Analysis of the Liederkranz riser and potential shell transportation requirements

We have eight (8) Wenger 18”, 3 step risers, with the back rails. Ours are 4’ wide. According to their website, one such riser is 4’ 3” wide x 4’ 8” deep. When in the deployed model they stand 24” high. Also, when deployed, they are 4’ 3” wide at the wide end and 3’ 3” at the narrow end. The angle is 6.25 degrees.

When collapsed, they are 65 ¼“ x 20.6” x 14 ¾”. I think that means that the volume needed for the riser is 19,826.2 Cubic inches folded. That is 11.47 cubic feet.

I think in the interest of people’s backs, we should store them in a trailer vertically, strapped against the sides. That would imply a trailer which was at least 5’ 5” high on the inside, and would have a length long enough to accommodate four risers, or at least 4 X 20.6”. That would presume we can put them touching each other and still get them in and out. I would suggest that the minimum length dimension of the trailer would have to be at least 7 feet internally, and 8 would be better.

The side to side distance across the trailer on the inside would need to accommodate a riser strapped to each inside side wall. Assuming we can get them pushed flush against the trailer wall, we would need at least 2 x 14.75”, plus some room in between them to maneuver them into place They are 20 .6 inches wide in the orientation we would roll them onto the trailer. More room in the middle would be greatly helpful. So the absolute minimum would be 50.1 inches wide. At that width, a riser being loaded would be touching the both of the riser on the sides, if it was rolled between them. If we assume we can load them from the front to the rear sequentially, and remove them from the rear to the front, we should not have to roll one between two that are strapped to the walls. Still, that 50.1“ is over 4 feet wide. We should not consider anything any narrower than 5 feet (60 inches), and that would still be tight.

I think a trailer with minimum internal dimensions of 5 feet wide, 7 feet long and 6 feet high would accommodate the eight risers and the railings.

Now, supposing we were to add the acoustic shells. (Which are available on Pearland, Texas) According to the Wenger literature, there is a move and store cart for the shells which accommodate 1 of the sets described. It is 6’ 7” deep, 2.5’ wide and 3’ 11” high. If we bought one of those sets of shells from the people in Pearland, we could haul in in the trailer above, provided we now make the trailer 6 feet wide.

I think we could haul all eight of our risers, the back rails and both sets of shells if we had a trailer that was at least 14 feet long , 6 feet high and 5 feet wide (internal dimensions).

The total dead weight of the contents of the trailer would be 8 x 108 for the risers, and 590 for the shell x 2 if we bought both. I will guess that the railing and the clips that hold them on add maybe another 100 pounds. So, I would estimate the net weight of the risers, shells and rails to be in the neighborhood of 2150 pounds.

The carts that hold the shells would weigh almost 600 pounds. If we assume we are going to roll them up a ramp into the trailer, we might actually need to add a winch to get them up the ramp. That is not a big deal to do, but it would probably be in the way when we loaded the risers.

I hope some of this makes some sense.