

ANSWERS™

The Magazine for Tandy® Computer Customers



America's Cup:
Plotting a Course
for Victory with
Tandy 2000s — Page 4

Winter
Issue

Beyond PC compatibility

In the personal computer market, compatibility refers to a product's ability to use the best-selling software on the market. Today this happens to be those programs which are based on the MS-DOS operating system. IBM's PC uses the MS-DOS system, hence the phrase "PC compatible".

Beginning with our Tandy 2000, and including the Tandy 1000, the Tandy 1200 and most recently, the Tandy 3000, we've put together an MS-DOS product line compatible with the most popular software around.

But there's another aspect to compatibility. The compatibility between you, the customer, and the companies that made and sold you your computer. With Radio Shack, you're doing business with both the manufacturer and the retailer. So when you walk into one of our Computer Centers or Radio Shack stores, you're talking with people who work for the company that made the computers they sell. They can work with you in selecting the right computer, and they'll continue working with you after the sale, providing the support, training and service you need.

Our sales are proving we've done one of the best jobs in manufacturing and retailing a product line. But it's our customers who are buying because of service and support, and because of the general confidence in Radio Shack that are proving a much bigger point. We are compatible with your business.

Both our computer products and our people will continue to work hard for your business.



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

LETTERS

TO THE EDITOR

Editor:

I applaud your premier issue of *ANSWERS*, the magazine for Tandy computer customers.

I found the magazine to be well done and very informative. Keep up the good work. I am looking forward to the next issue.

—Eugene Mateff, Ed. D.
Superintendent of Schools
Saucon Valley School Dist.
Hellertown, Pennsylvania

Editor:

I have just received the Premier Issue of *ANSWERS* magazine. I am looking forward to seeing it grow in usefulness to Tandy users and as a buying aid to potential Tandy users. I have a Tandy 2000, my second machine (1st was a Model 12) and I am still hoping it will serve me for a good while, because I think it is a great PC.

—Albert L. Clark
Summerfield Farms
Heathsville, Virginia

Editor:

Congratulations on producing a well constructed, high quality and very business-like magazine like *ANSWERS*. I appreciate seeing such an appealing approach to such an appealing line of microcomputers! In the past, I have written to John Roach, complimenting Tandy on the reliability of your machines. We are doing things now and taking in jobs that were only dreams five years ago because of your reliable machines. When it comes time to move into the MS-DOS line of computers, the choice is simple—Tandy!

—Joseph M. Boburka
D & S Mold & Tool Co.
Marinette, Wisconsin

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Letters sent become property of the magazine and cannot be returned. Due to volume, we cannot respond to every letter.

PRESS REVIEW

In our Fall issue we reviewed the new Tandy 3000 personal computer. We thought you would be interested in seeing some of the comments made by the press after the 3000's introduction at the Computer Dealer's Exposition in November.

—Editor

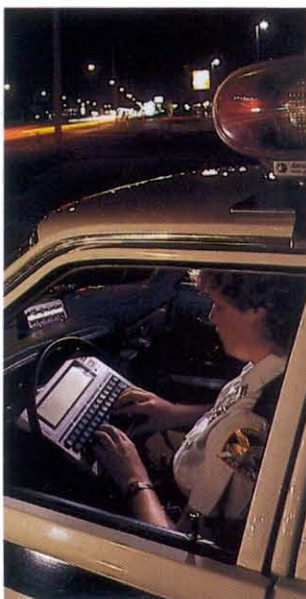
I have never seen a microcomputer operate as fast as it (the Tandy 3000) does. Heck, I loaded BASIC into it for five minutes, over and over again, just to see whether my eyes were deceiving me!

Trot down to your Tandy Computer Center and take a look at the 3000's high resolution graphics. Outstanding. Here we have an IBM AT compatible that goes the AT a lot better, but is still compatible.

—Lonnie Falk in
PCM Magazine,
December 1985

A run of *BYTE*'s BASIC version of the Sieve of Erathosthenes benchmark on a non-production model of the Tandy 3000 yielded a 55.3-second average execution time, a 30.8 percent decrease over the published execution times for the same benchmark on an AT.

—G. Michael Vose in
Byte Magazine,
December, 1985



4 CUSTOMER PROFILES

By plotting hull designs on the high-resolution screen of a Tandy 2000 computer-aided-design system, two naval architects are plotting to win the America's Cup in 1987. Turn to page 4 to find out how a fast computer is helping to design faster boats.

On page 6, Radio Shack's Model 100 and Tandy cellular telephones are on patrol with law enforcement officers in St. Petersburg, Florida.

If you're currently sending detailed specifications of your products to dealers across the country, why not get your dealers "on line" with a computerized catalog? That's what Star Manufacturing did using Tandy 6000s, and it turned out to be one of the best business decisions they've made. Read about it on page 12.

On page 14, a first experience with computers wasn't the last—fortunately. Switching to Tandy computers has streamlined the business operations of an Arizona lumber products manufacturer.



8 PRODUCT PROFILES

One of the newest computers on display at your Radio Shack Computer Center comes complete with software, display, disk drive and telephone modem. But what really sets the Tandy 600 apart from our other desktop computers is the simple fact that this complete system fits in your briefcase.

On page 10, take an inside look at an innovative approach to backup storage. The Tandy Disk Cartridge System combines the advantages of removable floppy disks with the high speed and storage capacity of a hard disk system.



11 TECHNIQUES, ETC.

Tandy Computer customers explain how they're using computers to address specific business problems. Turn to Techniques, Etc. and perhaps you'll discover a new application for your computer or how other computers can become your business solution.

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The Race is on for America's Cup.

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



Britton Chance, Jr. at his Tandy 2000 CAD system.

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 the *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."



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

"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 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 Berkeley 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, recently 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 the 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.



Stars and Stripes and Liberty in action.

"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.



The decorative wall hangings are actually tank test models used to evaluate different hull designs.

The "Paperless" Police Department

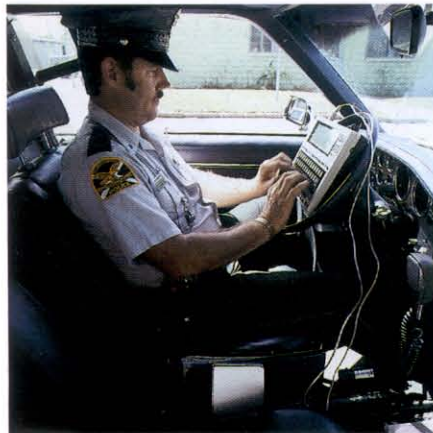
Police Officers in St. Petersburg, Florida find that state-of-the art electronic equipment makes their job more effective.



Sergeant Maurice Q. McGough, the force behind the "Police Portable Computer Project".

Have police officers become computerized? You bet. And it all began in St. Petersburg, Florida.

Flashing blue lights. Whoops! "Yes Officer, I guess I was going a little fast..." A routine day for a police officer. And routine forms to complete—that is—routine forms the officer used to complete. This officer has a portable



The Model 100 fits comfortably in a St. Petersburg police patrol car.

Radio Shack Model 100 in the patrol car. And this means the officer can enter information into the Model 100, hook it to a phone line, and send it to headquarters. A much more convenient way to collect, transfer and store information.

Sergeant Maurice Q. McGough, developer of a pilot program to streamline police work through the use of electronics, began this project in April 1984, starting out with one Model 100 portable computer. Since then, things have really exploded.

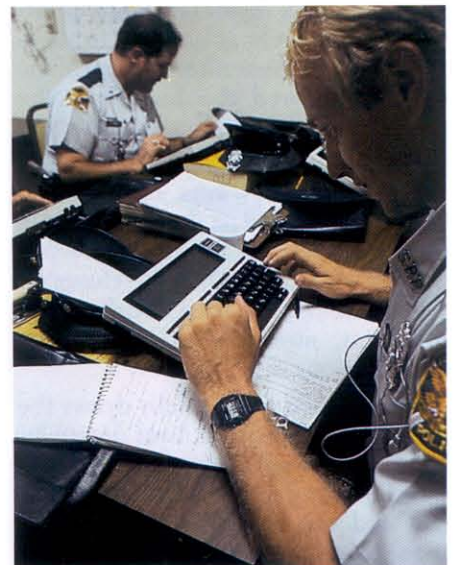
The Test

McGough, a member of the St. Petersburg Police Department for over 15 years, gave 20 police officers Model 100 portable computers on May 18, 1984. He hoped these computers would help to eliminate the tedious and time-consuming chore of manually writing police reports. Often a report is re-recorded by detectives, crime analysts and clerical personnel in various summaries and reports. "We saw the portable computer as an opportunity to make that (writing police reports) less of a chore," says McGough.

And the project works. So well, in fact, that over 200 police officers now use the Model 100, and it's hoped that

all police officers will have computers soon. And the police officers find the computers easy to use. Officers are given an 8 hour training course and are also encouraged to take their computers home to learn more applications. The results are outstanding. The officers reported that they spent less time creating better reports with portable computers, and that they enjoyed the experience. They successfully transmitted hundreds of reports over ordinary telephone lines to a host computer at the station for printing and storage. And with over 130 thousand police reports generated each year, the Model 100 can add up to significant time and paper savings.

Not only is the Model 100 used for reports and memos, but officers using the computer have developed other uses that make their jobs more effective, such as a radar log, daily schedule with court case appointments, or a surveillance notebook to keep track of ongoing cases. Currently, the use of the Model 100 to generate traffic tickets is being explored. And of course many officers take their computers home. Officer L. Pierce III has taught his daughter games on the computer. Not only is his daughter learning more about computers, but she is also learning with her father, giving both a shared experience. As McGough pointed out, the computers are positive in improving morale along with computer literacy among officers. "The officers feel more a part of a professional organization" states McGough.



Police officers enter data into their Model 100's—saving mounds of paperwork.

With four high schools in the St. Petersburg area, Youth Service Detectives find the Model 100 extremely useful, particularly because by law, the Youth Services section of the police department must maintain a separate records system. McGough has even

It's hoped that all police officers will have a computer soon.

asked for a grant specifically for Youth Services so that all detectives and supervisors can have their own Model 100's. And just using the Model 100 in and around the schools generates interest. In fact, one of the School Resource Officers said that while using a Model 100 at St. Petersburg High School, several students showed considerable interest.

Cellular Communications

As the continued use of the Model 100 computer proved to be more and more successful, McGough began to investigate other aspects of electronic improvements. His next choice was the cellular phone. Working with Tandy and four other corporations, sixteen cellular phones were installed in patrol cars; 8 cellular phones were installed by Tandy. The results are impressive. "When a man barricaded himself in his apartment with an arsenal of weapons, and fired twelve to fifteen rounds through the walls and ceilings during a three hour stand off, the cellular phones in two cruisers on the scene provided vital communications for a successful TAC (Tactical Apprehension and Control) Team mission," states McGough. Often during a crime the police car radios get

Cellular phones enhance police communications.

jammed from all the calls being made, thus the need for alternative communications. The officers on the TAC Team commented that for the first time they can remember, "the radios actually worked."

With over five hundred 911 callers a day in the St. Petersburg area, things

tend to get congested. But now, Communications Officers can patch a call directly to an officer, thus reducing response time drastically and also improving the success rate of solving a crime.

Most recently, Hurricane Elana sent strong wind and rain to St. Petersburg. Evacuation of many areas became necessary. One officer on duty that day was able to call his family during the storm and be reassured that they were safe, allowing him to concentrate on his job.

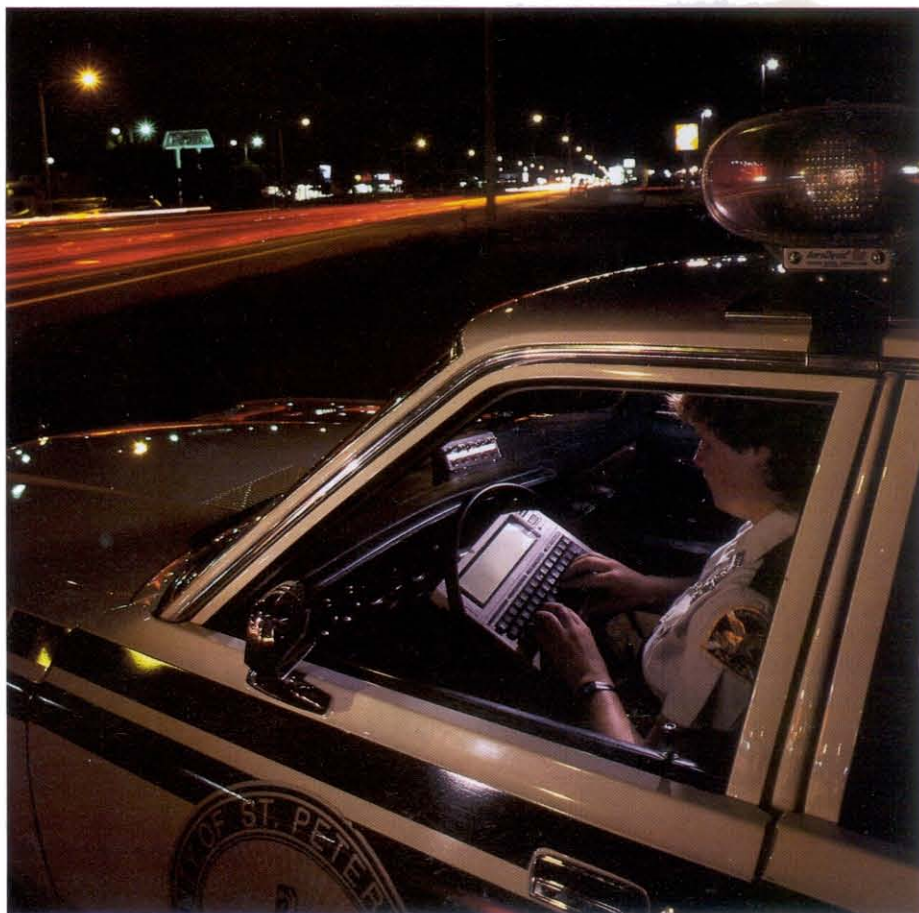
Police Officers feel that not only does the use of the cellular phone save time, it also increases productivity, enables the officers to make better decisions and thus increases police effectiveness which leads to citizen satisfaction. As Chief of Police S.F. Lynn so aptly states, "they're (cellular phones) designed for law enforcement."

What's next? Definitely more computers and more phones as the budget allows. If all police agencies in Pinellas County used a single automated report writing standard, not only would additional paperwork required by the

State Attorney be eliminated, but more importantly, it would enable all police departments to readily share valuable information. And because police officers are "knowledge workers", the entire community would benefit.



And soon, it is hoped that all police forces in the United States will use this new technology. And it all started in a town in Florida called St. Petersburg.



The Power User's Laptop

The Tandy 600 lets you take disk-based computer power wherever your work takes you.



The Tandy 600 fits comfortably in any briefcase for true portability.

System overview

Microprocessor: 16-bit 80C88 CMOS. 3.07 MHz clock speed.

Memory: 160K ROM, 32K RAM, expandable to 224K.

Disk Storage: Built-in 360K, 3.5" floppy disk drive.

Dimensions: 13 × 10 × 2 1/2."

Weight: 11 lbs.

Display: 80 × 16, liquid crystal display. Upper and lower case ASCII characters, 240 × 128 dot-matrix graphics.

This past fall, Tandy introduced a portable computer that matches all the performance of a desktop computer—the Tandy 600.

When Tandy came out with their first portable computer, the Model 100, it set the standard for portable computing power. Shortly thereafter, Tandy introduced the Tandy 200. From these two successes Tandy developed the high-tech Tandy 600. We asked Radio Shack's President Bernard Appel to comment. "Laptop users asked for more contiguous memory, an 80-column display, built-in disk storage, and enhanced word processing, spreadsheet and telecommunications facilities. When we brought out the Tandy 200, the cost of the technology needed to offer those features was simply too high." Mr. Appel continued, "Now, the costs and technology have reached the point where we're able to offer greatly enhanced features while maintaining the basic characteristics that make the Radio Shack Model 100 and Tandy 200 portable computers laptop industry leaders."

Powerful Advantages

The Tandy 600 laptop computer uses the 16-bit 80C88 microprocessor, and comes with 32K RAM storage. The memory is expandable to 224K, in one contiguous memory bank. One of the stronger features is the built-in 3-1/2" floppy disk drive with a capacity of 360K, allowing the user to have more versatile storage capabilities. For better viewing and less glare,

Tandy put a matte finish on the adjustable, flip-up 80-character × 16 line LCD display allowing the user to scroll through up to 32 pages in any one file.

Get the works with Microsoft Works®

Tandy has also included Microsoft Works, a collection of five extremely powerful, full-featured resident applications. With a larger display, expanded memory capability and disk storage, the Multiplan "second-generation" spreadsheet can produce larger, more complex projections. Using the MS-Word program, a subset of the popular Microsoft-Word word processing program, documents are readily available and there is more storage with the built-in disk drive. The File application is an electronic database for names and addresses, expenses, client billing, inventory and more. And by using the pocket-size diskettes, a variety of files can be utilized. The Tandy 600 also includes a built-in modem, allowing communication with other computers over phone lines, and can also access national information networks. Telecom will even dial the phone number of anyone listed in the File program, saving valuable time. Telecom also allows the user to transfer under what is technically referred to as "Xmodem protocol," which makes the Tandy 600 compatible with a variety of other telecommunications programs. And the ever-useful Calendar program allows the user to keep track of daily tasks and activities.



Travelers can make every minute count with the Tandy 600 laptop.

To keep all the programs running smoothly, an easy-to-learn resident System Manager lets the user run each application, exchange information between applications and manage the files created. Tandy has also made available BASIC/ROM so users can write their own programs. Tandy did an excellent job in the documentation of each application, and in the discussion of how the Tandy 600 portable can be used most effectively.

News and views

The Tandy 600 has been receiving rave reviews from the press. Henry

80-column display portables in the past year. Invariably, they were difficult to read in "normal" light conditions. Such is not the case with the 600—a fact that, I happen to think, will make this one big seller . . ."

Tandy remembers how hard a laptop computer works, too. With built-in nickel-cadmium batteries, the Tandy 600 will run approximately 11 hours between charges. They are easily recharged with an AC adapter, which is included with the Tandy 600 laptop computer. In addition, an internal 300-bits-per-second modem is a direct connect unit, not acoustical. Other



Kisor of the Chicago-Sun Times says, "Microsoft Works is a joy to use. Word and Multiplan can do just about anything most desktop equivalents can, and files created with them are fully compatible with their big brothers. This makes the 600 exceptionally attractive as a second computer for desktop users of Microsoft Word and Multiplan."

Another viewpoint comes from Lawrence C. Falk, editor and publisher of PCM Magazine. "I was blown away by the screen display of the 600 . . . I have looked at a huge number of

features include an RS-232C connector, an expansion bus for an external floppy-disk drive and a parallel printer port. Tandy has also made room for custom applications to be run by removing the Multiplan ROM chip and substituting another ROM chip.

Summary

The Tandy 600 is a very reliable traveling companion, allowing the on-the-go businessperson the portability needed without sacrificing the power necessary for today's business. This is one advanced little machine.

10-Megabyte Disk Cartridge System

Removable disk cartridges make it easy to back up and store data from a conventional hard disk.



Matching the problem of data dynamics

The pace at which today's small and large offices are installing and expanding personal computers generates problems that are often created by computer technology itself. Yet that same technology can rise to the occasion and overcome the challenges.

The buildup and usage of larger and larger databases has become a big problem. Our 10-megabyte Disk Cartridge System with distributed data storage is the solution. The Tandy Disk Cartridge System combines the obvious advantages of a floppy disk drive with the high capacity, high reliability and fast data transfer of a hard disk.

Enter the Bernoulli Principle

The new 10-megabyte Tandy Disk Cartridge System is an innovative solution to the problem of data dynamics: the need for more data bases at work in more data places.

The Tandy Disk Cartridge System uses an aerodynamic principle discovered in the 18th century by the Swiss mathematician Daniel Bernoulli (pronounced bear-NEW-lee). Taking Bernoulli's insight as a starting point, the Disk Cartridge System was designed as a simple, yet dynamic data-management file for large or small businesses.

This is truly a creative use of technology to solve the problem of a total database and data-backup system.

Get a versatile data-backup system

If you're using a hard-disk system with your Tandy 6000, 3000, 1200, 1000, IBM PC or PC compatible, you know the advantages. You can store massive amounts of data and programs for instant retrieval.

But if you want to make sure that all of your valuable data is kept safe, you have to make numerous individual backups on small-capacity floppy diskettes. That is, you had to—until now.

Incredible flexibility

The new 10-megabyte Tandy Disk Cartridge System is a remarkable technological advance that replaces the cumbersome method of multiple floppy diskettes. With the Disk Cartridge System, you get the flexibility of floppy-disk storage, combined with the high access time of hard disk drives.

Just insert the 10-megabyte cartridge into the drive to make rapid backups of important data and programs. Additional 10-megabyte cartridges are available to create a backup library. The Tandy Disk Cartridge System can also be expanded to a total of 20 megabytes of storage by adding our 10-megabyte kit.

The Tandy Disk Cartridge System may also be used as a primary storage source. Either way, you'll have unprecedented power and flexibility in a versatile and safe environment.

System overview

Media: Removable 10-megabyte disk cartridges.

Data Transfer Rate: As fast as your host allows, up to 1.13 Mbytes per second.

Average Access Time: 30 ms.

Dimensions: 6¹/₂ × 12¹/₂ × 15"



Streamlining a taxing problem

Tax planning, financial planning, tax management, estate planning, the list goes on. Today's CPA has a lot more to do than just the yearly 1040 tax forms. And a reliable computer makes a demanding schedule much easier to deal with. Thomas Stabi, president of Vross, Stabi and Burnett, Inc., a CPA firm located in Youngstown, Ohio, says that "Reliability" is the main reason he chose Tandy computers. In 1982, the company purchased a Model II. "We use the Model II four to six hours a day, and sometimes more during tax time, and we've never had a breakdown—the Model II has never seen a service center."

This kind of reliability is why Stabi chose the Tandy 1200 as the company's second computer. In fact, the entire company is computerized. Now the computer takes over all the tedious work while the office staff can spend more time servicing their client's accounts, thus allowing the company to grow at a much faster rate.



Computers for warm homebodies

You've probably heard of solar-heated homes, but did you know you can heat your home with your body? Neil Carter, president of Solar Assisted Homes in Charleston, Maine, employs super insulation to retain intrinsic heat. "The home is designed to retain the heat that we get so we can heat the house with the intrinsic heat—which is like people, lights and appliances," says Carter.

How does he design these homes? Prior to purchasing a Tandy 2000 and VersaCAD software, Carter did his designs by hand, but after seeing a variety of CAD systems, Carter chose the Tandy 2000. "It was very frustrating having to draw plans with a pencil all last winter after seeing what CAD could really do," said Carter. "I found that the Tandy 2000 was an excellent machine and would do just what I wanted it to do . . . everything has been great."



In defense of speeding

The law firm of Lacey and Simonetti in Birmingham, Alabama has found that one way to success is speed. This new firm is only a year old and yet is ready to hire another employee. Why did the firm choose the Tandy 2000? "We checked all the makes and models and believed that we were getting the most equipment for our money with the Radio Shack unit," said Rhonda Lacey, partner. In addition, there is the ability to complete the more time consuming and redundant work on the computer. "I would venture to say that our secretary is able to put out at least twice the work with the Tandy 2000 than she was able to do beforehand," said Lacey.

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 our Techniques, Etc. column, we'll contact you—so be sure to include your address and phone number. Letters sent become property of the magazine. Sorry, we can't return any letters received (so don't include diskettes, photos, etc.). Address letters to: Techniques, Etc., Answers Magazine, 300 One Tandy Center, Fort Worth, Texas 76102.

Computers Shine for Star Mfg.

An Oklahoma building manufacturer is offering its builders an innovative "electronic" price book to cut cost estimates from days to minutes.



Star Manufacturing's headquarters in Oklahoma City.

Star Manufacturing Co., an Oklahoma City headquartered metal building manufacturer, with additional plants in Georgia and Pennsylvania, revolutionized its business in 1982 by introducing a standard microcomputer program for its builders. The new technology has cut the time it takes builders to price a building from one or two hours to ten minutes per building. The majority of buildings are priced on computer in the local builder's office. In most cases the need to write or call corporate offices, even for unusual specifications, is eliminated.

The program is based on a combination of specially written software and Radio Shack Model II, 12, 16, 16B and Tandy 6000 computers, purchased at a local Radio Shack Computer Center. It is used by 220 of the nearly 500 builders across the country who sell the standard and custom-designed buildings Star manufactures. Forty-three percent of Star's building orders and



A Star employee works efficiently on a Tandy Computer.

32 percent of the sales dollar volume are priced by builders using Star Builder System software on Tandy computers. Star Manufacturing is among the top five manufacturers in its industry, said Lon Shealy, the company's energetic vice-chairman.

Shealy, who has the motto, "Our greatest liability is experience" framed above his desk, has supported the innovative microcomputer since its introduction. He says that the benefits of microcomputing have been felt by builders and corporate staff.

A new, and better way of doing business

"You can do more with the computer than with the regular price book.

The computer allows you to do so many more combinations—it broadens the type of buildings you can price without sending specifications to Star for them to price," said Dick Manchester, project manager at Nowland Associates, Inc., a Newark, Delaware builder.

The ability to perform cost estimates in the builder's office can reduce the time it takes to prepare special pricing from several days—the time needed to mail specifications from the builder to Star's headquarters and back to the builder—to less than an hour. Even when an unusual specification goes beyond the range of the Star Builder Program, the builder can perform most of the pricing in his own office, and send unusual parts specifications to corporate headquarters.

"For computerized companies, Star Builder Software eliminates the need to use engineering and product data manuals. The software gives more information and greater flexibility," said Dennis Watson, manager of engineering services at Star.

For example...

A builder taking advantage of the system is J & N Elliott Construction of Morrowville, Kansas. Janet and Norman Elliott run their business with Model II and Model 16B computers.

"We had a job about eight or nine months ago—close to a \$300,000 job. We got the plans and specifications Friday night. We were gone all weekend and the proposal was due Tuesday afternoon. We couldn't have pulled it all together without the computer," said Norman Elliott.

The computers have eliminated the need for part-time clerical help and enable the Elliotts to keep records more up-to-date, they said.

"Just for word-processing alone, the computers would be worthwhile. I don't think I've seen a proposal shorter than eight pages leave this office. The word processor eliminates retyping. We can present really professional proposals in much less time."

Elliott also depends on his computers to assure accuracy in bookkeeping and pricing jobs. "With the computer, you know that if the numbers are right, the math's right. Once you've had the computer, there's no way you would ever want to do without it."

While computerization has been optional for longstanding builders of Star buildings, new builders are required to use Star software with at least one Tandy computer in their offices. Star offers a training course four times a year for new builders and new staff in existing builders' offices.

An incentive program was implemented by Star to encourage its builders to computerize. Between February and March, Star began offering builders a rebate of up to a half percent of 1984 Star net steel sales—to a maximum of \$2,500—for purchase of a first Tandy microcomputer system and Star Builder software. During that same time, builders were offered a five percent discount on the cost of all Star buildings that were priced from the Star Builder Software.

Computerizing was one of Star's best decisions.

In recognition that some builders are too small to afford the initial investment of a computer system, the company has designated a small group of builders as Starline accounts. Their computing needs are handled by telephone from Oklahoma City. Corporate staff responds to the pricing needs of these builders by using the Star Builder System, Watson said.

In the future, management is optimistic about developing a more direct



communications system between local builders and corporate headquarters. "We will be using a Model 16B to receive orders directly from the field. They will then be downloaded to our minicomputer for further processing," said Robert Carr, engineer in charge of the project.

The direct computer-to-computer communication will eliminate many telephone calls between corporate staff and builders. The computer system will also be able to stay on 24-hours a day, giving builders the capability of transmitting pressing requests for information even when working late at night or on weekends. "We expect to be able to give builders better quality information," Carr said.

A hard-working sales tool, too

The computer system has acted as a selling tool for Star as it seeks new builders to carry its line of metal buildings. More than 20 district managers have Tandy computer systems in their offices. They are known to put the computer system in the back seat of their cars and drive to a prospective builder just to demonstrate the system, Shealy said. Builders are also impressed that corporate staff is available

during business hours to answer questions about the operation of hardware and software.

"We've built a relationship with our builders by providing top-notch service. You've got to constantly seek to find means to differentiate your service from the pack. Computers are part of service in this industry," Shealy said.

"When we planned to develop a microcomputer program, the original criteria for selecting a microcomputer were low cost, high quality and a nationwide distribution system. Radio Shack was the only company that fit the criteria really well."

The software and hardware used by Star have been upgraded on a regular basis. Software originally written for the Model II runs on the Model 12 and the Model 16. Builders who have wanted to upgrade their systems have been able to upgrade their systems with Radio Shack hardware. "We couldn't have made a better choice," Carr said.

Just good business

"Going to Tandy computers is one of the best business decisions we've made in the last ten years," Shealy said.

The sense that computers are essential to success in the metal building industry was echoed at a recent annual sales meeting of Star Manufacturing builders.

"One builder asked his colleagues, 'How many of you use computers?', and a number of hands were raised. 'I don't know if I'll see the rest of you next year. You need computers.'"



From a Dinosaur to PCs

After an ill-fated affair with a mini, a lumber products manufacturer falls in love with a little thing called the personal computer.



Computer advocate
Paul Wood.

Wood is an old name in the Arizona lumber business. Older than the state. The first Wood started his lumber yard in Bisbee back in 1903 — nine years before statehood, when Arizona was a territory.

Three generations later, Paul Wood is the Manager in charge of Wood Brothers & Halstead Lumber Company in Phoenix. The name is a misnomer. None of his brothers is involved with his firm. The Halstead name is also an old lumber concern, starting in Arizona in 1911. The two concerns have been supplying the Arizona building industry for a combined 156 years. Marie Sievert, daughter, and sons Carl and Harry help their dad run his business.

The big wheel in lumber

"We sold off our retail division a few years back and now we are strictly a manufacturer of wood products, and a wholesaler," Paul says.

Surrounding the offices you will find numerous buildings, wherein all types of re-manufacturing of lumber products takes place. The entire area is covered by high piles of lumber. "About 1,000,000 board feet of lumber, mainly pine, passes through the plant a month," Paul says. He has a fluctuating work force that ranges from a low of about 90 to 120 employees.

What these people mainly do is make wooden cable wheels. AT&T is one of Wood's largest individual customers, shipping his product as far north as Omaha. Wood also manufactures boxes, crates, skids and pallets for industry.



The business is labor-intensive and calls for a lot of ingenuity in the building of machinery to reduce labor costs. "I hold two patents and am always tinkering on some device to speed up the manufacturing process," Paul says, holding up a contraption that will stop nails from falling down a chute. "Been fooling with this thing for a couple of



Bookkeeping made simple.

years. Sometimes you want nails in a certain process, then in others you don't. So you have to be able to regulate the flow."

"Cable reel manufacturers," he says, "like to scope out each other's businesses. We're very competitive; however, we are pretty much willing to share our ideas with others outside of our competitive area to discuss production techniques and hold our own in the marketplace. Sometimes someone will come from another marketing area and see how we handle our problems, and we will allow them through our plant, and share ideas."

"Some machines are worth over \$100,000 each so it pays to build your own design in order to save money and time."

From making paper to doing the paperwork

Like a meat packing plant that sells everything but the pig's squeal, Wood even makes money from piles of scrap wood and sawdust. "The scraps are turned into wood pulp for making paper and the sawdust and shavings are used for bedding stable floors. Horses seem to like it, especially after a rain. Keeps their area dry."

Back when his father was running the original lumberyard in Bisbee, Paul was trained in bookkeeping. He and other persons handled all the books. He recalls those days of big, heavy ledgers.

"It seems as there always was a crisis. The first of the month, accumulat-

ing the customers' invoices, checking them against their statement, folding, stuffing and mailing. Every Friday the crush was on to record the workers' hours, enter them into the checkbook, figure the taxes from the charts and manually type the checks. Then every quarter there were all of those spread sheets for all the employees — those darn things had to balance! Federal and state reports had to be made and sent in."

Paul knew there had to be a simpler way, but years passed without much help for number crunchers.



The dinosaur's resting place.

"Enter a small bookkeeping machine with two memories. Wow! We were really cooking," Paul recalls with one of his frequent chuckles. "We used this machine for just about everything except payroll and sales distribution."

Paul said he felt comfortable about moving into the age of computers when a salesman for one of the industry's big firms came calling. He bought.

"After about three years of that dinosaur and literally tens of thousands of dollars, continual breakdowns, rotten service, and exasperated bookkeepers, and an annual \$4,900 service contract, I was burnt out on computers."

Paul takes a visitor to the closed-off room where the "dinosaur" still sits alongside its almost shoulder high printer. Both machines are covered with clear plastic shrouds. Unused binders of manuals for the machine sit next to bowling trophies of long ago lumberyard-sponsored teams.

"Everything in this room is useless," Paul says in an uncharacteristic sigh.

Never give up

Despite several years of grouching about computers, Paul was finally won

over to the idea of microcomputers.

"I broke down and bought a Model III and a DMP 400 printer. That's when I had a change of life. Really. This thing affected my eating habits, TV habits, and my sleeping habits," Paul, the father of six, recalled.

"I invested in a number of small pieces of software, including Profile III Plus. I was able to write an inventory control system with this database, which we are still using."

He also was able to write numerous programs for use in the lumber business.

"The next thing on the scene was the Model 4 which I just had to have with a 10 megabyte hard disk and naturally had to upgrade to 128K."

Paul compared his affection for his Tandy computers to that for his wife. "If you pick the right woman, she will provide all your needs and you don't need to do any more looking. I feel that way about Tandy products. With that other computer outfit, I spent thousands for repairs, maintenance, upgrades and downtime. I think that since I switched to Tandy, I might have



A computerized database keeps tabs on inventory levels.

spent maybe 20 bucks for a replacement part on my original printer. That's been it. These machines are reliable."

Paul continued his story of requited love.

"Now with my appetite really being whetted, I purchased a Model 16B with 768K of RAM and a 15 megabyte hard disk. The next thing Tandy did to me was to come out with the 6000

upgrade and a megabyte of RAM. Naturally, we had to have this latest technology."

Paul now has a Tandy Model 6000, three Tandy Model 4Ps, and three Tandy Model 4s.

"I also have purchased a Model 12 for my daughter and son-in-law in Spokane, Washington, and a Model 16 for another daughter and son-in-law in Payson, Arizona. Think I am a computer nut?"



The happy ending

"You know," he adds, "I have never had a single lesson on operating Tandy computers. With a little help from my friend, Richard MacMillan—who introduced me to Tandy—and Ted Devault at the Radio Shack Computer Center here in Phoenix, I have been able to format my hard disks, install operating systems and software packages and customize them for the company. Tandy's documentation is complete and very easy to use. I have dabbled with a bunch of disk operating systems and found each to be very powerful and easy to use."

What does all this do for his office?

"Well, let me put it this way," Paul said. "In Bisbee, our monthly volume was \$12,000 to \$15,000 and our total employee base was nine to 12. Today, our monthly volume runs \$300-500,000, with anywhere from 90 to 120 employees. There are no more crises, weekly, monthly, or quarterly, with still two bookkeepers. And those two usually have time on their hands."

"In addition, we have an inventory control system, plus numerous other business applications, such as daily cost of goods sold, automatic estimating, and word processing. You know, if I had a switch, and started talking about Tandy computers and software, you probably couldn't turn me off. 'Nuff said?"

IF UNDELIVERABLE, DO NOT RETURN

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The Tandy Computer Business User's Group: Setting Ideas in Motion

Tandy Computer Business User's Group (TCBUG) is an independent organization established by some of the most active and respected business users of Tandy computer equipment. TCBUG provides Tandy computer business users with a forum for the exchange of ideas between its members, and acts as a liaison between Tandy Corporation and its business users.

"We have an open door to Tandy Corporation on key issues such as product development and customer service," says Tom Miller of UCCEL Corporation, former president and current membership chairman of TCBUG. Indeed, from the beginning, TCBUG has provided Tandy with valuable input from the user's point of view, and has been instrumental in the release of the 35 megabyte hard disk drive and the DT-100 data terminal, both now an integral part of the Tandy computer product line.

TCBUG also hosts an annual conference each spring in Fort Worth, Texas, headquarters of Tandy Corporation. The conference gives each member the opportunity to discuss common issues with other Tandy computer users,

and with Tandy management people. Additionally, keynote addresses by industry leaders provide insight into areas of interest to all Tandy computer users.

In addition to the quarterly newsletter, TCBUG has a Special Interest Group (SIG) on the CompuServe Information Service. Offering a forum atmosphere, the CompuServe SIG may be used to ask questions, provide some useful information, or offer a service. The SIG is open to anyone—type GO TCBUG for further details.

Membership in Tandy Computer Business User's Group is open to any business computer user. There are two levels of membership. Regular membership entitles the member to vote on any issue put before the group including the election of the Board of Directors. Associate membership entitles the member to all privileges of a regular membership except the right to vote. If interested, please contact TCBUG either through CompuServe or at P.O. Box 17580, Fort Worth, TX 76102.

