



RUSSIAN RADIANCE

BY LAURIE LAMOUNTAIN

Anyone who has lost a home to fire knows that safety becomes an absolute requirement when it comes time to rebuild. In January of 2014, the Lyons family lost their home to fire due to an electrical malfunction, but they still weren't about to take chances when it came to their choice of a secondary heat source. While researching options, Steve and Cathy found the Masonry Wood Heaters Association of North America Web site, which provided a list of certified masonry heater designer/builders. The nearest to them in Bridgton was Tony DaSilva of Maine Masonry Craft in Damariscotta.

There are several versions of masonry heaters, but the Russian stove Tony designed and built for the Lyonses operates on the Free Gas Movement Theory developed in Russia during the early 20th century. Unlike a Finnish contraflow stove that forces the gases through channels, the Russian stove is designed to allow gases to move freely, relying on the force of gravity alone to circulate the gases within the stove's heat exchange system. In this way, only the cooler portion of the gases is exhausted, leaving most of the heat inside. Instead of channels, the double bell firebox design of

the Russian stove has chambers that allow the introduction of secondary air into the firing chamber. The result is a heater that burns cleaner and is 80% plus efficient.

When I spoke with Tony to get a better understanding of how the Russian stove works and why he prefers its design, he told me of his association with Alex Chernov whom he met at the North American Masonry Heater Conference in 2008. Alex had been using digital equipment to experiment with double bell heater construction and had made great strides in increasing the firebox design and efficiency. There are many heaters in Russia that are over 200 years old and still in use today, but they don't have the Alex advantage of modern technology to improve their performance.

"One of my clients built a 1,200-square-foot home with R60 ceiling and R24 walls and he heats his home 100% with a masonry heater using two cords for the entire heating season," says Tony.

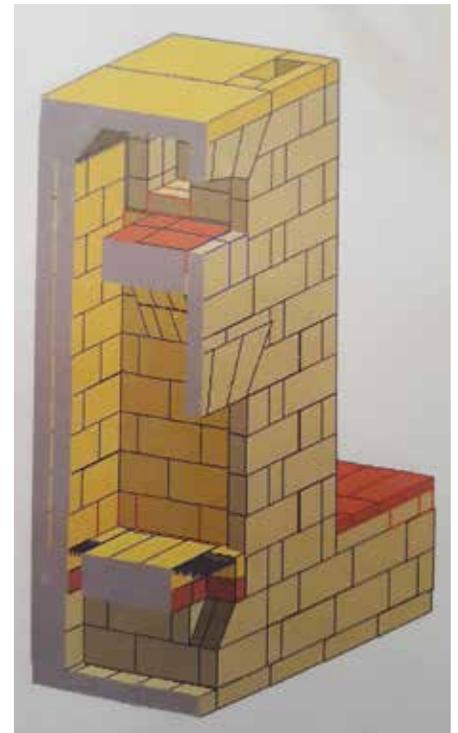
The way it works is that the stove is top-down loaded in the morning, in other words, wood on the bottom, then kindling and newspaper on top. Instead of the few pieces of wood you would normally use with a wood stove or fireplace, the masonry

heater holds an armload or two of seasoned wood. Once lit, the masonry heater fires to over 950°F, the threshold for burning all of the gases for a very clean combustion, until it burns out in a few hours. After the fire goes out and the dampers are adjusted, there's nothing more to be done. No wood to load and no ash to sweep. Just 20,000 to 25,000 BTUs per hour of heat stored in the masonry thermal mass that slowly radiates into your house for the next 18 to 24 hours.

The Lyons had only had their heater in use for about six weeks this past winter before they no longer needed it. During that period they did several small burns to "season" the system. That gave Cathy an opportunity to experiment with the bake oven. She and her youngest son, Nik, who is autistic, spend a lot of quality time together cooking, so the bake oven in the Russian stove was a definite selling point for her. For Nik, it's an opportunity to try out the new skills he acquired while attending a culinary program at the vocational center. During their six-week test drive they had a few successes and a couple of failures. Eventually, they plan to bake all of their own bread in the oven.

"I'm on the quest to find the perfect pizza and bread. So far Otto's is the best," says Cathy. Of course, if she and Nick have their way, Otto's will have to take a back seat.

One thing they've determined since then is to invest in an enameled cast iron casserole and an infrared temperature gun for the oven.



Because they're hand built, no two stoves are alike. The core is always constructed of fire bricks but the exterior can be brick with stone inlay, as with the Lyons's, or stone, stucco or tile. Cathy compares the selection of materials and their placement to making a pizza.

She points out that a Russian stove wouldn't be for everyone. For one thing, it's a sizable investment. In their case, they opted to do away with or postpone some things in order to accommodate the masonry heater in their building budget.

"It's our garage," she jokes.

She also points out that it's much easier, and affordable, to design and construct the heater in a new home than to add it to an existing structure, especially since their contractor, Kurt Christensen, worked so well with Tony and his crew at Maine Masonry Craft. As an added savings, the Lyonses opted for a stainless steel chimney, which was considerably less expensive than a traditional brick chimney and came with a lifetime warranty.

While the upfront cost of their stove was significant, the savings are as well. The Lyons's other heat source is a propane-fired boiler and the goal is to keep their fuel costs to a minimum, while burning only a cord or two of wood. Then there's the added savings of not having to sweep the chimney each year. The high heat creates a very clean combustion. Tony pointed out that he's been burning his masonry heater for seven years and has never had to sweep his chimney. He does, however, recommend the heater be inspected and vacuumed once a year for fly ash that has made its way through the system—a fairly simple task that can be done by the homeowner with a shop vac.

Then there's the fact that no matter how many years of savings you accrue with a masonry heater, it holds its value. Should you decide to sell your home, the high efficiency and savings will surely appeal to a buyer, as will the aesthetic.

"He's as much an artist as he is a mason," says Cathy about Tony's stonework.

It's true that he has artfully capped the heater and crowned the bake oven. Decorative details have been added to the side facing the front entrance. I'm drawn to the stove not only for its aesthetic but more for the idea of it being the radiant heart of the house. A blue stone bench on the side is where I'd probably spend a lot of my time on a cold, winter day. It would be a great spot to read *Anna Karenina* one more time. 🍕



STONE TURTLE BAKING AND COOKING SCHOOL PIZZA DOUGH

In order to get great flavor and a thin crust with open bubbles around the rim, a wetter dough is the only way to go.

Poolish

- 1-1/2 c unbleached all-purpose flour
- 1/4 c whole wheat flour
- 1 c water (cool tap water 60°F)
- Pinch of instant dissolving yeast

Final Dough

- All of the poolish
- 1-1/4 c water (lukewarm—75°)
- 1 Tbsp olive oil
- 1/2 tsp instant dissolving yeast
- 1 Tbsp kosher or sea salt
- 4-5-1/2 c all-purpose flour (wetter is better)

Semolina for dusting

In a large bowl, combine all of the poolish ingredients about 12 - 16 hours before you plan to make the dough. If temperatures in your house are around 70° F plan on 14 - 16 hours. If the temperature is warmer the poolish will mature faster but should take 12 hours minimum.

For the Dough: Add water to the poolish

and mix gently but well. Add the oil and salt and mix. Add 2 cups of flour and the yeast and mix well. Add remaining flour, one cup at a time, and mix until the ingredients are combined. Knead 4 to 6 minutes or until the dough becomes smooth and elastic (use a scraper, if needed, to help in kneading the wet dough). Cover with plastic wrap and set aside in a warm (75°) place for about 30 minutes.

Turn dough out on to a lightly floured surface, pat into a rectangle and divide into 6 or 8 ounce pieces for small pizzas. Form pieces into balls and place on a covered tray to proof, in the refrigerator, for at least 2 hours to overnight.

Ensure that the baking surface is thoroughly pre-heated to 675-725° F Take dough out of refrigerator about an hour before using. Gently stretch, roll or toss into a thin disk, but retain a rim around the edge. Place dough onto a peel that has been liberally coated with semolina to prevent sticking. Dress with simple toppings (less is more) and bake on a pre-heated stone with the bake oven at about 675 - 725° F). Pizza should bake in about 3 minutes. *Watch it carefully.*