

Braille terminal to help

Computers for the blind

Blind people could gain access to computer technology and careers through an idea developed by a group of Texas A&M University graduate students. The students plan to market a system centered around a braille terminal that will enable the blind to enter computer job market. The concept was developed for a systems engineering course. But Glover and David Tucker of the College Station and Susan Jenkins of the same university decided to expand the engineering entrepreneurship aspect of the assignment and take it to the business world. Glover, Jenkins and Tucker developed the braille terminal in a presentation involving two graduate student teams. They

were in a class taught by Dr. Charles A. Rodenberger. "In all three cases, the student groups interacted with the computer," Rodenberger said. "I think it's an indication of the future. My crystal ball says this is the way we are going. I don't see us ever backing off from use of the computer." The project was praised by evaluators as engineering that benefits society. The students plan to file for a patent. Called a braille terminal, it would link with virtually all existing computer systems. It is based on an idea by Glover, who has a master's degree in digital electronics. He is in Texas A&M's doctor of engineering program. Jenkins and Tucker are master's

degree candidates in business marketing and handle that aspect of the business opportunity. "The basic set-up consists of a computer interface which interprets output into braille characters, along with a typewriter keyboard for input into the computer," Glover said. The keyboard would be no different from typewriters with braille keyboards that are on the market. A device atop the terminal will enable the blind person to communicate directly with the computer. In the index finger slot of the two-slot terminal, prongs that project slightly through two columns of three holes, or similarly arranged heating elements, will reproduce the braille alphabet. "A blind user would type a line of copy into a microprocessor in the terminal, hit a key and play it back through the braille terminal," Glover described. "If correct, another key would insert the line into memory." The system has numerous applications that can open a variety of possibilities to the blind, the Texas A&M students feel.

With electronics components becoming less costly, they think most non-sighted persons could have their own micro-computer system with floppy disk memory storage.

Desert plants — New fuel, say A&M scientists

As the search for alternative energy sources takes on an increasingly fevered pitch, Texas A&M University researchers are turning to the land for answers. Agricultural scientists are able to turn primarily desert plants — with names like guayule, jojoba and gopheria — into everyday commodities such as rubber, lubricating oil and ethanol, an alcohol fuel.

Calvin, a Nobel Prize-winning scientist at the University of California, is promoting it.

Of all the petroculture crops, guayule (wy-OO-lee) probably holds the greatest potential, contends Bragg. Guayule could be used as a substitute for the synthetic rubber made from petroleum. The Native Latex Commercialization Act of 1978 put \$30 million in federal funds into research programs to develop guayule. Bragg and other researchers at Texas A&M have already started experimental work in several parts of Texas.

Rubber from guayule is not a new idea. In 1910, half the nation's rubber production came from the plant. So researchers know it can be used successfully.

It's now a matter of creating markets, finding the best variety strains of the plants and making guayule production economically feasible, Bragg says.

"We're looking at some very complex plants," he says of petroculture, and that means a lot of research questions remain before these resources can be used to replace non-renewable ones.

But the effort is not only worth it, Bragg believes, but vital. "We've become an island economy," he explains. "We used to be self-sufficient, but now we import 35 percent of our iron ore, all the bauxite for producing aluminum and 50 to 55 percent of our oil. We need to develop petroculture for our national defense and for our economic health."

Bragg predicts that by the turn of the century the United States could be well on its way to an industrial society based on renewable plants.

It's much more exciting than something mundane like atomic energy, and it has much more potential, Bragg says. "So far, we've ignored most of these plants because the bill has had our minds on cotton, corn or wheat. If we couldn't eat corn, we'd ignore it."

The petroculture products, developed in times of national emergency and strife, are used today, but that is changing. For example, some racing cars run on ethanol, which is distilled alcohol. Ethanol is lubricated with jojoba (HO-HO) oil. Jojoba is another of the desert shrubs that grows in the southwest and is under a revival, partly due to economics and partly to the fact that it is an excellent replacement for sperm whale oil.

Ethanol can be produced from corn, for instance, after the food value has been taken out, adds Bragg.

Certain species of plants belonging to the euphorbia (you-FOUR) family produce a latex that is similar on a molecular level to crude oil.

"Nobody has put it through the lab," Bragg says, "but Dr. Melvin

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