

# ENERGY

## This sausage saves

These sausage-shaped cylinders can reportedly save as much as \$216 annually in an average household's air conditioning electricity bills by storing energy during night off-peak rates and providing cool air during the day. The cylinders are stuffed with hydrated salts (melting point 55°F)—a mixture of sodium sulfate, ammonia chloride, sodium chloride and water—with an added thickening agent to prevent settling out, explains Allen M. Barnett, director of the Institute of Energy Conversion at the University of Delaware, where the energy storage system is being developed. The most important feature is the cylinder casing, a five-layered covering made of polyester, aluminum and a special material developed by Herbert Nagel, program manager at Dupont's Plastic Products and Resins Department in Wilmington, Del. The casing will allow only 3 percent evaporation in 10 years—longer than the life of an average heat pump, Barnett says, and is cheaper than previous designs. The system should cost from \$600 to \$800 and should pay for itself in three to five years, Barnett says. The Institute has planned ten pilot plants to test the system.



Univ. of Del.

## Coal-burning cars?

Rather than convert existing oil-burning power plants to coal, or gasoline and diesel engines to alcohol, O. A. Battista of the Research Services Corp. in Fort Worth, Tex., suggests burning Carb-Oils. Carb-Oils come in three grades and contain from 30 percent to 45 percent colloidal coal, ground particles in the micron or submicron range—"virus-sized," according to Battista. Other coal-fuel mixtures contain coal particles in the 50- to 300-micron range, which often burn less efficiently than the fuel alone, Battista says. But evidence is showing that Battista's Carb-Oil-2, which contains 30 percent carbon-black particles 200 to 500 angstroms thick, releases 17,690 Btu's per lb.—290 Btu's better than the same amount of Number 1 diesel fuel—and can be used instead of diesel fuel, Battista says. Carb-Oil-1, 45 percent anthracite coal particles, can be used in oil-fired furnaces. Carb-Oil-3 is made of 30 percent carbonized (burned in an oxygen-free atmosphere) starch and cellulose microcrystals, which could be obtained from agricultural wastes. Battista says Carb-Oils can become competitive with gasoline and diesel fuel when the prices for those fuels reach \$1.40 a gallon.

## Alternative fuels information

Do you wonder what kinds of problems you will have lubricating your automobile's gasoline engine if you switch to alcohol? If you use an alcohol-fuel blend, what your efficiency will be and how you can improve it? The Department of Energy's Office of Transportation Programs recently set up an Alternative Fuels Data Bank to answer these and other questions. Anyone with access to a computer terminal with an acoustical coupler for a commercial telephone line can tap into a library-full of technical information on alternative transportation fuels. "We are trying to reach people who are doing research—designers, fuel manufacturers and transportation companies," says Ken Stamper at DOE's Energy Technology Center in Bartlesville, Okla. There have been more than 350 calls to the data bank in the past three months, Stamper says. For a systems access code and for further information, call Stamper at (918) 336-2400, extension 258.

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# BEHAVIOR

## La Fleur by any other name

They have visions of becoming female Bobby Orrs or Guy LaFleurs: They are the young girls who play full-contact ice hockey in Canada. Behavioral scientists are becoming increasingly intrigued with the growing role of women in sports. Young women have been playing ice hockey in Ontario since the early 1900s, and researcher Evelyn I. Bird of the University of Guelph has decided the "study of female participants in ice hockey seems overdue."

Using the Childrens Personality Inventory (Form A), Bird studied 17 girls, ages 8 to 11, who played for teams in several small Ontario communities. "Accurate information rather than a stereotypic concept is needed by the public, parents of hockey players and coaches as to the characteristics of female ice hockey players who participate in this body-contact, 'male-oriented' team sport," she writes in the June PERCEPTUAL AND MOTOR SKILLS.

Bird found that while a comparative control group of male hockey players did not differ appreciably from other non hockey playing males, the female players differed from both other females and the male players. The female players were found to be significantly more "tough-minded and enthusiastic" than their male counterparts, Bird reports.

She described the girls as "self-reliant, tough-minded, impulsive and lively rather than conformists to the adult world"—characteristics which, while somewhat different from those of other youngsters of their own age, are nevertheless "healthy and normal for an active child." The girls "would enjoy themselves while suffering some game losses," while "by contrast, the boys are serious, self-deprecating and sensitive, and the loss of games might be taken too seriously." These findings, she suggests, should be considered when contemplating the "style of coaching" appropriate for girls' and boys' teams.

## Left-handers: Enjoying their art . . .

It is fairly well accepted that the brain's left hemisphere is predominantly associated with verbal, mathematic and other related functions while the right hemisphere deals with visual, spatial, artistic and musical abilities. Less substantiated is the suggestion that a greater proportion of artists would tend to be left-handed, while more scientists would be right-handed.

Now, University of Cincinnati researcher John M. Peterson reports that this indeed appears to be the case. In a study of 1,045 undergraduates (482 females), Peterson reports in the June PERCEPTUAL AND MOTOR SKILLS that left-handedness was significantly more prevalent among majors in music and visual arts than among science majors.

While 9.4 percent of all the students were left-handed, the percentage of music and visual arts majors was 14.9 and 12.2 percent, respectively, compared with only 4.4 percent of the science majors. Also, and "unexpectedly," he reports, there was a higher proportion of left-handed females in the study—9.1 percent—than in several previous studies elsewhere.

## . . . and smoking more

And when they're not composing music or painting, it seems there's a good chance left-handers will be smoking. University of Michigan researchers Ernest Harburg, Anna Feldstein and James Papsdorf report that left-handers appear to smoke more than do right-handed persons. The scientists, who observed the difference while analyzing results of a Detroit area study for other purposes, suggest that the stress of being a minority-group member may contribute to more cigarette smoking among left-handers.

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