

## Mark Pauline's Machine Mayhem

For nearly three decades, Survival Research Laboratories has redirected the technology of industry, science, and the military to create the most dangerous theater on Earth. ➤

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Mark Pauline: "The vision for SRL was always about creepy, scary, violent, and extreme performances that really captured the feeling of machines as living things."



From these scraps monsters are made. Mark Pauline's San Francisco workshop is a jumble of discarded, donated, and questionably acquired "obtanium."

Outfitted with flamethrowers, the radio-controlled, monster-sized walking machines torch piles of broken pianos as a 16-foot Tesla coil spurts crackling blue sparks. A huge air cannon blasts away at plate glass

windows before turning ominously, to onlookers who are already suffering from the din of a V-1 jet engine wailing nearby. Legless robo-soldiers crawl from the belly of a two-story Trojan horse as a hovercraft, propelled by four 4-foot-long pulsejet engines, glides chaotically across the burning asphalt. These scenes from a nightmare are real, and this theater of cruelty has a name: Survival Research Laboratories.

Founded in 1978 by Mark Pauline, Survival Research Laboratories is a San Francisco-based network of engineers, artists, hackers, and makers who create "spectacular mechanical performances" where "humans are present only as audience or operators."

"The real message of machines isn't that they're helpful workmates," says Pauline, cleaning the fingernails on his three-fingered right hand. (Part of his hand was blown off in 1982 by a DIY rocket engine. Two of his toes were later attached as replacement digits.)

"Like any extension of the human psyche, machines are scary things," he says. "When you take the scary human psyche and magnify it hundreds or thousands of times with technology, it's really nightmarish."

At an early show, a steel exoskeleton mechanically reanimated a dead rodent while a live guinea pig controlled a large walking machine. At another performance, the giant spring-loaded Hand O' God cocked itself with 8 tons of force before flicking a house of glass to the ground. Meanwhile, the Sparkshooter spewed molten metal 500 yards across the mechanical war zone.

### We'll Pay You to Kill!

Right now, however, these mechanical beasts and their brethren are resting inside a dim machine shop where Pauline works in solitude. Wearing oil-stained mechanic's overalls and

horn-rimmed glasses, he blends into the mills, drill presses, wire spools, and cartons of unidentifiable raw materials filling every nook. The faint sounds of disco play in the background. Curiosities — doll parts, kitschy posters, vintage prosthetic limbs — hang alongside unusual industrial signs and remnants of surreally comedic props from previous shows.

Pauline's office — until recently his bedroom — overflows with engineering trade magazines, illegible notes, battery chargers, a restaurant-grade espresso machine, piles of work clothes, and cobwebs. A massive poster of dystopian novelist J.G. Ballard looms over a tattered leather sofa. Ballard, who infamously fetishized car wrecks in his novel *Crash*, once defined robotics as "the moral degradation of the machine." Unsurprisingly, Ballard was one of Pauline's main inspirations when he founded SRL in 1978.

Fresh out of art school, Pauline relocated to the San Francisco Bay Area from his native Florida. Immersed in the burgeoning punk scene, he staged prankster attacks on corporate culture and complacency by modifying billboards in clever but acidic ways. In one widely reported stunt, he altered an Army recruitment sign emblazoned with the slogan "We'll pay you to learn a skill!" to read "We'll pay you to kill!" But for Pauline, the infamy was too short-lived to satisfy his calling in life as a creative troublemaker.

"I learned in art school that if you wanted to do something that no one had ever done before, if you wanted to create a truly new idea, you had to be lucky and very dedicated," he says. "Out of that challenge came SRL."

In November of 1978, Pauline, disillusioned with guerrilla billboard art, realized that "the techniques, tools, and tenets of industry, science,





and the military” could be redirected to point out what he saw as the “irony and hypocrisy in the world.” So he borrowed the name Survival Research Laboratories from an advertisement in an old *Soldier of Fortune* magazine and produced the first show, a commentary on the oil crisis of the day, in a gas station parking lot. Titled *Machine Sex*, it involved a conveyor belt, a spinning blade, and quite a few (already) dead pigeons.

“The vision for SRL was always about creepy, scary, violent, and extreme performances that really captured the feeling of machines as living things,” he says.

### Only Marginally Acceptable

The small audience of local punks was impressed and delighted. But most importantly, Pauline had found his fresh idea. He wouldn’t learn until years later about kinetic sculptor Jean Tinguely, who constructed an elaborate machine that destroyed itself in the garden outside New York’s Museum of Modern Art in 1960.

Three decades later, SRL would stage its own performance at the groundbreaking ceremony for the San Francisco Museum of Modern Art. Following the show, one citizen wrote in a letter to the editor of the *San Francisco Chronicle*, “In Florida, we call it fraud, not art, and we put them in jail.” Good thing that Pauline had moved out of Florida long before.

Of course, Pauline knew even before he first put drill to steel for *Machine Sex* that SRL’s activities “would only be marginally acceptable to people who wanted to live in peace in urban settings.” Indeed, some of what he planned might even be downright illegal. That’s why SRL is a legit, tax-paying company.

“I understood that companies could get away with things that individuals can’t,” he says.

### Pathological Amusement

Still, SRL has earned its reputation as a band of troublemakers. In 1989, the group made news after taking credit for a number of mysterious TNT charges that had been found throughout San Francisco. The explosives were fake, grabbed by audience members as unusual souvenirs after a performance and then littered around the city.

In 1995, after SRL’s *Crimewave* show at the foot of the Bay Bridge, Pauline was interviewed in connection with the Unabomber case. Although that matter was cleared up quickly, Pauline and a colleague were arrested and charged with using explosives and starting a fire unlawfully.

It’s these and a host of other run-ins with fire departments that have made it nearly impossible for Pauline to stage a performance in San Francisco. In recent years, though, the group has packed up flatbed trucks with dozens of tons of equipment and performed in Austin, Los Angeles, Phoenix, and other cities in the United States and abroad. In the 1980s, SRL toured Europe several times with the support of politically well-connected art promoters. These promoters arranged for SRL to have almost unlimited access to scrap yards, and they squelched any potentially threatening controversies immediately.

“They’re kind of like the art mafia,” he says. In 1999, Pauline and several dozen SRL crew members packed boat-bound shipping containers for the group’s first large performance in Tokyo. The show, titled *Thoughtfully Regards: The Arbitrary Calculation of Pathological Amusement*, was sponsored by Japanese telecom behemoth NTT and held in a public park.

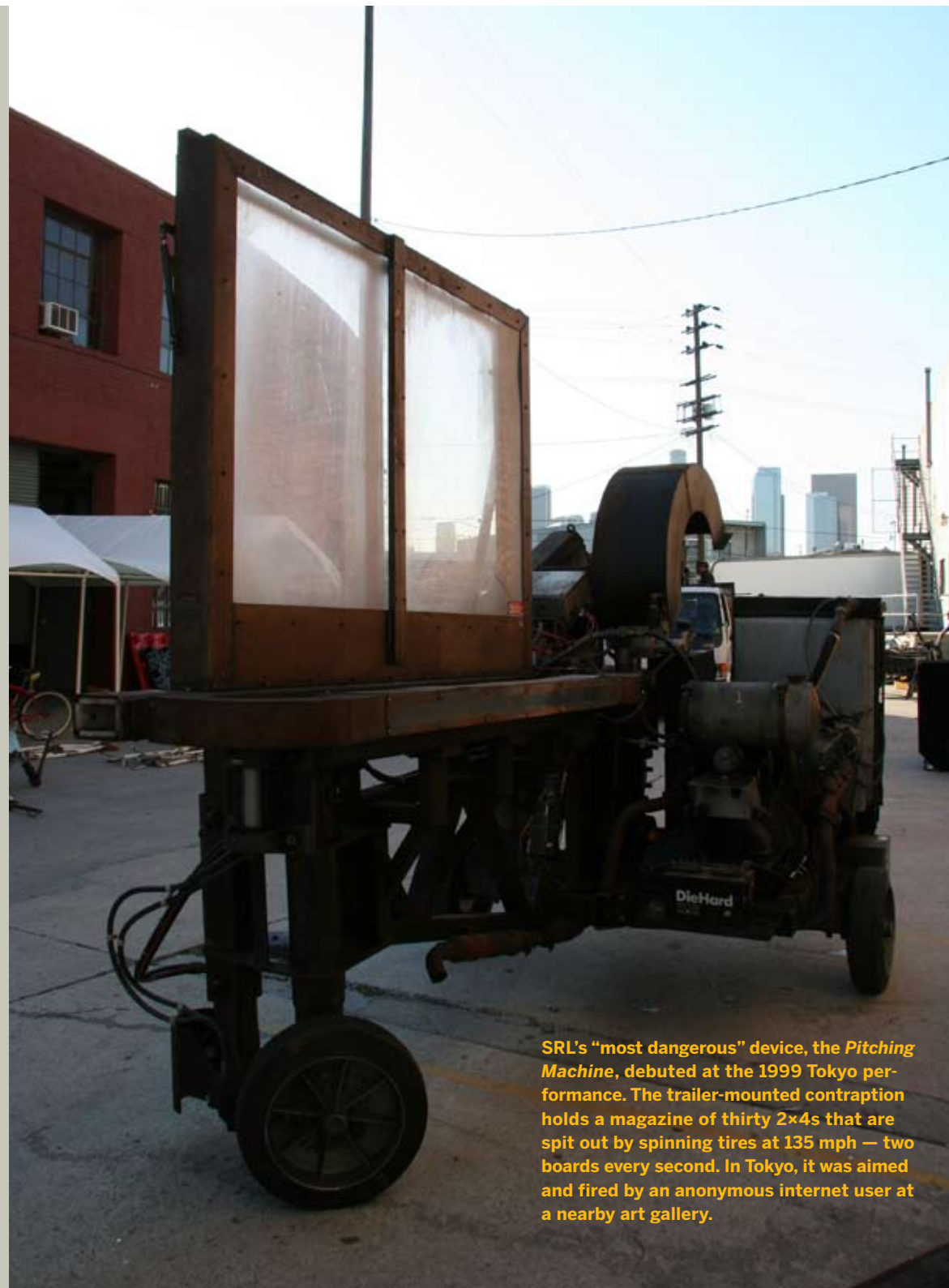
### “I’m a Vulture Capitalist”

This kind of support is essentially unheard of in the United States, Pauline says. Usually, the show time and location must be a closely guarded secret until the very last minute to prevent the authorities from shutting down the event. Unable to sell advance tickets, Pauline must now bankroll the shows himself at costs of tens of thousands of dollars.

“I’m an artist, but I have to live on an executive salary to do what I do,” he says.

For most of his adult life, Pauline barely paid rent at the shop, supporting his tool habit by doing welding and specialized fabrication for high-tech firms in the Bay Area.

“Normally, the research labs contract out their freelance work to shops that have all the right paperwork for things like worker’s comp,” he



SRL’s “most dangerous” device, the *Pitching Machine*, debuted at the 1999 Tokyo performance. The trailer-mounted contraption holds a magazine of thirty 2×4s that are spit out by spinning tires at 135 mph — two boards every second. In Tokyo, it was aimed and fired by an anonymous internet user at a nearby art gallery.

says. "But there were people in those labs who also worked at SRL, so they cut the red tape and steered the contracts to me."

In more than 25 years, SRL has harbored hundreds of engineers, physicists, artists, bathroom chemists, gearheads, and hackers who all find joy in the social commentary disguised as mechanical mayhem.

"SRL has always attracted the interests of people who really are on the cutting edge of technology, and they volunteer assistance and materials that we wouldn't otherwise have access to," Pauline says.

Even with friends in the right places, the contract work couldn't cover the increasing cost of the intricate machine designs Pauline had in his mind's eye and scribbled on scraps of paper. At the end of the tech boom, Pauline identified a new market for his technical knowledge. He buys specialty tech gear — server components, tape drives, scanners — on the cheap, tests them, makes any necessary repairs, and then auctions them off on eBay. Essentially, he has learned to identify the treasures in the tech "trash" that companies cast off due to downscaling or planned obsolescence.

"I'm a vulture capitalist," he says.

While most people lost their shirts on the dot-com bust, Pauline paid off his debt, bought a house, and funded several large shows out of his own pocket.

"I might take a \$40,000 loss on a show, but it's just a taxable expense for me and it's considered promotion for the company," he says.

### The Fish Boy's Dream

Along with enabling Pauline to move out of his bunker bedroom-cum-office, his vulture-capital career has afforded SRL the luxury of upgrading its tool arsenal. Most of the early machines were assembled from parts that were scavenged from junkyards or obtained "surreptitiously," Pauline says. Items taken without, er, proper approval are known around the shop as "obtainium." Custom components were hand-tooled from raw materials — an incredibly time-consuming process, especially when the machines could take years to build. For example, Pauline spent

five years on and off (mostly on) bringing the six-legged walking machine to life. Times have changed. At the center of the SRL shop is a shiny new CNC (computer numerical control) milling machine that automatically fabricates parts based on a digital design file.

"Our cycle of production mirrors recent changes in industrial manufacturing," Pauline says. "You can think more about the design of something because the time it takes to go from bare metal to a finished project is much shorter. All the hundreds of hours you'd spend in front of a manual machine making duplicate parts are condensed way down."

The first maniacal machines to roll off the CNC-powered assembly line were a battalion of *Sneaky Soldiers*. The remote-controlled androids contain a battery-powered chain-drive mechanism so powerful that they can pull themselves along on their steel bellies. Ten soldiers debuted in *The Fish Boy's Dream*, a performance held outside a Los Angeles Chinatown art gallery earlier this year. Of those ten, only two will ever walk — or rather, crawl — again.

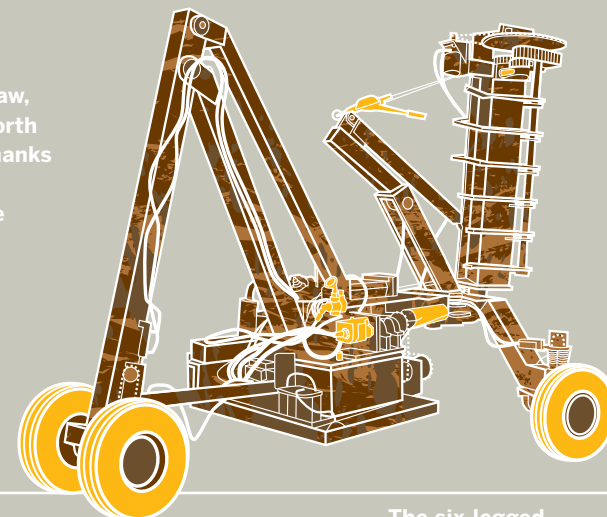
The *Sneaky Soldiers* will have to wait for Pauline to tend to their injuries. His attention is now on the *Snot Gun*, a large tube outfitted with a gas mixer and ignition plug. The bottom of the tube is filled with a stinky stew of wallpaper paste and bait fish. When ignited, balls of the goeey "snot" are propelled 200 feet out of the end of the tube. "It's like what happens when you cover one nostril and blow really hard," Pauline explains.

The *Snot Gun* and other machines are being overhauled in preparation for SRL's first large-scale Bay Area show in nearly a decade. This month, the group will perform in San Jose as part of the 13th International Symposium for Electronic Arts. This is one of the rare instances where a city government has given its stamp of approval to Pauline's band of maverick machinists. Maybe they don't know what to expect.

"This show will have an apocalyptic theme loosely based on Dante's *Inferno*," Pauline says. "Think of it as Six Flags over hell."



Outfitted with a massive vertical jaw, the *Inchworm* can inch back and forth or pull itself forward like a crab, thanks to opposing ratchets on the front wheels that drive them in opposite directions.



The six-legged *Running Machine* trots along at 6 mph, powered by a gas engine that drives a hydromotor, that moves the chain linkages, that turn sprockets to enable the locomotion. The *Running Machine* also boasts a hydraulic manipulator arm for picking apart props.



Constructed entirely from aluminum, the *Hovercraft* is propelled and steered via the remote control of four 4-foot-long pulsejet engines providing 70 lbs. of thrust. Roaring at 150 decibels, SRL calls it "the loudest robot in the world."

