

The Home Forum®

A family worthy of blowing its own horn



BRUCE Lawson can't stop blowing his own horn – literally. He's testing one of the French horns that he and his family have just crafted by hand in the Maryland woods. And considering it took them about 80 hours – they could probably use a little recognition.

The three generations of Lawsons spend each day transforming

huge rolls of sheet metal and long tubes of copper into graceful curves and gleaming bells – some of the world's finest French horns. You can hear a Lawson Brass horn for yourself – just listen to the CNN theme music on TV. The instruments also fill the French horn sections of major symphony orchestras in the United States.

To an untrained eye and ear, though, the Lawson horns may look and sound ordinary. But consider this: The French horn is actually made up of more than 100 pieces and 22 feet of coiled plumbing. That leaves a lot of room for differences from one horn to the next.

Factory in the woods

Bruce works in the “factory” – a two-story workshop on 18 acres of wooded land near Boonesboro, where the family used to go camping. The workshop is just down the winding dirt road from his parents' house and a few yards from the Appalachian Trail. He and his dad, Walter, started Lawson Brass in 1980 with Bruce's brothers, Duane and Paul. Duane has moved on to other interests. But the company has gained the help of Paul's wife, Re-

becca, and sometimes Bruce's teenage daughter, Amy.

These instrument builders are also a bunch of musicmakers – though they have different tastes. Bruce prefers the keyboard, while Amy likes the cello. Walter is the real French horn fanatic: He played second chair with the Baltimore Symphony for 29 years until he retired in 1976.

Most French horns are made by big companies like Yamaha and C.G. Conn. They might have hundreds of people making and assembling horn parts. They churn out more than 4,000 French horns a year, a lot of which are sold to students for about \$3,000 each.

Honoring special requests

Lawson Brass, on the other hand, makes fewer than 40 horns a year that cost about \$8,000 each.

“You can compare us to a carmaker,” says Walter. “If you want to buy a regular Ford car, you go to a Ford dealer. But if you want to modify it and race it, then you go to a custom carmaker.” Lawson Brass mostly sells horns to professionals, who often have specific requests.

They might want a French horn that sounds richer, just like one they heard on a CD. Or one that glows a distinct shade of gold under the bright theater lights where they perform. Or one with a longer pipe leading to the mouthpiece to account for a player's especially tall figure.

But one thing all horn players strive for is emotion, Walter says. “After all, the Oxford English Dictionary de-



WAITING FOR ASSEMBLY: These French horn parts include four circular valves (l.) that control the air flow through the tubing (r.).

fines music as ‘a story stirring emotions by means of sound.’” The French horn, especially with its long tubing, “enables a player to hit more notes – and express more shades of anger, hate, love, and joy,” he says.

A musician varies a horn's sound by changing the position of his lips, moving the location of his hand inside the bell (the horn's funnel-shaped end), or pressing down on the valves that control the air flow through the tubing.

But every detail of the manufacturing process affects the instrument's sound, too.

A horn with a lighter tone, for instance, will have a narrower diameter inside the tubing. This horn is often used for chamber music, played in a small room as opposed to a grand symphony hall. A handful of different metals can also produce horns that may be described as sounding “brassy,” or “rich,” or “mellow.” And the degree to which the horn tapers, or gets wider, from the narrow mouthpiece all the way up to the foot-wide bell, also gives horns a lighter or heavier tone.

Paul is the one who makes the larger horn parts. He starts with the tail, the long piece that connects the coiled tubing to the bell. (See photo, next page.) From a roll of sheet metal, he cuts out a long rectangular shape that is wider on one end so that it will taper.

Then he heats the metal in an oven to soften it. Once it cools, Paul shapes the metal into a tail by bending it around a tapered, solid-metal mold called a mandrel. He gives the tail a smooth, round outside by forcing the tail through a hole in another metal mold.

How do you coil all that metal?

Now how does he give the tail that nice arch? (See photo, left.) He can't just bend it – because like a hollow garden hose, it could easily kink. So he fills it with hot, liquid tar. When it hardens, he can curve the tail and still maintain its width. To remove the tar, he just heats up the tail.

Paul uses similar techniques on the bell (which he molds from sheet metal) and on the tightly coiled tubing (which are pre-formed tubes that he bends – a lot).

Next, Bruce, Walter, and Amy assemble the horn and attach the smaller parts they've made, such as the mouthpiece and the finger levers. They add a handful of parts the family doesn't make, such as the screws. Then they polish and lacquer the surfaces of the horn.

Finally, Bruce plays the shiny instrument to test the way it sounds. A computer program listens in and indicates where, among the 100 parts, the horn needs an adjustment. This is a real improvement from just a few years ago, says Walter. “It used to be that you'd have to pass a newly made horn around to several players, who only might be able to tell you what you needed to adjust.”

Walter has been either playing or building French horns since the 1940s, but he still enjoys them.

“It's incredibly fun and interesting always trying to perfect the French horn,” he says. “The next time you go to a concert hall, think of all the fancy stuff that goes into making those instruments.”



PHOTOS BY ANDY NELSON – STAFF

MEET THE LAWSONS: Walter (center), his sons, Bruce (l.) and Paul (r.), and granddaughter, Amy, custom make French horns near rural Boonesboro, Md. Each year they produce about 40 horns – considered some of the finest in the world.

Sara Steindorf



A HORN'S TAIL: Paul Lawson shapes the tail, the long piece that connects the end of the French horn with the rest of the tubing. He slides a metal mold over the tail to help give it a round, smooth surface.

Make your own instrument

Here's a fun project that you can do by yourself. And unlike the French horns on the previous page, this guitar takes only an hour or so to make.

What you need

- A sturdy shoe box
- Scissors
- Tape and glue
- Colored paper
- Glitter, paint, and markers
- Four large rubber bands, of equal or different widths
- A cardboard paper-towel tube

What to do

1. Cut a hole about 4 1/2 or 5 inches wide in the center of the box top. Then cut a hole about 2 inches wide on one end of the box.
2. Tape the cover on the box.
3. Use colored paper, glue, glitter, paint, or markers to decorate the box.
4. Stretch the four rubber bands around the box, from one long end to the other. They should be stretched over the hole on the top of the box. Make sure there is space between each rubber band.
5. Push the cardboard tube through the 2-inch hole to make a neck for your instrument. Two of the rubber bands should be on one side of the tube and two on the other side.
6. Now play your new guitar!

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TODAY'S ARTICLE ON CHRISTIAN SCIENCE

An article of special interest to young people

The first day of school

PUBLIC SCHOOL STARTED in Nashville, Tennessee, two weeks ago. The thermometer tipped 90 degrees, as yellow buses lined school driveways. Kids exploded into the sunshine. Who can do homework when the pools are still open? In our condo complex, the pool was filled with hot pink and cool blue "noodles" by the time I got home.

I was curious how some of my young friends fared on their first day. So I phoned two high-school girls. I've been friends with them and their families forever.

"So how was the first day of school?" I asked Patricia. She started the ninth grade today in a new (to her) school.

"It was good," she said. "I actually knew someone that went to all my classes."

Kids in Nashville pray a lot, so my next question wouldn't sound unusual. "Did you pray about anything before school?" I asked.

"I did pray," Patricia answered, "because I had a really bad dream. I had a dream that it was the worst day possible. I tripped a lot. I got lost more times than I could think of." In Patricia's dream, her school "was a big cement prison. But," she added, "nothing bad happened to me during the day."

When I asked how she prayed, Patricia answered, "That I wouldn't be the only one." I think Patricia meant that she would know some of the other kids and not feel alone all day. And she added, "I did know that I was going to have a good day. I thought of the ... synonyms [for God]. I thought about divine Love and God." There are many names for God. Some of them in the Bible are *Father* and *Shepherd*. Seven other names for God found or implied in the Bible are included in the Glossary of "Science and Health with Key to the Scriptures" by Mary Baker Eddy. They are *Life, Truth, Love, Principle, Mind, Soul, Spirit*.

After my conversation with Patricia, I called Lindsey, who is a senior and is on the soccer team. When I asked about her first day, she said, "I might get changed out of one of my classes. Everything else was good. I was really tired, because I had to get up really early. Besides that, it was good. We had a soccer game. We lost, but we played well over all."

She didn't pray specifically about the first day of school, but she had been praying. Lindsey said she prayed "about stress from all my summer reading." She continued, "We worked on it some at Sunday School." Some of the ideas she prayed with were: "I have infinite resources from God and I'm His reflection. Time is just a human measurement."

When I asked if there was a specific verse, she said, "Wait, it's in my purse." Moments later, Lindsey read me this sentence from Science and Health: "Spirit, God, gathers unformed thoughts into their proper channels, and unfolds these thoughts, even as He opens the petals of a holy purpose that the purpose may appear" (pg. 506).

"Did the prayer help?" I asked.

"Well, yeah, I got all my stuff done and didn't have to stay up until 3 in the morning," she laughed.

Lindsey's advice for the first day of school is: "Be prepared. I have home-

The students stopped to think about what they knew about God and themselves as God's children.

work tonight, a quiz tomorrow, and a test Friday!" That's good advice for kids in any grade. And part of the preparation is prayer.

Both Lindsey and Patricia prayed with spiritual facts they had learned about God. They didn't just ask God to help them, and go on. They stopped for a minute. They thought about what they knew to be true about God and about themselves as God's children. They used spiritual ideas in their prayer that they'd learned in Sunday School and from reading the Bible and Science and Health. Then they put their prayer into practice.

You can prepare for school by praying with what you know about God. There are lots of verses in the Bible and Science and Health that will help you. One of my favorites is, "God hath not given us the spirit of fear; but of power, and of love, and of a sound mind" (II Tim. 1:7).

We know that all things work together for good to them that love God, to them who are the called according to his purpose.

Romans 8:28

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