

# Recycling Technology

## A Byte for Education

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**S**queezing a 30-something-plus body into an elementary school-issue desk is awkward at best. Your legs either stick out the other side, fold up so your knees become a convenient chin rest, or wrap around the desk's short, metal legs like ribbon 'round a May pole. Dick Van Dyke could do an Emmy-winning comedy sketch with a set like this.

But it was just such a what's-wrong-with-this-picture classroom scene that helped Randy Gunter realize why his evening adult computer courses were scheduled at an elementary school.

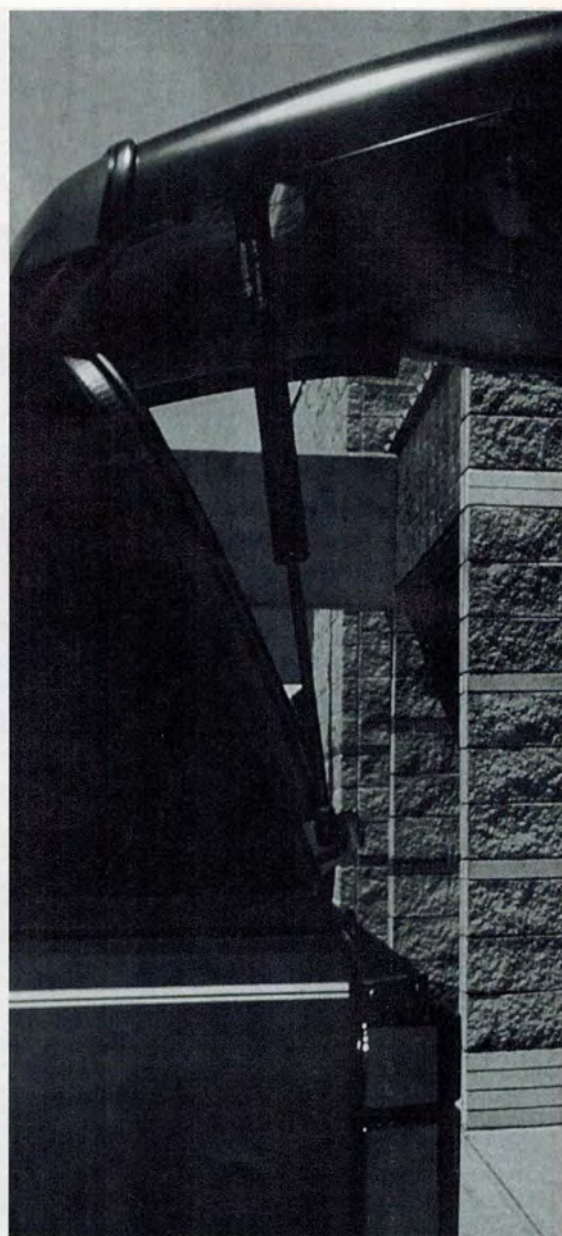
"Most high schools in Mississippi don't have computers," said Gunter, a retired major and former chief of flight operations at Columbus AFB. "And the IBM computers in the elementary schools are strictly for teaching remedial math and reading. So most public high-school students aren't computer literate even though the state has mandated that in two years, seniors must have basic computer skills before they can graduate."

Gunter, who is working on his doctorate in computers, helped change all that. Through his perseverance, about 10 high schools currently are equipped with surplus Air Force computers. The struggle to get them there, he

said, was worth the nearly two-year effort.

In August 1992, he learned the Air Force was canceling its maintenance contract for NCR computers. Bought in the mid-1980s, the computers were equipped with an operating system considered state-of-the-art at the time. As new technology emerged, the NCR computers became obsolete because no other software could be used on them.

"Columbus was one of the few bases completely networked by NCR computers," Gunter said. "We relied on them mainly for mail. I was concerned about what would happen if we lost a big part of the system after the contract ended and before the new com-







Shaun Stallings, a sophomore at West Lowndes High School, near Columbus, Miss., helps unload computer equipment from Gunter's truck.

puters were installed. Instead of the one-day service we received under the contract, it would take two to three weeks to get a [computer] card repaired. And if people couldn't rely on the system, they'd stop using it."

He contacted the small computer office at the base's parent command headquarters — then-Air Training Command — to scrounge spare parts to use during the two to three years it would take to install the new system. Two months later, he got a call from the computer folks asking how many work stations he needed.

Ever the sharp negotiator, he asked how many they had. The reply: They were ready

to ship 500 and could put their hands on 500 more.

"We needed only 40 or 50 to get us through the transition," Gunter said. "So when I asked what would happen to the rest, I was told they'd be junked and sold for scrap at pennies on the pound. What a waste! That's when I got the idea of declaring the computers excess equipment and giving them to the high schools. I knew the systems would be more than adequate to meet the state's graduation requirements for computer literacy."

About 700 former ATC computers have been transferred to schools and another 800 or 900 from bases throughout the Air Force





Florine Stewart, a business instructor at West Point High School near Columbus, Miss., says the school's newly installed computers have changed how she teaches and improved her students' basic keyboarding and formatting skills.

— comprising about 8,000 components — still need to be inventoried. "On paper, the components are worth about \$25 million, but in reality, they're worthless because they're outdated within the business industry," Gunter said.

After items are checked, he logs into a computer database at Gunter Annex in Alabama. When he locates the appropriate serial number, he manually changes its code from in-use to excess. "It takes about five minutes for each part, which means it'll take another 1,000 hours or so just to change the codes," Gunter said.

Once that's done, the paperwork is forwarded to Air Education and Training Command headquarters for review. Then it goes to the Pentagon's excess equipment office, which sends it to a Defense Department computer database in Arlington, Va.

It, in turn, offers the outdated equipment to state agencies. But because no one in state government wants it, officials can transfer it to schools, which is allowed under executive order.

After nearly a year of struggling through the paperwork jungle, Gunter and three volunteers installed two computer labs in Caledonia High School last August. He hopes to put computer labs in 20 to 25 schools. As

a result, about 7,500 Mississippi students will learn computer skills. And all at no cost to the schools.

In fact, they'll be saving money. More than \$6,000 a year.

That's how much schools spent last summer repairing their old manual and electric typewriters. "A used 20-megabyte hard drive from a reseller costs about \$150," Gunter said. "Repairing one typewriter, however, costs about \$240. Compare the cost of replacing all eight 20-megabyte hard drives in each school to the cost of

repairing 32 typewriters, and it's obvious where the savings are. And if you don't need to replace the hard drives, the savings are even greater."

The reason most Mississippi high schools don't have computers is based on one thing: lack of money. "We don't have the tax base to purchase computers for our schools," said Peggy Rogers, Lowndes County assistant superintendent of schools. "We figured each school needed two computer labs costing about \$50,000 to \$65,000 each. A bill in the state legislature last year requested funds, but it didn't pass because lawmakers couldn't raise the money. Mississippi has one of the highest poverty rates in the nation so it's difficult to provide what students need."

Each school receives a 20-percent spares base so labs will be up and running for five to 10 years. If a monitor breaks, all teachers need to do is plug in a new one.

"It's a very simple system," Gunter said. "Schools getting computers from us are totally self-sufficient. We train teachers about the software programs as well as how to maintain the equipment. In schools where students have shown an interest and aptitude for maintaining the equipment, we taught them how to troubleshoot and fix problems when they occur."



With 32 work stations in each lab and a class size averaging 24 students, even if an entire eight-string network crashes, students move to an unused work station without losing class time or having to share a computer with another student.

Changing from the typewriter age to the computer age means more than a step up in technology. "I'll bet in the past four years there hasn't been a person hired for their typing skills in the entire state," Gunter said. "There are no more typing jobs. Employers need people with computer skills who know word-processing and spreadsheets. At least they'll leave school with employable skills, which eventually will have a positive impact on the state's economy."

Marilyn Erwin, a typing teacher for more than 20 years, sees it from a different perspective. "Last year my average students typed 30 to 35 words a minute, and my top students reached 50 words a minute," said the Caledonia High School keyboarding instructor. "Using computers, students average 50 words a minute, and top students are at 70 to 80 words a minute. It was quite a learning curve to make the switch, but the kids are learning faster and can produce better work in a shorter period of time."

One complaint keyboarding and computer applications instructors receive concerns time. "We practically have to pry kids out of their seats when class is over," said Rosie Gardner, who has taught accounting and keyboarding classes at West Lowndes High School for 23 years. "Before [we had the computer labs], they couldn't get out of here fast enough. Now they complain that class is too short!"

Rogers, a career educator, said of the project: "The hard work and perseverance of the people at Columbus [AFB] have been exceptional. Once again, this demonstrates what a responsive partnership the city of Columbus and Lowndes County have with the base and the Air Force."

It's a sentiment shared at the highest levels of Air Force leadership. Secretary of the Air Force Dr. Sheila Widnall visited the computer labs at New Hope High School in February, which was installed by Gunter and a few volunteers. "This is a sign of quality initiatives working among individuals," she said. "It's a sign of today's Air Force."

Gunter's reward for all his volunteer work is the impact it's having on students. "It's great watching them learn about computers," he said. "They're really enthusiastic. Some have computers at home, but use them only for playing games. Still, they understand the possibilities and opportunities that come with knowing about computers. It's their future."

There is one drawback though. Because the schools' NCR computers constantly make temporary files, no data can be lost, even if there's a power failure. As a result, students can't use the dog-ate-my-homework excuse anymore. Teachers are smiling all the way to their grading books. ♦



Gunter shows Chuck Hagle, a student at Caledonia High School, how to repair minor printer failures so the school can become self-sufficient in operating its computer lab.



Linda Dahlem, a computer applications teacher at Caledonia High School, Miss., works with a student on the school's newly acquired equipment.