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## **Hive Bodies Explained**

Hive boxes are called hive bodies or supers. When used to hold brood they are referred to as brood chambers (or brood boxes). Brood chambers can be any size box. One could keep bees in all shallow, medium, or deep boxes. However, the most commonly used set up would use a deep hive body or two deep hive bodies for a brood chamber. A beekeeper begins to develop his/her beekeeping style when selecting the type of brood chamber he/she will use.

The general dimensions of a brood box will vary according to the woodenware manufacturer's design. Some boxes will have a space above the frames (called a bee space) and some will have the bee space below the frames.  $\frac{3}{8}$  of an inch may not seem like much, but it can cause trouble.

Mixing boxes with the space at the top with boxes with the space at the bottom creates a problem for the beekeeper. If such an event should occur, as much as  $\frac{3}{4}$  of an inch could be left between two hive bodies. This is not good because the bees will build burr comb in the space between the two boxes with the  $\frac{3}{4}$  inch space. On the other hand, when two boxes leave no bee space at all, the bees will use propolis to glue the hive bodies together. When buying hive bodies try to purchase all hive bodies from the same woodenware supplier. Also realize that hive bodies are sold in different grades. #1 or select grade is a box without knots. Commercial grade boxes will have some tight knots.

### **The shallow super**

The shallow super is  $5 \frac{3}{4}$ " deep. It takes a shallow frame,  $5 \frac{1}{2}$ ". It will hold approximately 30 pounds of honey when all combs are drawn out and filled. For those who do not like lifting the large deep super or heavier medium supers full of honey, the shallow super is a good choice. Shallow boxes should only be used as the honey supers and not the brood chamber.

The beekeeper also has access to many of the same choices in foundation that is offered for deep supers. One can buy wired shallow foundation, shallow brood foundation (not wired), thin cut comb foundation, and plastic foundation in the shallow size.



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### **The Medium Super**

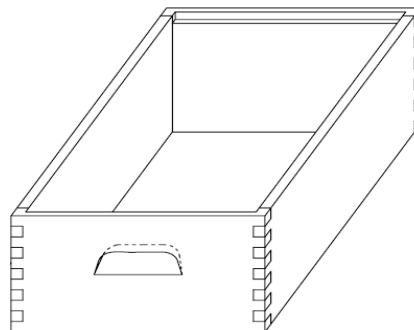
The medium super is 6 5/8" deep and uses 6-1/4" frames. It is attractive for a number of reasons. It will hold approximately 40 pounds of honey when all the combs are drawn out and filled. For those who do not like lifting the large deep box, this is a good compromise. Three mediums will equal the same hive size as two deep boxes. We know of a number of beekeepers who use nothing but medium hive bodies for both the brood chamber and honey supers. It holds more honey than a shallow super.

The medium super is sometimes called an Illinois depth super. So if you hear someone talking about Illinois supers you know they are talking about medium depth supers.

The cost of a medium super is not much more than the cost of a shallow super. Regardless of the frames you buy, they cost the same for any depth of super. Remember that it takes just as much time to build a shallow frame as it does a medium or deep frame and for the cost you are getting about 1/5 to 1/4 more honey with the same labor by using medium supers than shallow supers.

### **The Deep Hive Body**

A deep hive body is 9 5/8" deep. When filled with honey a deep hive body can weigh close to 90 pounds. Deep hive bodies are traditionally used for brood chambers. While designed to hold 10 frames, some beekeepers will remove one frame after the bees have drawn the comb out on all the frames and re-space the remaining 9 frames evenly in the box.





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### Hive Body Dimensions and Weights for Comparison

<b>Ten Frame Box</b>	<b>Length (Inches)</b>	<b>Width</b>	<b>Depth</b>	<b>Volume cubic inches</b>	<b>Weight Full of Honey, Lbs.</b>
Deep	19 7/8	16 1/4	9 5/8	2608	80-90
Medium	19 7/8	16 1/4	6 5/8	1796	45-55
Shallow	19 7/8	16 1/4	5 3/4	1559	35-40
<b>Eight Frame Box</b>	<b>Length (Inches)</b>	<b>Width</b>	<b>Depth</b>	<b>Volume cubic inches</b>	<b>Weight Full of Honey, Lbs.</b>
Deep	19 7/8	13 3/4	9 5/8	2167	55-65
Medium	19 7/8	13 3/4	6 5/8	1491	30-40

## Frames Explained

Frames are used in a bee hive to hold the wax comb. This comb is built on some type of foundation by the bees. Honey bees will build comb in a frame without foundation but it will not be straight and perfect like we are accustomed to seeing in a bee hive. Many states require that bee hives be easily inspected and this requires frames with no cross comb.

### Frame Sizes

Frames will vary in size. It depends upon the depth of the hive body they are going to be placed in. Frames are sold as:

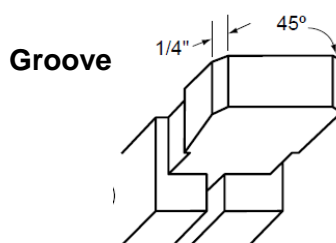
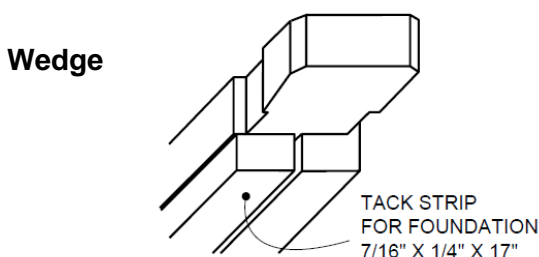
Shallow frames - These frames will fit a standard shallow super of 5 3/4" depth. All frames have the same size top bar and bottom bar. The end bars will determine the height of the frame. The shallow end bar is 5 3/8 inches from top to bottom.

Medium frames - These frames are designed to fit the standard medium super of 6 5/8" depth. The medium end bar is 6 1/4 inches from top to bottom.

Deep frames - These frames are designed to fit the standard deep hive body of 9 5/8" depth. The deep end bar is 9 1/8 inch from top to bottom.

### Wedge versus grooved

Nearly all bottom bars of wooden frames are grooved. Top bars may be of grooved or wedge design. Which one you choose depends on the type of foundation you are using. If you are using a plastic foundation, then you need a grooved top bar. If you are using wired wax foundation then you need a wedge style top bar





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## Foundation Explained

The beekeeper also has access to many of the choices in foundation found. One can buy wired wax foundation, unwired wax foundation, thin cut comb foundation, and plastic foundation coated with beeswax or uncoated.

### Wax foundation

If you are new to beekeeping you may be perplexed to find that there are many different choices when it comes to buying wax foundation. Regardless of the size of frames you have, you will have choices such as: plain foundation (not wired), brood foundation - wired and not wired, thin foundation for comb honey and a few others. You need to decide on foundation before you select your frames or select foundation that will fit your frames.

### Plastic foundation

Plastic foundation is preferred by some beekeepers and despised by others. It can be purchased in white, yellow, or black. It cannot be used if you plan to make cut comb honey. It does offer some of the following advantages:

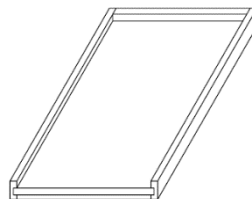
- It is fast and easy to put into frames
- Wax moths cannot destroy it
- Mice do not eat through the mid-rib of the plastic
- Black plastic foundation allows one to see eggs the queen has laid much better than any other comb
- If the bees do not do a good job of building comb, the old comb can be scrapped off and the plastic sheet used again (a power washer does a neat job of cleaning them up)
- The plastic foundation can be bought as a complete unit with the frame molded into one unit including the foundation -- no need to build anything at all. It is ready to be put into the hive.

## Bottom Boards Explained

Bottom boards serve a very useful function in a bee hive. It is the landing area and floor of the hive. When buying or building a bottom board, the beekeeper is faced with several choices. An entrance reducer is used during the winter to prevent mice and cold air from entering the hive. These are made of wood or metal.

### Solid bottom board

This has been the standard for years. Purchased bottom boards are going to be very much alike. They will have a shallow side and a deep side. The deep side has traditionally been used for winter with an entrance reducer installed at the entrance to keep out mice and cold air. Years ago a beekeeper would be expected to reverse the bottom board to the shallow side for summer. It was a good practice because the beekeeper would be cleaning the deep side of bees that dropped to the bottom board during the cold winter season and turn it down so the bottom summer side was up and gave the bees a very clean floor. Today, most beekeepers no longer flip the bottom board over.



### Screened bottom board

The screened bottom board has been around for several years. It was developed to allow varroa mites to drop thru the screen rather than land on the solid bottom and then crawl back up into the hive. It is important to remember that this type of bottom board has another working piece which completes its use. That is a sliding sheet of either metal or plywood which is used as a solid bottom during the winter to block drafts of air from reaching the bees. This is slid in to the bottom board in the fall and removed in the late spring.

