

TEST-DRIVING THE DESTROYATRON

Imagine a machine that will take any object you put into it—anything at all—and reduce it to a cloud of atoms. Heh-heh. *By Stuart F. Brown*

**THIS
JUST
IN**

SOONER OR LATER WE ALL want to get rid of something. An irritating book. A fruitcake received as a gift. Perhaps even a heavy pipe wrench used to bludgeon ... Stop! Lose that last thought. And let us make it

perfectly clear that FORTUNE harmed absolutely no one in the preparation of this report. The point here is that people need to get rid of a jumble of different things for all kinds of reasons. So do businesses and governments. It's a nagging problem.

I got a phone call not long ago from a Connecticut company, Startech Environmental Corp., that builds a system called the Plasma Waste Converter. The man said you put stuff you don't want in there, and it doesn't merely get crushed or burned—it gets *dissociated*. Into my mind popped the word *Destroyatron*. Think of it: a magical machine for getting rid of things once and for all, like what a little kid

hopes for when he flushes his socks down the toilet.

The device uses a hissing plasma torch powered by a torrent of electricity to create temperatures of 10,000 degrees Fahrenheit and higher in a chamber glowing red-orange like the fires of hell. To put 10,000 degrees in perspective, it's the temperature of the sun's surface. When objects are placed in such an environment, the atoms in their constituent molecules stop holding hands with one another and fly apart. That's what "dissociation" means.

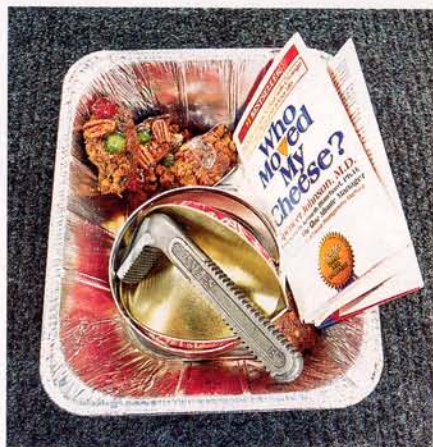
Brief negotiations led to an invitation to the company's R&D lab in Bristol to make some things disappear. Bring your book, and fruitcake, and wrench, and we'll put them into the machine, offered the Startech people.

And they pretty much kept their promise. The book FORTUNE selected—*Who Moved My Cheese?*—met with immediate approval, and so did the fruitcake, although the engineers wanted to break it into several big chunks to increase its surface area. That's

Startech's Plasma Waste Converter makes things go away.



BERNARD ALIERS



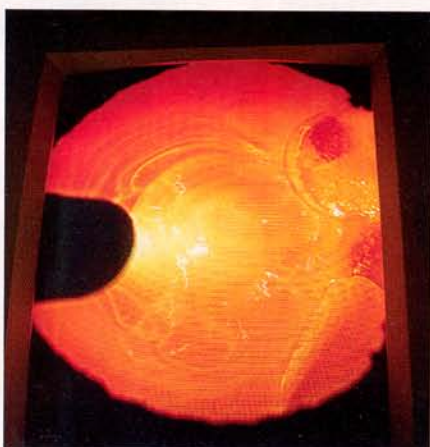
fine, we said; far be it from us to overtax the Destroyatron just in the name of fun. But it was the wrench that caused them to pause and reconsider. "We haven't put anything quite like that in the machine before," said the engineers. "How's if we just put in the movable jaw, but not the big heavy handle?" Sure. It was a reasonable request. So we unthreaded the jaw and put it in an aluminum baking pan with the other items.

Karl Hale, Startech's engineering vice president, manned the control panel as another techie put the pan of sacrificial items into an augur-fed chute leading into the system's cylindrical plasma vessel. Heat-tolerant refractory material lines the vessel, which is cooled in critical areas by large volumes of water flowing through internal passages. Into the inferno went the items when Hale gave the go-ahead signal.

We watched what was going on in the plasma vessel on a color TV monitor. Suffice it to say that the book didn't stand a chance, quickly morphing into a swirling cloud of ... really hot atoms. The steel wrench jaw was a bit of a disappointment, however, quickly sinking out of sight into the pool of molten stuff at the vessel's bottom. Materials such as metals and silicates end up in the pool, which is drained off periodically. Once cool, these materials form a glassy, obsidian-like material that can be ground up to make abrasives or added to asphalt for paving roads. The organic components of what you feed into the machine—the items containing carbon, in other words—end up as gases that are drawn off and scrubbed clean by equipment downstream of the plasma vessel.

The chunks of fruitcake were the best

Things we wanted to dispose of (left), and the Destroyatron at work. The outline of the doomed fruitcake can is visible.



part. At first they looked dark on the monitor. But soon they began to turn red, then whitish orange, and then they were just plain gone. We managed to get a

decent photo of the circular steel fruitcake can before it too surrendered its form to the roiling inferno. Destroyed!

Who might want a Plasma Waste Converter? Startech has built one for a company in Japan that is using it to dispose of PCBs, the toxic and now banned insulating material still found in many older power transformers mounted atop electric poles. And Startech recently won a \$34 million contract to supply two 50-ton-per-day systems to FP Immobiliare near Rome, which will employ them to get rid of electronics-industry waste. Other likely uses are disposing of scary medical waste from hospitals and mixed waste containing all sorts of materials from construction and demolition projects.

Startech's chief operating officer is Joe Longo, a veteran waste-handling machinery manufacturer with a fondness for posh neckties. He's also hoping to sell the Plasma Waste Converter to entities like New York City, which is challenged to dispose of its municipal solid waste, or MSW. A large system consuming all sorts of trash could generate enough valuable gases such as hydrogen—which can feed a fuel cell—that it would cover its own electricity bills, Longo says. My feeling is that this machinery sounds really great, but it needs a better name. The answer is in plain sight. Out of gratitude for dissociating that fruitcake, I am willing to assign the Destroyatron trademark to Startech at no charge. **F**

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