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I would like to thank both John Neely and Judith Duff for giving so freely of their time and knowledge. I called them on numerous occasions for information and both always had seemingly unending patience and took time to answer my questions.

In 2002 Louise Rosenfield and I, and a group of four other women built a Train kiln in Toole TX, which is a 1 1/2 hour southeast of Dallas. We decided to build this kiln because I had previously fired with Finn Alban, another Texas potter who had built a similar kiln, and I had also seen the kilns at Utah State. What excited me most about the Train kiln was the potential for the diversity of surface much like an Anagama. For the most part, the majority of my firing experience has been with the fast fire catenary arch style kilns which fired very efficiently, but also gave very even results throughout the kiln. I was searching for a broader range of effects. I felt that the variety of surface qualities in the Train kiln would help to push the work in different directions. Everything from the crusty clay, coaly black surface, to light fly ash can be had in this kiln. In addition to this, our kiln is built in the middle of a close neighborhood lake community and we were concerned about the smoke. Finn's kiln seemed to smoke very little as I had heard from other Train kiln builders as well. All of these factors in addition to the idea that this kiln could be fired rather quickly with out the loss of surface richness, coupled with the easy-to build-and fire design persuaded us to build this kiln. I am not like many wood fire folks who relish the process; I am not really a pyromaniac nor am I a night person. I fire with wood because I love the subtle complexity of atmospheric surfaces. I am a physical person and likewise enjoy a certain amount of physicality in the process but I don't feel that that is the driving force compelling me to fire in such a labor intensive way. So, I was drawn to a slightly less demanding process.

We call this kiln the "old lady kiln" because there would be no lifting of shelves above the shoulders, no crouching or climbing walls during loading, no puzzling together a big door at the end of a loading. I think we should take our bodies into consideration if materials allow for it.

Technical information about kiln

We based our Train very closely on Judith's Duff's design with a couple of changes. The plans she has made available were invaluable to us. Our kiln is a bit larger, about 90 cubic feet of stacking space, we did a variation on the lid, and added a side door so we could walk into the chamber to load.

-The lid is on a ½ ton crane from Granger it is 8" thick and is filled with folded fiber blocks which are called "Z blocks" manufactured by Thorpe Products in Dallas. They are made in a couple of different sizes. We used 2-foot sections and it comes with a bolt installed in the middle of them. This in turn was then fastened into the expanded metal on top of the lid. The only problem with this is that there has been some shrinkage of the fiber and we have had to fill the gaps occasionally. As the lid gets lowered on to the kiln a fiber gasket is put around the perimeter insuring a good seal. However, this is probably not necessary.

- The lid has a chain welded to it that hooks to the crane and is lifted off with a simple hand crank and then rolled off to the side.

- The kiln is two layers of hard brick.
- The stacking chamber is 3 feet wide and 10ft long and 3ft high
- The firebox is 4 ft long and approximately 5 1/2 high to the top of the sprung arch
- The chimney is 14ft tall and about 18 inches deep after corbel where dampers are set in.
- We used mizzou castable for the throat arch.
- We used 4"angle, which was 1/4 inch thick around most of the kiln.
- The stoke door is at about a 4ft height and has a welded angle iron frame with a fiber block inside it. It is held in place with angle iron and is set on top of loose ball bearings allowing it to roll smoothly to the side.
- I made a mistake of putting too many holes in the kiln for experimentation and this led to cracked pots because of all the air that was being let in during cooling, so there is such a thing as too many options! We have since closed all the extra openings and no longer have cracking issues.
- The dampers are stainless steel floor plate, 1/4 thick they have really taken a beating with the cooling reduction but are holding up better than any damper I have ever seen!
- The grates are 2" solid stainless pipe and are also holding up very well. They do bend a little with each firing but going on our 8th firing are nowhere near in need of replacing.
- The outside was insulated with 8 lb density fiber which was then covered with a clay/sand//Portland mixture.
- We put in the stair stack system in the firebox, which allows for air to be directed into the ash bed. I have never had such a consistent fluffy ash bed, which NEVER needs to be raked.
- We also used the "Swiss cheese" flue pattern, which allows you to adjust where the kiln is drawing from very easily. If the bottom is cold just plug up a few holes in the top of the flue forcing the kiln to draw harder from lower down and visa versa.
- The firings usually last from about 28-30 hours with a down fire of 4-6 hours.
- I like to have some glaze work in the back of the kiln where the cooling reduction has less effect. We figured out that if we down fired very hard or for too long we got horrible bubbling in most of the glazes. After talking to Simon Levin and Jason Hess I understood that if we allowed the kiln to clear a bit between stokes during the down fire that would help with the bubbling. Indeed it does, and we have found a happy medium for the variety of surface that we want.
- We use a mix of hardwoods, primarily oak cordwood for the firebox, and pallet hardwood for side stoking wood.
- We usually start stoking the back as soon as the wood will burn; about 1000 degrees or so otherwise the back gets too far behind.
- We end up using 1 1/2 -2 cords of wood.
- There are two side stoke holes. The first stoke hole is primarily stoked for ash and atmosphere. The temperature would be fine with out stoking it. The back stoke hole would not get to temperature without stoking.
- For most of the firing the damper is 7 inches to all the way open, but we have a total of 14 passive dampers, (one passive =1/2 brick dimension) which we use throughout the firing. The chimney is very powerful and we often use all of them during reduction and to slow the flame down.

My husband Peter and I are fortunate to spend summers in upstate New York. Last summer after a couple of years of amassing material and pouring the pad I built a smaller Train kiln. This kiln is considerably different than the one in Texas. Some people refer to this kiln as the "Chevy" and the Texas kiln as the "Cadillac".

When I heard there was going to be another burn ban in Texas, I decided to build the kiln with the materials I had on hand. No mortar, no level, and I hardly used a square. I needed to build it as fast as I could so it could be fired before we left to go back to Texas.

Fred Herbst who runs the ceramic program at Corning Community College gave me an enormous gift of silicon carbide goodies. I based the kiln size around those shelves as well as the lid configuration.

Technical information on the kiln

- The chamber is 9 feet long including the 2 ft firebox (which is the same height as the chamber) 2 feet wide and a little under 3 feet tall with a 12-foot chimney.
- I used shelves for the lid, which rest on silicon carbide bars, spanning the width of the kiln, which the shelves couldn't, and then we put a 2" fiber blanket over the whole lid. I don't feel comfortable with this because of the health issues, so hopefully I'll switch to putting blocks of soft brick on top of the shelves instead.
- This kiln was based on a kiln I fired at Stephan F. Austin University in Nacogdoches, Texas which fired beautifully despite being uninsulated and having a small firebox.
 - We used 2" angle $\frac{1}{4}$ inch thick
- We fire with a mix of hardwood slab and the kiln used a little over a cord of wood with a firing time of about 30 hours. Then a down fire of 4-6 hours.
- There is one primary air port on each side of the firebox, which are two bricks wide and deep.
- There is no step system in this kiln, which didn't seem to cause any problems, there still was no raking of ash.
- There is one side stoke hole in front of the last shelf.
- There are three grates which are 2" cold rolled solid steel not as good as the stainless but seem to hold up better than hollow tubes.
- There are two dampers which I used silicon carbide shelves which cracked and fell apart so I will probably go with a metal damper in the future.

Unfortunately, we only had time to fire it once and there are no doubt some bugs to be worked out. There were some unfortunate "first firing" happenings i.e. a large pot broke blocking the stoke hole which prevented us from getting the back to come up to temperature with the front which meant the front got a bit too hot. I feel confident with a couple of adjustments this kiln will fire beautifully as well and I look forward to getting surfaces as rich as the ones which I have come to expect from the Texas kiln.

