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The Magazine for Tandy® Computer Customers

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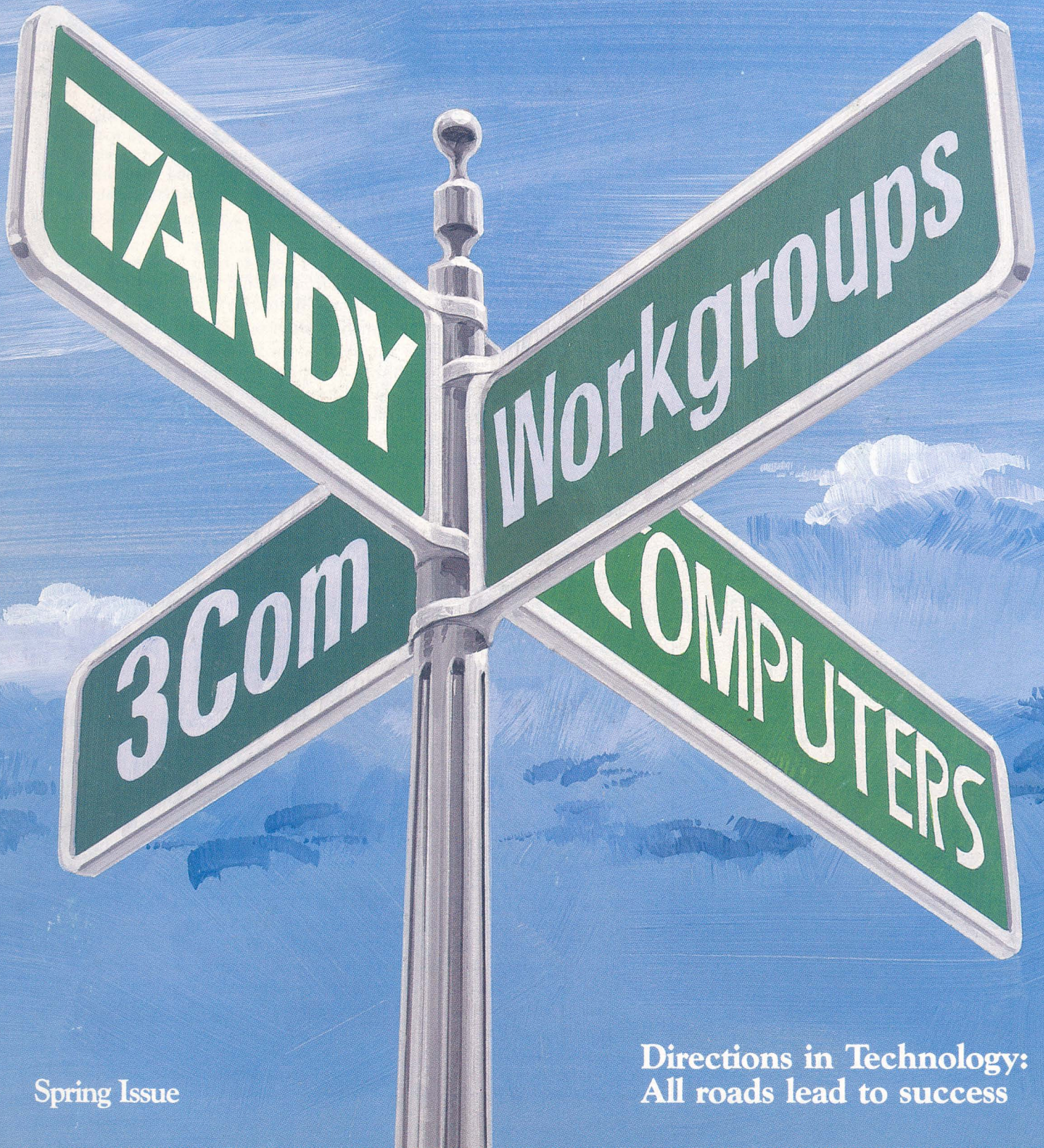
Spring Issue

**Directions in Technology:
All roads lead to success**

Mastering the responsibilities

We have a responsibility to our customers. That may seem like stating the obvious, but the fact of the matter is that all too many companies in the marketplace today view their customers as a means to an end and all but abandon them after the sale.

But that's not our style. We believe in selling value, not just product.

When we say value, that is exactly what we mean; it's not just hype. And we don't just mean cost either.

Our value equates to quality: Quality in our products, quality in our people, and quality in our performance. When you buy a Tandy computer product—any Tandy computer product—you know that product reflects the latest innovations in technology.

You know that our sales force is trained to insure that the product is right for your business needs. You know that the product is backed by the best service and support organization in the industry, bar none.

You don't just buy a computer from Radio Shack, you buy a company. That's a big responsibility that we absolutely accept.

As a sixty-year old company, we have responsibilities to our customers to provide them with the value they demand. Our goal is to master those responsibilities.

John V. Roach

—John V. Roach
Chairman, CEO and President of Tandy Corporation

LETTERS
TO THE EDITOR

Editor:

I have three Tandy computers, a Model 100 with 32K RAM, and two 2000s, one with 512K RAM and monochrome monitor, which I use chiefly for word processing with the Multimate version 3.30, and one with 256K and color monitor which I use for running BASIC programs, pfs:file and for reviewing and printing Multimate documents.

I write a weekly essay for my church, and am in the midst of writing a 1500-page commentary on the book of Revelation for my Bible class. I am disabled with epilepsy, so I spend a great deal of time here in front of my computers. But, as any writer will testify, inspiration can strike at any moment, so I also have a Radio Shack Model 100 which I use chiefly as a word processor when I am away from home. A cassette recorder provides additional, economical storage.

Once I am back at the 2000, it only takes a couple of minutes to download the new file from the 100 using Videotex Plus software and the RS-232 connector. Multimate's improved file conversion utility soon converts the ASCII file to a Multimate document. Then I load Multimate and do any minor cleaning up of the file which might be necessary. The whole process takes maybe five minutes. I have written a very simple batch file to streamline the whole affair.

The spare 2000 comes in handy when I need to refer back in my notes to some older material. If I need to copy from the old to the new, it only takes a few seconds to swap diskettes and use Multimate's copy utility. I also use that computer for printing on a DWII printer, so I can edit or compose one file while printing another.

I have written a 1700-line BASIC program to calculate and print a report of the quarterly receipts and expenditures for our church, as well as a couple of dozen other programs written for my own edification and amusement.

I thoroughly enjoy all three of my Tandy computers, and I would not hesitate to recommend them to anyone.
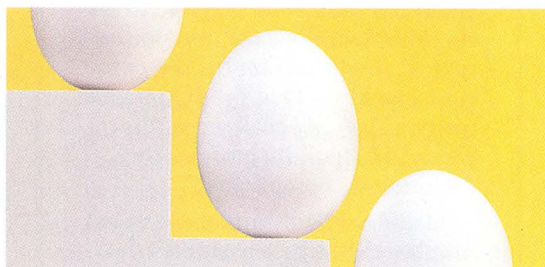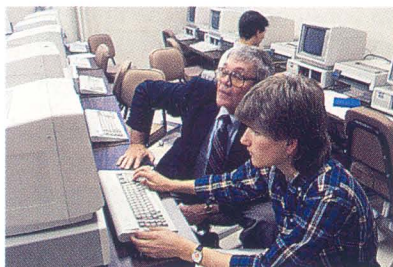
Wes Duckett
Odessa, TX

Address your correspondence to: ANSWERS Magazine, 300 One Tandy Center, Fort Worth, TX 76102. Letters sent become property of the magazine and cannot be returned. We cannot respond to every letter.

Are you using your Tandy/Radio Shack computer in an interesting manner? We'd like to hear about it. Just send us a brief description of your application, including the software and model number of the computer you're using. If we select your application for possible inclusion in *Answers* Magazine, we'll contact you—so be sure to include your address and phone number. Letters sent become the property of the magazine. Sorry, we can't return any letters received (so don't include diskettes, photos, etc.). Address letters to: *Answers* Magazine, 300 One Tandy Center, Fort Worth, Texas 76102.

PRESS REVIEW

Much to our surprise, Tandy began releasing sales numbers to us and other market researchers that started to get our attention. Today, we received the fourth quarter and year-end numbers, and I must admit publicly that I owe Tandy an apology. In the calendar year 1986, Tandy sold at retail in the United States 272,000 PC-DOS machines, 276,000 proprietary machines (TRS-DOS, color, etc.), and 120,000 pocket portables. This total of 668,000 machines sold in 1986 ranks them as the No. 1 supplier in a dead heat with Apple Computer Inc. on a unit basis. (Of course, IBM Corp. is still No. 1 in value of shipments.) Furthermore, Tandy, having sold 272,000 PC-DOS clones, ranks as the No. 1 clone manufacturer through retail channels in the United States ahead of all others, including Compaq Computer Corp., Leading Edge Products Inc., Epson America Inc., etc. These are very impressive results for Tandy and represent an extraordinary rebirth of this early player in the PC business.

Richard J. Matlack
President, InfoCorp.
Computer Reseller News
January 19, 1987

CUSTOMER PROFILES

FOCUS ON EDUCATION

FOCUS ON TANDY

SUPER SUPPORT AT SUPER BOWL XXI

Sportswriters and their Tandy portables receive special attention during coverage of *the* football event of the year.

When Radio Shack first introduced the Model 100 portable computer on February 25, 1983, the trade press was quick to predict that journalists would be the largest single market for the compact machine. That prediction was overwhelmingly realized as the Model 100 rapidly became the "journalist's companion."

Major media events serve to exemplify the indispensability of portable computers to journalists. The Super Bowl, where sportswriters gather in droves to cover every lead, tip, rumor, angle and imaginable aspect surrounding the game, is a prime example.

Most of the reporters—an estimated 70 percent—were using a Radio Shack Model 100, Tandy 102 or 200 portable to write their stories and upload them to wire

service bureaus, newspapers and other types of publication offices around the world.

In consideration of the more than 2200 media members covering the Super Bowl, Jim Steeg, Director of Special Events for National Football League Properties, approached Radio Shack officials
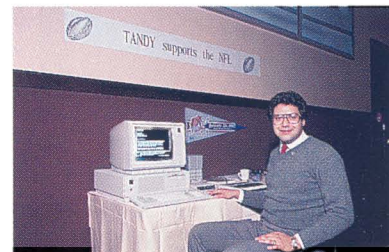
Radio Shack's Mehmet Gurol on duty at Super Bowl press headquarters.

to request that a technical service representative be made available at Press Headquarters during the week preceding the Super Bowl. Radio Shack rose to the occasion.

"We wouldn't normally do something like this," said Bob
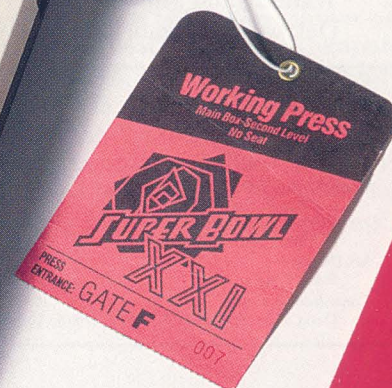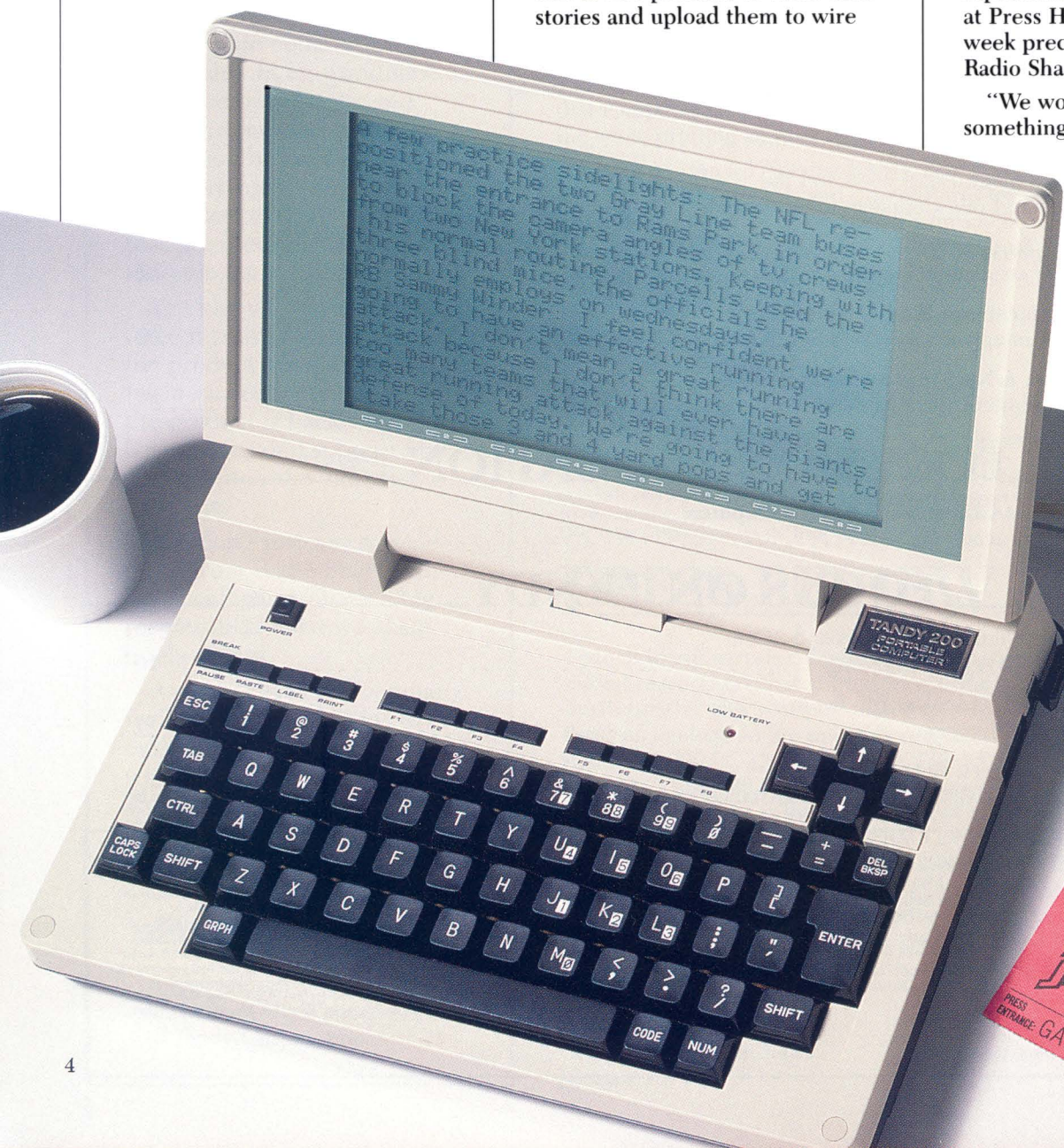
Myers, Radio Shack's Vice President, Administration. "But with that many writers in one place, and potentially using our portables, it made sense."

Pressroom position

Appointed to "set up shop" in the pressroom, Mehmet Gurol, systems engineer in Radio Shack's Orange, California, Training and Support Center, let the media know help was available by displaying a "Tandy Supports the NFL" banner he created with a Tandy 1000, PrintMaster software and a DMP-2100P printer. His first request for assistance came from a reporter who kept getting an extraneous character on his Tandy 200. Gurol solved the problem in two minutes.

Newsday *staffers (left to right) Joe Gergen, Steve Jacobson and John Jeansonne compare notes.*

Gurol again sprang into action when Larry Tucker of the *Calgary Sun* reported that his Model 100 would not turn on consistently. Diagnosing the problem as a dirty contact on the power supply jack, Gurol sent the unit to a nearby Radio Shack service facility. Tucker was up and running early the next morning when his machine was returned.

Manning his post, ready and eager to help, Gurol began to realize that he might well be the "loneliest man at the Super Bowl." Frank Cooney of the *San Francisco Examiner* stopped by with a question about his printer, but, as the days of Super Bowl week came and went, Gurol noticed that he was not in demand. The sportswriters simply were not encountering major difficulties with their Radio Shack and Tandy units.

Taking pride in his circumstance, Gurol continued to help out where needed and happily visited with the journalists, showing them about double banking on the Tandy 200 and showing off the Tandy 3000 HD he had brought along. Many of the writers stopped by to express their opinions of their portables, sharing "war stories" of other media events.

One such tale related by sports columnist Steve Jacobson of *Newsday,* a major New York-area daily, told of two reporters arguing over a seat in the pressbox at the Olympics. "One of them got so mad, he threw the other guy's Model 100 out of the pressbox window. It landed on the concrete floor of the grandstand some 20 feet below. The 100's screen was cracked so badly it looked like a spiderweb, but the little jewel still functioned."

The final outcome

All in all, during his week-long stint in the pressroom, Gurol's help was summoned by only six users of Radio Shack and Tandy portables. In addition to those instances previously mentioned, one incident involved a stuck zipper on a Model 100 carrying case, and another, a snapped modem cable. He was approached on occasion by writers using other than Radio Shack and Tandy equipment, and helped out where possible.

Public relations directors Kevin Byrne, Cleveland Browns (left), and Dan Edwards, Pittsburgh Steelers, check out the Tandy 3000 HD.

While the Super Bowl support effort, in the final outcome, seemed to be much ado about nothing, the lack of need for support speaks for itself. That may be what prompted Al Pahl, managing editor of Ray Nitschke's *Packer Report* to comment, "I never work without my Model 100, and I never want to."

The Race is on for the America's Cup
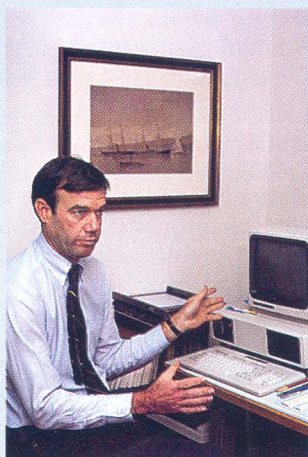
Britton Chance, Jr. at his Tandy 2000 CAD system.

This article, which first appeared in the Winter 1986 issue of ANSWERS, featured two naval architects who were designing yachts for the America's Cup Competition. Since one of those architects participated in the design of the winning yacht, we thought it appropriate to reprint the article in dedication to the team with the winning technology. ANSWERS called Mr. Britton Chance, president of Chance and Company, Inc. of Essex, Connecticut, to convey our congratulations. A very proud but very tired Mr. Chance (he "commuted" to Australia six times during the competition) shared his feelings on being part of the winning team.

"I feel strangely patriotic. That may sound a little too grand, but that's the way I feel. I think the country has gone through a difficult time in the last twenty years and I'm pleased to be part of an effort which can help the national pride. I think the Stars and Stripes was a demonstration of American will and technology in competition with international will and technology.

"It would be wrong for anyone to think that the victory was anything less than a very strong effort from all points of view: design, construction, sails, crew and helmsmanship. It is generally conceded that we did have a superior boat. Stars and Stripes was the result of a lot of good work on the part of a lot of good people. I think the effort will be viewed as remarkable in future years for its contributions to computational hydrodynamics and, in particular, for the work on the minimization of wavemaking resistance."

—Britton Chance, Jr.

American yacht designers are turning to computer aided design to bring the Cup back from "down under".

During a season when most people are more interested in skiing and hearthside fires than sailboat competitions, the race is on to build a boat that will recapture the America's Cup for the United States. At least two of the U.S. syndicates that plan to compete in Perth, Australia in 1987 are harnessing the latest technology in the battle for the winning yacht.

"The primary reason the Australians won in 1983 was that they had a superior boat," said naval architect

Gary Mull. After the Australians lost in 1980 they launched a three year research and development program. Their boat had a revolutionary keel design—winglets that flare out from the keel, he said.

"The winglets were a concept invented by NASA in Virginia. The Australians had the courage to grit their teeth and use the technology that was available," he said.

Mull, 48, has designed 184 boats and is chairman of the International Technical Committee of the Offshore Racing Council. He is designing a yacht that will enter the America's Cup race for the St. Francis Challenge of San Francisco. Their boat will be raced by Tom Blackaller, a helmsman of *Defender* in the 1983 Cup trials.

World-class sophistication

The revolutionary boat, *Australia II*, that broke the 132-year hold on the cup by the New York Yacht Club, was designed with the aid of computerized performance simulations. The simulations were developed by Dutch hydrodynamicists and aerodynamicists, said naval architect Britton Chance, Jr. of Essex, Connecticut. Chance's naval architecture firm is one of three firms in the design team employed by the Sail America Foundation of San Diego.

"Their sophistication is at a world level. The more we do, the more respect we have for the work the Dutch have done. We're trying to do an even better job. All indications are that we are getting the job done," he said.

Chance, whose office overlooks Essex Harbor—where ships were built to win the Revolutionary War—modified the *Intrepid*, which defended the America's Cup in 1970.

One of four boats will be selected by the foundation as the boat that Dennis Conner will sail in the Perth, Australia, competition. Conner won the America's Cup competition in 1980 at the helm of *Freedom*. He then lost the trophy to *Australia II* in the 1983 competition.

The race has been a showcase for American technology

Innovative design has played a big role in the America's Cup race since its beginnings with an 1851 race around Britain's Isle of Wight. John Cox Stevens, founder and commodore of the New York Yacht Club, entered a radically designed schooner, *America*,

in a race against 17 members of the British Royal Yacht Squadron. When *America* won, the Royal Yacht Squadron gave Stevens a trophy. He later named the trophy the "America's Cup" and deeded it to the New York Yacht Club as a "perpetual Challenge Cup for friendly competition between foreign countries."

"From the late 1800's up through the First World War, the America's Cup was always a showcase for the best in American technology. It was a very important part of our national pride," Chance said.

Now, with American complacency shattered by the Australian victory, both Mull's and Chance's groups are using the best scientific resources the country can offer. Chance is working with scientists from NASA, Boeing and Grumman corporations as well as private aerodynamic and hydrodynamic

Hand-drawn designs can be digitized and stored on the computer for future use.

consultants who are usually employed in classified government work. Mull's consultants include scientists from Lawrence Livermore National Laboratory, NASA-Ames, the University of California at Berkley and Stanford University.

Speed is of the essence—in yachts and computers

Both naval architects are using Tandy 2000 computers as part of the technological solution to designing a winning yacht.

Chance, who said he selected the Tandy 2000 for its high-quality graphics, speed and reasonable price, re-

cently demonstrated the computer's use by calling a program up to the screen. Within moments, a blueprint-like sketch of a boat hull was in view. Split through the center, one half of the drawing showed the hull from the bow. The other half was from the stern.

By pressing a few keys, a list of specifications appeared on the screen. Each number described a point on the surface of the hull. Quickly changing the numbers, Chance recalled the blueprint, now altered to the new specifications.

Chance said he normally draws the original concepts for a boat design by hand in a rough version. A digitizer transforms the drawing into digital format and the information is entered into the Tandy 2000 computer equipped with yacht design software. He is then able to perform hydrostatic calculations, prepare input for running a velocity prediction program, and run the velocity prediction program.

Some of the software is custom-written for this particular project, while other programs for yacht design are commercially available. Chance said he communicates with the other naval architects and consultants on his team with a modem and the telecommunications mode of Tandy's DeskMate program.

The winning solution

"Although graphics were my primary consideration in buying the 2000, its speed is crucial for throughput," Chance said. "Computer usage has shaved as much as a month off the time required for taking a boat from initial concept to finished product," he said.

"The Tandy 2000 is extremely useful and should be used in many yacht design projects. It's fast, there's plenty of software and it's cost effective," Chance said.

Mull said he considered several other computers, including those from Hewlett-Packard and IBM, before selecting the Tandy 2000 computer.

"The IBM has a lot more software, but it's slow. I did comparisons of the performance of the machines, and I kept coming back to the Tandy. The Tandy ran my programs in exactly half the time of the IBM," Mull said.

"I'm convinced that the Tandy 2000 is far superior to anything else I could use in a desktop computer," Mull said.

Productivity makes the Grade

Microcomputers help a midwest company lay a path to success in the egg industry.

In 1977, Radio Shack introduced the TRS-80 Model I, its first Z-80-based microcomputer. The successors to the Model I, the Model III, 4 and 4D were well received for home, business and educational applications. The Model 4 continues to uphold a long-standing reputation as a "work-horse" computer. In addition to providing performance for value, Radio Shack continues to support its Z-80-based systems as part of its total commitment to computer users such as Seymour Foods, Inc.

In the troubled farmbelt of the Midwest, a small but prosperous company has emerged on top using technology and old-fashioned ingenuity. Seymour Foods, Inc., a 90-year old firm with deep roots in the poultry/egg business, has introduced to a rather primitive industry the latest in machinery and computer-controlled systems. The results are "egg-cellent."

"This technology has been needed for a long time," said O.R. Anderson, executive vice president of the Topeka, Kansas, firm credited with pioneering egg breaking and egg grading control systems. "Computerization was inevitable to remain competitive and run an intelligent business."

Throughout its history, Seymour Foods has been subject to a great many technological advances. Methods, machinery and management have changed through the years, but the constant ingredient to the company's success has always been eggs.

At one time, Seymour Foods was one of the nation's major egg products distributors. Today, the company's focus of attention is on the design of egg breaking and grading systems — a profitable market that has earned Sey-
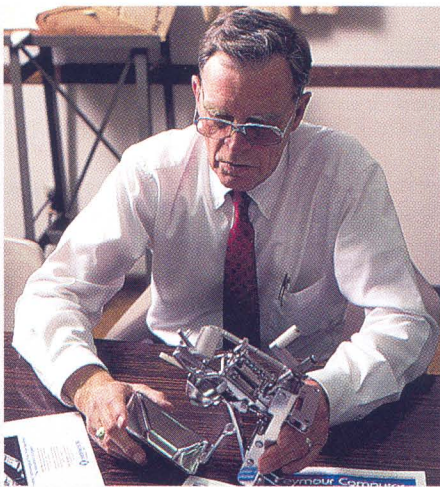
O.R. Anderson explains the intricate workings of the egg breaking device.

mour Foods the distinction of being the leading manufacturer of egg systems with worldwide annual sales of approximately $6,000,000.

The design for Seymour Foods' first computer-controlled system was engineered by Vice President Wayne Anschutz in 1978. Anschutz, a self-taught computer buff, wrote a software program for an egg grading plant using Assembly Language on the Radio Shack TRS-80 Model I.

"I just went out and bought the computer. At that time, it was about the only personal computer available. I taught myself how to program by reading the manual and some other books," Anschutz explained.

Before research and development was completed, however, Radio Shack introduced the TRS-80 Model III and Seymour Foods updated their hardware and software. Today, the majority of their systems utilize Tandy Model 4 and Model 4D computers.

"Model 4s are excellent computers for industrial applications," explained Anschutz. "They're not babies. They're tough machines that can withstand unbelievable industrial environments. We're talking lots of water, dust and chemicals."

The egg and the interface

The Seymour Foods egg grading and egg breaking systems are simple in concept, yet sophisticated in design. The hardware consists of a Tandy computer, a Tandy printer and a computer interface (of their own design) connected directly to an egg plant's production equipment.

Monitoring the egg breaking equipment requires concentration and quick reflexes.

The software, on the other hand, is a true example of skilled programming. Assuming that the operator in an egg plant has little or no experience with computers, the software is totally menu-driven. The use of interrupts and task processing also allows other applications to run simultaneously with the machine control program.

How does it work? Each farmer's egg production is divided into lots with a varying number of eggs in each lot. During the egg grading process, the operating software tracks the weight of each egg, determines the proper grade (jumbo, extra large, large, medium, small and peewee) and records the data for evaluation by management.

The computer is programmed so that as the eggs roll down the conveyor belt, each egg is weighed 16 times on an electronic scale and the scale data is stored in its memory. Timing is critical. Approximately two dozen eggs are weighed and packed into cartons every three-quarters of a second.

Freshness also counts. Grading plants process eggs and deliver them to grocers within 24 to 48 hours after the chicken delivers the goods. The computer's internal clock records processing time for each lot of eggs. A processing report generated by the computer provides management with a detailed lot-by-lot analysis and one of the most accurate grading systems available.

"In the past, management did a fair job of determining how much to pay each farmer for his lot. With the sys-

tem, management has the ability to immediately determine the value of the farmer's eggs and pay him accordingly. There have been times when a farmer actually got more than was due," said Anderson. "Without the system, it's just guesswork."

An egg breaking experience

All eggs, though, are not treated with as much care. Of the eggs produced annually in the United States, 16 percent will be broken — intentionally. The contents are used by food processing plants to make cake mixes, mayonnaise, salad dressing, baby food, shampoo and a variety of other commodities.

Years ago, eggs were hand broken. The egg breaking plants typically

employed 250 people, working eight hours a day. With the fingers of one hand arranged just so, each person could crack two eggs at one time and separate an average of two and one-half cases (900 eggs) per hour. Separating the yolk from the egg white was not the easiest task, and very few mastered the technique.

Today, egg breaking plants are capitalizing on the advantages of modern technology. Large plants can easily average a quarter of a million dollars in egg products every eight hours.

Keeping accurate records on broken eggs proved to be an immensely difficult task. Recognizing the need to provide egg breaking companies with timely product information, Duane Corkill, an electronic engineer at Seymour Foods, programmed the MIC (Management Information Center) system using BASIC and Assembly Language on a Tandy Model 4. Replacing traditional daily breaking reports which were calculated manually the following day, the MIC system provides the producer with the needed information upon request.

The egg breaking process is exactly what it's cracked up to be. As eggs are brought in by the truckload, lot identification information and cost per case is keyboarded into the computer and automatically recorded into shell egg inventory. An up-to-the-minute printout of the inventory is available at any time.

Eggs, eggs and more eggs are placed in pockets on a conveyor belt and are cleaned by an industrial-size washer. After the wash cycle, the eggs roll across a very bright candling light. The light illuminates any flaws an egg might have allowing operators to spot check and dispose of the "bad" eggs early in the process.

Additional sensors are installed on each candler to detect empty conveyor pockets and to measure the frequency of passing rollers. As the eggs roll past the candler, this information is recorded into the computer.

Beyond the wall

Huge, thick concrete walls divide the loading and candling operation from the actual breaking process to conform to strict United States Department of Agriculture regulations.

Passing through a small opening in the wall, the eggs drop into stainless steel cups on the breaking machines. The egg is cracked by a knife and drainage of the albumen, or egg white, begins. Breaking machine operators, or "breakers," inspect the egg white for traces of yolk, blood or any other unwanted substance. The yolk of the egg, in most cases, remains in the cup and the breaker must trip the cup if a broken yolk sac is detected. The breaker has a very limited amount of time and space in which to do the job so a combination of quick reflexes and steady concentration is a must.

The yolk and egg shell are ejected approximately eight seconds later. Three-inch stainless steel pipes route the finished product, whether it be whole egg (egg white and yolk), albumen or egg yolk, to an area where it is packaged and distributed to food processing plants across the country.

The operating software tracks the performance of each breaker and each machine, allowing for downtime due to employee breaks or maintenance problems. One of the most impressive features of the program is an automatic "shut down" and "power up." At the end of the day, a total daily performance report is printed and the system shuts itself down until the next morning.

Profit power

Machine efficiency is perhaps the most important data monitored in the program. Profits for an egg breaking plant depend on the quality of purchased eggs and the measure of liquid yield and loss. Quality lots will result in reduced labor costs and increased breaking speeds. Eighty cases (28,800 eggs) per hour is the average speed for most breaking plants. An investment in an MIC System is under one percent of the annual cost of eggs purchased plus labor and overhead, and can represent an annual savings to the breaking plants in excess of $100,000.

The Milton G. Waldbaum Company in Wakefield, Nebraska, is the largest egg processing plant in the United States under one roof, and can process 3.6 million eggs daily or over 275,000 30-dozen cases of eggs per month. Waldbaum's warehouses can hold four million pounds of dried egg products. With such a large inventory and workload, the company installed the MIC system to eliminate costly manual reports and expenses.

Anderson considers the MIC system to be revolutionary with only one minor limitation. "The MIC system is actually ahead of its time in this industry," he explained. "It requires substantial discipline on management's part to use it to its potential."

The systems can be adapted to other industries as well. Seymour Foods has system installations throughout the United States, Australia, South Africa, Japan, Mexico and Europe, and is negotiating to install a system in China. A Danish company is their only competitor and, in 1986, Seymour Foods carried 100 percent of the U.S. market.

"We recommend Tandy computers to our customers because we've had excellent success with Tandy products and Radio Shack service," Anderson said. "Our original Model I has never been serviced. We have a Tandy printer that must be four years old and we're still on the same daisy-wheel.

"Many of our customers are in remote areas but there always seems to be a Radio Shack store close by," Anderson added. "We're very sold on Tandy."
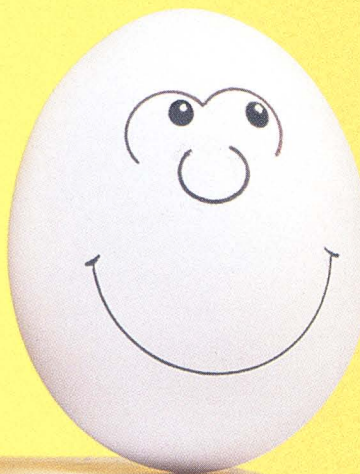
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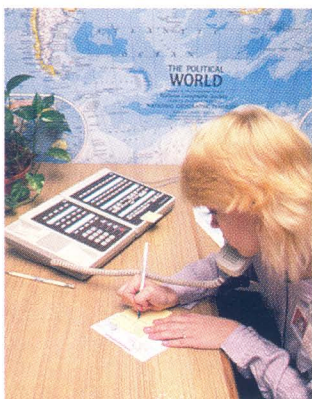
President Byron Ellison

The humble phone enhances the operations of a high-flying firm.

Business offices today are equipped with every technological convenience from the calculator to the computer. Though often taken for granted amidst the modern machinery, the telephone remains a productive management and business tool. Exchange Street Corporation, a growing and prosperous company in Ft. Lauderdale, Florida, is one company that utilizes phone power.

In addition to providing management and financial services to the aviation and business community, Exchange Street Corporation owns and operates SunCoast Airlines Inc. The airline accounts for approximately 80 percent of the company's business and is certificated by the United States Department of Transportation and the Federal Aviation Administration to provide domestic and international, chartered and scheduled transportation of passengers, property and mail. SunCoast Airlines operates a fleet of Boeing 727 aircraft, including the actual plane from which legendary hijacker D.B. Cooper bailed out in 1971 with $200,000 in cash.

Exchange Street Corporation was formed as a partnership in 1968 and incorporated in Florida in 1970. Founder and President of Exchange Street Corporation, Byron G. Ellison, knew exactly the type of phone system that would meet his business needs well into the future.

The KISS Principle

Chartering a vacation for 129 people or scheduling a shipment of supplies for the United States government is no easy task. Important details must be handled, most often over the telephone, so it was imperative for Exchange Street Corporation to have a reliable phone system: one like the Radio Shack 2101 Phone System.

"What we wanted was something that fell under the KISS principle — "Keep It Simple, Stupid!" explained Ellison. "We looked at a number of telephone systems and found we couldn't afford most of them. Finally, we hit on a Radio Shack system we were able to build with."

Exchange Street Corporation chose the 2101 Phone System, Radio Shack's most sophisticated and largest capacity system. The 2101 Phone System is capable of providing up to 21 lines and 56 stations or extensions. "I didn't see the performance and service in the other systems," Ellison noted. "I wanted a modern, solid-state system and minimum contact with the Bell world." Exchange Street Corporation's phone system features 11 lines, including a WATS line and foreign exchange lines directly to Miami. "We built the system originally with a 10-button set and we went up from 10 buttons to 20."

The company also benefits from standard features of the phone system such as toll restriction, line access and speed dialing. As an added bonus, each station is equipped with a standard speakerphone.

Initial installation and customized programming of the system was provided by Radio Shack but Ellison points out the ease with which employees can program a phone to increase their individual productivity. "We're able to do a lot of the changing and revamping of the system ourselves. It's not all that difficult to do."

Controlling the flow

With additional offices located worldwide in London, England, Georgetown, Grand Cayman, and Washington, D.C., a heavy flow of phone traffic floods Exchange Street's corporate office daily. "With activities in the Caribbean islands and the U.K., we have a very heavy load of international calls. We're able to program our phone system to direct dial these locations."

A Direct Station Select Console with a busy lamp field display is stationed at the receptionist's desk, making her job much easier. The console allows the receptionist to place incoming calls on hold and transfer them simultaneously without monitoring the correct station.

Ellison's phone features a liquid crystal display which shows the time and date when the phone is not in use and shows the number dialed and elapsed time the call has taken when the phone is in use. These optional features made the Radio Shack system more attractive with very little extra investment. "Price had a lot to do with it because we pay cash," said Ellison.
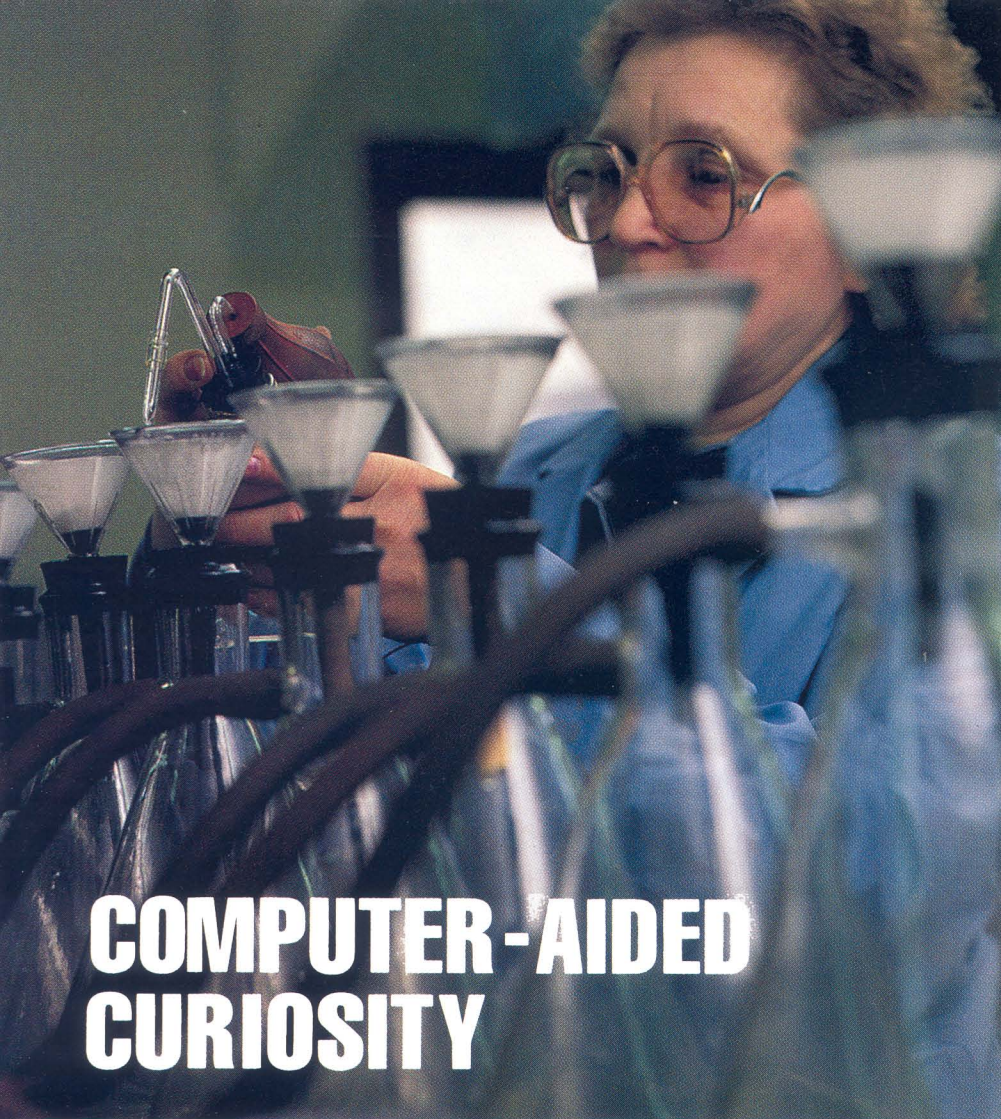
COMPUTER-AIDED CURIOSITY

Getting to the bottom of someone else's nagging questions is all in a day's work for a Wisconsin metals laboratory.

A manufacturer wants to know why teeth shear off on a specialized twenty-five inch gear. An aerospace supplier of precious metal brazing alloys needs certification of its products' chemical composition. When problems like these face the industrial community, chances are Anderson Laboratories will be called upon to supply the answers or provide the data. When it comes to metallurgical testing, Anderson Laboratories of Greendale, Wisconsin, has earned a reputation for supplying quick and accurate information.

Boasting a client list of over 1500 satisfied customers from coast to coast, Anderson Laboratories has experienced steady growth since it was founded in 1939. At the time, metallurgical testing was conducted using traditional wet chemistry, which Ralph Meyer, Anderson Laboratories' general manager, describes as being "the classical analytic technique." While wet chemistry testing is still performed at Anderson Labs, in many areas it has been replaced by highly specialized, highly technical test equipment. This boost in technology has allowed Anderson Labs to increase its volume and improve turnaround time for customers.

Anderson Laboratories' reputation for accuracy and quick turnaround made the company's services a sought after commodity nationwide. As volume increased, old methods of record keeping became cumbersome. Keeping track of the more than 1.5 million tests conducted annually is a formidable task, and one that does not lend itself easily to pencil and paper. Thanks to a planned computerization effort centered around the multiuser Tandy 6000, Anderson Labs is systematically reorganizing operations.

What's in there?

The most common testing procedure performed by Anderson Labs is composition testing—determining the chemical make-up of a test sample. According to Meyer, the sample a customer turns in one day is often from the previous day's production. It is important that tests are performed quickly; preferably in one day, thus allowing ongoing production decisions to be made in a timely manner.

Composition testing is often carried out through computerized emission spectroscopy. By passing an electric current through a sample and analyzing the resulting emissions, the sample's elemental content can be determined.

Is it tough enough?

Sometimes the importance is not the product's composition, but rather how the product holds up under pressure—up to 200,000 pounds of pressure. Mechanical testing is the second most common test procedure conducted by Anderson Labs and includes testing for strength, hardness and impact resistance. To determine strength, a sample is literally pulled apart and the amount of force required is recorded. Hardness testing drives a small tungsten carbide ball under thousands of pounds of pressure into a sample. Impact resistance is determined by striking a sample with a pendulum-like device and recording the amount of force the sample withstood before breaking.

Anderson Labs' penchant for finding answers reaches its peak when they are called upon to perform long term projects in failure analysis. "Long term projects are the 'why things broke' jobs," Meyer explained. This type of testing is more subjective and requires the company to run a series of tests to determine the cause of metal failure. Tests include the standard composition and mechanical testing, but may also employ such sophisticated techniques as microscopic photography and the use of a scanning electron microscope.

Your report, sir

Once testing is completed, results are reported to the customer. The reporting stage was among the first affected by Anderson Labs' computerization program. "When we got involved with computers, our main purpose was to automate our invoicing, but we weren't sure exactly how to do it," said Meyer. After considering a consultant's package, Meyer and Anderson Labs' owner, Richard Krause, decided that personal computers

might be a cost-effective way to create an automation system. "We didn't know Radio Shack from IBM or anybody else," Meyer recalled. "We knew that Radio Shack was close by; from then on it was Radio Shack that sold us on Radio Shack."

Anderson Labs purchased a Radio Shack Model 16 computer and outfitted it with word processing and spreadsheet software. Meyer worked with the system for about a year but, because of time limitations, was only able to develop some basic word processing functions.
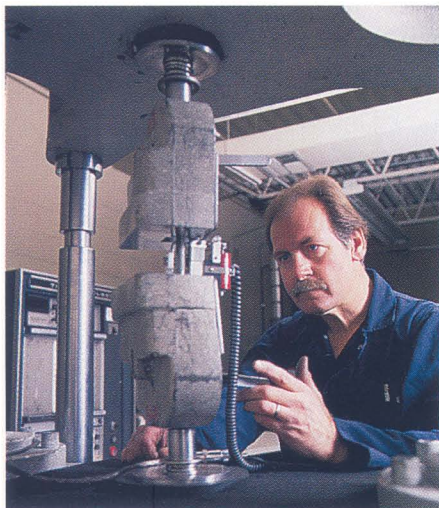
Tensile testing is a routine test procedure that determines the strength of metals by pulling them apart.

Realizing that they needed help, Anderson Labs hired Dave Snyder as Data Processing Manager. Snyder instituted a step-by-step approach to automation, "We started out very simply with accounts receivable," explained Snyder. "That was the most time consuming and least productive part of the operation." Snyder selected a Tandy 6000 with Xenix, a 35 megabyte hard disk drive and three terminals. Using Profile 16, he created an accounts receivable system that performed double duty as a method for reporting results to clients.

Input data, please

Prompts and a near replica of the report that will ultimately be printed appear on a terminal screen to guide a user through the process of inputing information such as tests performed, test results and customer number. When completed, the system prints the report on a two-part business form. One part of the form is sent to the customer as a laboratory report of test results. Later, prices are entered onto the second part of the form for use

when preparing the customer's invoice. The second part of the form is then filed as a permanent record.

Ninety-five percent of the reports generated can be printed on the standardized form. The other five percent are narrative-type reports from long term projects that require more detail and are often accompanied by photographs. To handle the narrative reports, Anderson Labs purchased a second Tandy 6000, which is used primarily for word processing. The two Tandy 6000 systems are interconnected allowing them to share printers, test results and customer information.

Often, the results of testing at Anderson are eagerly awaited by the customer. To better serve their customers, Snyder added a feature to the system allowing a customer who has a personal computer and a modem to access the Labs' Tandy 6000 and retrieve test results as soon as they become available. "People have learned when samples will typically be ready," Meyer said. "About one o'clock every afternoon, the modem line gets real busy."

New plans on the horizon

Now that accounts receivable have been computerized, the next step is to tie data collection from testing directly into the Tandy 6000s. The first link in place is a Tandy 1000 interfaced with the computerized emission spectroscopy equipment. Using the Tandy 1000, the operator inputs test instructions directly into the system. After testing, results displayed on the computer screen detail what elements are present and in what quantities. "We're in the process of fine tuning the software that will allow us to capture results for the ultimate generation of the report," said Snyder. "Once it's in the computer, we should keep it in the computer."

The next planned step is the creation of an order entry system that will allow the more than 70,000 jobs performed annually to be logged into the computer as they enter the lab. Previously, each sample was logged by hand after testing was completed. "The first area that we have computerized is the long term projects," Snyder reported. "The quantity is much smaller, so it's a much easier place to begin development. By logging projects as they come in, we can keep better track of them as they move through the lab. The computers have already made us more efficient," Snyder said.
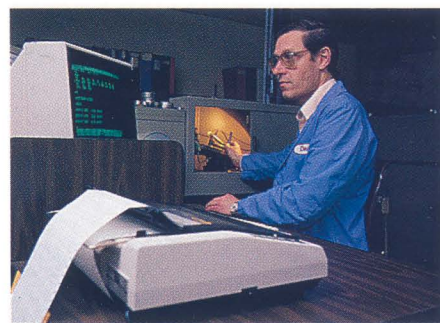
A laboratory technician uses a Tandy 1000 computer to interface with the composition emission spectroscope.

Meyer agrees that the computerization program is a success. "It's a very useful management tool," he said. "One of the areas where we have seen, and anticipate seeing even greater improvement, is cash flow." This anticipated improvement is due in part to a system that will handle invoicing on a weekly basis. "The sooner we can get an invoice out, the sooner we will get the money back in," Meyer said.

"As you can see, we've added a lot of computerization to what we do in just two years," Snyder said with a touch of pride. Meyer agreed and added that a fair amount of credit should go to Computer Center manager Jim Phelps and his staff. "They have been here with us through all of this," he said. "The few times we have needed service, and when updates on software have become available, Jim and his people have been a big asset to us."

In the final analysis, curiosity and efficiency are at the heart of an operation such as Anderson Laboratories. Reducing the paperwork employees handle allows them more time to dig deeper into projects seeking solutions. Automating office procedures increases efficiency, allowing the company to serve more customers within a particular time frame. The obvious conclusion: the combination of curiosity and efficiency yields success.

Dave Snyder (left) and Ralph Meyer.

WINSTED, Conn. — As the town sleeps, Tandy Computers help the Courier give its readers what they want—local news...
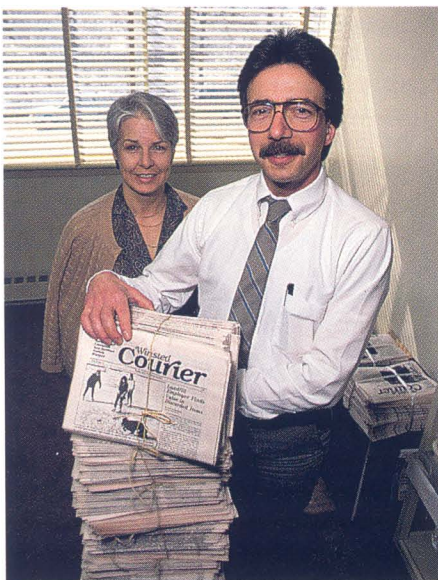
Frank Poirot (right) and Sandra Mac-Dougall proudly display Winsted's "own" newspaper.

In an age when "home-owned, small town" newspapers are rapidly becoming links in corporate chains, a small New England town and its people are fighting back. Every Wednesday at about eleven in the morning, the *Winsted Courier* appears on newsstands in Winsted, Connecticut, a town of about 11,600 people, and in surrounding small communities with names like Barkhamsted and New Hartford. The *Winsted Courier* doesn't tell its readers what's going on in Beirut, Lebanon, or Washington D.C., or in the state's capitol for that matter, unless what happened in those places directly influences them. This is a local paper, covering local stories and local people.

Just one year old, the *Courier* was created after the purchase of the town's daily paper, the *Winsted Citizen*, by an out-of-state newspaper chain and the merging of the paper with another local paper purchased by the chain, the *Torrington Register.* Under new ownership, the hybrid *Register/Citizen* took on a more worldly editorial view, emphasizing wire reports and broader coverage. The community, however, still desired local news. In response to these needs, a group of 36 local businessmen and ordinary citizens pooled their financial resources and created The *Winsted Courier.*

Covering the local scene

Frank Poirot, managing editor of the *Courier*, agrees there is a need for news coverage of the world and willingly secedes that responsibility to the *Register/Citizen.* The *Courier* was never intended to replace the daily paper. As a matter of fact, people read the *Courier* as a supplement to their daily

paper because of its in-depth local coverage. The beat of the paper's staff is the local arena and its players. Without the *Courier*, Poirot questions if there would be any coverage of local interest. "Who's going to cover the garden club? Who's going to walk down Main Street with a camera and photograph local people and put them on page one? That's what is missing in papers today; the coverage of the people who are buying the paper. You know what's happening in the world, but what about what is happening next door?"

Poirot earned his degree in Mass Communications from The University of Connecticut and has worked for newspapers ever since. After working for a small town daily in Norwich, Connecticut, and a big city daily, the *Hartford Courant*, Poirot was looking for a full time reporting position. "I grew up about thirty miles east of here," said Poirot. "We used to come here to fish and to swim in the rivers. The combination of the area and the opportunity for a full-time reporting position are what made up my mind." After a year as a reporter, the position of managing editor came open and Poirot was selected to fill the vacancy.

Multiple applications

Poirot's title may be managing editor, but he still reports on the goings-on in Winsted. With a Tandy 1000 microcomputer, he has more time to
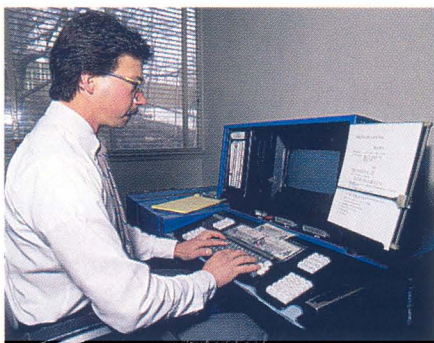
A modem connection between a Tandy 1000 and the typesetter eliminates the need to reinput copy.

do the job he was originally hired to do. "I still do a lot of writing," he reported, "both editorial and reporting. I have never used a computer as extensively as I do now. I guess you could say that this is the the first job where I have relied on my computer for ninety percent of my work."

When Poirot made the move to computers, it was more of a leap. "Actually, I went from a Royal manual typewriter to the Tandy 1000 as far as newspaper work goes. I was a little skeptical at first, but by the third week I was very much at home with it, all the skepticism had vanished. Now, my manual typewriter collects dust down in the basement and I had thought that I would never get rid of it."

Using a modem, Poirot can communicate directly between his Tandy 1000 and the newspaper's typesetting equipment. When a reporter finishes a story, Poirot takes the reporter's diskette and duplicates the story onto his own diskette, does any needed editing and sends the copy directly to typesetting, eliminating the need to type the copy into the typesetter.

According to Sandra MacDougall, the *Courier's* general manager, the business needs of a modern newspaper, even a weekly like the *Courier*, couldn't survive without a computer. The business office is able to do all of the paper's accounting functions, including payroll and government reporting, with just one Tandy 2000 HD running Accounting Partner software by Star Software Systems. MacDougall wasn't exactly excited about learning to use computers. "When I took this job I didn't want the computer," said MacDougall. "I said, 'It's a dust collector, I don't want it.' Now I'm thinking about buying a 2000 to use at home."

Radio Shack's customer support was invaluable in helping the paper get started in computing. "When we first got the computers, a fellow from the Computer Center in West Hartford came here and trained us to use WordStar. He spent a lot of time with us and taught us the ins and outs of this particular machine. He made us feel real comfortable." Originally, the *Courier* leased their computer system but later bought out their lease. Before buying out the lease, they considered changing computer systems. They looked at other PC compatible computers and they looked at mainframe systems. But the more they used their Tandy computers, the more comfortable they felt with them. Subsequently, they bought out their lease and have been Tandy computer users ever since.

"We've had very good luck with our Tandy computers," Poirot said. "We've had no problems that can be attributed to the computer. What few problems we have run into were, I'd say, errors in the way they were operated, nothing that could be attributed to the computer. There seems to be enough safeguards on the keyboard to alleviate any

worry about wiping out a day's work with the stroke of one key. There is no fear of the unknown like thinking 'What will happen if I hit this key?'"

In addition to the Tandy computer system, The *Winsted Courier* also purchased a Radio Shack System 402 phone system. "The phone system's biggest plus is that we don't notice a difference between it and an AT&T phone system," commented Poirot. "In other words, I've been in businesses where you had to jump through hoops just to get an outside
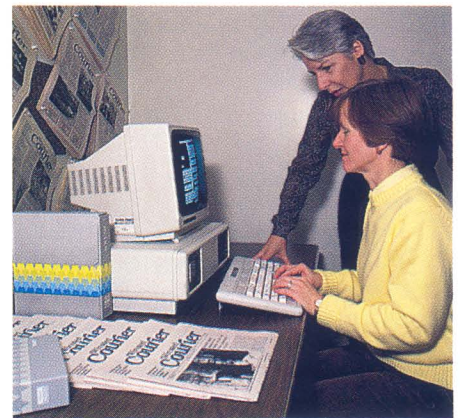
All of the Courier's business office functions are handled on a Tandy 2000 HD.

line. I once spent fifteen minutes trying to get an outside line; then I went to a pay phone. But this Radio Shack phone system works just as well as the phone I have at home."

The future of computing

Looking to the future for the *Winsted Courier*, management hopes to integrate computer generated graphics into the newspaper. "The IBM compatibility gives us a lot of options down the road. I can virtually put out a tabloid newspaper with some of the programs that are available for under $1000: that's real exciting." Beyond improved graphics, the plan is to constantly improve the look and the content of the paper while building circulation.

As the *Courier* continues to grow, the one element that will remain constant is the paper's dedication to covering local news. Stressed Poirot, "Local news is important to our readers. Because we're small, we must establish contact with our readers including the leaders in the community. We have to stay in touch." Noting that the *Courier* is a different environment than a larger paper, Poirot smiled, "It's a nice position to be in if you're going to be a managing editor."

PEOPLE AND PCs:

Communication where it counts

**TANDY
WORKGROUP
SOLUTIONS™**

Tandy computers and 3Com's 3 + series provide business users with an effective resource sharing capability.

In the computer industry, the concept of networking—merely "hooking" machines together—has given way to the concept of providing connectivity and communication between and among *individuals* performing separate but related tasks: a workgroup solution.

Workgroups allow individuals to share information resources in common data bases and exchange messages via electronic mail in central or remote locations, while maintaining the advantages of stand-alone operations. Thus, an individual in a workgroup becomes a part of a total entity with a vast productivity potential.

As sharing information resources becomes vital to operations, more and more companies are exploring the advantages of workgroup computing. In fact, according to Future Computing, the Dallas, Texas, based research firm, the market for networks will grow to $3.0 billion by 1987. Network products have a projected annual growth rate of 100 percent from 1985 to 1988, versus an expected 18 percent growth rate for personal computers. In a different light, it is predicted that in 1987, approximately one out of every three personal computers sold will be delivered for connection to a network. In addition to the growing demand for shared resource capabilities, factors contributing to the demand for workgroups are the declining cost per connection and the need for interconnecting installed base systems.

In this demanding and complex arena, the 3 + network software system from 3Com Corporation of Mountain View, California, has emerged as an industry standard in local area networks. Offering speed, ease of use and high performance, the 3 + product series has become synonymous with networking computing power.

Joining forces

At the Fall Comdex computer trade show in Las Vegas, Nevada, in November, 1986, 3Com Corporation announced that another industry leader, Tandy Corporation/Radio Shack, would begin marketing 3 + products to customers in the first quarter of 1987. During the announcement, Graham Beachum, vice president of Computer Business Products Marketing for Radio Shack, noted that the 3Com products were selected after a ten month evaluation. Said Beachum, "We were searching for the best workgroup solution for our small, medium and large corporate customers."

3Com's President and CEO L. William Krause recognized the agreement as having "significant proportions" and noted that it underscored Radio Shack's "commitment to offer business customers workgroup computing solutions."

Speed and ease of use equate to performance and computing power.

As a result of the agreement, 3Com products, the EtherLink and EtherLink Plus adapters and the network operating system software, 3 +, are available as part of Radio Shack's Tandy computer product line or through the company's Express Order program. According to Beachum, the 3Com products coupled with Radio Shack's MS-DOS computers, the Tandy 3000 family and the Tandy 1000 SX, offer business users a cost-effective workgroup solution that offers custom functionality and expandability.

A basic workgroup system consists of seven elements including a workgroup server, workstations, interface cards, cables, application and networking software, printers and other desired peripherals. A minimum configured workgroup can be as small as two workstations and one workgroup server. As business needs grow, the 3Com workgroup can expand by adding more workstations, interface cards and network software.

This type of flexibility, plus its easy-to-use menu structure and functional modular approach, has helped to establish 3 + as the leader of workgroup computing in the industry. 3 + network software packages which facilitate system customization include: 3 + Share for multiuser file sharing, spooled printer sharing and network-wide naming service; 3 + Mail for electronic mail functions; 3 + Remote for access to 3 + services from remote microcomputers via telephone lines or dedicated high-speed lines; 3 + Route for internetworking between separate 3 + networks; 3 + Start to support diskless workstations; 3 + Turboshare for enhanced file server performance; and 3 + 3270 for communicating with IBM SNA host computers. Additionally, a number of popular software packages for accounting, communication, data base management, word processing and other applications are compatible with the 3 + software system.

Total solution

Radio Shack's commitment to provide workgroup solutions for its business customers doesn't stop with hardware and software. To provide the total systems solution, Radio Shack and 3Com have undertaken a massive training program to insure customers that their needs will be met.

The training focuses on a team approach. Radio Shack Computer Center sales personnel will work with Training and Support Center (TSC) personnel to determine the business client's needs for all elements of the workgroup solution. With 3Com training in installation, user training and support, Radio Shack has built a professional staff for a comprehensive workgroup solution sales force.

"We believe in-depth training of our sales, service and support personnel by 3Com will reinforce to our business customers that Radio Shack and its Tandy computer products are their best alternative, their best partner, in their business," said Beachum.

Eaton's Chip Culpepper.

Computer power takes to the road

Tandy portable computers are the heart of a Michigan automotive supplier's communications solution.

The Truck Components Marketing group is a major division of Eaton Corporation, one of the world's largest suppliers of automotive components. The division sells and services axles, brakes and transmissions to truck manufacturers such as Peterbilt and Kenworth, to more than 2000 national dealers and to major fleet owners. With such a strong emphasis on vehicle performance, it is altogether fitting that the division's service representatives drive in style.

Today, white vans sporting Eaton's distinctive blue and white logo are the major mode of transportation for the 40 field personnel who service the division's six regions in the United States and Canada. Tucked away in these vans are repair manuals, spare parts and the latest instrument for assuring quality service: a portable computer.

Eaton's decision to equip its fleet of service vehicles with portable computers was twofold. First, the company wanted to develop a communication network that would allow communication between the division's offices and its outbound sales and service forces. The second factor was the company's desire to reduce the amount of paperwork that sales and service personnel were required to do. "We had a glaring need to get equipment failure data back to the product divisions faster and we wanted to make sure our service personnel were spending more time with customers," reported Chip Culpepper, customer service manager for the Great Lakes Region headquartered in Kalamazoo, Michigan.

A man with a mission

With improvements in communication and paper reduction as the major objectives, a task force was initiated to research alternative solutions and report back to management with recommendations. Culpepper, acting as chairman of the task force, brought together representatives from warranty management, sales management, service management and data processing. "When we formed the task force," Culpepper recalled, "we didn't know a portable computer would be the solution."

Eventually, however, the task force did arrive at the portable computer as the solution. A market survey and a hands-on evaluation of more than ten different models of portable computers followed, but no final decision was reached. Seeking further information, Culpepper contacted service managers at a leading pharmaceutical firm located nearby whose sales and service personnel were using Radio Shack portable computers in an application similar to what Eaton planned to initiate. After seeing the company's portables in use, Culpepper and the other members of the task force decided they liked what they saw.
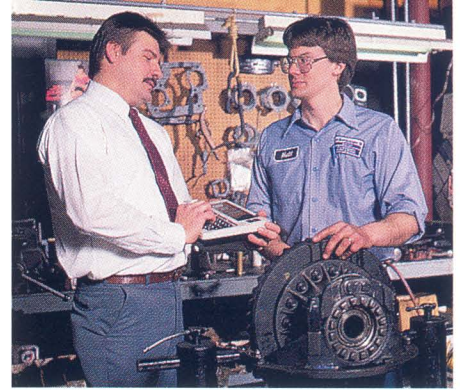
Eaton has simplified service calls and increased productivity by installing the Radio Shack Model 100 in its service vehicles.

"The Radio Shack Model 100 was the most portable computer we found," Culpepper said. Besides the Model 100's built-in text software, the task force liked the internal modem, which was critical to the communications network the Truck Components Marketing division required. Eaton needed an accessible telephone network so personnel using the portables could communicate with one another from anywhere on the road.

With the help of the Radio Shack Computer Center in Kalamazoo, Eaton evaluated available telecommunications services and finally settled on a network that met its requirements. The network set up by Eaton can be used to transmit reports to the main office via the Model 100s and to create an electronic mail system for use by the division's personnel. It was Computer Center manager Mike Norton, Culpepper noted, who was able to show Eaton the utility of the Model 100. "Without Radio Shack's help and knowledge, it would have taken us much longer to implement our system," he said.

More information, less paper

Today, the division's sales and service forces and assorted managers are equipped with a Model 100, acoustic coupler, a portable disk drive and a DMP-130 printer. Before the network could be implemented, however, users had to be trained. Culpepper ran training classes in each region for two days and found that people learned the system very quickly. "We were training people who had never even used a typewriter," he said.

Results have been astounding. Prior to implementing the Model 100 systems, the manual reporting of equipment failures took anywhere from two to three months; now they are transmitted daily to the word processing system at each regional office, noted Culpepper. In "the old days" before computers, a service representative

filled out a form at the customer's site when equipment failed. Periodically, the data would be compiled and submitted to the regional office. At the regional level, equipment failure reports from all representatives would be compiled and sent to the main office of the Truck Components Marketing division in Galesburg, Michigan, adjacent to Kalamazoo.

The manual reporting system took three to four months to evaluate the equipment failures to determine if there were any correlations among failures. "For example," explained J. Roger Hobbie, general service manager for the division, "a representative in Allentown, Pennsylvania, would report a gear failure and consider it a fluke. Representatives in Dallas or Los Angeles would report the same failure and also consider it a fluke because they didn't know what was happening in other locations." Because information is now available so quickly, division headquarters can identify failures, remedy the problem at the manufacturing level, and advise field personnel of any serious defects.

In addition to reporting equipment failures, service and sales representatives can now write their weekly call reports on the Model 100s and transmit them through the network to their regional offices. To aid the representatives, standard report formats were written into the text program, which makes weekly reporting much less of a chore.

Electronic letters

The electronic mail system has been especially helpful to field personnel. Many of the company's field representatives are vastly more knowledgeable regarding certain products, Culpepper explained. Frequently, less experienced field service people contact a colleague in another region for more information regarding equipment. Two field people trying to contact each other was formerly a classic

example of telephone tag. Now, representatives can communicate with each other through messages prepared on the Model 100s and sent over the communications network to a particular individual. The response may answer a specific question, or the representatives can set up a time to talk with each other over the telephone.

"Now that the system is implemented, personnel see its benefits and have added applications," Hobbie reported. For example, salespeople have developed vehicle performance reports which show prospective customers how vehicles perform when equipped with Eaton transmissions, axles and brakes. They are also able to supply prospects with analyses of the return on investment they will receive by purchasing Eaton equipment.

Secondary solutions

Automation has created a thirst for data at the division and among sales and service personnel. The current text systems are unable to manipulate data to produce reports, so Hobbie is considering acquiring a personal computer for each regional office. Computers have had such an effect on sales and service personnel that some have purchased Tandy 1000 microcomputers for use at home.

In the future, Hobbie looks forward to using the Model 100s for electronic diagnostics. Plans are in the works that will allow a field service representative to plug a Model 100 into a truck transmission equipped with automated diagnostics, punch in a few numbers with a diagnostic test program, and determine which part is causing a failure.

"Our market is driven by service. The Model 100s give us a more professional image," Culpepper said. "So now Thursday afternoons and Fridays, when our competitors are doing paperwork, our service people are with customers—and they may even have a little extra time to get in some fishing."
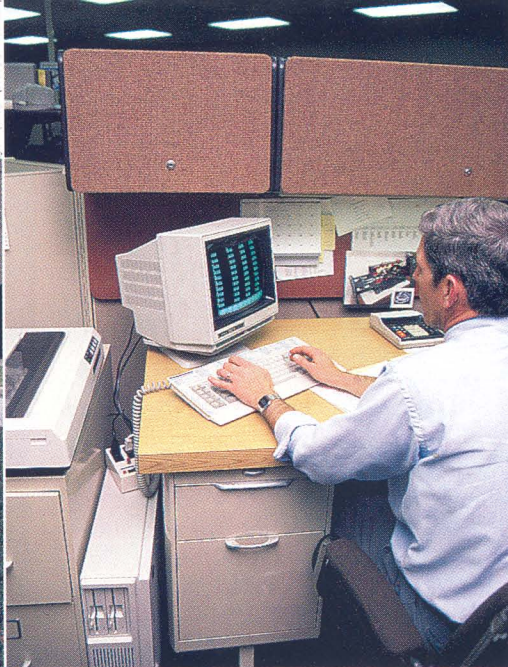
Geared up for information

A South Carolina manufacturer replaces terminals with microcomputers and gets more than mainframe access.

The city of Greenville, South Carolina, nestled among the pines at the foot of the Blue Ridge Mountains, is an area that was once dominated by cotton fields and textile mills. While agriculture still plays a major role, an effort has been made by the state to diversify the economy by attracting new types of business. The Mechanical Group of Reliance Electric is just such a business. Originally based in Indiana, the Mechanical Group headquarters moved to South Carolina in 1980.

A division of the highly diversified Reliance Electric Company of Cleveland, Ohio, the Mechanical Group is the recognized leader in the manufacture of mechanical power transmission products. Jim Sneed, Group Management Information Systems Manager for Reliance Electric, described the scope of the company's products as "everything that would connect to the turning shaft of an electric motor to make a conveyor system move at a specific speed under a given load."

At a time when many American manufacturing operations are moving offshore, Reliance still produces most products in the United States—while competing effectively with foreign manufacturers. Improved productivity and up-to-date product design are keys to the group's success.

A vital part of improved productivity and up-to-date design is the company's widespread use of computers. From mainframes to micros, computers are a day-to-day business tool for Reliance Electric. A computer network tied together with microcomputers helps management, manufacturing and authorized distributors communicate and meet customer's needs. The addition of Tandy microcomputers, primarily Tandy 3000 HDs, has played an important role in this activity.

Centralized information

Sneed's objective has been to create an information center that links
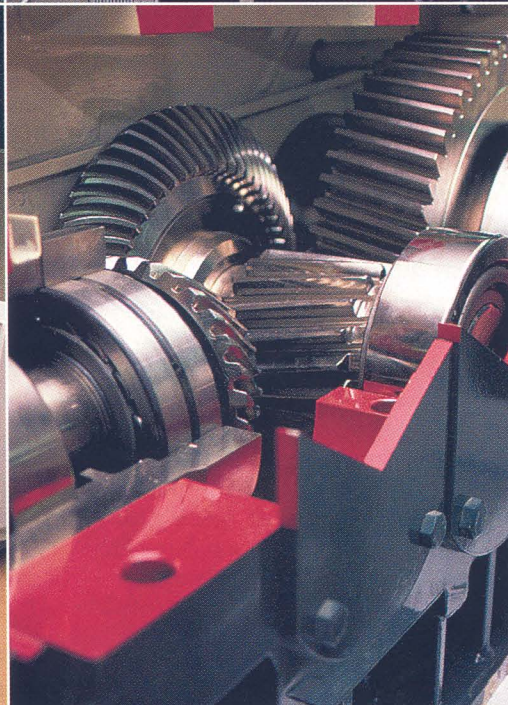
together computing not only at group headquarters and at the group's remote plants, but also integrates the company's distributors into the network. "I do a lot of reading on information centers," Sneed commented. "When you look at companies that have not succeeded in putting together a successful information center, you find all kinds of different computers, all kinds of different software and lots of incompatibilities."

The hub of Reliance Electric's distributor computer network is the Mechanical Group's headquarters in Greenville. Housed there is the company's NAS/7000 mainframe (an IBM plug compatible mainframe), which sits at the heart of the network. Initially, terminals were used for accessing the mainframe. Now, the trend at Reliance is away from terminals and toward microcomputers that company personnel can use for both mainframe access and stand-alone computing.

Each of the group's seven manufacturing facilities have been connected to the central mainframe via microcomputers. In addition, each plant is equipped with a Hewlett-Packard 3000 computer that runs manufacturing operations. "The PCs in our plants run software to emulate an HP terminal," Sneed said. "Some of the computers have three capabilities: they are hooked up to the mainframe, the HP-3000, and also have stand-alone capabilities." Like the main office, the plants once used terminals and now are making the conversion to microcomputers. "It's an evolutionary process that we are currently undergoing," Sneed explained. "Terminals no longer satisfy the complete needs of a user.

"Personal computers are addressing another segment of the operation," Sneed reported. "They satisfy the need for the ad hoc type reports that have to be created. The other big advantage of personal computers is that they are very versatile and capable terminals. Today, a personal computer can be anything that you want it to be. All you have to do is plug in the correct circuit card and plug in the right software, and you've got it."

Picking a PC

When Reliance began the process of converting from terminals to microcomputers, IBM PC/ATs were initially selected. Eventually, a search began for a more cost-effective computer solution. "We were looking, first of all, at

compatibility. We wanted to insure that all of the applications we had started with IBM PC/ATs would continue," explained Gary Oberg, Manager, Distributed Systems. "Secondly, we were looking for an established company that would be around in the PC market after we purchased the computers. Finally, we were looking for the best value for our money. We wanted a machine that would last through our depreciation period and not be obsolete through new technology."

For a period of several months, the conference room at Reliance was converted into the what Sneed called "the competitive analysis room." "We took a variety of machines, set them side by side, and ran compatibility tests on them. They were advertised as being PC compatible. But, when we tried to utilize the standard software we use here—and I don't believe that we're

Reliance Electric's Jim Sneed.

very complex in the way we use the personal computers—some computers failed the compatibility test.

"In the competitive analysis that was conducted," Sneed continued, "Tandy exceeded all the other computers that were compared." Also important, was Radio Shack's network of computer service centers. "Because we have locations scattered all across the United States, we required that service be available over a wide geographical area." Finally, Sneed said, Tandy offered "a price/performance that was very difficult to refuse."

The latest phase of Reliance Electric's Information Center is the establishment of a program that offers the company's independent authorized distributors a PC which can be used to access the company's mainframe but can also be used on a stand-alone basis within the distributor's business. Distributors will be given the choice of an IBM PC/AT or a Tandy 3000 HD. "Using the system, they will be able to see our in-stock positions, view the status of their current orders, and enter their own new orders," reported Oberg. He added that from 1981 to 1986, the volume of orders placed directly to the computer by distributors increased from 13 percent of sales to more than 40 percent. "We're looking to increase that percentage appreciably by operating with personal computers," Oberg concluded.

Machine it right

Reliance's manufacturing facilities use Tandy computers in ways that serve to reinforce the company's commitment to computerization. Reliance's Greenville manufacturing facility is typical of this commitment. At the plant, a Tandy 1000 has been connected to a Cordax 805, a device that determines if a product has been machined to proper specifications. Used to transfer a particular product's design specifications to test equipment, the Tandy 1000 replaced a paper tape reader supplied with the equipment. Previously, when specifications had to be fed into the machine, the tape had to be located, loaded and read before testing could begin. Now, the data is stored on diskettes and can be accessed and loaded faster and easier.

"We believe that Tandy computers have allowed us to meet our user needs in a more cost effective manner," Sneed reported. "Consequently, our information center has been extremely successful in meeting the continuing, growing demands that we are seeing from our employees and distributors for personal computers."

Concluded Sneed, "To me, a key factor for a vendor is: After you've dealt with them for a year, what would you say about them? If you have to make the decision all over again would you do the same thing? I'm sure that we can say without any reservation that from what we know about Tandy, we would select them again as a supplier of our equipment—and that's not always the case with suppliers."

"Simmons, I think we need a consultant to help us refine our system."

"Right, J.B. We'll request a proposal right away."

Finally!

THE CONSULTANT CONNECTION

Consultant Liaison Programs are a valuable resource for the computer industry.

As microcomputers have firmly established their place on the desks and in the plants and warehouses of businesses worldwide, users are seeking the technical skill and expertise required to get the most out of their systems. Realizing these requirements, Radio Shack has developed a service and support network capable of meeting the general needs of business users from installation to training, including some elements of software customization.

Some businesses, however, have specialized needs, whether it be developing a specific vertical software application or refining a telecommunications system. In addition to recognizing these specialized needs, Radio Shack recognizes that within the whole scope of the computer industry, there is a large business segment that caters to such needs: The consultant community.

While Radio Shack had been working with consultants on an informal basis, providing technical, product and other information, the growth of the microcomputer business and the ensuing number of microcomputer consultants prompted the company to formulate a formal program which would establish an open line of communication.

To put the program into action, Radio Shack studied the type of information consultants had requested in the past and looked at the consultant-oriented programs of other companies. One of the most valuable resources in establishing the Radio Shack Consultant Liaison Program (CLP) was the Independent Computer Consultant Association (ICCA). As a member of the ICCA's vendor-oriented Consultant Liaison Group,

Radio Shack established direct contact with consultants of varied backgrounds and expertise. Through the contact, the company was able to refine the CLP into an open information exchange that benefits the company, the consultant and the customer.

The customer connection

Through feedback from its Computer Center personnel, Radio Shack knew that some of its business customers had made queries regarding consultants. It seemed that many users were mystified by the aura surrounding consultants.

Selecting a consultant seems to carry its own set of circumstances for consideration. Just what makes a consultant? Where and how can a consultant be located? Is using a larger consulting firm better than using an independent? The answer to these and other questions seems to be caveat emptor. While most consultants are indeed vastly qualified in their genre, and are certified through certifying organizational bodies, some, as in almost any business, attempt to go beyond their abilities. In fact, in a survey conducted by *Computer Decisions* magazine of Hasbrouck Heights, New Jersey, of the 133 businesses who responded to the survey, more than half related good experiences with consultants. Consultant relations were rated as poor by 27 of the respondents and 36 noted that projects were jeopardized by the consultant, with incompetence cited as the cause.

To provide customers with at least a starting point in solving their dilemma, as part of the CLP, Radio Shack publishes a quarterly directory listing the over 500 members of the Consultant Liaison Program. This directory is made available through Computer Centers and may be used as a reference by customers. While Radio Shack does not endorse the use of CLP members, the directory provides customers with a viable option.

The directory is significant considering that many consultants do not spend a great deal on advertising *per se*, but may use direct mail, brochures and seminars as marketing tools. In fact, a large percentage of a consultant's client base is a direct result of "word of mouth" referrals from satisfied clients.

Influencing factors

In addition to the value of open communication, the CLP has a great potential in terms of net worth. With the average installation by a computer consultant involving $50,000 to $100,000 in hardware and software, a consultant's recommendation can carry considerable weight. In terms of microcomputers, it is estimated that consultants will recommend over $100,000 in micros in their businesses in 1987.

In fact, in a survey conducted by *Computer Consultant*, a publication for the DP/MIS consulting community based in Syracuse, New York, responding consultants ranked microcomputers as the equipment most frequently recommended and purchased with mainframes low in the list behind printers, communications equipment, networks and other hardware and software elements. As a major contender in the microcomputer marketplace, Radio Shack is strengthening its posi-

Radio Shack's CLP promotes mutual open information exchange.

tion as more and more consultants discover the value of Tandy computers through the CLP.

Key markets for computers . . . and consultants

The consultant community also serves as an indicator of those segments of the business marketplace where growth is expected regarding microcomputers. According to *Computer Consultant*, the growth in the industry experienced over the past two years will continue throughout 1987.

While growth is expected in all business areas, the true momentum for microcomputers lies in the small and medium-sized businesses, particularly in a variety of vertical markets.

The construction industry is an example of such markets. According to the National Association of Home Builders, only 12 percent of the construction firms in the United States used computers through 1984. Thus, the construction market holds great opportunity for the microcomputer industry as more and more builders view the computer as a means to increase efficiency.

Manufacturing is yet another arena where microcomputers are expected to come into their own. The comparatively minimal cost of microcomputers will enable small and medium-sized manufacturers—some 200,000 of them—to automate their operations. It is estimated that by 1989, 50 percent of these firms will have computerized manufacturing operations, a sizeable increase from the current 3 percent who have automated.

The hotel/motel industry is projected to be an active area as small and medium-sized segments of the market experience growth ranging from 10 to 30 percent. A proliferation of economy type motel chains will offer competition to the more traditional segments of the industry.

An influx of specialty stores and new trends in retailing concepts bode well for the microcomputer industry as many of the entrepreneurs will turn to computers to manage their customized operations.

Statistics indicate that the legal profession also offers great potential for microcomputers. An estimated 625,000 individuals practice law in the United States either in their own practice or in larger firms. Approximately 25 to 30 percent of these firms are utilizing computers. It is predicted that the remaining 70 to 75 percent will soon follow suit, using computers for legal accounting functions, word processing and access to information sources such as LEXIS, a legal data base created by Mead Data Central in New York.

As hardware and software vendors alike pursue these markets, the Consultant Liaison Program should prove to be a valuable edge on the competition. Radio Shack will continue to refine the CLP toward cementing a relationship that will work to everyone's advantage.

Closeup:
The independent perspective
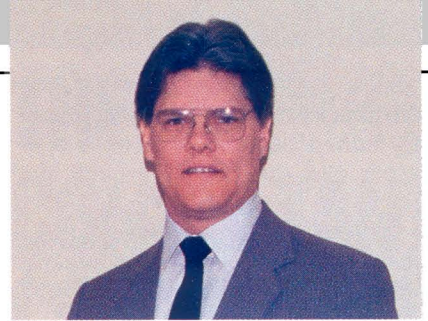
Since its founding ten years ago, the Independent Computer Consultants Association (ICCA) has become a viable force in the computer consultant community. President Jeff Sachs, who will become Chairman of the Board at the organization's annual conference in May, discussed the ICCA with Answers.

Answers: Why was the ICCA founded and what are its goals and purposes?

Jeff Sachs: When the ICCA was founded in 1976, there was no association for independent computer consultants. Our primary goals are to promote professionalism within the computer consulting industry and to increase awareness of the services available from independent computer consultants. A third stated goal is to provide members with group benefits that may not be available from other sources: insurance plans, marketing brochures, business development seminars and things of that nature. It's also important to note that we have an ICCA code of ethics to support our goals. The five sections of our code deal with independence, professional competence, integrity and objectivity, confidentiality and professional conduct.

Answers: Can you profile a typical member?

Sachs: That would be difficult as our membership provides services in all areas of computing. We have generalists, people who work on many types of computers from mainframes to micros, and we have specialists who have a particular expertise, perhaps in a programming language or type of hardware. We have some who specialize solely in data communications. Membership in the ICCA is by firm. That is, the member representing a consulting firm must be one of the principles of the firm, an owner or a partner, for example. We currently have approximately 2300 member firms representing over 6000 computer consultants and we're still growing.

Answers: What are some of the group's activities? How does the membership benefit?

Sachs: We are an independent computer consulting trade association dedicated to the betterment of the industry as a whole. Our chapters conduct seminars oriented toward running and developing a professional consulting business. Perhaps the biggest issue we're involved in today is Section 1706 of the Tax Reform Act of 1986. For the purposes of this discussion, I won't go into detail; but we're working very hard at high levels because of the potentially devastating effect on consultants. We hope to have some answers or a resolution by our conference in May. The conference, incidentally, is another one of our major efforts. It gives consultants an opportunity to benefit from seminars and presentations by well-known figures in the industry. Additionally, there is a lot of interaction on a personal consultant-to-consultant level.

Answers: When is the conference and who may attend?

Sachs: May 20 through 22 at the Saint Francis Hotel in San Francisco. It's open to both members and non-members and we take registrations at the door!

Answers: As a consultant, do you see the need for consultants increasing?

Sachs: Absolutely! Although, especially as it relates to PCs, the nature of the business is changing. We see that PCs have become very prolific in the workplace and we're seeing users that are more computer literate. Therefore, it is no longer necessary to teach them the basics, but rather to help them get more from their systems by helping them decide which software is appropriate for what they want to do: more system management type services. The users are becoming more sophisticated in their demands on their computer systems. However, I will stress that all systems, regardless of how large or how small, require a certain amount of overseeing by skilled data processing professionals. While a tremendous amount of the software available today makes it easy for end users to do some of their own "development work," it is important that they recognize when that process goes beyond their capability and requires the assistance of a professional. An area that will be a good marketplace for consultants is networking. Until we have a standard as accepted as MS-DOS for an operating system, and nail down certain compatibility problems, consultants may be very valuable in defining, purchasing and implementing PC-based networks.

Answers: The ICCA has a Vendor Advisory Group: How is that program progressing?

Sachs: We now call the VAG the Consultant Liaison Group and its ranks are growing every year. We receive calls from companies who want to establish consultant liaison programs looking for suggestions and direction for their plans. I'd like to commend Tandy for its continued work in its Consultant Liaison Program. The program is really at the forefront of liaison programs for the micro industry. Tandy has been very good about referring clients to members of the CLP to help customers get the expertise and service they need. Personally, having representatives of Tandy as a resource for me has made it very easy to get the information I need. Liaison programs are advantageous. They're good for the consultant, good for the vendor and good for the client: they get everybody talking.

Jeff Sachs has 15 years in the data processing industry. He founded Alembic Computer Services, Inc. in Mesa, Arizona, in 1980, offering programming and analysis services on mainframes and minicomputers. Since then, services have expanded to include microcomputers.

For information, call the ICCA National Office (1-800-GET-ICCA [438-4222]).
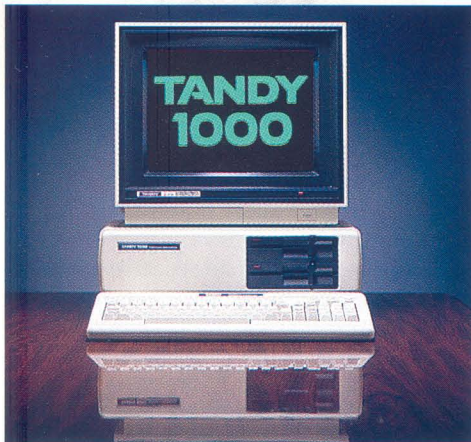
Skating on solid ground.

The daily bookkeeping necessary to maintain a small business can consume the owners' time to the extent that they sometimes find themselves skating on thin ice when it comes to maintaining day-to-day operations. The owners of a figure skating school in Troy, New York, recognized the need for sophisticated accounting procedures and initiated a computerization plan before they broke through the ice and found themselves drowning in a sea of paperwork.

When Mark and Linda Lansing first opened Silver Skates, Inc. in February of 1985, they divided the responsibilities of the business between themselves. Linda is a triple gold medalist in figure skating and took charge of the staff of instructors that teach the school's more than one hundred students. Mark's background was in business administration so the school's business affairs became his responsibility. Initially, the day-to-day bookwork alone took up to two hours to complete, a substantial part of Mark's working day.

"I had worked with computers in business but I had never actually purchased one for myself," said Mark. Undaunted, he began a process of product research and testing that led him to final decisions about both hardware and software. In the interim, he learned a valuable lesson about selecting a computer system. "I think that both the hardware and the software solutions should be considered at the same time," explained Mark. "Naturally, you need software that is going to run on the hardware, but you also need hardware that's going to run other things besides the specific software that you're going to buy at the time." Mark's research led him to the Tandy 1000 as the right computer for the company's needs. He selected DAC Easy Accounting as his software solution because "DAC Easy Accounting is great. It's one of the main reasons I bought the computer; but the Tandy 1000 can do a lot of other things."

Since purchasing the Tandy 1000, Mark's daily bookwork takes only a fraction of the time it once required. In addition, he now uses Borland's Newsroom software to print the company's newsletter and pfs:write word processing software. "I don't even have a typewriter any more," quipped Mark. He now has enough time to work on his latest computer project, learning computer-aided design. "Generic CAD software goes for about $99 while a lot of others go for about $2500. It's another "easy" type of solution; it doesn't do everything but it does a lot."

As Mark explained, the division of duties that once existed at Silver Skates is not as distinct as it once was. "I branched out and started teaching some of the classes. I can't skate as well as Linda, but she has taught me a little."

B.M.O.C. at Clemson University
Tandy Computers...Big Machine On Campus

Integrating microcomputers into a university's complete computing system brings computing power to all students.

Once a military school, Clemson University in Clemson, South Carolina, clings to the traditions of pride and excellence that have characterized the school's history. While Clemson's roots go back to the turn of the century, the university has a foot planted on the firm ground of the present and an eye focused on the promise of the future.

Clemson University has drawn to the forefront of academics by insuring that its over 12,000 students have the latest innovations in technology available for their pursuits. An outstanding example of such innovations is the personal computer, which may well be to the latter half of the twentieth century what the automobile was to the first half—a turning point for society. Therefore, at Clemson, as on many of today's college campuses, the computer has become as standard a learning tool as the textbook.

Clemson University can be considered as a model for the future of computing on college campuses. From computer science majors harnessing the speed and power of a mainframe to a freshman English student using a personal computer with word processing software to write a five hundred word essay, the computer is a way of life at Clemson.

Stone age mainframe

While credit for the growth of the university's computing facilities goes to a number of visionary individuals, one man, Dr. Chris Duckenfield, deserves a fair share of the credit. Duckenfield, who serves as the Vice Provost for the Division of Computing and Information Technology (DCIT), joined the staff at Clemson in 1978. With an impressive background that includes bachelor's and master's degrees from Oxford University and a doctorate from the University of Connecticut, Duckenfield took charge of the computing facilities at Clemson.

"When I came here we had one IBM mainframe that had three megabytes of memory," recalled Duckenfield. "We thought that was a lot of memory at the time."

Since Dr. Duckenfield arrived at Clemson nine years ago, the world of computing has expanded and changed and Clemson's computing facilities have grown with the industry. The network has grown to over 2000 workstations and is now based around a 128 megabyte National Advanced Systems AS/XL-V60 and several DEC VAX computers. The network now reaches to all buildings on campus.

In addition to on-campus terminals, the mainframes are accessible by phone through the use of modems connected to the telephone network. However, one of the biggest changes in computing at Clemson came with the introduction of an alternative to mainframe computing, the personal computer, and Tandy computers have been an integral part of Clemson's expansion into personal computing.
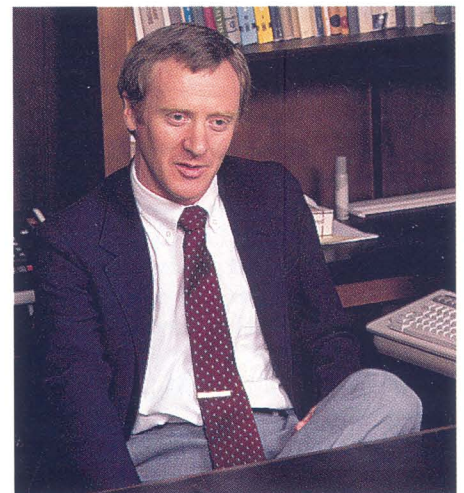
Dr. Chris Duckenfield, Vice Provost, DCIT

With the advent of the personal computer, computing began to move out of the sciences and into the student population at large. In response to requests from the university's faculty and student body, DCIT began a program that has enjoyed wide success. In addition to existing open access labs of mainframe terminals, DCIT began to equip open access labs
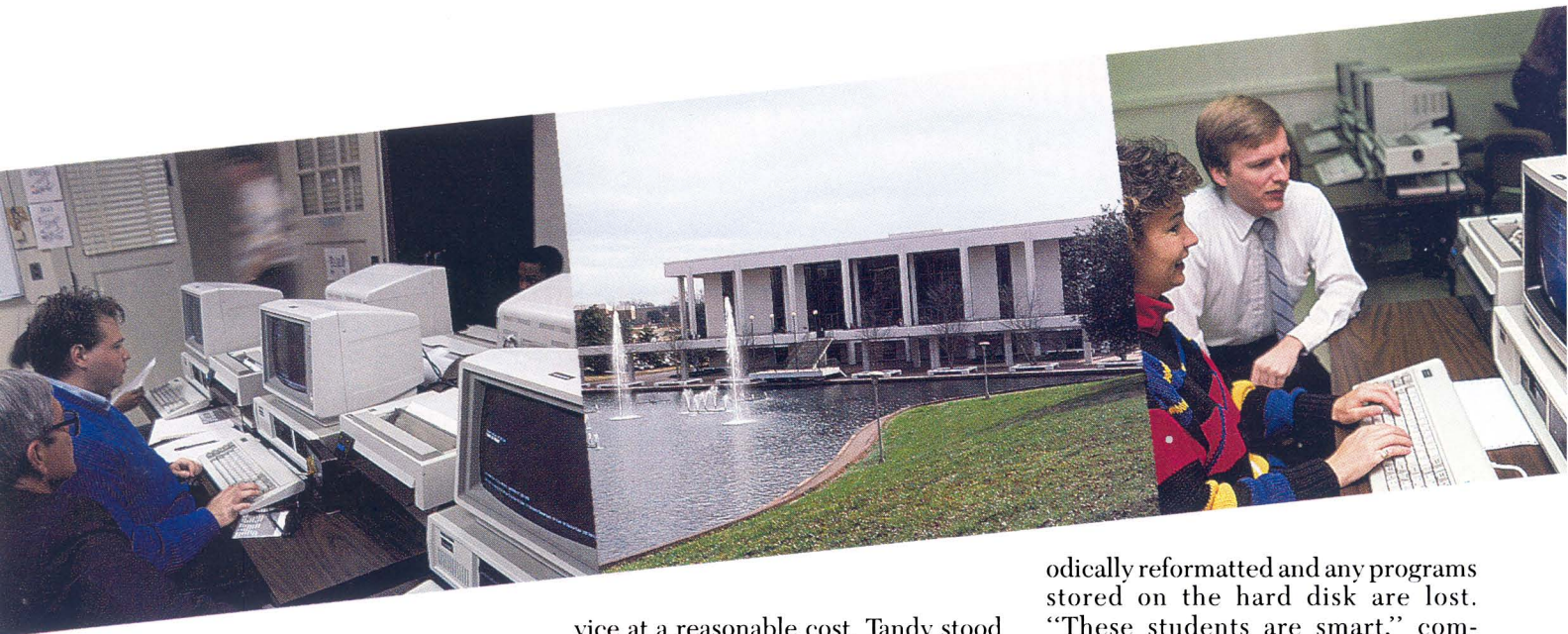
with personal computers. DCIT's goal is to provide enough micros and terminals so users can access the type of computer equipment most efficient for their particular application. Hours of operation typically are from early morning until late in the evening, with extra hours added at peak times during the semester. To further increase efficiency, an effort is underway to tie all the microcomputer labs into the university's computer network allowing users to select between mainframe access and stand alone computing.

Compatibility criteria

When DCIT purchases computer equipment, it wants to be sure the technology will have a life somewhat equal to the life of the equipment. For instance, when the IBM PC was introduced, DCIT waited before committing the university to PC compatibility. Once the PC standard was firmly in place, DCIT was willing to make the investment necessary to integrate PC compatibility into its much larger computerization scheme.

Once the decision to begin purchasing PC compatibles was made, DCIT formulated three criteria: price, support and full compatibility. "Once we decided that compatibility was important, we wanted to be sure that a particular computer would actually run software designed for the IBM PC," stated Duckenfield. "We also wanted to get a good price; you can buy a Hong Kong special and beat IBM's price anytime. However, although price was important, it wasn't the determining factor because we also needed support—we had to be able to get ser-

vice at a reasonable cost. Tandy stood up well on all three counts; they were compatible, the price was good, and we could get the computers serviced locally."

The decision made, DCIT began in March of 1986 to equip Clemson's open access computer labs with Tandy computers. "We've established several laboratories of Tandy microcomputers. We've got the IBM PC/XT compatible Tandy 1200s in laboratory settings, fully configured with printers, color monitors and software," Duckenfield said. All of the Tandy 1200s in use in the open access labs are equipped with hard disk drives that allow DCIT to supply students with a variety of basic software. "We provide the operating system, BASIC, word processing and, in some cases, spreadsheet," Duckenfield continued. "The departments provide their own software beyond that."

DCIT's decision to use Tandy computers was not the first time that Tandy had been selected for computer equipment at Clemson. Tandy computers have had a strong presence on the Clemson campus since the introduction of the Model I. While Models I, III and 12 are still in use on campus, individual departments are now upgrading to the new generation of Tandy computers including the Tandy 1000 and 3000. DCIT also intends to make use of the increased computing power a Tandy 3000 has over Tandy 1200s, where necessary, in order to provide the right type of computer for each computing job.

Signs in the open access labs warn computer users to copy their work onto a diskette—hard disks are peri-

odically reformatted and any programs stored on the hard disk are lost. "These students are smart," commented Cindy Calcutt, who coordinates Clemson's open access computer labs. "Some of them came up with a way to put hidden characters in their file names so that we couldn't delete them from the hard disks." Calcutt added that a method has been found to erase the "secret" files. Being in charge of twenty-five computer labs keeps Calcutt on the move—she has more than a hundred students working for her as lab assistants and her key ring carries more than thirty keys.

Computer majors, step aside

Now that open access computer labs at Clemson have been outfitted with personal computers, the natural question is: "Is anybody using all those computers?" According to Duckenfield, almost ninety percent of the university's students use a computer at some time while attending Clemson. "It would be difficult to go through four years here and not use a computer," stated Duckenfield. "The College of Liberal Arts at Clemson probably has a bigger complement of personal computers and terminals than any other college of liberal arts. It's public access equipment— anybody can walk in and use it—but mostly liberal arts people use it. Students who take an English course or creative writing or journalism are going to use personal computers even if they are only using them for word processing. Of course, in engineering and computer sciences, everyone is using computers."

Once all these students have learned to use computers, one might assume that they would be purchasing them for use at home. Unfortunately,

"It would be difficult to go through four years here and not use a computer."

...Dr. Chris Duckenfield
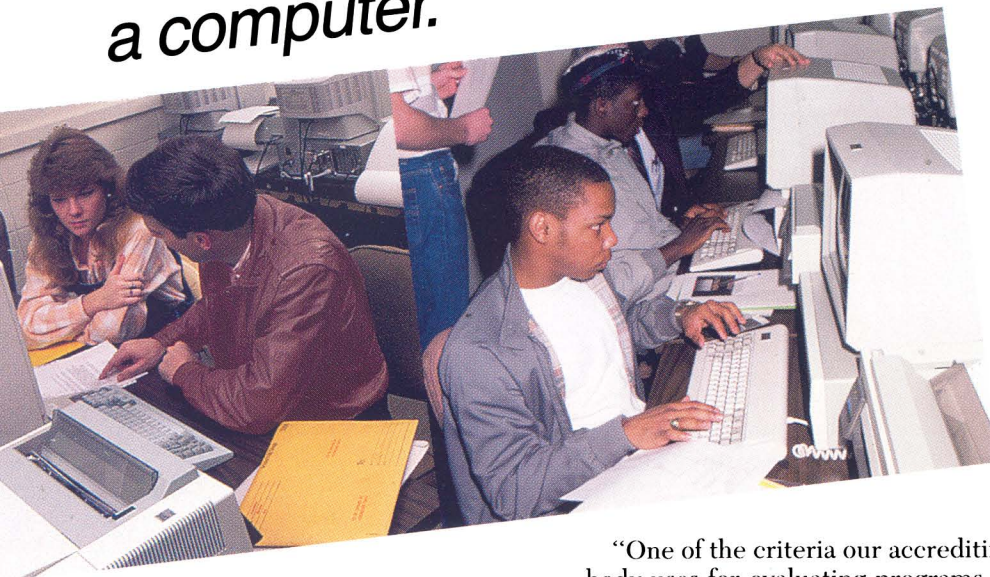
according to Duckenfield, Clemson students are far below average in respect to owning personal computers. "We're trying to think of ways to encourage students to purchase their own personal computers," he said. "One way would be to discontinue providing the service in the labs, but we don't want to do that." As an alternative, Clemson has signed volume purchase agreements with a number of computer vendors including Tandy. "The very fact that you can offer a substantial discount is attractive in itself because the students realize that they are getting a deal they won't be able to take advantage of once they graduate."

A new tool for the trade

When Duckenfield says that everyone in engineering and computer sciences is using computers, he is not exaggerating. Typical of the departments in these colleges is the Department of Industrial Engineering. Under the guidance of Dr. Robert Davis, Industrial Engineering has integrated computers into its curriculum. "The microcomputer is not merely a tool of convenience, it's a tool of necessity," stressed Davis. "I cannot conceive of our students being able to survive in the workplace without computer knowledge. It's not just a matter of being familiar with how to do things on a computer, it's being very comfortable with doing them."

"One of the criteria our accrediting body uses for evaluating programs is: How well are computers integrated throughout the curriculum?" Davis continued. "It's not enough to have a course in computational methods; you have to integrate computing throughout the curriculum. Students must come out of your curriculum not only computer literate in a general sense, but computer literate in their field."

Throughout their college career, Industrial Engineering students are taught to think of computers as sophisticated problem solving tools. As freshmen, engineering students take a course in introductory computational methods, the bulk of which is done on microcomputers, as a springboard to upper level classes that will depend on computing skills. The next step is learning to use an integrated software package to do word processing, spreadsheet analysis and data base development. As students progress in their studies, they are constantly drawing on computing knowledge from previous classes to solve engineering problems.

A specialist in support

Tandy's representative at Clemson is Educational Specialist Donn Duncan. No matter where Duncan is on campus, he is well known. As he walks down the corridors of a building, voices call out to him from offices and laboratories. Some people ask him questions about equipment they have or request an opinion on a new hard-

ware or software solution; the rest just want to say hello. "It's like there are dozens of separate businesses here on campus," Duncan said with a soft spoken southern accent. "They have their own budgets and purchase their own equipment."

An example of the dedication of Clemson to the state of South Carolina is The Clemson University Forestry and Agricultural Network (CUFAN). A joint project of DCIT and the College of Agriculture, CUFAN not only encompasses the Clemson campus, but also the entire state of South Carolina, providing a computer communications link between Clemson and South Carolina's forty-six counties. CUFAN provides up-to-date agricultural data and information on plants, animals, food, economics and weather. Anyone in the state with a computer and a modem can place a local call to the county extension of CUFAN and access both CUFAN and the Clemson Computer Network. A Radio Shack Model 12 computer provides the link between the county extension and Clemson. In the summer of 1986, it was the CUFAN network that was instrumental in procuring and distributing hay for drought-stricken farmers in the south.

A further example of the connection between Clemson and the computer industry is the selection of Clemson as a beta test site for a CD ROM application of a library reference index. Working as a terminal for the CD ROM unit is a Tandy 1200 computer. The test compact disc, which is only about sixty percent full, stores approximately 60,000 pages of scientific periodical listings—the equivalent of about three feet of shelf space.

As more college graduates enter the work force possessing computer knowledge, they will bring new tools and new ideas to the economy. The widespread use of computers in colleges today can be seen as a signal of what the future holds for the world beyond the classrooms and laboratories of academia. Clemson University has made the first step toward the future; they have given the leaders of tomorrow the tools they will need for success.

TEAM EFFORT IN THE MOTOR CITY...

BATTING 1.000 IN COMPUTER SUPPORT AND SERVICE

Detroit area businesses find they can rely on Radio Shack's Training and Support Centers for solutions and assistance.

In today's challenging business world, computer users need all the support they can get. It's tough out there—success or failure can hinge on making the right decisions about complex business systems. With its Training and Support Centers (TSC), Radio Shack is ready to help businesses meet the challenge.

There are nearly 60 TSCs throughout the United States, serving businesses from the East Coast to Hawaii. Rob Kruss is the Training and Support Manager of one of the busiest: the Detroit, Michigan, TSC.

TSCs are staffed by teams of professional system engineers. While system engineers are familiar with all Tandy computers and can deal with most problem situations, each has a particular area of product specialization, so customers have access to expert knowledge on all Tandy equipment and software.

"Basically," said Kruss, "we're here to do whatever the customers need us to do. It's our job to see that they get the most out of their systems. If they need help with setting up a system, have questions about hardware or software, or if they just need some answers, we're there for them."

Computer support services can prove vital to an organization's operations. "In fact," Kruss stressed, "many businesses consider support to be a necessary investment."

"The TSC offers users a wide range of services," Kruss continued. "With system installation and orientation, we provide the means to get the customer started as quickly and as efficiently as possible. And, with our System Administrator Service, a systems engineer will go to the customer's location to manage the computer system.

"Of course," Kruss noted, "the users are always going to have questions." To keep up with those questions, TSCs offer phone support on a subscription basis. "We keep a file on each subscriber that tells us what kind of system the customer has, which programs are used and any past problems the user may have had. Since we're often able to solve the problem over the phone in a matter of minutes, the customer is able to resume operations very quickly."

TSCs also offer two types of training—on-site and classroom. According to Kruss, on-site training is ideal for customers who have specialized applications or need training for several people at once. "We go to the customers' businesses and train users in their actual work environments. This makes them more comfortable with the computers because many of them have never used a computer before. On-site training helps them overcome any fears they might have.

"Our classroom training provides users with instruction on the most popular computer applications, such as word processing, spreadsheets and data bases." TSCs also offer classes for Lotus 1-2-3, the MS-DOS operating system and portable computer operations. "The classes usually last a day and are conveniently scheduled—some are offered as often as once a week."

TSCs also offer a ten-hour class in basic computer applications to school teachers and administrators at no cost. If users have a specialized business problem requiring a software solution which off-the-shelf software packages cannot provide, the TSC can custom design an application to meet those needs.
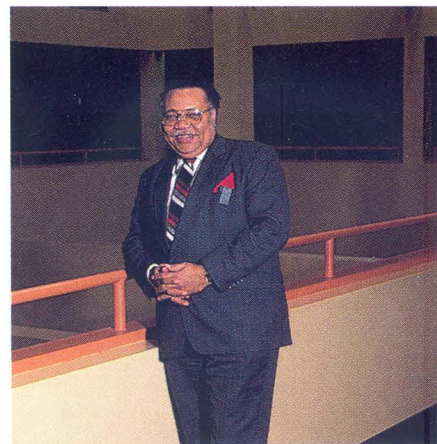
Service organization finds value in TSC business sense

One organization that has availed itself of almost all of the Detroit area TSC's services is the Greater Flint Opportunities Industrialization Center (OIC). The OIC is located at Mott College's Walter Reuther Learning Center in Flint, Michigan, about 70 miles from the Detroit TSC. TSC personnel will travel up to 150 miles for customers requiring service. "They realize that users outside of the city need support, too," said Reverend Harry Redds, OIC's director.

A nonprofit organization, the OIC provides a valuable service to the community. "We are in the employment and training business," Redds explained. "We help unemployed people learn the techniques that can put them back to work." The OIC teaches its clients everything from resume writing to job interview skills.

"Each year," Redds explained, "we have anywhere from 3,000 to 5,000 clients coming through our program. Because we receive funding from various government agencies, we have to keep track of a tremendous amount of information for each client. We record biographical information, and we follow each client's progress on the job after he or she leaves us. Then we generate reports of the data for our funding agencies.

"It took a tremendous amount of time to record the data and generate these reports by hand. We needed an automated system so we could spend more time doing what we're here to do—serving our clients.

"When we first decided to automate our system, we talked to a number of dealers who all said *if* it could be done, it would be extremely expensive. The first time we met with the Radio Shack support group, right away they said yes, it could be done.

"We were amazed. In a couple of hours, they were able to understand what we did, how we did it, and what we needed to do to improve. Then they came back with a proposal and a very reasonable price. They helped us install the system, they provided us with training, and now they are customizing a software package for us that will save us hours and hours of work."
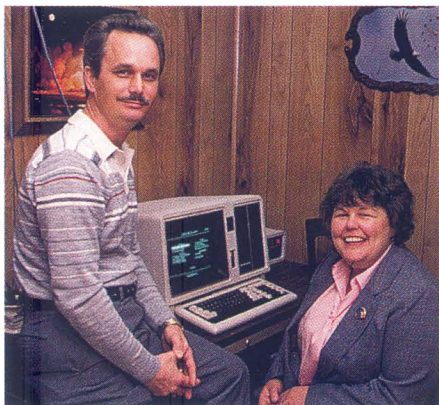
Manufacturing firm finds TSC is the key to software assistance

SKI Industries in Mt. Clemens, Michigan, is a growing design and manufacturing firm with a product line that ranges from small metal cases to huge production-line machinery. The "SKI" stands for the company's equation for success: Skill, Knowledge and Integrity.

A contributing factor to SKI's growth has been its computer system. While small compared to some of Detroit's megacorporations, SKI still processes massive amounts of data. To keep up with its ever-expanding operations, the company began a conversion from the Radio Shack Model II and Model 12 computers they had been using since 1980 to a Tandy 6000 multiuser system. SKI turned to the Training and Support Center for help in establishing the new system.

Office managers Bill Peck and Carol Stapleton rely on their computer sys-

tem to keep SKI running smoothly. "With our old system," Peck said, "the programs were on floppy disks. You could only work with whatever disk you had in the computer at the time.

"With our new hard disk system, we can jump back and forth from accounts payable to general ledger to Profile or whatever we need. At first it was really confusing; but all we had to do was call the support center. They took us through the programs step-by-step, and made things a lot easier for us. If you hang up the phone and forget what they said, you can call them back, and they'll take their time and go through it again. They're good. I know what to expect from them, and I would recommend them to anybody."

Stapleton pointed out the importance of a backup system to SKI: "If we lost our files, it would take us at least a month to replace them. We needed a good backup system, but we wanted something beyond the one described in the software manual. We called the TSC, and they gave us an excellent alternative that maybe goes even a little farther than it had to. And it's paid off so many times. For example, last year, we accidentally cleared all of our payroll records—we couldn't even send out W-2 forms! But with the backup, we brought everything right back, and it was no problem at all."

Recently, electrical problems caused SKI's computer to go down. "I made up my mind," Peck said, "that I was going to reinstall XENIX, but something told me I'd better call the support center first. They identified the problem as a hardware problem. I needed repairs before I could do anything. If I hadn't known that, I would have wasted a minimum of two hours trying to load that software.

"When the system is down, all of our accounting is down. The work starts piling up. The support center knows that. When we call, they know we need them. We've gone to them with the disks in our hand and a sad face saying 'Can you help us?' Their answer is 'Sure, just give us a couple of hours and it will be done.'

"That's why we chose Tandy rather than one of the other computer companies. They get the job done. We've been very happy with the results."

TSC expertise helps distributor solve inventory issues

With a product line of more than 16,000 items, Greenfield Hobby is the distributor for over 800 toy and hobby stores in the U.S. and Canada. Bob Boyle, president, and chief controller of automated business systems, said, "We needed a system that could handle our inventory and customers, and provide a reliable backup.

"As a hardware engineer, I know a lot about computers—but I'm no programmer! The support group recommended software, and helped us customize it to suit our needs. They also conducted a training class here at the office to familiarize our employees with the system's operation.

"We have an exceptionally large data base—probably one of the largest in Detroit," Boyle stressed. "When we need advice, we usually need more than the average salesperson can give us. We turn to the TSC. Their people have the expertise that we need.

"We started with a Model 16," Boyle said. "At the support group's recommendation, we're converting our operations to a Tandy 3000 HD. They convinced us that the 3000's speed would make it worth the change. We also have 15-meg and 70-meg hard disk drives, and two disk cartridge systems for backup."

Greenfield Hobby Distributors also subscribes to the TSC's phone service. "Because I fall into the category of 'knowledgeable user,'" Boyle noted, "I haven't had as many questions as others might. But when I do have a question, or if I'm out of town, it's good to know the support group is there."
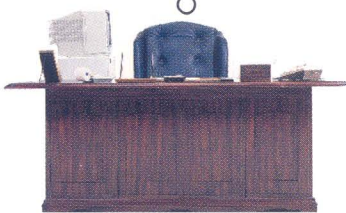
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What's a CLP?

As microcomputers continue to gain prominence in today's businesses, computer consultants have expanded their services to facilitate the industry. As a result, consultants have become a major influence affecting the businesses they serve as well as hardware and software vendors.

Realizing the important role of consultants, Radio Shack developed a Consultant Liaison Program (CLP). Initiated in 1985, the purpose of the CLP is to provide consultants with the information they need to serve their clients.

Designed to promote a mutual commitment to business computing, the Radio Shack program is based on the establishment of mutual information exchange which benefits all concerned, including the end user.

Radio Shack provides consultants with timely business, product and technical information as well as information about its management and service and support functions. Additionally, CLP members may take advantage of special "hotline" telephone numbers to receive technical information.

Radio Shack also works with consultant associations such as the Independent Computer Consultants Association (ICCA) to insure that the consultant program continues to provide information vital to consultants.

Radio Shack understands the role of consultants and, through the CLP, strives to establish and maintain a mutually beneficial relationship with the consultant community. For information on benefits available to consultants through the CLP, contact a Radio Shack Computer Center or write: Consultant Liaison Program, 1400 One Tandy Center, Fort Worth, TX 76102.

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