

Square Bowl

Texture Dresses Up a Simple Design

by Joseph M. Herrmann



Square (or rectangular) bowls have always intrigued me for some reason, maybe just because they are different and not round. Whatever the motivation, I've grown fond of making them. My friend, Bill Noce, demonstrated the basics for the bowl featured here at a recent Presque Isle Woodturners meeting in Erie, Pennsylvania. Bill's bowl was a bit smaller, widthwise, and had a slightly different outside profile. I also added the decorations on the top and bottom next to the foot and feature ring, because I thought it gave it a little pizzazz and also served to hide a potential troublesome area.

I've made quite a few of these since the initial demonstration and have found that exotic woods produce striking bowls, but domestic species are also quite appealing. I have found, however, that coarser-grained woods, such as ash and oak, tend to tear out quite a bit

on the trailing edge and you have to allow for that by starting with a wider blank. The first oak bowl I made became a reject because I had to round over the bottom edge so much to eliminate the torn grain that I didn't like the end result.

PREPARE AND MOUNT THE BLANK

Cherry was used for the bowl featured here and I started with a blank 1" x 3-3/4" x 10". However, use whatever species you like, and if you look at **Fig. 33**, you will see that just about any kind of wood will work; I just used whatever I had on hand to make these. Once the blank is square and cut to the correct dimensions, find the center by connecting the corners and center punch the middle with an awl (see **Fig. 1**). This will become the top of the bowl, so if the blank has some special feature you wish to highlight,

SUPPLIES

Wood: one piece 1" x 3-3/4" x 10" cherry (or species of choice)

Tools: planer; jointer; table saw; drill press with 1/4" brad point drill bit; screw center chuck; lathe with assorted chisels; Avisera texturing tool* (optional); 4-jawed chuck with assorted jaws; drill motor with 3" Velcro pad; modified Ray Key skew; awl; ruler; compressed air; woodburning pen (optional)

Assorted grits of abrasive paper

Watco Danish Oil and satin lacquer or finish of choice

4/0 steel wool

Tack cloth

Toothbrush

Pencil

Paper towels

**Available from Eli Avisera,
21 Yanosh Korchak Street,
Kiryat Hoyovek, Jerusalem, Israel 96825;
e-mail: avisera@eli.name;
order: Eli Avisera Texturing Tool.*

Please refer to all manufacturers' labels for proper product usage.

plan accordingly.

Initially, I mount the blank on the lathe with a screw chuck. Mine requires a 1/4" diameter pilot hole approximately 7/8" deep (see **Fig. 1**). Unfortunately, you can't drill a hole that deep in this blank, so shorten the pilot hole to 5/8", which is the approximate depth of the center depression. I prefer to use a brad point drill bit to drill this hole, and if you use one, be sure to account for the point when setting the depth stop (see **Fig. 2**).

I like the new Glaser screw chuck a lot and used the small plate with the small diameter end up against the stock. The screw is too long for this project, so I put a 3/8" wooden washer between the body and the backer plate, which effectively "shortened" the screw (see **Fig. 3**). With my other screw chucks, I would simply have put a

plywood disk over the end of the chuck to shorten the screw, but I wanted to take full advantage of the design of the backer plate that came with the chuck. I must add that Glaser HiTec **DOES NOT** endorse this procedure. Screw the blank tightly onto the chuck, making sure it is tight up against the backer plate.

I suppose if I were Jimmy Clewes, I would turn up the

lathe speed all the way to 3250 rpm; however, I'm not comfortable turning that high, so I turned the bowls at approximately 1400 rpm and found that to be more than sufficient—but turn at whatever speed you are comfortable with.

A higher speed might work better on coarser-grained woods and could help to reduce tearout on the trailing edge; in the future, I might try it just to see if it does.

I used an ogee curve on the bottom edge of the bowl because I think that it makes a pleasing shape. Unfortunately, it is a hard shape to get correct. So I drew a pattern to get consistent results and I've provided a copy of that full-size pattern (see **Diagram A**). Line up the pattern with the top outside corner and trace it onto the blank (see **Fig. 4**).

BEGIN TURNING

Turn on the lathe and use a pencil to find the center of the blank. The jaws on one of my chucks require a 1-3/8"



Fig. 1

Find the center of the blank and mark it with an awl so that you can drill an accurate hole.

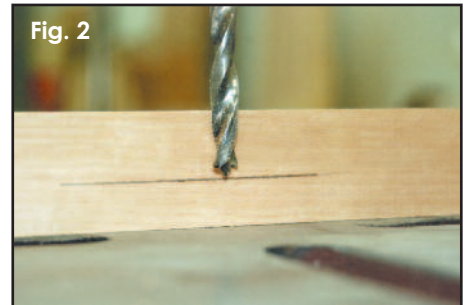


Fig. 2

Be sure to account for the point of the drill.

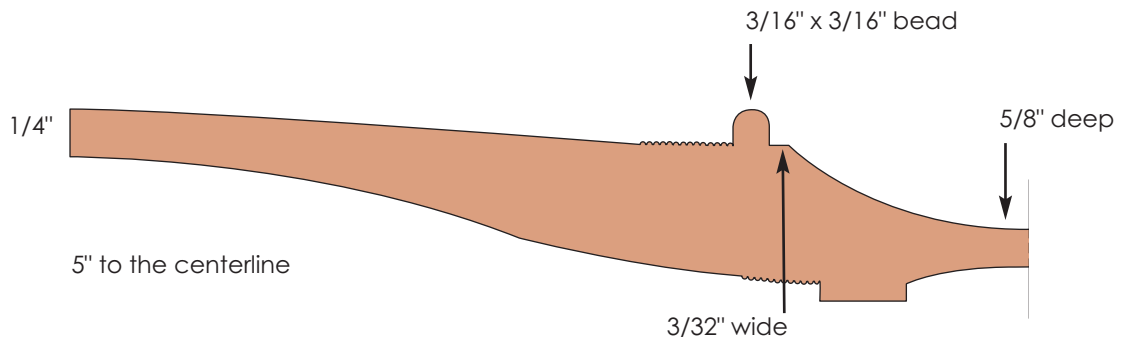
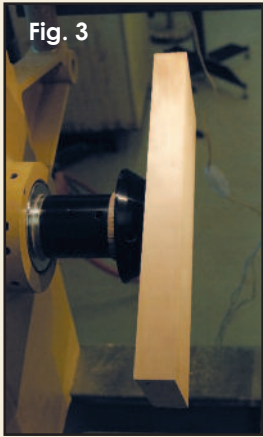
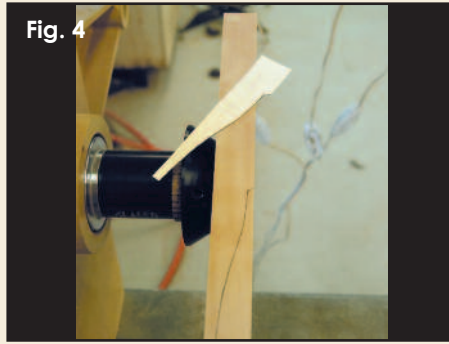


Diagram A

This is the full-size pattern that I used for the bottom of my bowl.



A wooden washer effectively shortened the length of the screw.



I drew a pattern and traced it onto the edge of the blank so that I could get the profile correct.



Draw circles for the foot and for the mounting socket.



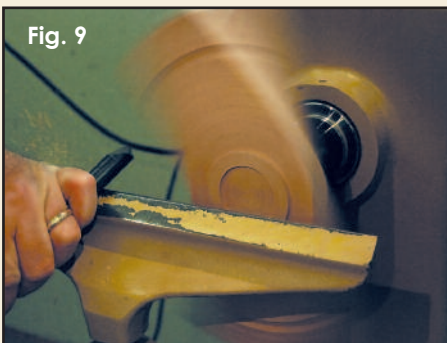
I used an angled parting tool to clean out the center of the socket and to form the dovetail.



Use the 5/8" bowl gouge to remove the excess wood from around the foot.



You might notice a little tearout on the trailing edge, but it shouldn't be excessive.



Remove the majority of the excess material with the tip of the gouge.



The remainder of the excess material is removed with a modified shear scraper.



You can see the shape of the scraper better, and note the relatively clean cut.

dovetail mounting socket and I wanted a 2-1/2" foot on the bowl, so I measured accordingly and drew the proper size circles on the blank (see **Fig. 5**).

Next, use a parting tool and part-in approximately 1/8" to the left of the outer circle and a little shallower groove to the right of the smaller circle. The foot will have less of a chance of breaking out if the mounting hole is shallower than the outside of the foot. My chuck requires a dovetail-shaped socket, so I wasted the excess wood away with a

specially ground 3/8" beading and parting tool (see **Fig. 6**). Be sure that the interior of the hole is perfectly flat.

Using the bowl gouge in a scraping mode, remove the excess wood around the foot and extend the cut out to the end of the blank. Try to get the cut as flat and as uniform as possible (see **Fig. 7**). You might notice a little tearout on the trailing edge of the blank. It shouldn't become too excessive, and if you are concerned about it, simply make the blank a bit wider so that it can be



Fig. 12

I'm fairly close to the line.



Fig. 13

A skew gets rid of the problem lump in short order.



Fig. 14

Start sanding with the lathe OFF, using a drill motor and a Velcro pad.



Fig. 15

Carefully inspect the tips of the blank and sand as needed.



Fig. 16

The tip of the Ray Key skew works great to cut a little groove in beside the foot.



Fig. 17

The line will serve to highlight the textured area.

removed later (see Fig. 8). Now turn the gouge so that you are using the very tip and make a series of "coves" to hog out the waste on the end of the blank (see Fig. 9). Stop short of the line.

I use a modified 1" flat shear scraper to finish the shape. I've found that the scraper does a better job than the gouge, and minute amounts of material can be removed until I am satisfied with the shape. Used on edge, the scraper leaves a relatively clean cut (see Fig. 10). Fig. 11 shows the profile of the scraper and you can see that it leaves a pretty clean cut. The surface left by the scraper is almost perfect in the harder exotic woods and requires little sanding. Fig. 12 shows that I'm fairly close to my original pattern line.

Adjacent to the foot is a potential problem area and I've been left with a bit of a lump on more than one occasion. A 1" skew used as a negative rake scraper does a great job in smoothing out this area (see Fig. 13).

SAND THE BOTTOM

All sanding is done with the lathe OFF. I start with a drill fitted with a Velcro pad and 240-grit abrasive to remove any major defects (see Fig. 14). Be sure to look carefully at the tips of the blank—sometimes a little extra sanding is required (see Fig. 15).

Be careful not to oversand and alter the shape or

undercut the annular rings—if you were careful with the shear scraper, it shouldn't need a great deal of sanding. Next, I start with 120-grit abrasive paper and sand by hand until the surface is smooth. Then I go to 180-grit, 220-grit, and finally finish up with 400-grit abrasive. Try to get in close to the edge of the foot with the abrasive.

APPLY TEXTURE

The area adjacent to the foot is a problem area because it is difficult to sand. If you are careful, you can use the tip of a slightly angled parting tool (very much like a skew) to cut away the torn fibers. However, texturing the area is a better solution and adds some visual interest.

Begin by using a small bowl gouge to taper the edge of the foot. If you leave it flat or dovetailed, folks will think that you used the area to hold the bowl so that you could turn the front—you want to keep them guessing! Once this is accomplished, I use a specially modified skew popularized by Ray Key (see Fig. 16) to cut a shallow groove adjacent to the foot (see Fig. 17). This will serve to highlight the texturing. The tip of a regular skew will work as well.

I took a course with Eli Avisera in Texas a year ago and one of the techniques we used was a faint texture pattern applied with a special tool he developed (see Fig. 18). It works similar to the Sorby texturing tool, but is nowhere as aggressive. I hold the tip vertically and advance it until it



Fig. 18
The Eli Avisera texturing tool works great here.



Fig. 19
Add another cut with the skew to frame the textured area.

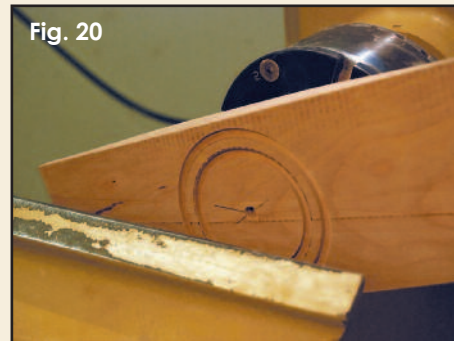


Fig. 20
Lay out for the bead and use a parting tool to cut into the blank.



Fig. 21
Use the 1" skew to flatten out the problem area.

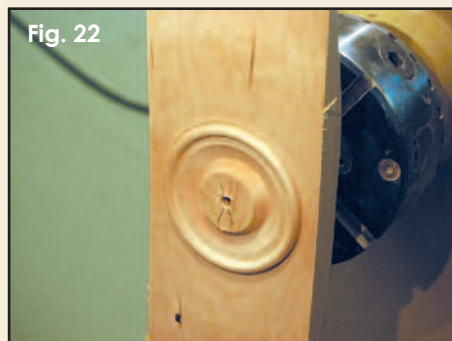


Fig. 22
I used the Key skew to form the bead, but there are other tools that will also work.

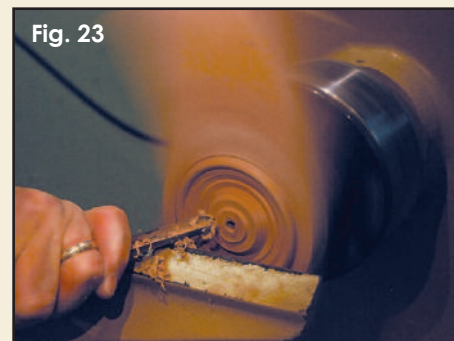


Fig. 23
Use a small bowl gouge to form the bowl depression in the center.

contacts the wood and then move it back and forth until I am satisfied with the results. Then I use the Key skew to make another cut to the left of the texture to highlight the textured area (see **Fig. 19**). If you don't have access to a texturing tool, small concentric circles cut into the wood with the tip of the skew will also work well—an odd number of rings looks best.

REVERSE THE BLANK AND TURN THE TOP

Remove the blank from the screw chuck and mount it in a 4-jawed chuck. I used the extended dovetail jaws in my large Vicmarc 120 chuck, but noticed that if I made the mounting socket a little bit larger in diameter, I could use the standard jaws in my recently purchased small Vicmarc 100 chuck—I will next time.

On the top of the bowl, draw layout lines for the decorative bead that highlights and surrounds the shallow depression. The inside of the bead will serve as a mounting point so that you can reverse-chuck the bowl to work on the bottom, and my chuck requires a 2-5/8" diameter recess. I made the bead approximately 3/16" wide. Then I used a standard parting tool to part down on either side of the bead, approximately 3/16" deep (see **Fig. 20**). Use a 3/8" bowl gouge to begin to remove a bit of the excess material in the center of the depression so that you can access the bead more easily—be sure to leave a small flat

adjacent to the interior of the bead.

The tip of the bowl gouge is used to remove the excess material from around the exterior of the bead, and the cut is tapered so that hardly anything is being removed at the end of the blank. Keep the cut as flat and clean as possible, and clean it up with the modified shear scraper as was done on the bottom. Use the 1" skew to flatten out the problem area (see **Fig. 21**).

Form the bead that surrounds the depression in the middle. There are a number of ways that this can be done, but I've found that the Key skew works the best (see **Fig. 22**). Previously, I had used a small spindle gouge to turn this bead, but I saw Ray Key demonstrate the skew in Provo this year and it did a great job, so I changed tools. A small point tool or a small standard skew would work here as well.

Use a 3/8" bowl gouge to form the center bowl shape (see **Fig. 23**). Be careful not to turn too deep and go through the bottom. Stop just slightly beyond the pilot hole that was drilled in the beginning.

SAND AND ADD TEXTURE

The same sanding procedure was used as with the bottom. I begin with the drill motor and the Velcro pad with 240-grit abrasive to sand the area outside the bead with the lathe **OFF**. Then I hand sand the entire area starting with 120-grit



Fig. 24

I used the same sanding procedure as I did for the bottom.

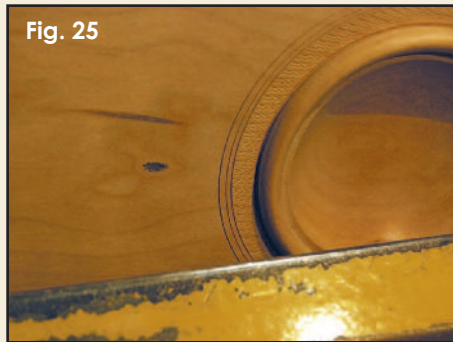


Fig. 25

I used three skew cuts to frame the exterior of the texturing on the top.



Fig. 26

Be sure to leave a small flat so that you can reverse-chuck the bowl.

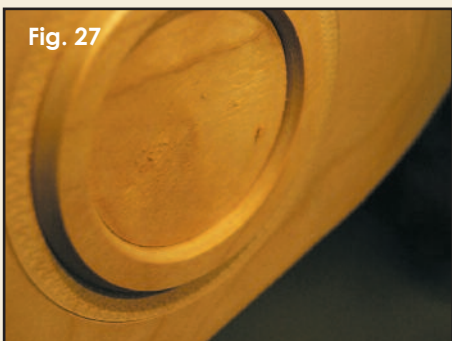


Fig. 27

Remove all traces of how you mounted the bowl in the chuck.



Fig. 28

I sanded the interior recess and then added a few lines for visual interest.

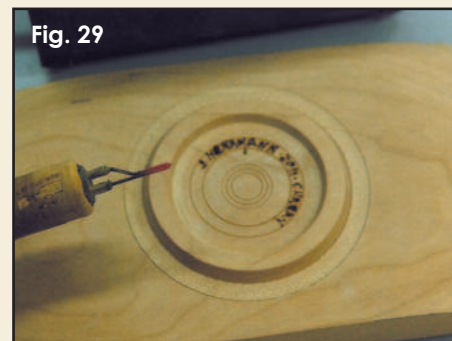


Fig. 29

I used a woodburning pen to sign my work.



Fig. 30

Don't forget to break the sharp edges with a piece of abrasive paper so that the bowl feels good in your hands.



Fig. 31

All my finishing is started with a coat of oil.



Fig. 32

Twenty-four hours later, I followed up with a coat of satin lacquer.

abrasive and work my way up to 400 grit. Once this is accomplished, I turn on the lathe and sand the bead and bowl depression, going through the same sequence of grits as when I hand sanded the flat area. I do not use the drill (see Fig. 24).

The texturing process is started by forming the groove adjacent to the bead with the Key skew. Then I texture the area just as I did on the bottom. Finally, I add a few lines to frame the textured area. Note that I used three unequally

spaced lines for a little more visual interest (see Fig. 25).

REVERSE-CHUCK THE BLANK

It is important to leave a small flat adjacent to the interior of the bead, as this will allow the bowl to be safely remounted to work the bottom (see Fig. 26).

I used my large Vicmarc 4-jawed chuck (equipped with standard jaws) to remount the bowl. Then a small bowl gouge is used to remove the dovetail that served as



Fig. 33

These are some other square bowls I've made (clockwise from center): Brazilian tulipwood, cherry, kingwood, ash, oak, tiger maple, bocote, walnut, and sassafras.

my mounting detail. All I did was turn a small taper to obliterate the dovetail and left a small line for visual interest (see Fig. 27). Sand the area completely and add several concentric circles with the Key skew for visual interest and decoration (see Fig. 28).

The outside lines are used to frame my signature that I burn into the bottom with a woodburning pen. I always sign my name, the year the piece was made, and the species of wood (see Fig. 29).

As I mentioned, sometimes there is a little tearout on the trailing edges of the blank. Most of it should have been removed by this point, but I usually run the edges through my jointer to take off a small amount of material. I've found that if the depth of cut is shallow and push sticks are used, there shouldn't be any problem making a few safe passes. If you are hesitant about using the jointer, a hand plane will also work. Use the skew cuts as a guide to make sure you have left an equal amount of wood on both sides—otherwise the bowl will look unbalanced. Be sure to sand the edges and ends of the blank carefully, and don't forget to slightly break the sharp edges of the

blank (see Fig. 30).

FINISHING

I think simple is best when it comes to finishing. Usually, I start with a coat of natural Watco Danish Oil and often use it to wet-sand larger work (see Fig. 31). After approximately twenty-four hours, I brush on a coat of satin lacquer, wait a few minutes, and completely wipe it off with paper towels (see Fig. 32). Keep a toothbrush handy to remove any paper particles that might get caught in the textured areas. It's best to do it now; if the oil or lacquer dries, the particles will be difficult to remove. Once the lacquer is dry, I go over the surface with 4/0 steel wool, blow off any remaining particles with compressed air, and go over it with a tack cloth—the microfiber cloths work well. Then I apply another coat of the Watco oil and wipe it dry with paper towels. It's a very simple procedure, but effective.

OPTIONS

I've made quite a few of these bowls and just about any species will work. Fig. 33 shows a variety of the ones I've made.

SAFETY NOTE

Oily rags can be quite dangerous!

I can remember two fires that started in the school shop when I was teaching that were a result of improperly disposed of oily rags. I usually spread them out on the ground until they are dry and then put them in a plastic bag,



Fig. 34

I'm very careful how I dispose of any oily rags.

squeeze out all the air, and tie them securely. Then I hang them on a pole in the yard—so they don't blow around—until garbage day, when I put them in the trash can and take them to the road (see Fig. 34). I don't like to put them in the trash any sooner than necessary—I had some friends who lost their house because someone put varnish rags in the trash can next to the building. The rags caught on fire and the fire spread to the house.

Statement of Ownership, Management, and Circulation (Required by 39 U.S.C. 3685)

1. Publication Title: Woodturning Design. 2. Publication Number: 1550-8412. Filing Date: October 1, 2011. 4. Issue Frequency: Bimonthly. 5. Number of Issues Published Annually: 6. 6. Annual Subscription Price: \$29.97. 7. Complete Mailing Address of Known Office of Publication: All American Crafts, Inc., 7 Waterloo Rd., Stanhope, NJ 07874. 8. Complete Mailing Address of Headquarters or General Business Office of Publisher: 7 Waterloo Rd., Stanhope, NJ 07874. 9. Full Names and Complete Mailing Addresses of Publisher, Editor, and Managing Editor: Publisher: Jerry Cohen, 7 Waterloo Rd., Stanhope, NJ 07874. Editor: Joseph M. Herrmann, 7 Waterloo Rd., Stanhope, NJ 07874. 10. Owner: Jerry Cohen, 7 Waterloo Rd., Stanhope, NJ 07874. 11. Known Bondholders, Mortgagees, and Other Security Holders Owning or Holding 1 Percent or More of Total Amount of Bonds, Mortgages, or Other Securities: None. 12. Tax Status: N/A. 13. Publication Title: Woodturning Design. 14. Issue Date for Circulation Data Below: 2011. 15. Extent and Nature of Circulation. Average No. of Copies Each Issue During Preceding 12 Months: (a) Total Number of Copies (Net press run) 44,617. (b) Paid and/or Requested Circulation (1) Mailed Outside-County Paid Subscriptions Stated on PS Form 3541 14,757 (2) Mailed In-County Paid Subscriptions Stated on PS Form 3541 0. (3) Paid Distribution Outside the Mails Including Sales Through Dealers and Carriers, Street Vendors, Counter Sales, and Other Paid Distribution Outside USPS 9,882. (4) Paid Distribution by Other Classes of Mail Through the USPS 0. (c) Total Paid Distribution 24,639 (d) Free or Nominal Rate Distribution (By Mail and Outside the Mail) (1) Free or Nominal Rate Outside-County Copies Included on PS Form 3541 92. (2) Free or Nominal Rate In-County Copies Included on PS Form 3541 0. (3) Free or Nominal Rate Copies Mailed at Other Classes Through the USPS 0. (4) Free or Nominal Rate Distribution Outside the Mail (carriers or other means) 1,804. (e) Total Free or Nominal Rate Distribution 1,896. (f) Total Distribution 26,535. (g) Copies not Distributed 18,082. (h) Total 44,617. Percent Paid 92.9. No. Copies of Single Issue Published Nearest to Filing Date: (a) Total Number of Copies (Net press run) 46,386. (b) Paid and/or Requested Circulation (1) Mailed Outside-County Paid Subscriptions Stated on PS Form 3541 15,183 (2) Mailed In-County Paid Subscriptions Stated on PS Form 3541 0. (3) Paid Distribution Outside the Mails Including Sales Through Dealers and Carriers, Street Vendors, Counter Sales, and Other Paid Distribution Outside USPS 10,345. (4) Paid Distribution by Other Classes of Mail Through the USPS 0. (c) Total Paid Distribution 25,528. (d) Free or Nominal Rate Distribution (By Mail and Outside the Mail) (1) Free or Nominal Rate Outside-County Copies Included on PS Form 3541 95. (2) Free or Nominal Rate In-County Copies Included on PS Form 3541 0. (3) Free or Nominal Rate Copies Mailed at Other Classes Through the USPS 0. (4) Free or Nominal Rate Distribution Outside the Mail (carriers or other means) 1,900. (e) Total Free or Nominal Rate Distribution 1,995. (f) Total Distribution 27,523. (g) Copies not Distributed 18,863. (h) Total 46,386. Percent Paid 92.8. 16. Publication of Statement of Ownership will be printed in the February 2012 issue of this publication. 17. I certify that all information furnished on this form is true and complete. Darren Cohen, CEO. October 1, 2011.