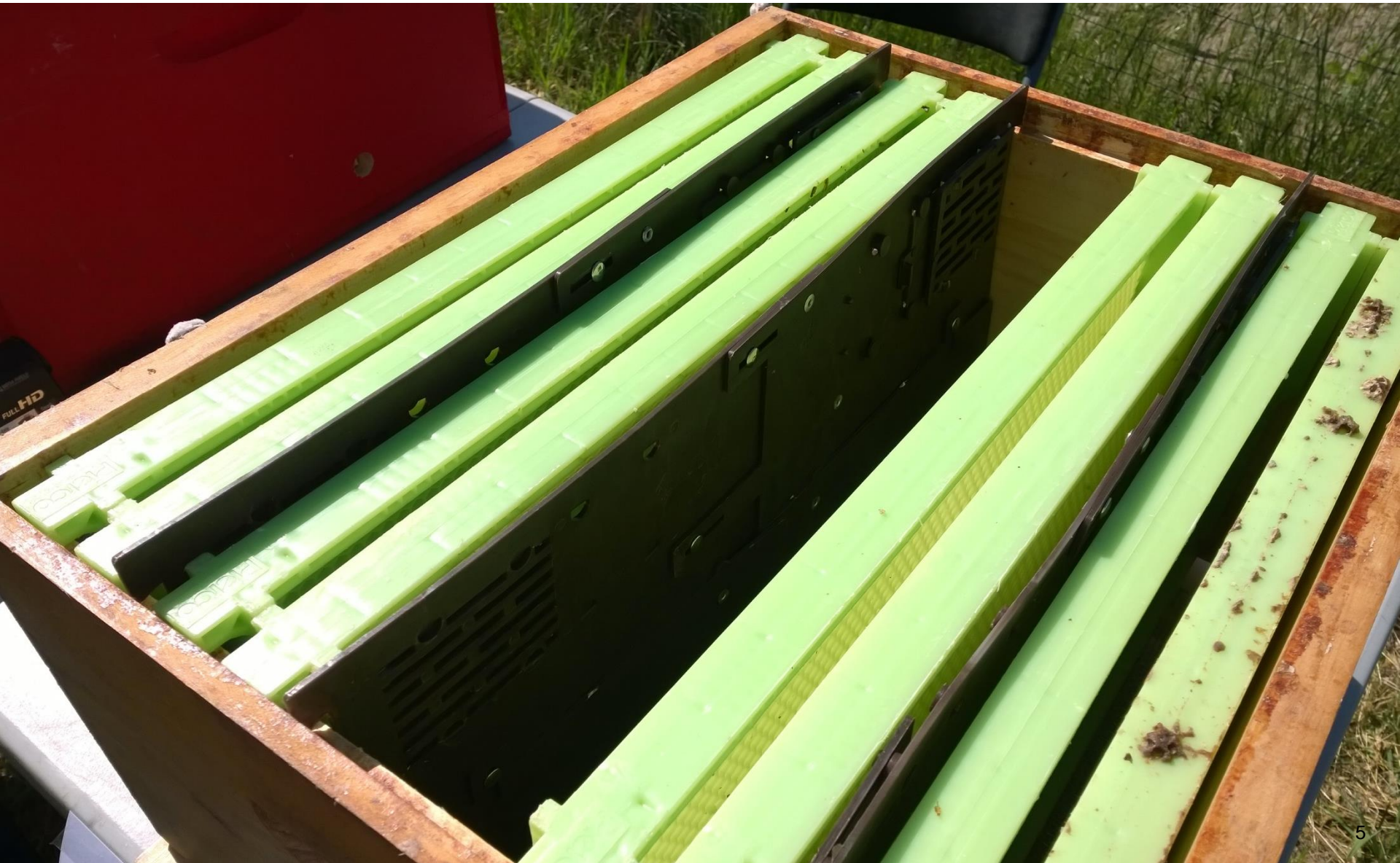
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- ▶ Sustainability
  - Make up for Winter Losses or make Increases
- ▶ Genetic Diversity; within apiary and general area
- ▶ Save Money
  - A typical queen costs \$20/\$25 plus shipping.
- ▶ Time & Availability
  - In an emergency you order a queen and it takes several days to make arrangements and get the queen.
  - Queens may not be available but you'll be prepared



# A Better Look

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# A Brushy Mountain Divider



# Another Example

Feeder Holes >

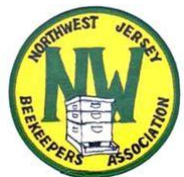
Adjustable Hive  
< Entrance Door



# Separate Hives

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- ▶ Each hive chamber has it's own entrance.
    - The castle does not use a conventional bottom board. It uses a sealed flat bottom
    - Each of the chambers has a hole for the bees to escape
      - Describing the holes from looking at the front of the castle box:
        - The left most chamber has a hole on the left side.
        - The second one in on the left has a hole in the front side.
        - The third chamber has a hole out the back side of the box
        - And the Last chamber has a hole out the right side.
- These of course can be done in different configurations...*





# Crown Board Replacement

- ▶ The dividers in the hive extend up **past the top edges** of the boxes
- ▶ Four separate boards are used to replace the crown board.
  - The whole device is covered with a conventional outer cover.



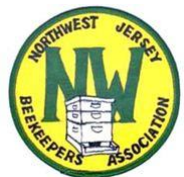
# Populating with Swarm Cells

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- ▶ In the spring look for capped queen cells
  - Remove that frame from the mother colony with its bees and put it into one of the chambers.
  - Pull another frame with honey, pollen and nectar + bees on it to accompany the first.



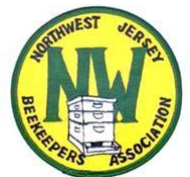
Note: Make sure you don't have the queen!



# Hatching

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- ▶ Let the queen hatch and mate in the box.
- ▶ When mated, transfer the frames to full Nuc
  - If you don't have four chambers in operation you can remove a divider and make two of the chambers into a five frame Nuc and run it that way.
    - Use a cork to close the second opening
- ▶ Remember the Objective - *Sustainable*
  - Need a queen, have one in reserve...
    - FROM YOUR OWN LOCAL STOCK!
    - Free bees, not \$25.00 each and a trip to a supplier



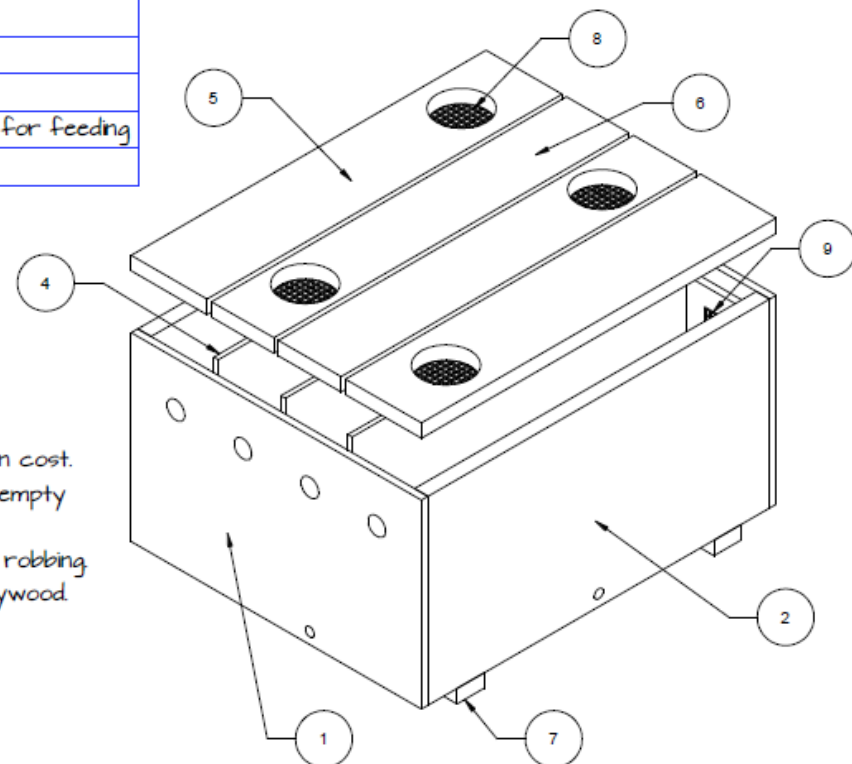
# Need Plans? Check the Web

## Bushkill 4-way Mating Nuc

| Item | Qty | PartName      | Material  | Dimension         | Comment              |
|------|-----|---------------|-----------|-------------------|----------------------|
| 1    | 2   | Front/Back    | 3/4" Ply  | 10-1/8" x 16-1/4" |                      |
| 2    | 2   | Side          | 3/4" Ply  | 10-1/8" x 19-1/8" |                      |
| 3    | 1   | Bottom        | 1/4" Luan | 15-1/2" x 19-1/8" | Recessed in rabbet   |
| 4    | 3   | Divider       | 1/4" Luan | 10-5/8" x 19-1/8" |                      |
| 5    | 2   | Cover (outer) | 3/4" Ply  | 4-1/4" x 19-7/8"  |                      |
| 6    | 2   | Cover (inner) | 3/4" Ply  | 3-1/2" x 19-7/8"  |                      |
| 7    | 2   | Bottom Rail   | 1" x 2"   | 11/2" x 16-1/4"   |                      |
| 8    | 4   | Top Screen    | #8 cloth  | 3" x 3"           | Optional for feeding |
| 9    | 8   | Vent Screen   | #8        | 11/2" x 11/2"     |                      |

### Notes:

1. Regular telescopic cover can be used.
2. Coroplast (election signs) can be used for dividers to save on cost.
3. Screen holes in covers allow for inverted jar feeding. Place empty deep hive body around jars and then cover.
4. Uppers screened vent holes provide good protection against robbing.
5. Four mating nucs can be made from a 4x8 sheet of 3/4" plywood. Layout diagram provided.



<http://robo.bushkillfarms.com/beekeeping/downloads/>

# Tips! Things to Consider

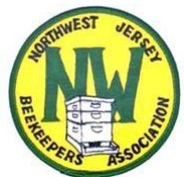
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- ▶ Make it deeper than normal

- **TIP** If you want to take advantage of natural swarm cells it is useful to have a castle that is an inch deeper than normal if you attach a solid bottom to it;
  - That way those dangly queen cells you encounter that droop deep toward the bottom board can be relocated to your castle without damage.

- ▶ Paint the sides of the box different colors

- **TIP** Boxes painted with different colors on each side might help the bees orientate better to their entrance.

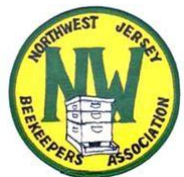


# Tips! No UNI-TASKERS...

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## ▶ Dual Purpose Boxes for hive inspections

- TIP** ◦ For additional utility, these boxes can serve as a quiet box, when not in use as a queen castle.
- Simply put a cork in the holes and you have a quiet, dark place to slip your frames into.
  - They have multiple tops so you can load as you go.



# Caution! Watch Your Fingers

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- ▶ One way to construct a box is to “DADO” grooves for the dividers to go in and out of.
  - If you use a table saw, watch you don’t have your fingers in the handholds when dado-ing.
    - The blades will get into the handhold area and one could lose a fingertip if using the built in handhold to move the board through the saw.
    - Three chambers to avoid this?
      - Maybe divide the box into three instead of four.
      - Three frame Nucs are less crowded and the dividers may fall to either side of the handhold when dado-ing.



# Not Handy?

- ▶ Don't have wood working tools?
  - You can buy one. Here is one from Brushy Mountain

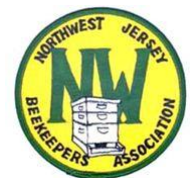


▶ Full Size Frames

**\$37**



▶ Medium Frames



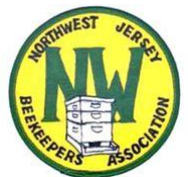


# Actually, No Special Equip. Required

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- ▶ Truth is you could put frames with queen cells in a Nuc or a full box if need be.
  - Makeshift follower boards\* could be used to divide hives without dedicated equipment

*\*A follower board is a term used to describe a solid divider between frames*



# A Quick Run Through

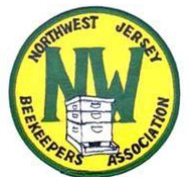
» How to do it



# Timing

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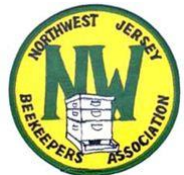
- ▶ This should be implemented when the spring flow is full on and boxes are bursting with bees.
- ▶ You are going to set this up by allowing your bees to get into a pre-swarm state
  - Of course you need to pay attention or they will swarm and the opportunity will be lost.



# Step 1 – Setting Up

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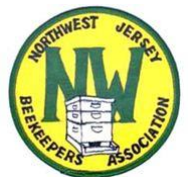
- ▶ Take a frame with swarm cells and remove it from the parent hive to your queen castle.
  - This first frame should have brood on it along with the queen cell. **Take the nurse bees too!**
  - The cell can be capped or open, but with larva of course.
    - If open, make sure the larva is in a lot of royal jelly and that they are attending to it.
      - Handle the frame gently, don't damage the queen
    - **Make sure the reigning queen is not on the frame.**
      - Consider isolating her in a quiet box to make sure you don't take her by mistake.



# Step 2 – Second Support Frame

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- ▶ Take a second frame from the brood area with the bees.
  - Again, be sure the queen is not there.
  - It should have capped brood which will emerge and become the workforce to raise the new queen.
  - Be sure to pick a frame with a good mix for your second choice | Brood + Nectar + Pollen
    - You've selected a brood frame. Foragers will not be there or fly back. They'll need something to eat.



# Step 3 – Queen Mating Timing

## ▶ 8 Days until mating

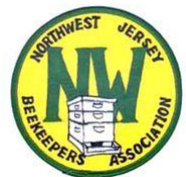
- If the original queen cell(s) were capped, they were 8 days into a 16 day cycle for the queen to emerge – give or take a day for how long the cell was capped.

## ◦ Emergence:

- In about 8 days after you put the cell in the castle, the queen will emerge and the typical mating cycle will start:
- 5 to 6 days in the hive maturing
- Up to one week for mating
- 2 to 3 days to get ready for laying once returned – practicing...

+8  
+5  
+7  
+2

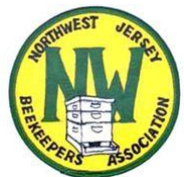
**22  
Days**



# Step 4 – Nuc Stage or Resident

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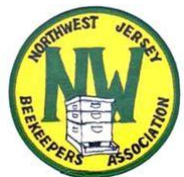
- ▶ You can move the frames out to a new Nuc or colony when the queen starts laying.
  - Resident: Optionally you can leave them there for a short period but...
  - In time you will have to increase the space by removing a divider *or* move them to more spacious arrangements



# Additional Insights...

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- ▶ What if multiple queen cells on one frame – can they be harvested individually?
  - **Yes** > Take a pen knife and cut them out.
    - Instead of one brood frame, move two frames + Bees; *without queen cells of course*
    - Take a pin or secure the cell in the right orientation to the face of a comb.
      - Be gentle with the cell you cut out and cut a large swath around that cell
      - This will assure you have something to affix when 'transplanting' the cell to the face of the comb.





# Additional Insights...

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- ▶ Can you do this with day old eggs?
  - Yes. Follow the same process and let them raise their own. It will take about a week or two longer.
  - Commentary: Quality of this type of queen?
    - Younger larvae make better queens.
      - The queen raised from a cell that the bees made, with intentions of keeping the colony going, will be superior
      - They may not pick the best larvae when forcing them to make an emergency queen in haste
      - Emergency queen production might be done with older larvae to speed up the process by the nurse bees who are panicked at not having a queen.



# Questions?

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# Resource

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- ▶ **How to start a queen in a two-frame nuc**

<http://www.honeybeesuite.com/how-to-start-a-queen-in-a-two-frame-nuc/>

