

Space Age Tires Come Down To Earth

Once you switch to SMART tires, you can sell your tire pumps and never buy another tire. Based on spring-tire technology from NASA, SMART Tire Company (STC) plans to reinvent the tire industry. Their non-pneumatic tires carry heavy loads yet flex when needed.

Shape Memory Alloy Radial Technology (SMART) is a super elastic material called Nitinol developed by NASA. Nitinol wire is woven to create a structure that flexes with the terrain.

"We developed the tires for future moon and Mars rover applications," says Charles Weinberg, STC. "We use rubber and polymer integrations for treads and sidewalls with no metal in direct contact with the ground or the road. This gives the tires a long-lasting tread and grip for all weather conditions."

The resilience and shock-absorbing nature of the tires are due to both the woven structure and SMART metal's ability to rearrange its molecular structure. When it encounters an object, it flexes around it and instantly goes back to its original shape as it passes over the obstruction. NASA scientists report it can undergo 30 times the deformation of conventional materials. The tires are elastic like rubber, yet strong like titanium. They can deform down to the axle and return to shape.

This year STC will be launching tires for bicycles and scooters.

"We want to get the products out and let people touch them," says Weinberg. "Bike tires will be priced at around \$150, which is at the higher end for the bike tire market, but



Tires made from Nitinol were developed by NASA and can flex as needed while handling heavy loads.

they'll last for years."

According to Weinberg, the bike tires are just the first step, to be followed by other off-road applications such as ATVs and UTVs in the next year or two. Eventually, Smart Tires will expand to cars and trucks.

"Car and truck tires require meeting DOT regulations and testing," explains Weinberg. "Off-road equipment doesn't involve 3 years to get certified for freeway traffic."

Contact: FARM SHOW Followup, The SMART Tire Co., Los Angeles, Calif. (ph 323-380-0887; hello@smarttirecompany.com; www.smarttirecompany.com).

His Passion Is Restoring Metal Toys

Adam Weigle has made a nice sideline out of restoring Tonka Toy and other pressed metal trucks, as well as tractors and other toys. He has a neighbor's child to thank for it.

"My neighbor's child had a big yellow metal truck that had belonged to his dad," recalls Weigle, Tonka-Toy and RAW Restoration. "It was rusty, and he cut himself on it. I restored it for him and posted some pictures online. People who saw it said I should do more like it, and the business grew from there."

Weigle began buying and selling old toy trucks, sometimes restoring them to like new status, other times simply cleaning them up and repairing them. He keeps many original parts on hand, as well as after-market fenders, roofs, wheels, etc. He uses them in his work but also buys and sells them online.

"I won't restore a truck unless the customer requests it," says Weigle. "I prefer to keep its history."

For a time, Weigle traveled extensively looking for pressed metal toy vehicles. "I've gone from Florida to Maine and bought, sold and traded with some of the biggest collectors," says Weigle. "I think I've seen pretty much every pressed metal truck built."

When Weigle finds trucks that have been poorly restored, painted over, are rusty or beat up, he restores them or customizes them on his own time.

"I love to restore things that people say their father or grandfather owned," says Weigle. "It's great to see their eyes light up at the restoration."

Weigle is careful about the customers he takes on, preferring to avoid those who will simply turn around and resell the restored truck. "I want to restore things that mean something to the customer," he says.

When a restoration isn't needed or requested, Weigle suggests simply applying gun oil to the vehicle to preserve its patina.

"I do have people request I clean a truck and apply clear coat," he says. "That's sort of



Weigle buys, sells and restores metal toys. Photo above shows one of his restorations.

like bronzing a pair of baby shoes. You aren't taking away from its history, but you're still altering it."

While Weigle is in the business of buying and selling, he also does evaluations for clients. Repairs and restoration costs depend on the condition a toy is in, how it's to be used, what parts are needed, and the desired condition when finished.

"I prefer to restore a part, rather than replace it," he says. "Prices start at \$150, depending on the quality of parts, decals, paint and the extent of the restoration requested."

One of his most extensive and costly restorations was a 1923 Buddy L Red Baby. It required a specific paint and with parts hard to find, a lot of Bondo, recalls Weigle.

"An original is worth \$5,000 on the market," he says. "The restoration cost the client about \$750."

IF FARM SHOW readers want an estimate of costs for a restoration, Weigle suggests sending a video of the vehicle (top, bottom and all sides) with a list of work desired.

"Do they want all new parts or polished and restored parts?" he says. "Do they want a



Cronk used old bicycle chains, sprockets, and other parts to make this spit for roasting a 50-lb. hog.

Rotisserie Made From Scavenged Parts

Joe Cronk says he grew up in Eastern Indiana reading and being inspired by FARM SHOW magazine and its articles about clever inventions. "Dad always had copies around, so that's what we read," Cronk says. That background paid itself forward several times over the years, even when Cronk was stationed on Wake Island in the Pacific as a contractor for the Air Force.

"Logistically, the island was a challenging place to work because there wasn't much there, and flights only came to and left the island every two weeks," Cronk says. "There wasn't a hardware store and if you didn't bring the tools and parts you needed, you'd have to barter or trade to get them."

With his farming background, Cronk got a reputation for being quite handy. He'd done a motor swap on a Kawasaki Mule and fixed various equipment. But Cronk says, "My biggest challenge came after the base firefighters brought in a 50-lb. whole hog to celebrate an outgoing serviceman's time on the island, then realized they didn't have a place to cook it." Cronk accepted the challenge to build a spit on the island's large, open firebox to help them.

"I dug through a scrap pile of old metal on the island," Cronk says, "and came up with parts of bicycle frames, chains, four or five sprockets, and some old brackets. I used an old boat rail for the skewer. A bike foot crank

mated to a piece of pipe served as the main shaft. For sanitary purposes, I slipped a piece of stainless steel over the pipe. That whole mechanism was anchored to the firebox with metal brackets."

To turn the spit, Cronk used a variable speed drill mated to the transmission from a burned-out angle grinder. "Through trial and error and using different size sprockets, the drill turned the spit at just the right speed," Cronk says. "I used a few old springs to keep tension on the derailleurs so the chains wouldn't jump off."

As Cronk did the fab work on the spit, an Air Force sergeant prepared the hog. "Even though neither of us had ever done anything like this, the only problem was that torque from the turning hog sheared off two bolts holding the skewer, so one side of the carcass got a bit overheated as I repaired the spit. It took about 7 hours to roast the hog, and the cooked pork turned out really juicy with excellent flavor," Cronk says.

Judging from empty plates after dinner, Cronk says the spit project turned out well. "I do recall that a few fermented beverages might have been consumed during the day to help everyone give the project a thumbs up," he added with a laugh.

Contact: FARM SHOW Followup, Joseph Cronk (Jcronk2529@hotmail.com).



Restoration costs depend on the condition of the toy, what parts are needed and the desired condition when finished.

full sandblasting, filling in problem areas and repainting? Do they want a different color? All of my restorations involve professionally sprayed automotive paint."

Contact: FARM SHOW Followup, Tonka-Toy & RAW Restoration, 5438 Carrick Rd., Cocoa, Fla. 32927 (ph 321-404-9411; adam@tonka-toys.com; www.tonka-toys.com).

