

Popeye Power Defuses Explosives

Spinach enzymes can eat, digest, and transform explosives such as TNT, according to researchers at the DOE's Pacific Northwest National Laboratory, Richland, Wash. (509-372-6313). Nitroreductase enzymes can reduce the explosives to low-toxicity byproducts that could be used by industry.

The biotechnology could help the U.S. military eliminate its nearly 450 million kg of explosives stockpiled around the country. **Circle 200**

Making Life's Highways a Little Less Bumpy

The potholes that once plagued Leo Mara's ride home from work may have a new enemy. The technician from the DOE's Sandia National Laboratories, Livermore, Calif. (925-294-2932), holds a patent on a bus-sized vehicle that fixes potholes as it drives over them.

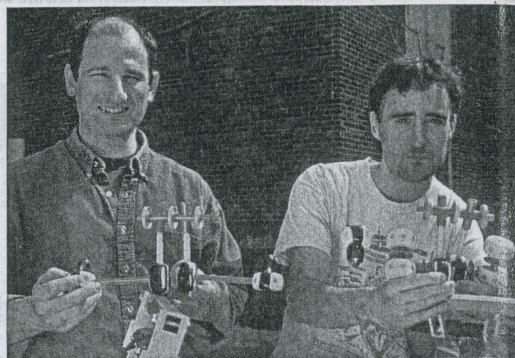
Using scanners mounted on its front bumper, the Rapid Road Repair Vehicle would "see" problems in the road surface. A phalanx of nozzles delivers filling material to any holes or cracks, and another row of scanners checks repair quality.

Mara envisions his vehicle patching roads at a speed of 10-15 mph. Sandia is looking for a commercial partner to develop a working prototype. **Circle 201**

Robot Walks Like a Man

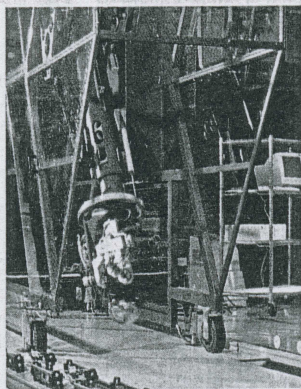
A headless, armless, trunkless two-legged robot made of Tinkertoys may help researchers understand how humans walk. Constructed by Michael Coleman and Andy Ruina at Cornell Univ., Ithaca, N.Y. (607-255-3613), the robot can amble down a gentle slope but cannot stand still in any position without toppling. Its composition mimics the human form, with its top-heavy, upright trunk and relatively spindly legs.

While research has focused on the nervous system's role in balance and movement, Coleman and Ruina believe the robot may explain how the interactions between gravity, inertia, and ground contact also affect human locomotion. Studies of the plastic toy could



Plastic Tinkertoy parts could offer insight for rehabilitating neuromuscular problems.

have implications for building better artificial legs. **Circle 202**



With the proper programming, the Throbot can mimic any world-class bowler.

Bowling Machine Hits the Lanes

A mechanical bowler developed by Bayer Corp., Pittsburgh (412-777-4197), and Brunswick Indoor Recreation Group, Muskegon, Mich., is the first machine that can scientifically test bowling balls. The Throbot consists of a pendulum arm approximately 2.5 m long mounted at the center of a steel supporting framework. By adjusting manual and computerized controls, users can make the Throbot duplicate the release characteristics of any bowler. As the bowling ball travels down the lane, a 24-sensor computer-aided tracking system records its speed and trajectory. The new machine, with its ball-throw repeatability and objective measurement, will allow Brunswick to develop performance data on its bowling balls and equipment. **Circle 203**

Notebook Computer Designed to Take a Beating

Whether it's being soaked with water or dumped with dirt, the Rocky II ruggedized notebook computer performs in the toughest environments. The computer is equipped with a wireless modem and a touch screen that is readable in bright sunlight. Designed by Amrel Systems Inc., Arcadia, Calif. (626-303-6688), the Rocky II was consumer-tested while a steady stream of water simulating a monsoon poured over its keyboard.

The rain-proof, dust-proof, shock resistant computer is powered by a 166MHz Pentium microprocessor and features pen-based operation. Accessories include an external battery and a

car adapter. Despite its aluminum alloy outer shell, the Rocky II weighs only 4.3 kg. It performs tasks ranging from field data collection in the petroleum and utilities industries to business multimedia.

Circle 204
—Amy Merrick



Extreme weather doesn't faze the Rocky II, which can be equipped with a CD-ROM drive.