

IRON MAN Nathan Frankel at his scrap yard in Fontana, Calif., with a pile of metal destined for the steel mills of Asia



21st-Century Scrap

A California metal recycler is dragging his old-fashioned business into the modern **container-shipping era**. That's a big deal. **BY JUSTIN FOX**

THE MODERN ERA of global commerce began 50 years ago, on April 26, 1956, when trucker-turned-shipper Malcom McLean loaded 58 truck bodies onto an aging tanker in Newark, bound for Houston. "The container made shipping cheap, and by doing so changed the shape of the world economy," writes economist and journalist Marc Levinson in his en-

lightening new history, *The Box*. It was the real-world equivalent of the Internet revolution: With the cargo container, goods are shipped in discrete packets, using a network that can carry almost any traffic imaginable.

Not *all* goods can use that network, though. A case in point is scrap metal. It's big business: Sales of U.S. ferrous scrap were an estimated \$12.6 billion in 2005. Sixty-seven million tons were melted down

domestically—accounting for two-thirds of U.S. iron and steel production—and another 14 million tons went overseas. But scrap is not a true global commodity. Special open-top truck trailers and railcars are needed to move it over land. When it is shipped overseas, it travels in old-fashioned break-bulk ships that are loaded and unloaded at special port facilities. Scrap remains trapped in transportation's premodern era.

That may, however, be about to change, thanks to 32-year-old Nathan Frankel. Frankel is a scrap dealer—a third-generation scrap dealer descended from Eastern European immigrants (a common pedigree in the business). He went to work in his father's scrap yard in the Southern California industrial town of Fontana after graduating from Brandeis in 1995. Then, after his father sold the business, he opened his own yard on five rented acres in Fontana in 1999.

Frankel might not fit your image of a scrap-yard owner. He lives in a swell Los Angeles neighborhood, is an accomplished violinist, knows an inordinate amount about Northern Italian wine, and thinks about his business—it's called Advanced Steel Recovery—in a thoroughly modern manner. "The goal is never having scrap on the ground," he says. "It's better to have a just-in-time system." To get people to bring him scrap, Frankel offers transparency rare in the industry—customers can monitor their accounts on his website, and he is about to install gas-station-style signs with regularly updated prices at the entrance to the yard.

Finding outlets for his scrap at first proved hard. The business is dominated in Southern California by two companies with break-bulk port facilities: Sims Hugo Neu, a division of an Australian firm, and Pacific Coast Recycling, a subsidiary of Japanese trading giant Mitsui. Each has its own network of scrap yards in the region (Frankel's father's old yard belongs to PCR), and no reason to offer high prices to competitors.

In 2001, though, a metals broker from Hong Kong named Roman Cheng made the rounds of Southern California scrap dealers with a proposal. He'd pay them 30% to 40% over the going rate for iron and steel scrap—if they could load it into a shipping container. Cheng represented small steel mills in China that, if they could get their hands on any overseas scrap at all, could do so only through layers of middlemen. By cutting out the middlemen and taking advantage of the trade imbalance between China and the U.S.—almost two-thirds of the 6.9 million containers shipped out of the ports of L.A. and Long Beach last year were empty, so shippers are willing to take on full containers almost for free—Cheng could offer a better price.

The catch was that the only way to get scrap into a container was to shove it in

DON'T TRY THIS AT HOME



HOW IT WORKS First, a crane **1** dumps 47,000 pounds of steel scrap into the Fastek machine **2**. The truck **3** backs up to the machine and is hooked to it. The machine rolls its scrap-containing drawer into the shipping container on the back of the truck, then lowers a steel plate to hold the scrap in while the drawer pulls out. After that the truck **4** drives to port and the container is loaded on a ship to Asia.



with a Bobcat loader. This takes hours, is unpleasant and dangerous work, and tends to leave the container full of holes. Cheng still found a few scrap dealers willing to make the effort. But Frankel, after one try, said no and set out to find a better way.

What he came up with is a machine called the Fastek (the "Fast" stands for Frankel Advanced Shipping Technology), for which he hopes to receive three patents this month or next. Its heart is a giant, superstrong steel drawer, which is loaded from above with 47,000 pounds of steel scrap, then rolled into and out of a shipping container, leaving the scrap behind. The container stays attached to the back of a truck throughout. Loading takes ten minutes with the first machine, which went online just under a year ago, and five minutes with a brand-new second model. Damage to the containers is minimal. In one swoop Frankel eliminated the cost and hassle of loading a container with scrap.

Getting there did set him back \$1 million

in engineering and manufacturing costs. But thanks to the machine, Frankel's business is now booming. He has shipped more than 2,000 containers in the past ten months and is cutting deals with everyone from a steel-mill owner in Bangladesh to a major shipping company that now routes trucks from Fontana's many distribution centers straight to Frankel's yard, where they load up before making the 70-mile drive back to the port. The next step is getting the machines into the hands of scrap dealers around the country—Frankel hasn't yet decided whether to rent them out or sell them.

Others in the business are watching closely. "The technology he's using out there is interesting," says Jim Haggerty, a spokesman for Sims Hugo Neu. "The question is whether it's scalable and will withstand the test of time." If it does, as anyone who has worked in an industry transformed by containers can tell you, the scrap and steel businesses will never be the same. **F**

FEEDBACK jfox@fortunemail.com