Machine may replace handmade fireworks

By Nick Leiber, Bloomberg Businessweek

The U.S. spent close to $1 billion on fireworks in 2012, according to the American Pyrotechnics Association. The trade group's executive director, Julie Heckman, expects sales to climb "a little bit" this year, continuing the market's steady upward trajectory.

Unsurprisingly, the bulk of what explodes in America's skies and crackles in backyards is imported from China, though a few display companies that put on shows do make a bit of their own stuff.

Less well known: Most fireworks are still made by hand to avoid accidental explosions in factories.

"The materials are friction sensitive," explains Heckman. "Until I did my first trip to China about 20 years ago, I would've never really appreciated 'made by hand.' The number of man hours (for) 20 minutes of enjoyment is just astronomical."

Fireworks veteran Jim Widmann of Sandy Hook, Conn., wants to speed up the manufacturing process. After learning the trade from fabled display giant Fireworks by Grucci and running his own outfit, he invented a machine that automates the most laborious step of making an aerial shell.

It pastes the paper that contains the gunpowder "about eight or 10 times faster" than it would take by hand, says Widmann, 55. He notes none of the roughly 450 machines he's sold through Connecticut Pyrotechnic Manufacturing, his 6-year-old business, has caused accidents.

And they’re “pretty intuitive” to use, he says. “I’ve sold plenty of machines to people I haven’t been able to speak one word with, using video, pictures and the manual.”

His timing is good, says Phil Grucci, president and CEO of his family’s storied “multimillion-dollar” fireworks business, which dates back to 1850.

Grucci says in China, “The labor that was available to manufacture fireworks is migrating to manufacture” more lucrative products, such as electronics and pharmaceuticals.

Widmann’s “technology, and that technique for pasting a shell is now widely revolutionizing the labor reduction in some of the manufacturers in Asia,” he says. It’s “given China the ability to maintain their productivity.”

The labor shortage “has left a lot of people asking, what’s the future of fireworks manufacturing in China going to be? Part of the solution to that is increased automation,” says Jesse Veverka, who just returned to the U.S. after shooting in Asia for “Passfire,” his forthcoming documentary about fireworks culture.

Widmann doesn’t expect to earn much from China. Even though Chinese factories are using his technology, few are buying his machines, which cost about $2,500. After traveling in China’s fireworks district multiple times and getting a Chinese patent, “It finally occurred to me that the Chinese are not going to buy my product,” says Widmann. When they “decide to use something like this, they just knock it off, one way or another.”

Widmann, who has sold his machines in 30 countries, says a lot of business comes from hobbyists in the U.S., which Veverka estimates “on the order of 50,000 people.” They build their own for backyard fun in states with permissive fireworks laws.

And “I can pretty confidently say that every remaining

(display fireworks) manufacturer” in the U.S. uses the machine, says Widmann.

He is hopeful about bringing the business back to the U.S. “I’m a big proponent of American fireworks manufacturing, for obvious reasons: I sell a machine that does it,” says Widmann.

He says he’s been talking with the owners of one of the big display companies in the U.S. about its investment in domestic facilities to bring back some manufacturing, even if just for specialty items or to safeguard against shippers ending the transportation of fireworks.

“We’re not dead yet,” Widmann says. “There’s a chance there might be a resurrection.”