

Trying to snuff hashish sales



John McConico/The Associated Press

A police officer patrols the hippie enclave of Christiania in Copenhagen, Denmark. At least 53 people were taken into custody Tuesday as hundreds of police entered the area to arrest anyone associated with the open selling of hashish. The penalty could be as high as a 10-year prison sentence, a police official said.

You'll step lively in these boots

By Michelle Locke
THE ASSOCIATED PRESS

BERKELEY, Calif. — Move over Bionic Man and make room for BLEEX — the Berkeley Lower Extremities Exoskeleton, with strap-on robotic legs designed to turn an ordinary human into a super strider.

Ultimately intended to help people like soldiers or firefighters carry heavy loads for long distances, these boots are made for marching.

"The design of this exoskeleton really benefits from human intellect and the strength of the machine," says Homayoon Kazerooni, who directs the Robotics and Human Engineering Laboratory at the University of California-Berkeley.

The exoskeleton consists of a pair of mechanical metal leg braces that include a power unit and a backpack-like frame. The

that activate or supplement weakened limbs or functions.

Excitement about robotics was fanned by last week's DARPA-sponsored Mojave Desert race for fully autonomous vehicles, and the field is making strides worldwide.

In Japan, a leader in robot research, Sony Corp. has developed a child-shaped walking robot, known as Qrio, and Honda Motor Co. has also developed a walking, talking humanoid robot. This spring, some Japanese companies plan to start marketing a "robot suit," a motorized, battery-operated device intended to help old and infirm people move around.

Carnegie Mellon University professor Matthew Mason is working on intelligent robots including the Mobipulator, which uses its wheels to move things as well as for locomotion.

Kazerooni isn't offering test drives of the exoskeleton. But if he were, Mason would be interested.

"It looks really exciting," says Mason. "I'd like to try it on myself."

A purge of is pure garb

By Michael Gormley
THE ASSOCIATED PRESS

ALBANY, N.Y. — Ken Ashley looks out from country home in the wide open spaces of north New York and wonders whether a small ban environmentalists is just crazy.

"It's all foolishness," he said. He scoffs at New York's latest and most powerful push to join a growing number of states that ban the burning of household and farm trash in backyard "burn barrels."

Long before dumps became landfills, the rusted waist-high drums have been used to burn household and barnyard trash in Technicolor flames that supporters say spew toxic plumes. In Ashley's Lawrence County, near the St. Lawrence River, nearly half of 9,926 rural households burn garbage, according to a 1993 county survey.

This year, burn barrels were banned in California and New Mexico, increasing to eight the number of states that prohibit the practice. While New York remains within the majority, its position is rare in the northeast where Connecticut, Maine, New Hampshire, Vermont, Massachusetts and New Jersey have banned burn barrels.

Ashley questions the need for a such a measure on country folk.

"If they think Ogdensburg has air pollution, they should try living in L.A., like I did for 20 years," says the 59-year-old accountant. "I think it's just a small group of people who have their own agenda."

In an Assembly hearing last week, state health and environmental officials, physicians and environmentalists said burning garbage in the relatively low temperatures of burn barrels spews toxins into the air. Half of all dioxins in the environment are now created in burn barrels, where 10 pounds of garbage can produce as much pollution as 400,000 pounds burned in a municipal incinerator, officials testified.

Physicians told the Assembly hearing that byproducts of the burns include dioxin, a possible cancer-causing agent. Supporters also link

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pair of mechanical metal leg braces that include a power unit and a backpack-like frame. The braces are attached to a modified pair of Army boots and are also connected, although less rigidly, to the user's legs.

More than 40 sensors and hydraulic mechanisms function like a human nervous system, constantly calculating how to distribute the weight being borne and create a minimal load for the wearer.

"There is no joystick, no keyboard, no push button to drive the device," says Kazerooni, a professor of mechanical engineering. "The pilot becomes an integral part of the exoskeleton."

In lab experiments, says Kazerooni, testers have walked around in the 100-pound exoskeleton plus a 70-pound backpack and felt as if they were carrying just five pounds.

Eventually, the device could help rescuers haul heavy equipment up high-rise buildings or turn tired troops into striding super soldiers.

What it won't do is turn you into a Borg, the gadget-happy gladiators of "Star Trek" fame.

"The exoskeleton is not going to magically transform people into killing machines," says Kazerooni, known to his students as Professor Kaz. "They're really good, it turns out, at enabling firefighters, soldiers, post-disaster rescue crews to carry heavy loads over great distances for hours."

So, no cyborg cops. But at least you get Terminator togs.

Video of the BLEEX in action, which can be viewed at www.me.berkeley.edu/hel/bleex.htm, shows a steel-spiked symbiosis of man and machine, marching about to the techno-industrial drone of grinding motors. The next step for the BLEEX team is making the power source quieter and stronger and miniaturizing components.

BLEEX is funded by the Defense Advanced Research Projects Agency, the Pentagon research and development arm, and was among the projects being showcased at a DARPA tech symposium this week in Anaheim.

The project is one of scores in the field of robotics, which ranges from industrial machines that assemble cars to orthotics, surgical devices

Mobipulator, which uses its wheels to move things as well as for locomotion.

"There's just too much to do," says Mason. "Every time that there is an advance in computing, there are just so many more things that it becomes possible to do. Robotics is really about interfacing computers to the physical world so that their sensors give them a better concept of what's going on around them—they can make interesting things happen instead of just sitting there in their little beige boxes."

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