

Optimising Wood to make a Platter

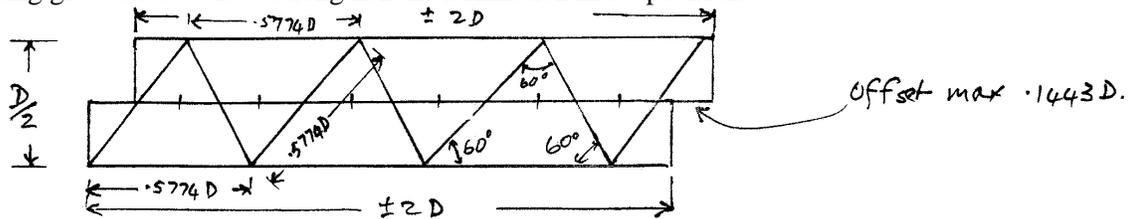
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If you want to make a platter of diameter D , (say 400mm), you would normally need a decent, solid, unspoilt plank of that width and length. It often is not easy to find such a piece and can be quite expensive, but that is not the least of your problems:

- Such piece of wood would be prone to crack.
- It is a difficult size to plane and prepare.
- At least 50% of the outside rim is cut and turned across the grain of the wood.

(It is interesting to note that 22.5% of the surface of the plank is wasted when turning it round.)

You can start with a narrower plank of $D/4$ wide and $4D$ long, using the same amount of wood, but much easier to find. Cut it in two and laminate it with a slight offset (less than $0.1443D$), using grooved dowels to strengthen the lamination in set positions.



Then carefully cut six equilateral triangles from the $D/2$ wide laminated plank, with each side exactly $0.5774D$. All angles are 60° .

Place the six triangles in a circle with all the wood grain running parallel to the outside of the circle. If you combine hardwood and sapwood on the plank, ensure that an even pattern is formed and mark the pieces 1 to 6. Again use grooved dowels to laminate the triangles. First glue no 1 and 2 together and no 4 and 5 together. Use off-cuts with 60° slots cut in them to clamp the triangles without damaging the corners. When they are dry, glue no 3 to 1 and 2 and no 6 to 4 and 5. When they are dry, fit the two halves together: You should have a discrepancy of less than 2 mm. Plane both edges exactly flat and glue them together. That should result in a hexagonal platter. You can trim the corners on the band saw before fixing a faceplate exactly to the center of the platter for turning the top. A paper joint can be used on the smooth top to provide a spigot for cleaning up the bottom, or it can be done using Cole jaws. (These are add-on jaws for the Nova chuck with rubber pads for gripping a round object without marking it.)

