

Greg's "Right Size" Big Band Risers

Based on a 32 inch square module
3/4 plywood lids with interlocking tabs
on five gallon buckets

February 25, 2012



Yes, it looks better with black paint and black buckets. See source for buckets in text.

Right Size Riser WHY?

Commercial band risers are expensive, heavy, and either too big or too small for the “ideal” big band setup.

Four feet is not quite deep enough for use of a typical band front music stand, especially if your musicians will be standing occasionally and need to read the charts. Eight feet is way too much. Five feet is just about perfect, but nobody makes a five foot deep riser.

Similarly, eight feet is not wide enough for four trombones, and certainly not for five saxes. But twelve feet is too much.

After measuring where musicians “naturally” place their chairs and stands, an individual space of about 32 x 60 inches is common. But even a slab of 3/4 ply this size is heavy for one person to manage. By cutting the individual space into two equal parts, about 32 inches square, we now have a manageable size and weight module to handle, and can make good use of 4x8 sheets of plywood.

Five gallon plastic buckets are very strong, uniform, light, and available for use as a support structure. They stack into a small space. They are also a nice height for getting the second row of horns up above the first, just enough, at about 15 inches high.

Many modular platform systems use hinges, “coffin locks”, or other expensive hardware to join the platform lids. I looked for a less expensive and more effective no-hardware method and came up with interlocking plywood disks, held in place by the buckets.

Here is a description of my system, for your personal use. Rights for commercial production are reserved.

Greg Graham, Brodheadsville, PA February 25, 2012

grahampianos@yahoo.com

Right Size Riser SET UP



Set out 6 buckets for the first two lid modules.



Line up the new pair with the previous pair.



Add 3 more buckets for each additional pair. Add lids one row at a time.



Hinge the pair down , pushing against the previous pair.



Rest the lids on the buckets and slide together the interlocking disks.



Line up the buckets under their disks.

Right Size Riser CONSTRUCTION



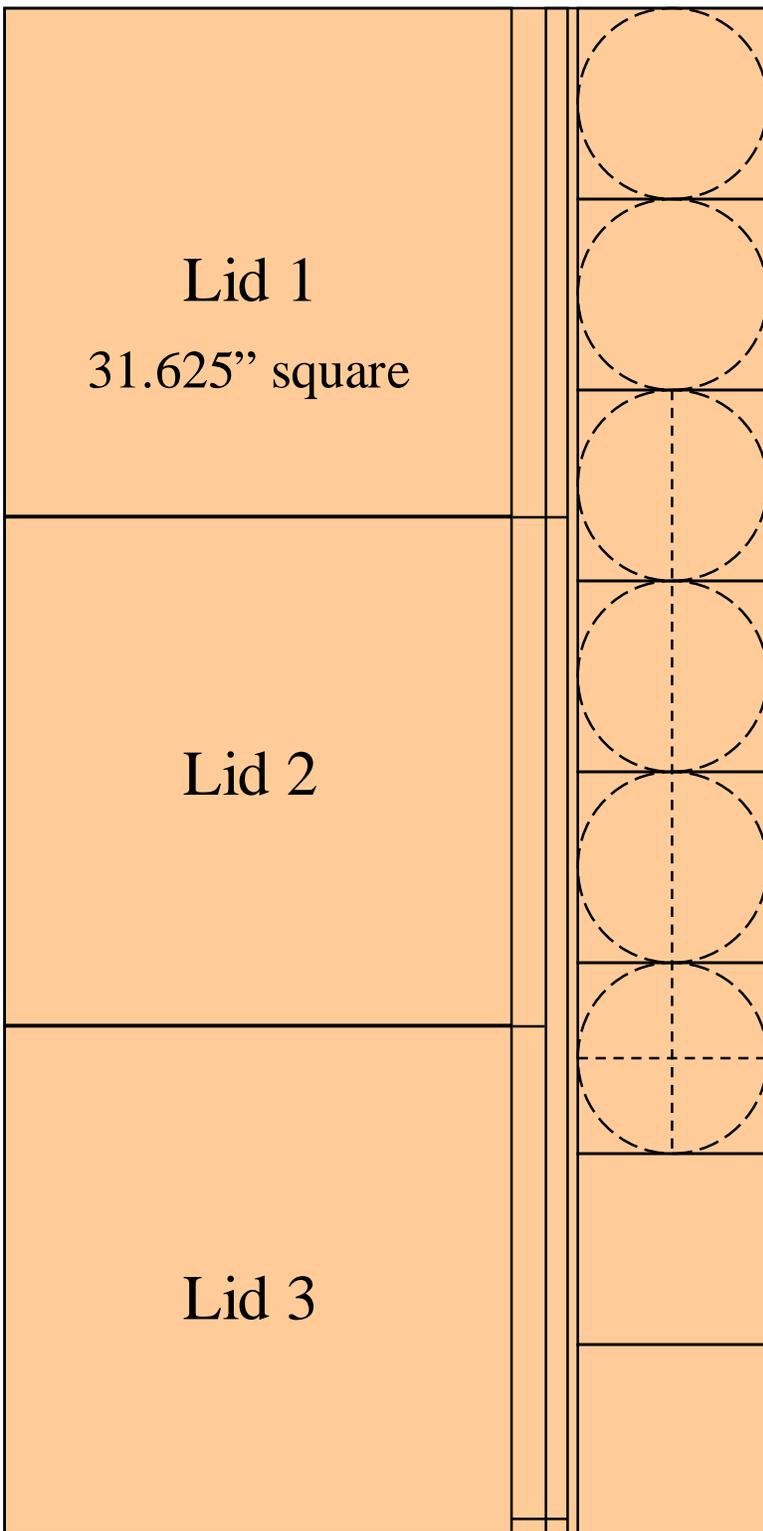
The key to the stability and economy of this system is the use of plywood disks on the bottom of the lid modules lock the lids in position on the buckets. No other hinges, locks, or latches are needed.

The half or quarter disks project across seams, creating interlocking tabs which keep the lids from spreading sideways or lifting and becoming uneven.

The lids below are corner units, each with one whole disk, two halves, and one quarter. Mid-run units have two halves and two quarters.



Right Size Riser PLYWOOD CUTS



Use B/C quality 3/4 inch ply.

Rip 11.75 inch wide strip for disks. Cross cut 11.75 square. Make 8 the first time, so you have extra to calibrate your circle cutting jig. You really only need 6 per sheet. Disk diameter should fit your buckets without slop, but not tight. Bandsaw with pivot jig or hand saber saw works.

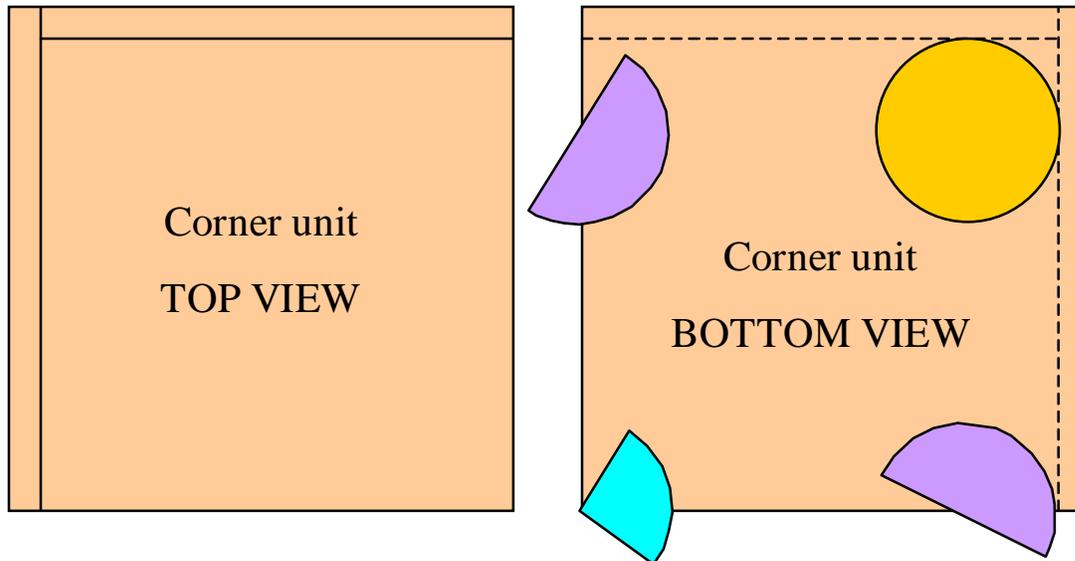
Rip two 1.5 inch wide strips for edge chair rails. Crosscut three strips to 31.625 inches. Crosscut two strips to 30.125 for the corner units.

Rip the remaining ply to 31.625 inches, then crosscut to 31.625 inches. (I ripped a little wide, then cleaned up the opposite side to 31.625.)

Dividing an eight foot sheet, (93 inches) into three lids of 32 inches is not possible, because the saw kerf takes away an eighth of an inch or so. You also may want to trim a rough "factory" edge. I settled on 31 and 5/8th inches (31.625) so that I wouldn't come up short. All lids should be exactly the same size. A tablesaw with a large crosscut sled is the best tool, but you can use a circular saw with a straightedge.

2 sheets makes 6 lids for 3 musicians.

Right Size Riser CORNER UNIT



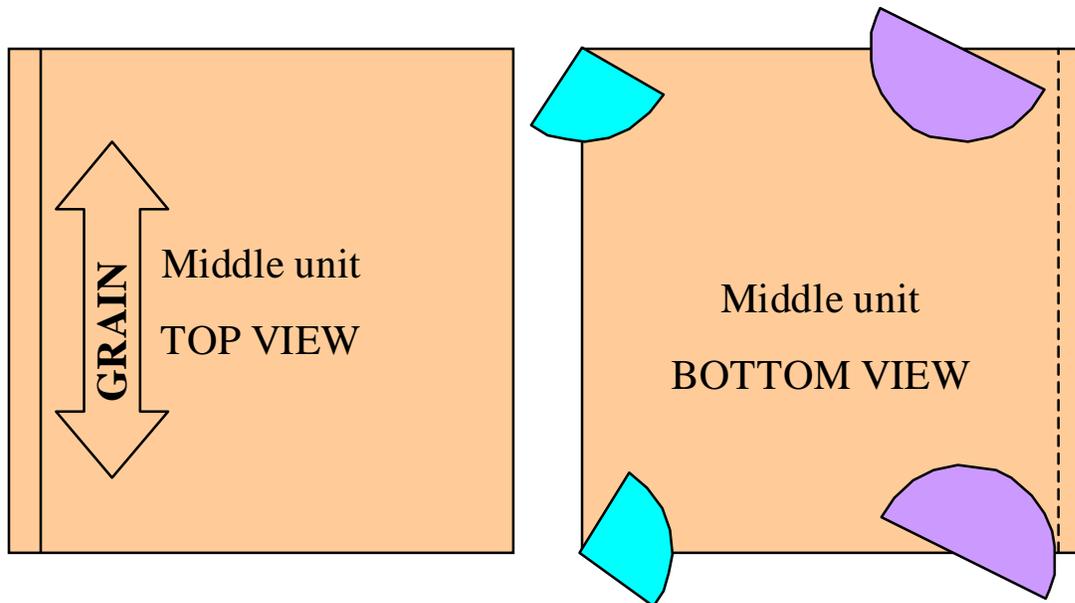
Corner units have 1.5 inch wide plywood strips screwed to two outside corner edges to prevent chairs from slipping off the riser.

On the underside, a whole plywood disk, sized to fit your bucket opening, is attached 1.625 inches in from both outside corner edges, so the disk will nest with other units' top edge strips. Use four, 1.25 inch number 10 deck screws.

The two half disks are attached 30 degrees clockwise of the edge, with the center point at the edge, down from the outer edge the disk's radius plus 1.625 inches, as with the whole disk, so the units stack for storage. Use four screws.

The quarter disk is mounted with the center directly above the inside corner of the lid, also 30 degrees clockwise from the edges. Use three screws.

Right Size Riser MIDDLE UNIT

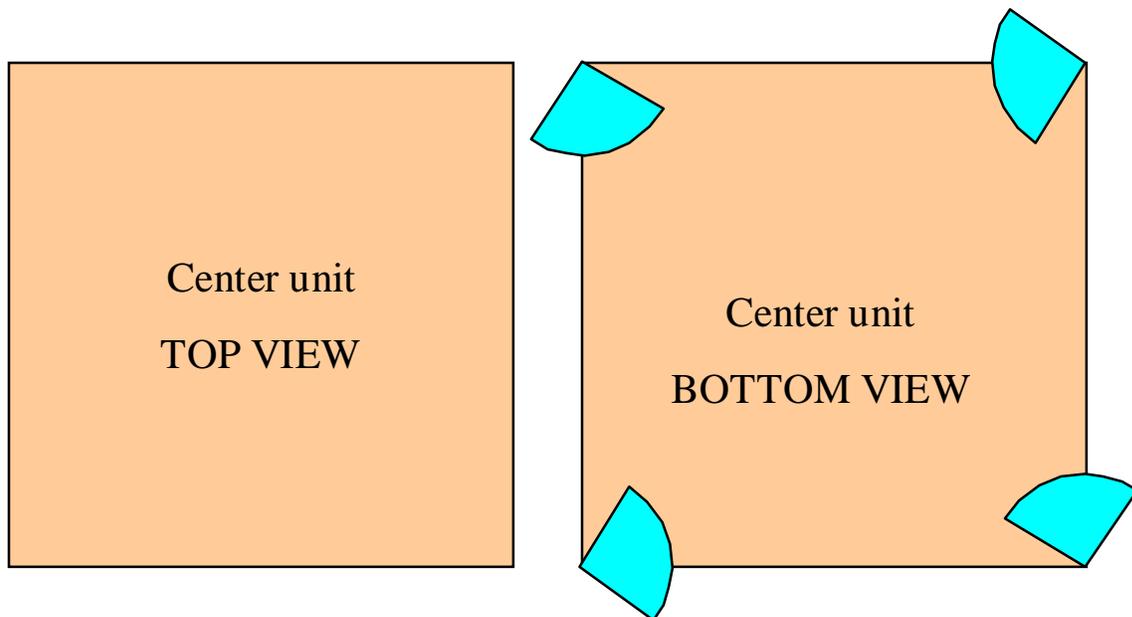


Middle units have a 1.5 inch wide plywood strips screwed to one outside edge to prevent chairs from slipping off the riser. Attach this strip parallel to the grain of the lid, as this unit must span a slightly greater distance between buckes, and plywood is stronger along the grain.

On the underside, two half disks are attached 30 degrees clockwise of the edge, with the center point at the edge, down from the outer edge the disk's radius plus 1.625 inches, as with the Corner units, so the lids stack for storage. Use four 1.25 inch number 10 deck screws. One half disk is mounted using the placement jig, the other is placed against another lid and lined up to an existing half disk. This is easier than building a second, mirror-image jig.

The two quarter disks are mounted with their centers directly above the inside corners of the lid, also 30 degrees clockwise from the edges. Use three screws.

Right Size Riser CENTER UNIT



This OPTIONAL unit could be used to make large risers with three by three modules, or four by four, etc., rather than two by whatever.

There are no chair rail strips on the top, as this unit would only be used when surrounded by other units on all sides.

On the underside, four quarter disks are mounted with their centers directly above the corners of the lid, also 30 degrees clockwise from the edges. Use three screws.

Right Size Riser JIGS



I screwed together four pieces of plywood to locate the whole disks in 1.625 inches from the outside edges. In that position, they will clear the chair rail strips on nesting lids for storage. (and theoretically allow for double-stacking risers)



Similarly, the quarter disk jig is made of four pieces of ply, locating the center of the disk directly over the inside corner of the lid, with the radial sides of the quarter rotated 30 degrees CLOCKWISE from the edge of the lid. All partial disks are mounted 30 degrees CLOCKWISE.

Right Size Riser JIGS



I screwed together four pieces of plywood to locate the edge of the half disks in 1.625 inches from the outside edges. In that position, they will clear the chair rail strips on nesting lids for storage. (and theoretically allow for double-stacking risers)



BUT...

The mating half disks would require a mirror image jig (sort of). It is easier to butt the lid up against a mating lid with a half disk already installed and simply line up the edges with your fingers.

All partial disks are mounted with their centerpoint on the edge of the lid, with the radial straight edge rotated 30 degrees **CLOCKWISE** from the edge of the lid.

Right Size Riser FINISHING

Paint and wall-to-wall carpet:

I plan to paint the chair rail strips and outer edges black, and glue down inexpensive gray indoor-outdoor carpet (from Home Depot) on the lids. This isn't completed yet, but I wanted to get the plans on line.

Or... It may be best to attach the carpet by screwing it down under the chair rail strips on the outside edges, and wrap it around the inside edges, stapling it to the bottom, THEN screwing down the disks. No glue. This keeps everything neat above, and less likely to fray, while allowing for easy replacement in the future. Glue bothers me. The disk edges would have to be beveled by router or sanding to prevent catching the carpet when sliding the units together.

Skirts or black buckets:

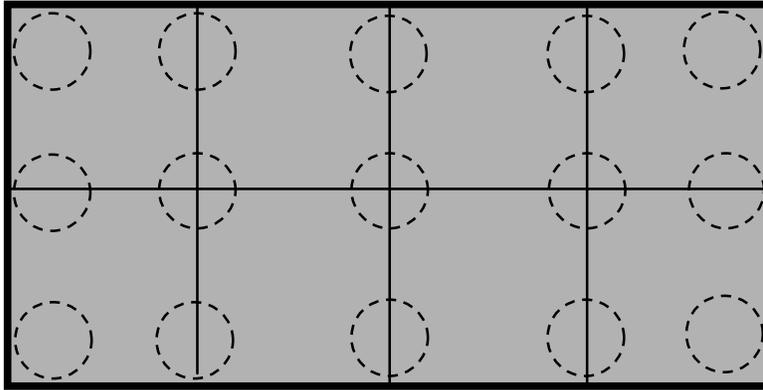
The orange buckets from Home Depot are cheap and available, so I used them for my prototype. They look bad as-is, so you either need to apply a skirt around the riser, or cut some stiff carpet to fit the distance between the bottom of the lid and the floor and wrap it around the perimeter of the buckets. The skirt and orange buckets is the lowest cost route.

I don't think painting the buckets is a good idea, because they may stick together in storage. For easy de-nesting, they need to be clean and slick.

I'm thinking about buying black buckets from ULINE on the web, currently item S-7914BLK, at \$4.69 each. I think the black buckets will look fine without a skirt, especially when hidden behind a row of saxophones.

Right Size Riser LAYOUT

2 x 4

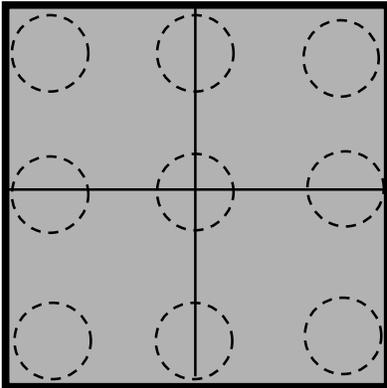


Typical setup for 4 musicians, such as trumpets or trombones.

Requires:

- 4 corner units,
- 4 middle units,
- 15 buckets.

2 x 2



Works for a small drum set. (Larger drum kits may want to to 2x3)

Requires:

- 4 corner units,
- 9 buckets.

For 2 x whatever:

You need 6 buckets for the first pair of lids, then 3 for each additional pair. (One musician gets one pair of lids).

2x2 needs 9 buckets

2x3: 12 buckets

2x4: 15 buckets

2x5: 18 buckets

2x6: 21 buckets

2x7: 24 buckets

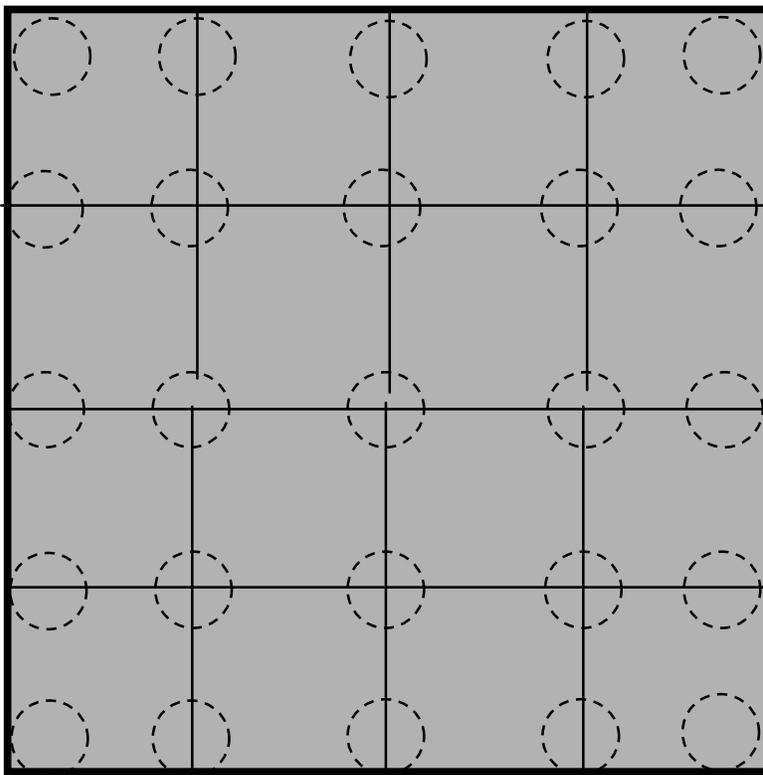
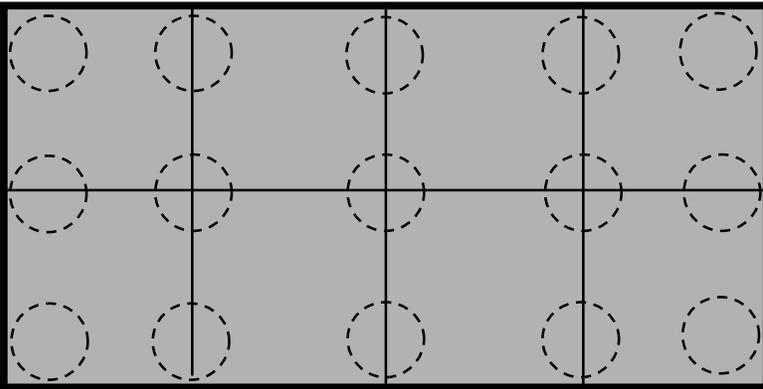
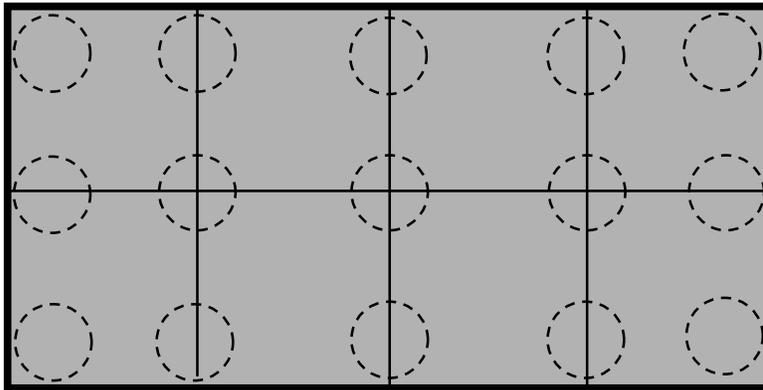
2x8: 27 buckets

2x9: 30 buckets

2x10: 33 buckets

Right Size Riser LAYOUT

2 x 2 x 4



“Stacked” brass, with 4 trumpets standing behind 4 trombones, requires 16 lids

One way is to use two sets of 2x4 risers.

Requires:

- 8 corner units,
- 8 middle units,
- 30 buckets.

(Theoretically, you could stack another 2x4 riser on the back to get the trumpets 30 inches in the air)

Alternative 4x4 setup requires four special center lids, but saves a row of buckets.

Requires:

- 4 corner units,
- 8 middle units,
- 4 center units
- 25 buckets.