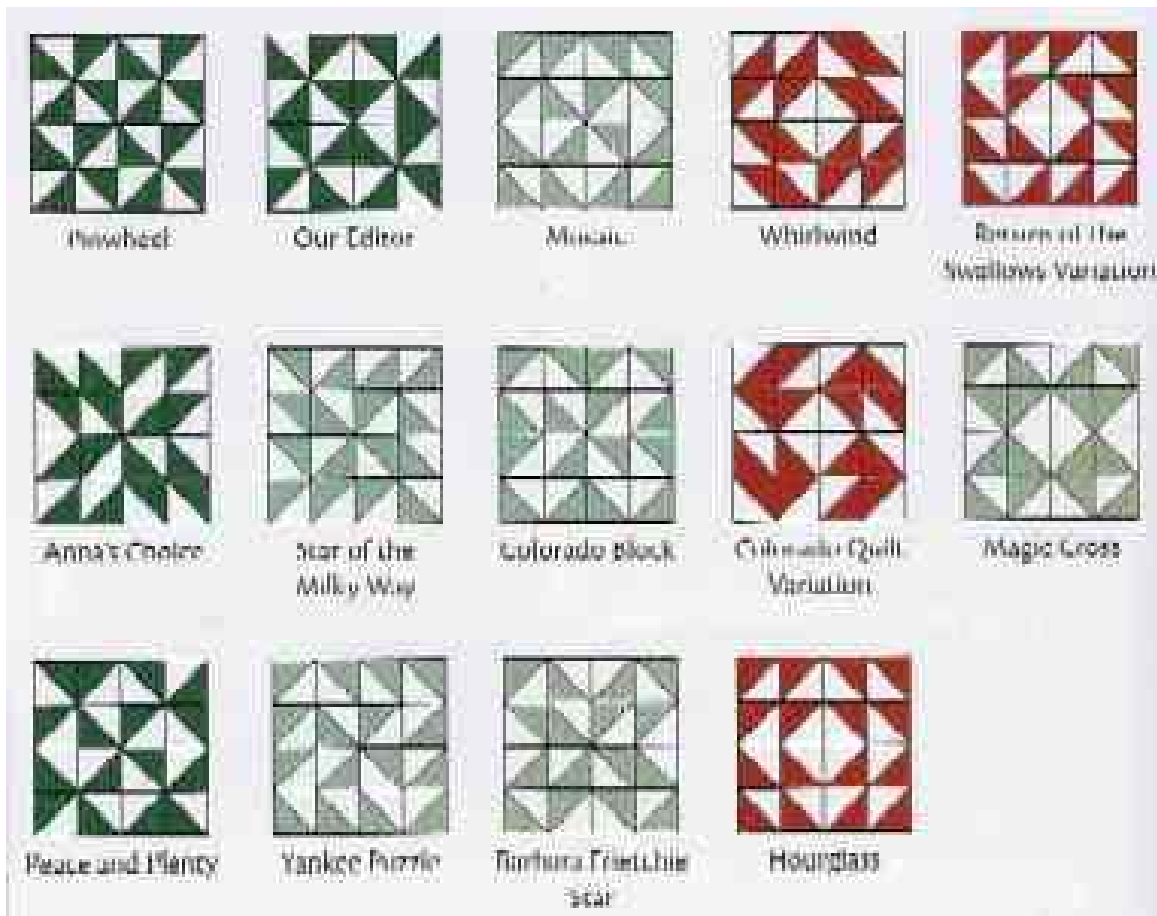


## "Half-Square Triangles" with Phyllis Gallaway

*Jun 21st, 2012*



Phyllis will demonstrate through a powerpoint presentation many ways to produce half-square triangle units, some more accurate than others. Methods will include sewing triangles, sewing squares, bias strips, grids, folding, and paper piecing.

Note: the handout does not have all of the illustrations that were in the powerpoint presentation. Eventually I will figure out how to put the entire powerpoint presentation online, to be played at your convenience.

## Half-Square Triangle Units (HST)

There are many blocks that use HST's - and the more accurate the HST's the easier to make sure the points are pointy when you assemble your blocks, and the better the blocks look.

- Classic samples requiring only 4 HST units :Pinwheel, Shoefly, Broken Dishes, Friendship Star
- More complicated like: Lady of Lake (FB for Justine)
- Quilter's Academy 3 Sampler
- Spectacular Quilts System

The holy grail of HSTs is to have a square unit, of a pre-determined size, with the diagonal seam going all the way to the corners, and with straight of grain on all 4 sides.

Original method of making HST's involved cutting a triangle template, tracing around it, cutting out the fabric and sewing the triangles together. However, this method provides so many opportunities to produce a less than square HST of uncertain measurement that I doubt anyone uses it any more!

This demo is divided into 6 parts, and since so many of the methods involve trimming to size, or cutting shapes out of strip-pieced fabric, will be followed by a trimming/cutting demonstration.

- methods involving sewing triangles
- methods involving sewing squares
- methods involving bias strips
- methods involving grids
- methods involving folding fabric
- paper-piecing

Which method you use will depend on how well a method works for you, how much fabric you have, how many triangles you need, whether you are doing scrappy, multiple or just two-fabric HST units, which tools are available to you, etc.

Fabric preparation for all these methods:

- starch or size the fabric first, for more accurate cutting and sewing, and to reduce bias distortion.
- Layer the two fabrics right sides together (unless otherwise indicated.)
- Press (with or without steam) the fabrics together before cutting and they will be more likely to stay together during the cutting and sewing.
- Use something like Invisigrip to prevent rulers/templates from slipping

## Sewing Triangles

- A. Cut triangles using acrylic templates/rulers - starting with strips - must cut, sew and press very accurately
1. Marti Michell acrylic template - has double bobbed corners
    - + very accurate results
    - + no fabric waste
    - limited sizes, template is in a set of multiple shapes, not inexpensive
    - 7 edges to cut, so cutting goes slowly
    - sewing bias edges
  2. Easy Angle acrylic ruler - has one single-bobbed corner (1-10-1/2")
    - + pretty accurate
    - + no fabric waste
    - + quicker to cut than Marti Michell templates
    - sewing bias edges
- B. Cut squares from strips on grain, then cut each square once on the diagonal
- Squares should be cut 1" larger than finished HST unit
  - Tools available to bob corners: Judy Martin Point Trimmer or Bias Square ruler or Marti Michell corner trimmer.
    - + very accurate because you oversize and trim down
    - + no bias edges to sew
    - a little more fabric waste

## Sewing Squares

- A. Cut squares from strips on grain and sew diagonally from corner to corner. Then trim seam allowance to 1/4" - discarding the piece trimmed off.
- squares may be cut same size as unfinished HST unit
  - you may use the Angler 2 to sew the diagonal line, or you may mark it
  - when marking, use a marker with a sharp point, and place ruler so that the marked line extends from corner to corner; it is more accurate to start from center and mark out to each corner, as this does not drag and move the fabric around as much
    - + quick to cut
    - + no bias edges to sew
    - lots of fabric waste
    - not as accurate (must start with exact square and sew exact diagonal)
- A. Cut squares from strips on grain, and sew 1/4" on each side of diagonal; cut through the diagonal, press, trim to size. You might want to shorten your stitch
- cut squares 1" larger than finished size
  - you may mark the diagonal and/or the sewing lines, or use the Angler 2 to sew without marking
    - + very accurate because you are trimming to size
    - + no bias edges to sew
    - + more forgiving if you are a wee bit off in marking the diagonal, or if your square is slightly "un-square"
    - a little waste because you are oversizing a bit

## Bias Strips

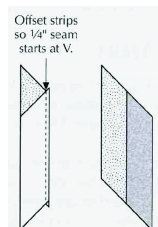
- A. Bias strips sewn along both edges - requires the Wonder Cut ruler
- Use the ruler to cut bias strips - measurements are on the ruler, based on unfinished size of HST. (Note: The Wonder Cut instructions call for straight of grain strips, but this will result in HSTs with bias on all 4 edges!) Sew an accurate 1/4" on each long edge of the strip.
  - After pressing to set the stitches, use the ruler to cut triangles from the sewn strips. Then flip open the triangles and press.
    - + good for scrappy, very little waste, from the strips
    - unfortunately, you align the ruler with the cut edge of your strips, rather than with the sewn line, so accurate only if sewing is accurate
    - cut before pressing, so pressing may distort
- A. Bias strips - stripsets - when you need many HST units. Seams are pressed open.
- This method is a form of strip piecing: bias strips are sewn together into a specific formation. The HSTs are cut from the strip set with a ruler.
  - accurate and speedy, with a little waste fabric
  - all seams pressed open, so no quilt in ditch

Style #1 Use 2 squares of fabric 8" - 15" right sides together (chart, last page)

1. Cut on diagonal; stack the two resulting triangle sets; cut parallel bias strips
2. Arrange as per diagram and sew each like sized pair together on the long edge. There will be two identical pairs of each length. Sew each pair together and press all seams open.
3. Join these sets, starting with the longest and aligning all along the bottom. You will have a strip set with a zigzag border. Press all seams open.
4. Start cutting out your HST units as shown in the diagram - cut just the upper two sides of each HST unit. When you have all of these, turn them around, and go back and cut the other two sides of each unit.
5. You may make these 2-fabric, scrappy or multiple fabric with constant background by using multiple fabric squares and mixing and matching the strips before sewing into a stripset.

Style #2 Use 2 rectangles/fat eighths/fat quarters, right sides up. (chart, last page)

1. Cut a diagonal line (45°) from lower right corner; then cut parallel bias strips the desired width, without moving them around. (Chart of strip widths)
2. Lay out strips as per diagram, alternating fabrics
3. Sew strips together into two stripsets, offsetting to form a smooth edge on two sides of your stripset. (Offsetting: sew into the "V"). Press seams open. Note: if using a small rectangle, alternate your strips into a single stripset.
4. Start cutting out your HST units as shown in the diagram - cut just the upper two sides of each HST unit. When you have all of these stacked, turn them around, and go back and cut the other two sides of each unit.
5. You may make these 2 fabric or scrappy or multiple fabric with a constant background by using multiple fabric squares and mixing and matching the strips before sewing into a stripset.



## Trimming to size

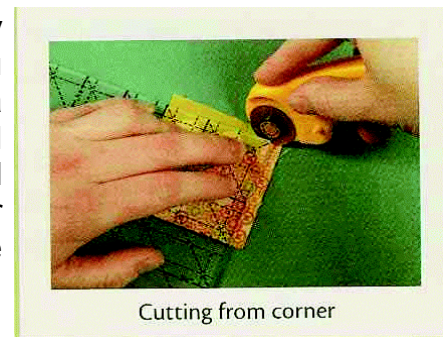
- Mark the cutting guide lines on your ruler for the size of HST you want.  
I use Edge Guide, which forms a "corral" for cutting.
- Place ruler with diagonal line on seam line, and make sure fabric extends beyond the cutting guide lines.
- Make first two cuts around corner of ruler.
- Rotate fabric (small or turntable mat is handy).
- Place the ruler with the cutting guides snugged up against the cut corner, and make the final cuts.

Note: If you have lots of HSTs, make the first cuts on all of them, then rotate all of them and go back and make the final cuts

Rulers - any square ruler with a diagonal line marked that is not hugely larger than your desired size, Bias Square Ruler (That Patchwork Place), Precision Trimmer (Marsha McCloskey), Bloc Loc ruler (blockloc.com)

## Cutting trick

Extra thickness at the seamed corner of an HST may cause a bit of distortion when you are trimming. If you push the cutter towards the corner, the fabric can shift a bit and you will lose your point. Start at the corner and press straight down with the blade right at the corner, roll back off the ruler edge, then roll forward down the ruler edge. Don't forget to press down with your finger on the corner of the ruler and use a sharp blade.



## Grids

These grids are just expanded versions of the method already discussed: cutting squares and sewing on each side of the diagonal. Grids may be purchased pre-printed papers, printed from a computer program, downloaded, drawn on paper or directly on the fabric.

- A. Draw your own, either on paper or directly on fabric - too difficult to draw accurately!
- B. Eight from a Square - when you only need 8 HST units.

See chart for size of squares needed. Draw diagonal lines in both directions. Sew 1/4" on both sides of both diagonal lines. (Use the Angler 2 - to sew the diagonal lines, or you may mark.) Cut into a four patch, and then cut on diagonal lines. Press open and trim to size.

There are pre-printed squares: "Star Singles" (Spinning Star Design) have continuous sew lines, 1" to 3" available, \$10-\$11 per pack (800 of 2" in a pack.)

Cutting sizes for eight from a square		
Finished size	Cut squares	Trim to
1"	4"	1½"
1½"	5"	2"
2"	6"	2½"
2½"	7"	3"
3"	8"	3½"
3½"	9"	4"
4"	10"	4½"

Marking - use a marker with a sharp point, and place ruler so that the marked line extends from corner to corner; it is more accurate to start from center and mark out to each corner, as this does not drag and move the fabric around as much

- C. Thangles - pre-printed strips of paper, one HST unit wide, for a variety of sizes of HST units ( $\frac{1}{2}$ " to 6")

Lay the paper on strips of fabric slightly larger than your strip of paper.

Sew on the sewing lines (smaller stitch) and cut on the cutting lines

Finger press each unit open (aggressively) and then remove paper.

- + little waste, accurate if you sew and cut on the lines accurately
- + can press seam allowance to one side for nesting or quilting in ditch
- not every size and not easily available, not cheap! Lots in a package
- have to keep stopping and starting (not sewing continuous lines)
- may distort when pressing

- D. Triangles on a Roll - pre-printed paper grids several HST units wide, for a variety of sizes of HST units (1" - 6").

Cut off the desired portion of the grid and place on fabrics slightly larger than grid.

Follow the sewing line arrows for continuous sewing (smaller stitch).

Cut on the cutting lines.

Finger press each unit open (aggressively), and then remove paper.

- + little waste, accurate if you sew and cut on the lines accurately
- + can press seam allowance to one side for nesting or quilting in the ditch
- + sewing lines have arrows for continuous sewing (this works as long as there are an odd number of units either horizontally or vertically)
- not every size and not easily available, not cheap! Many in a package
- may distort when pressing

There are pre-printed sheets of similar grids: Little Triangle Paper by Quilttime offers 7" squares for  $\frac{3}{8}$ " to 2" HST units and larger sheets in  $\frac{3}{4}$ " - 5" (\$4-\$6-25 sheets.)

You may also download grid pages, but you are limited to regular paper size:

<http://www.quiltingandwhatnot.ca/Half-Square-Triangle.html>

<http://www.blockcentral.com/a-halfsquaretrianglepaper.shtml>

- E. Computer Programs: *Triangulations 2.0* by Bear Paw Productions (up to 7" in  $\frac{1}{16}$ " increments) and *Triangle Magic* by Quilt Pro (up to 7" in  $\frac{1}{8}$ " increments) print continuous line sewing grids (like Triangles on a Roll) on home printers.
- + many sizes available - grids
  - + less expensive - only print what you need, on regular paper

**Folded** If you like the 3-D look, folded triangles are great.

- Start with two squares,  $\frac{1}{2}$ " larger than finished HST unit.
- Place right sides together, with fabric to be folded on top
- Take one corner of top fabric and fold it back to its opposite corner, revealing the right sides of both fabrics. Press it in place.
- Baste the two edges where there are 3 layers of fabric.
  - requires lots of fabric, lots of fabric in seam allowance, (pressing problem)



## Paper-Pieced

This is the quickest, easiest method for making a sawtooth border (which is just a very long row of HST units), or a row of HSTs, or several rows.

You may print these from a program like Electric Quilt, or copy them from a book.

No need to cut or mark accurately, no need to trim over-sized units - just sew on the lines and get accurate results. This works best for smaller HSTs, as quite a few will fit on the 8-1/2" x 11" or 8-1/2" x 14" paper which most printers can handle. Otherwise, just paper piece units as long as your paper and sew units together.

## Tips

- Use sharp blade, and angle into ruler to cut close to edge.
- Use very sharp points for marking, and angle into ruler to mark close to edge
- Set seam with iron first, then finger press (to minimize distortion) before pressing.
- Chain stitch triangles or squares, to avoid corner mishaps.
- Lots of YouTube videos demonstrating everything (rulers, Angler 2, etc.)

Bias squares: Strips widths and square yields

Finished size	Cut size	Square size	Strip width	Yield (approx.)
1"	1½" × 1½"	8"	2"	21
1"	1½" × 1½"	12"	2"	50
1"	1½" × 1½"	15"	2"	84
2"	2½" × 2½"	10"	2½"	13
2"	2½" × 2½"	12"	2½"	16
2"	2½" × 2½"	15"	2½"	29
2½"	3" × 3"	8"	2¾"	8
2½"	3" × 3"	14"	2¾"	20
2½"	3" × 3"	15"	2¾"	27
3"	3½" × 3½"	9"	3¼"	8
3"	3½" × 3½"	14"	3¼"	16
3"	3½" × 3½"	15"	3¼"	19

Cutting chart - bias style #1

Fat quarter cutting chart for bias squares  
(based on 18" × 22" fat quarter)

Finished size	Cut size of bias square	Strip width	Yield
1"	1½"	1¾"	160
1¼"	1¾"	2"	120
1½"	2"	2"	100
1¾"	2¼"	2¼"	80
2"	2½"	2½"	60
2½"	3"	2¾"	50
3"	3½"	3¼"	38
4"	4½"	3¾"	24

Cutting chart - bias style #2

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Judy Hopkins and Nancy Martin.  
Donna Lynn Thomas  
Marsha McCloskey  
Ilene Bartos  
Harriet & Carrie Hargrave  
Judy Hooworth & Margaret Rolfe