The Imirie Shim®

An Imirie Shim® is a gadget developed by George Imirie, a well known beekeeper in the Northeast. It is a simple 3/4-inch rectangular frame that is the same size (width and length) as a honey super (Figure 1). The shim has a 3/4-inch notch cut 3/8-inch deep in the middle of the front end bars (Figure 2).

The idea is that the shim can be placed between any of the honey supers to allow for additional access for foraging bees. Since the shim also provides additional ventilation, you can place it on top of (or under) the inner cove to allow a place for moisture to leave the hive.

The shim is a simple idea, but it really works. We view the shim as "essential" equipment in our bee yards and use several per hive. Because these shims work and are so handy, you may want to consider making a couple for each hive that you have.

The Importance of Ventilation

A hive produces a lot of water and it is important to provide a means of ventilation. During a honey flow, the bees need to cure the nectar which is water-thin when first brought into the hive. Also, there is also a surprisingly large amount of water produced simply from the bees' metabolism even during the cold winter months. All this water has to go somewhere - and the best place for it to go by far is outside of the hive.

The shim allows you to create a ventilation opening essentially at any location in the hive. Since warm air rises, as does its moisture, the shim is best placed at the top of the hive either just above or just below the inner cover. Because of the benefits to hive ventilation, we leave the top most shim in place year round.

The Importance of Entrance Ways

As you add supers throughout the summer, there is an increasingly longer distance that the bees must travel inside the hive when moving the nectar. With only a bottom entrance, this traffic is forced to go up through the brood chambers and any intervening supers. If you use a queen excluder then
there is an additional barrier to this traffic. This may be why (perhaps unjustified) some beekeepers refer to a queen excluder as a honey excluder.

The Imirie Shim® offers a simple solution. When you add a super, put the shim down first. If you use a queen excluder, put the shim on top of the excluder. Then, as you add more supers, simply move the shim up under the super the bees are currently working on. The notch in the shim will provide a direct ingress/egress opening for the foraging bees. It makes sense and when you use the shim you will see bees coming and going through the shim’s opening.

**A Disadvantage**

Using an Imirie Shim® violates the principle of “bee space” in the hive. Consequently, the bees will tend to build bridge comb in the space created by the shim. In our opinion, this is a minor inconvenience when weighed against the advantages gained by using the shim.

A commercial version of the Imirie Shim® is inexpensively available from Brushy Mountain Bee Farm, Inc. Visit their website at www.brushymountainbeefarm.com.

**Basic Construction**

The shim is constructed by ripping 3/4” strips from 1x4 pine. You will need two side pieces 19-7/8” long and two end pieces 16-1/4” long; a perfect use for scrap material. We recommend an angled bridle joint for joining the sides to the ends. This is a relatively easy joint to make with a table saw. A 3/8” deep by 3/4” long dado for the opening is cut into the top of the front.

**Before You Begin...**

All of the dimensions shown in the drawings and cut list are for a standard 10-frame hive. A table is provided at the back of this article with the sizes of the various components for an 8-frame hive and a 5-frame nuc.

**Construction Details**

*(For a Standard 10-Frame Hive)*

**Step 1. Cut the Shim Sides and Ends**

From 1x4 pine, rip two side pieces 19-7/8” long and 3/4” wide and two end pieces 16-1/4” long and 3/4” wide (Figure 3).
Step 2. About an Angled Bridle Joint
We recommend you use an angled bridle joint for maximum strength (see Figure 4). One piece will have a tenon 3/4" long and 1/4" wide. The tenon will fit into a corresponding pocket on the adjoining piece.

This joint is quite strong (lots of glue surface) and relatively easy to make. The joint is best made with a table saw.

Step 3. Cut the Tenons on the End Pieces
For the tenon cut, set the blade 3/4" high and 1/4" to the outside of the blade from the fence. Using a scrap piece of 1x4 or a tenoning jig as a guide, hold the end bar in a vertical position and make the two cheek cuts on each end (see Figure 5). Make similar cuts on the second end bar. Reset the blade 1/4" high and 3/4" to the outside of the blade from the fence and the make the remaining two shoulder cuts on each end.

Step 4. Cut the Pockets on the Side Pieces
For the pocket, set the blade 3/4" high and move the fence so that you are making a 1/4" cut to the inside of the blade. Again using the guide, hold the side bar vertical and make the first cut (see Figure 6). Rotate the piece and make the second cut. Depending on the thickness of your saw blade, you may have to nibble any remaining waste from the middle of the pocket. Repeat these cuts on the other end and on the second side piece.

Shop Tip
Both the tenon and the pocket are easier and more accurately cut using a tenoning jig. See “In the Beekeeper’s Work Shop” article on Building Hive Bodies for details on making and using this handy jig.
Step 5. Cut the Front Entrance/Ventilation Notch
Cut a centered 3/4" wide by 3/8" dado (notch) on the top of the front piece (Figure 6).

Step 6. Assemble the Shim
Dry fit the four shim pieces to make sure all the joints fit (Figure 6). Then reassemble by gluing and clamping the joints, checking for square. We recommend Franklin exterior Titebond® for the glue.

Step 7. Paint the Completed Shim
We suggest that you paint the shim. Use a quality latex primer and two top coats. Don’t skimp on the paint job since it will probably be the last time you paint the shim. A good paint job will greatly prolong the life of your equipment.

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Apiary Tip
You will undoubtedly want several shims per hive (we like to have at least two per hive). To save time, use a full 1x4 (or wide) board and assemble into a box. Then cut 3/4" "slices" from the box to make individual shims. You can use the joinery described herein or a "spline" joint to make the box. Consult “In the Beekeeper’s Work Shop” article on “Joinery” for details on how make a spline joint.

Resources
“Building a Bee Hive” series. Published on-line at www.michiganbees.org/beekeeping/in-the-beekeepers-workshop. For other beekeeper’s workshop project plans, search for “workshop”.
List of Materials: Imirie Shim®

WOOD
A  Shim Sides (2)             3/4 x 3/4 – 19-7/8  3
B  Shim Ends (2)              3/4 x 3/4 – 16-1/4  3

HARDWARE
1-1/2” Nails or Brads
Franklin’s Titebond® Glue
Paint

Cutting Diagram: Imirie Shim®

3/4” x 3-1/2” - 96” (1X4 Pine)

Sizes for Imirie Shims®

<table>
<thead>
<tr>
<th>Shim Size (Assembled)</th>
<th>Frame, Length (in)</th>
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<tbody>
<tr>
<td></td>
<td>Width (in)</td>
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<tr>
<td>5 - Frame</td>
<td>9-1/4</td>
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<tr>
<td>8 - Frame</td>
<td>13-3/4</td>
</tr>
<tr>
<td>10 - Frame</td>
<td>16-1/4</td>
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</tbody>
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Photo Gallery...

1. Detail of angled bridle joint.
2. Angled bridle joint being assembled.
3. Complete shim.
4. Detail of ventilation and ingress/egress notch.

Photo Captions:
1. Detail of angled bridle joint.
2. Angled bridle joint being assembled.
3. Complete shim.
4. Detail of ventilation and ingress/egress notch.