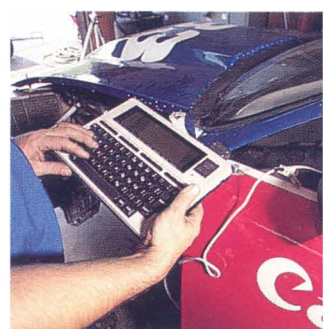
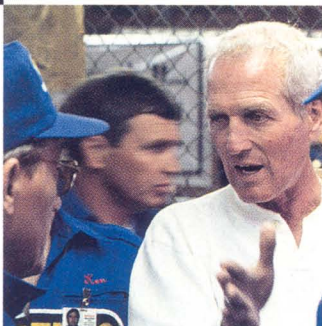


ANSWERS[®]

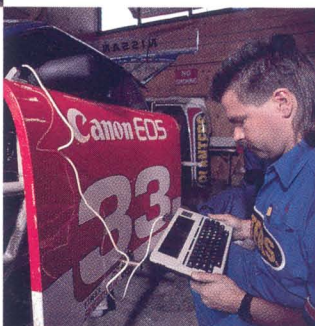
The Magazine for Tandy[®] Computer Customers



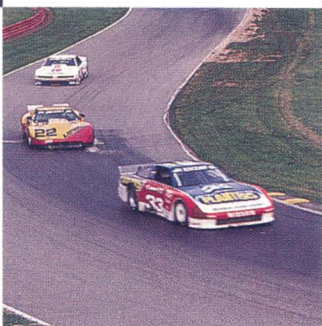
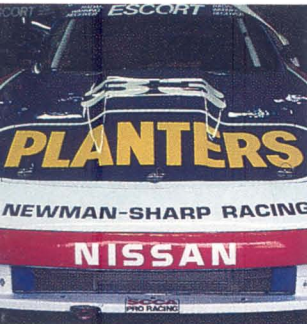
the



winning



edge



PULL-OUT SECTION
DESKTOP
PUBLISHING
PAGE
7

From the Chairman:

The ability to communicate effectively is a vital asset regardless of the type of business you're in. That's why more and more offices are linking their personal computers into workgroups—so that a variety of users can exchange information and ideas at will.

But business communications doesn't stop with computers, and neither does our new, expanded line of business products.

Our ET-422 brings cordless convenience to a two-line business phone. And if it often seems that your car is your real office, reach for one of our cellular phones. All our new models include the expanded 832-channel capacity offered in larger cellular markets.

There are times, though, when you just have to have it on paper. That is where our new TANDYFAX 1000 comes in. Send and receive letters, contracts and other important documents anywhere in the world for the price of a phone call.

So why run from here to there for office products when you can come to us and get it all? Take a few minutes and see what is in store for you at your nearby Radio Shack, The Technology Store.



John V. Roach
Chairman, CEO and President
Tandy Corporation

Letters to the Editor

Editor:

I still have many opportunities to share the article about the simulated shuttle mission in the fall (1987) issue of ANSWERS with many educators. They are impressed with the article.

Often it is hard to tell the impact of an article on the readers. I am enclosing a copy of a letter that I received from a young lady who read the article and was moved to write me a letter. Please pardon my delay in sharing the letter but my schedule has been very hectic.

I did write the young lady and sent her some NASA educational material. Perhaps someday she, too, will sail among the stars.

R. Lynn Bondurant, Jr.
Lewis Research Center
Cleveland, OH

Dear Dr. Bondurant,

I am a 12-year-old girl student interested in becoming an astronaut. I go to St. Francis of Paola School, which is located in Brooklyn. I am in the seventh grade and my grades are above average. The reason I am writing to you is that I was reading a Radio Shack magazine and came across an

article in which some students were helped by your center in "the NASA Junior Shuttle Program" and was very delighted to read how the students spent their day. As I said before, I would like to become an astronaut someday, so can you please send me information on how to go about it. Any information you can send me at your earliest convenience would be greatly appreciated. Thank you very much in advance for any help you can give me.

P.S. I also have a Tandy 1000 personal computer.

Domenica Munoz-Juvera
Brooklyn, NY

Editor:

In October 1985, I purchased a Tandy 1000 and DWP 220 printer and started a part-time word processing business from my home. The business has been more successful than I ever dreamed.

I am writing to say thank you for a wonderful product that runs every day without a failure. In this world, there are so few products that really work well, but owning the 1000 has been a real joy.

I hope sometime to buy a 4000, but now the 1000 is sufficient. Indeed,

there may be computers of equal value, but there is no better value than my Tandy 1000.

Ray Yearwood
Batavia, OH

Press Review

"As for software, Tandy has included with the (Tandy 1000 TL and SL) system a new version of DeskMate. This version has a number of new capabilities and is more compatible with DeskMate application software developed by outside companies. In fact, for low-cost systems, the DeskMate operating environment will almost undoubtedly be a very popular alternative to Microsoft Windows in the low-cost 8088/8086 market."

Rich Malloy
Byte Magazine
September, 1988

"Tandy's range of MS-DOS computers is one of the broadest in the industry. It makes a computer to fit any need or budget. Nobody in the industry can come close to Tandy in the sheer number of its outlets: there are 366 Computer Centers and 7,058 Radio Shack stores. It has been my experience that no one gives better after-sales service to its customers."

Stephen Miller
Family & Home-Office Computing
August, 1988

"... the 5000 MC doesn't just tag along after IBM's line. It actually delivers added value, especially in the mass storage department. The Micro Channel's unique talents have yet to be fully demonstrated, but this time, Tandy stands to share the benefit—and the risk—of being on the cutting edge."

Eric Knorr
PC World
September, 1988

Address your correspondence to: ANSWERS Magazine, 300 One Tandy Center, Fort Worth, TX 76102. Please include name, address and phone number. Letters sent become property of the magazine and are subject to editing. Letters cannot be returned. We cannot respond to every letter.

ANSWERS

December 1988 Vol. 4 No. 1

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The Winning Edge



Timing is critical to racing in both prerace diagnostics (above) and pit stops during the race.



Auto racing has always been a high-technology endeavor, with racing teams fielding cars that were at the cutting edge of automotive technology. Today, that cutting edge has found itself in the Information Age, with computers establishing a foothold in this fast-moving sport.

One driver on that cutting edge is Paul Newman. A film legend and noted entrepreneur, the multitasking Newman has established himself not only as a serious competitor on the racing circuit, but as a winner. His impressive string of victories includes four national and five divisional racing titles. Newman drives for the Newman Sharp Racing Team, named for Newman and the team's president, Bob Sharp, who is himself a winner of six Sports Car Club of America (SCCA) national championships and an International Motor Sports Association GTU title.

Despite the image of one driver behind the wheel, auto racing is in reality a team sport. A large part of Newman's success has been made possible by the

team's skilled group of mechanics. Like surgeons at an operating table, these specialists constantly adjust, repair and refine Newman's car, the Planters Nissan 300 ZX Turbo, in hopes of realizing the extra horsepower that could place the team in the Winner's Circle.

One look at Newman's car confirms that auto racing is a science as much as it is a sport. To simply call the Planters Nissan 300 ZX Turbo a "car" does not do the machine justice. Under the hood, a turbocharged 2.8-liter V6 Nissan engine modified by Newman Sharp Racing delivers over 600 horsepower and top speeds that exceed 175 mph.

The car's interior looks more like an astronaut testing device than a passenger compartment. A protective tubular steel cage surrounds the driver's seat, and some of the car's equipment, too bulky to fit under the hood, invades the passenger compartment in a surge of wires, hoses and metal. Dashboard gauges sit at odd angles—some even upside down—so that their needles point straight up when the car is running properly, making it easy for the driver to check the car's operation with a quick glance.

On the outside, a lightweight, aerodynamically-designed fiberglass body is brightly decorated with the names of the team's sponsors. The car becomes a fast-moving billboard, blazing past spectators, pit crews and media in a rush of color and noise.

"The engine has more sting than any engine out there . . ."
—Paul Newman

Even Newman's crash helmet, red white and blue and emblazoned with the initials "PLN," is high-tech: a two-way radio mounted in the helmet keeps the driver in constant contact with the pit crew. Newman can instantly inform the crew of conditions on the track, developments in the race, or aberrations in the car's performance.

Computer mechanics

In addition to the tools one would expect to find in the Newman Sharp garage—wrenches, ratchets, pliers and screwdrivers—there is one new tool that is making inroads in the sport of auto racing: the computer.

Newman's car uses an onboard computer, called an Engine Management System (EMS), to regulate its electronic fuel injection system. Using sensors mounted inside the engine, the computer monitors RPMs, throttle plate position, manifold pressure, air temperature and water temperature,

and uses these factors to determine the proper fuel-to-air ratio. The Engine Management System was designed by SynTec Incorporated of Sterling Heights, Michigan, and uses a Tandy 102 portable computer for data entry.



Newman/Sharp Racing Team: The men behind the car and driver.

Jim "Splash" Coleman, chief engine builder, explained how the system works. "A fuel injection system delivers fuel to the engine along a scale, or 'curve,' that increases or decreases in direct relation to the engine's RPM level. Mechanical (non-electronic) fuel injection systems on a turbocharged car cannot efficiently balance the fuel curve to the needs of the engine, so you get a compromise in performance, either at the high or low end."

That compromise also affects fuel consumption. Because of SCCA Trans-Am rules, the fuel tank can hold only 29 gallons, barely enough to get through a 100-mile race. An electronic fuel injection system, however, can deliver fuel more efficiently by measuring the conditions of the engine and responding appropriately.

"The EMS regulates the ratio of fuel and air that are supplied to the engine based on vacuum, atmospheric pressure, and varying levels of boost, which is the amount of air pressure being forced into the engine by the turbo," Coleman said. "Adjustments to the system are usually dictated by changes made to the car, and by the changes in climate that we encounter from track to track. Temperature, humidity and atmospheric pressure can all affect the engine's performance."

To adjust the fuel injection program, Coleman simply connects the Tandy 102 to an interface mounted next to the rearview mirror on the driver's-side door panel. He then enters numeric hexadecimal codes that instruct the EMS to provide specified amounts of fuel at different points along the engine's RPM and boost curves. Coleman can adjust the system in seconds with just a few entries on the 102.

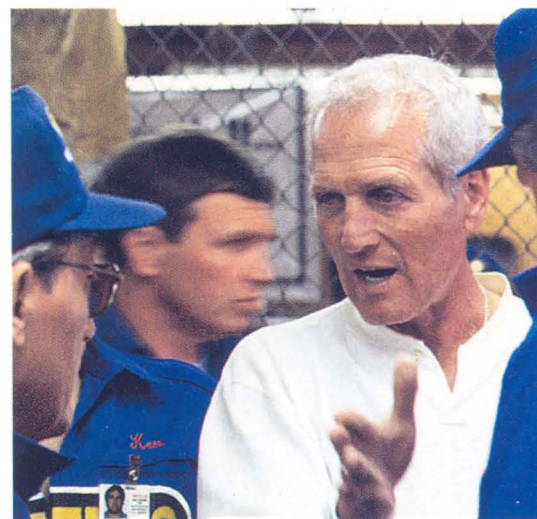
"Because the racing circuit frequents the same tracks each year, I keep a chart of the way the computer was programmed for each of the previous year's races and repeat the appropriate instructions whenever we return to a particular track," said Coleman. "That gets us close, but we always have to make at least a few minor adjustments because we are constantly changing or improving the engine's performance."

In the driver's seat . . .

When Newman tests the car on the track, he monitors the car's performance at various RPM levels. "Sometimes you run across a serious flat spot, where it won't take any gas at all," said Newman.

Scott Sharp (Bob's son) also drives for the Newman Sharp team. "While I'm driving, I am constantly watching the tachometer and the engine temperature, as well as the boost," Sharp pointed out. "I pay critical attention to how clean the motor is running. If there is any low RPM misfiring, or a lack of crispness at the high end, then I report those problems to Jim."

Coleman provided an example. "If the driver calls in on the radio and says that the engine is breaking up at 5500 RPMs and 70 inches of boost, that it is popping or missing, he can come in and I can go to that location on the curve—5500 RPMs and 70 inches of



boost—and change the fuel-to-air ratio without the driver turning the car off. I can also change the ignition timing of the motor on the spot."

Using the Tandy 102 for data entry gives the Newman Sharp team new flexibility. "Before we began using the 102," Coleman explained, "we had to actually create a microchip that had the entire set of fuel injection data plus our changes on it, take apart the on-board computer, replace the old chip with the new one that had the new instructions on it, then put the whole thing back together again. The entire process took about fifteen minutes—making it impossible to adjust the system during an actual race. With this system, we can make a change in about 30 seconds. We could make adjustments during a pit stop if we had to."

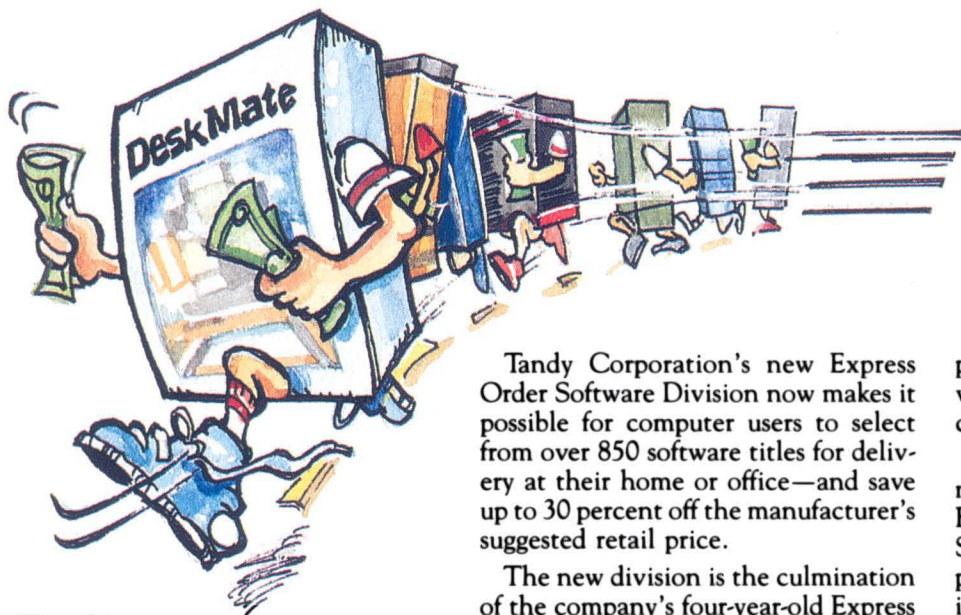
The results of Coleman's adjustments are often dramatic: Coleman estimates that by fine tuning the EMS, he can coax an extra 10 to 15 horsepower out of the engine. In test laps at the Mid-Ohio Raceway in Lexington, Ohio, where Newman competed in the SCCA Trans-Am, the car ran about three seconds faster per lap than it did the year before. In a sport where even a fraction of a second could spell victory or defeat, a three second savings becomes vitally important.

Leaving the competition behind

Newman appreciates the improved performance that the Engine Management System provides. "The engine has more sting than any engine out there; there's no question about that. It has a tremendous amount of power. The system has also helped throttle response, and the boost progresses more evenly. It's extraordinary . . . really a nifty piece of equipment." □

SHORT BYTES

A quick look at the products and programs encompassed in the world of Tandy computers.



EXPRESS ORDER

Delivery convenience plus savings

Tandy Corporation's new Express Order Software Division now makes it possible for computer users to select from over 850 software titles for delivery at their home or office—and save up to 30 percent off the manufacturer's suggested retail price.

The new division is the culmination of the company's four-year-old Express Order Program which offered high demand software through Radio Shack Computer Centers on a special order basis. Under the new program, software purchasers may still order through the centers, but also have the option of

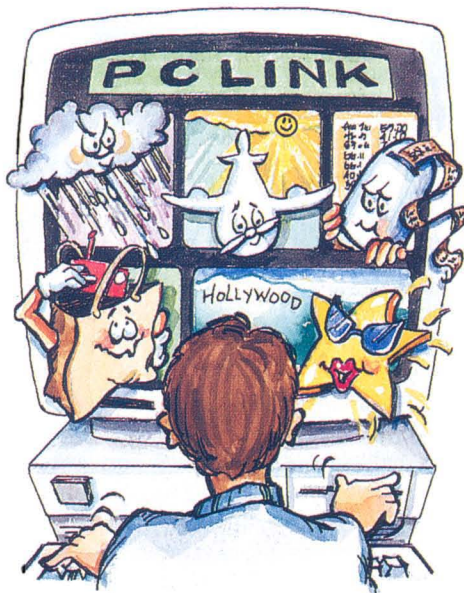
placing their orders by phone for convenient home or office delivery (credit card required).

The software offerings are listed in a new 84-page Express Order Software Buyer's Guide available at Radio Shack Computer Centers and participating stores and dealers. Listings are included for MS-DOS, XENIX, MS OS/2, TRSDOS and Color Computer operating environments and run the gamut from entertainment to integrated software programs. User support is provided by the participating software vendors.

The informative world of PC-Link

A Tandy Hotline which offers on-line access to Radio Shack's Computer Customer Service group is just one of the information bases Tandy computer users will find useful on PC-Link, an on-line communications service announced by Radio Shack in July. Provided by Quantum Computer Services in Vienna, Virginia, PC-Link is the first on-line service to utilize Tandy's DeskMate graphical user interface.

Using DeskMate's pull-down menus and pop-up dialogue boxes, users can easily navigate through the information service which offers an encyclopedia, national news and weather reports, stock quotes, entertainment news, travel services, electronic shopping, information from leading software publishers and much more.



PC-Link is incorporated into DeskMate 3.0 which is included with the Tandy 1000 SL and TL computers. A stand-alone version includes a runtime version of DeskMate 3.0 for use on any PC-compatible computer.

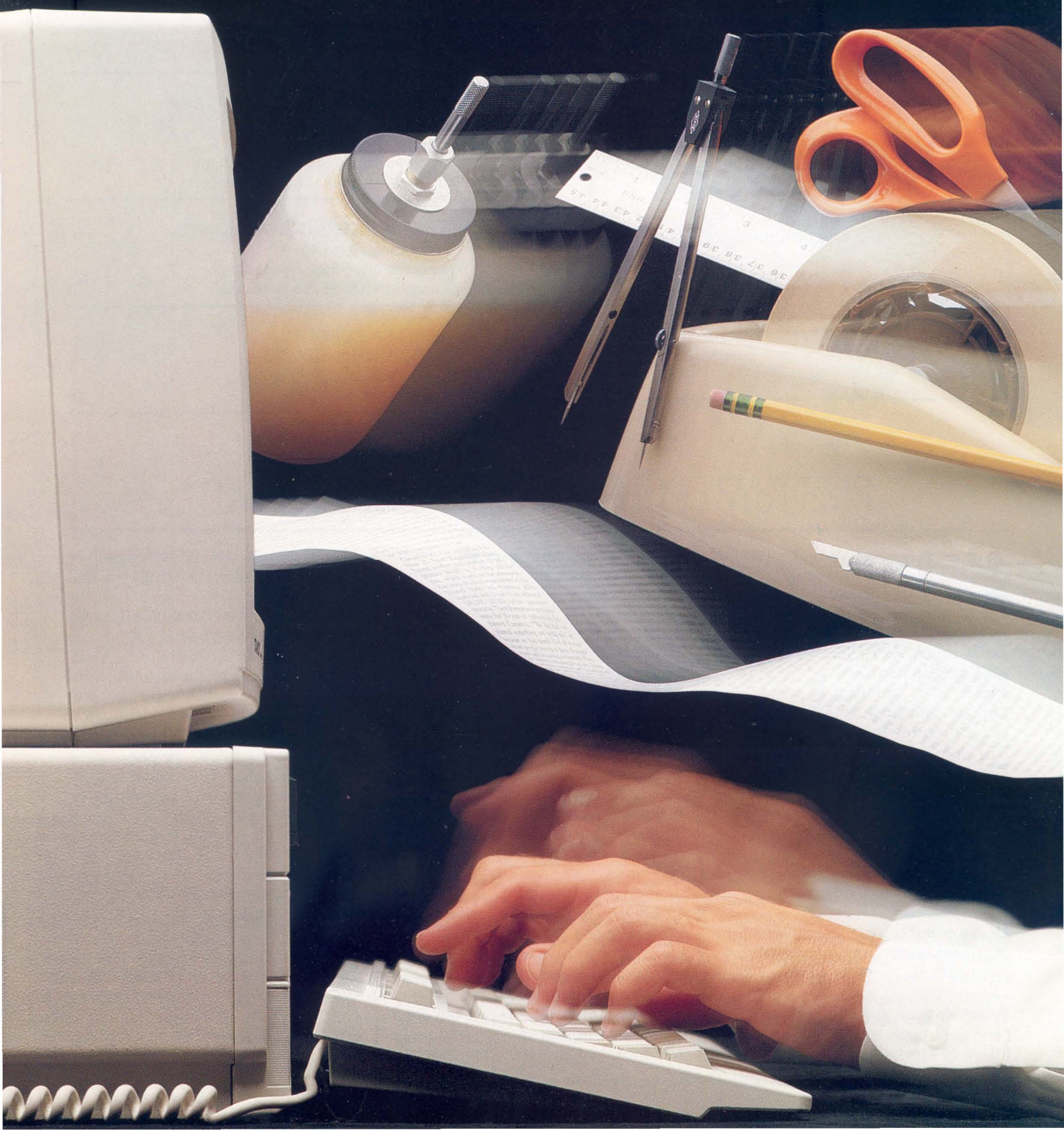
PC-Link members receive their first month of usage free. An optional premium PC-Link Plus Service offers live on-line conferences and tutorial sessions, electronic mail service and more. PC-Link subscribers receive PC-Link Update, a monthly publication containing information regarding the service.

PC-Link requires a modem and is available at Radio Shack Computer Centers and participating stores and dealers.

A N S W E R S M A G A Z I N E

DESKTOP PUBLISHING

A P O R T F O L I O O F A P P L I C A T I O N S



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From newsletters to newspapers, desktop publishing is emerging as the technology of the '90s for business and education.

The businesses, schools and organizations featured in this section have already discovered the cost/time savings and many other benefits of desktop publishing systems.

See how your communication needs can benefit from a desktop publishing system.

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GLOSSARY

To those uninitiated into the world of printing, the jargon associated with desktop publishing may be confusing. Many desktop publishing software packages contain comprehensive glossaries which define generic as well as package specific terms.

Below is a sampling of words and phrases commonly used in the production of printed material.

Camera Ready: All elements of a page composition prepared for print.

Clip art: Illustrations which may be incorporated into the design of a page. Clip art software packages offer a wide selection of subject matter.

Desktop publishing: The production of printed matter using a personal computer system.

Folio: A page number in a printed piece. Also, a large sheet of paper folded to create four pages.

Font, typeface, type style: Terms which designate a "family" of alphanumeric characters with a common design. Each family contains various weights (i.e. bold), point sizes (i.e. 10 pt. for body text) and modes (i.e. sans serif). Special font software packages offer a wide selection.

Kerning: Reducing the amount of space between certain letter combinations to improve text presentation.

Layout: The overall composition of a page incorporating such design elements as text, headlines, photos and graphics.

Leading: The distance between the bottom of one line of text to the bottom of the next line of text. Leading can be used for design effect.

Print resolution: Refers to how good an image a printer can generate; usually measured in dots per inch (dpi).

Most PC-based laser printers—such as the Tandy LP 1000—can print 300 dpi.

Rule: A line used to create graphic effects such as boxes on a page.

Scanner: An electronic device used to input photos, artwork and other images into the computer for incorporation into page layout.

Type alignment: The positioning of type within a specified column. Justified type is aligned on both the left and right sides of a column. Ragged type is justified on either the left or right side of the column; type on the opposite side of the column is different line lengths or ragged.

White space: Area(s) on a page layout designed to provide a "resting" zone for the reader.

Wrap: Placing text to flow around graphics areas such as photos.



TANDY DESKTOP PUBLISHING SYSTEMS

Radio Shack sells a variety of hardware and software products for desktop publishing applications in the home, school and office. The following examples represent the basics of a system. They may require additional adapters, kits, software, cables, etc. Software is listed on page 18.

Entry Level System

Tandy 1000 TL	\$1,299.00
CM-11 RGBI Monitor	399.95
20 Megabyte Hard Card	599.00
Tandy Serial Mouse	49.95
First Publisher software	115.00
DMP 2120 printer	1,599.00
System Cost	\$4,061.90

This system provides the basic needs of a desktop publishing system including sufficient hard disk storage for most applications. The color monitor enhances the display and the mouse provides easy input. This system is ideal for schools, small businesses and the work-at-home professional.

Mid-level system

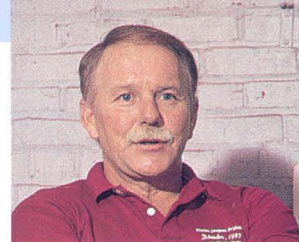
Tandy 3000 NL with 40 megabyte hard drive	\$2,699.00
EGM-1 EGA Monitor	499.99
EGA/CGA Adapter	249.95
3-button Logitech Serial Mouse	99.95
Aldus Pagemaker software	835.00
MS-DOS 3.3	119.95
Windows 2.0	99.00
Ricoh RS-320 scanner	1,495.00
LP 1000 Laser Printer	2,599.00
System Cost	\$8,696.84

This system offers more hard disk storage space to accommodate the use of additional soft fonts. EGA graphics offer screen clarity. The scanner adds the capability of incorporating photos, illustrations and other graphics from outside sources. Near-typeset printed text quality is provided by the laser printer. Businesses that produce brochures, forms, reports and other printed matter could easily utilize this system.

Advanced System

Tandy 4000	\$ 2,599.00
VGM-300 RGB Monitor	629.00
VGA Adapter	399.95
80 megabyte SCSI Hard Disk	1,499.00
SCSI Adapter	299.95
5 1/4" 1.2 megabyte disk drive	299.95
3-button Logitech Serial Mouse	99.95
Aldus Pagemaker software	835.00
Windows 386	195.00
MS-DOS 3.3	119.95
AVR MegaScan II scanner	3,290.00
LP-1000 Laser Printer	2,599.00
System Cost	\$12,865.75

The SCSI hard disk offers maximum storage area and speed for information retrieval. The AVR scanner software allows scanning and graphics manipulation. Publishing concerns and businesses with a high volume of printed material will appreciate this system.



STREAMLINING THE FINE

The first thing visitors notice as they cross the John Gorrie Bridge into Apalachicola, Florida, is the historic Gibson Inn at the busy seaport's east entrance. Boasting three stories of carefully renovated Victorian architecture, the inn is a meeting place for many of this remote Panhandle town's 3,400 citizens and is symbolic



of their commitment to preserving the area's ecology and its past history as an international crossroads.

Just north of the inn, visitors may still feel immersed in 170 years of history at the town's waterfront, once home to "tall" ships. The port now bustles with the sights and sounds of shrimp and oyster boats. The waterfront is also home to the weekly *Apalachicola Times* newspaper and its zoned edition, the *Carrabelle Times*, which provide news of local interest to the 9,200 residents of surrounding Franklin County.

The county's white sand beaches and convenient access to important waterways would seem a powerful lure

for tourism and industry. But according to John Lee, the newspapers' manager, independent thinking and interest in protecting the natural balance of local waterways and forest lands has prevented Franklin County from becoming a major tourist or industrial concern. That interest plays a strong part in the newspapers' coverage and was instrumental in recent automation of its production functions on Tandy 4000 and 1000 TX microcomputers.

"The newspapers originally operated several dedicated photo typesetters, which were expensive to operate and not very user friendly," said Robert Lindsay, a Sarasota, Florida, native. Lindsay purchased the 88-year-old *Apalachicola Times* with his brother in 1973 and founded its sister publication in 1977. "What attracted us to this type of system was its simplicity and user friendliness. Also, the conversion eliminated a lot of the chemically-produced corrosion and waste disposal problems we had. It also reduced production costs substantially."

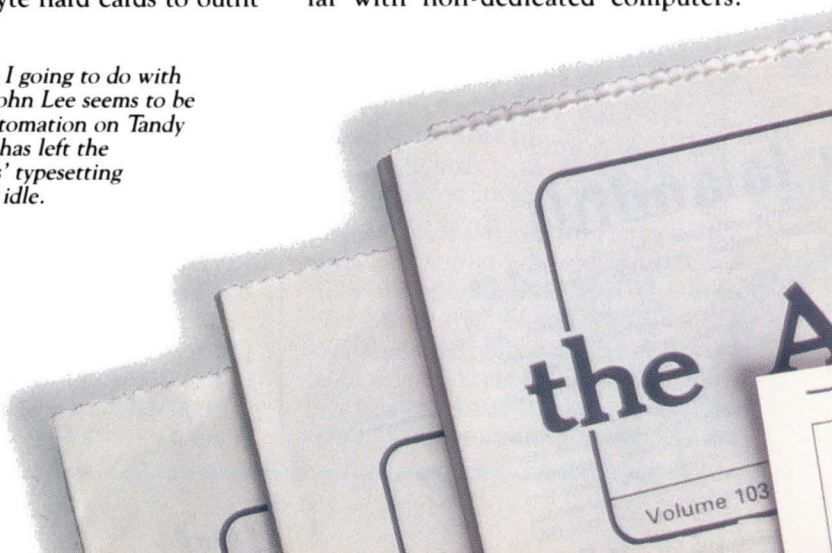
In February, 1988, Lindsay purchased two Tandy 4000s equipped with 70 megabyte hard drives and EGA monitors and two Tandy 1000 TXs equipped with 20 megabyte hard cards to outfit

the remote and main offices. All the computers are equipped with Logitech serial mice. The 4000s and the 1000s, which have high resolution monochrome graphics boards and monitors, are used for story composition using Microsoft Word 4.0 software. Aldus PageMaker 1.02 software is used for page layout. An additional 1000 TX with PageMaker 3.0 allows reporter Bob Blankenship to design pages without moving to another computer. Two Tandy LP 1000 laser printers produce hard copy of the computers' output, which includes classified and display advertisement design. "There is already a substantial time savings over the old method," Lee noted.

"We've been operating quite a while and haven't had a single hardware failure, no mice broken, no monitors broken, nothing," Lindsay said. "I think it's remarkable that we made such a dramatic changeover in the entire production process in just five weeks with people who were not particularly familiar with non-dedicated computers."



"What am I going to do with all this?" John Lee seems to be asking. Automation on Tandy computers has left the newspapers' typesetting equipment idle.





ART OF MAKING THE NEWS

They were a little frustrated at first, but they quickly realized the advantages."

The minor frustrations paled next to the dilemmas the old equipment presented. According to Lindsay, the equipment was unreliable by today's standards, often inconvenient to service and the annual cost for supplies and repairs was nearly as much as the entire cost of the new desktop publishing system. In contrast, Tandy equipment was selected because of its local service and broad accountability, said Lindsay, who keeps a Tandy 3000 HL on his desk in Sarasota.

"The main reason we picked Tandy is because it is the only company that can offer the entire package with one label on it," he added. "In other words, the whole system can be purchased from one vendor: training, hardware and hardware support. If there is a problem, we can go to one source. We also chose Tandy because if a

breakdown occurs, we can take the equipment to Tandy service facilities in Tallahassee instead of shipping it across the country. Some of the typesetting equipment weighs hundreds of pounds, so it had to be serviced on site."

Accounting now performed on a Radio Shack Model 16 will soon be done on a Tandy 4000 linked to a DMP 2100 printer. Subscription labels, now produced on a vintage labeling machine, will be automated via a data base management system. A clip art catalog may also be incorporated.

"We're working slowly and cautiously towards adding other features," Lindsay added. "We may use a simple network in the future. We're also probably going to set up a modem for communications to

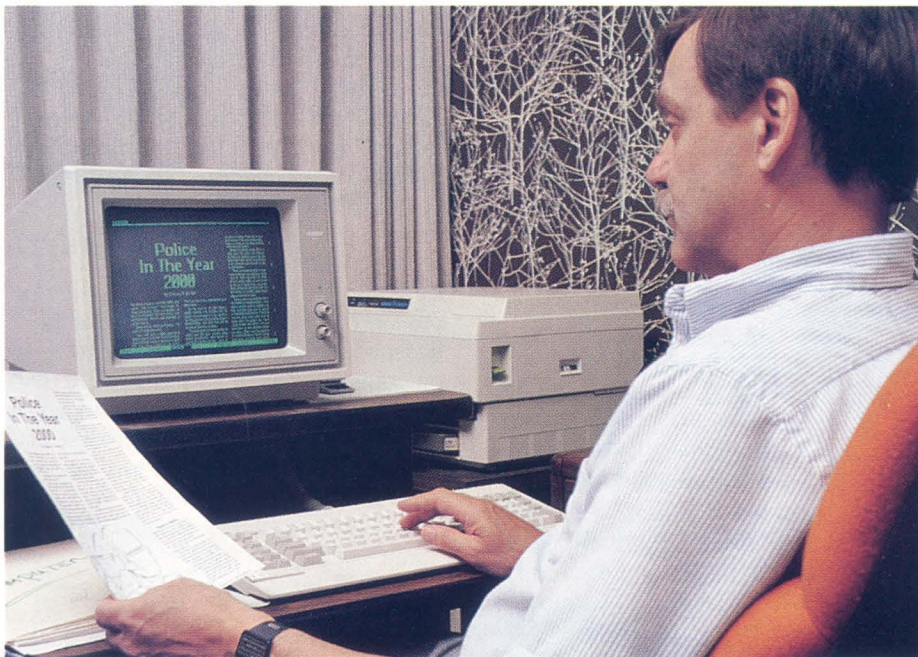
our remote office in Carrabelle, and to wire copy and eventually photos to our printer, which is 28 miles away in Port St. Joe."

According to Lee, the newspaper employees are not the only beneficiaries of the new system. Journalism students from Apalachicola High School have also learned the benefits of automation by producing their monthly *Shark Press* on the microcomputers. "I think it's a really good educational benefit for them to come in here and learn a substantial portion of the trade by going through the full production process," Lindsay added. "As for us, it has made a big difference in the way we put out the paper and I think it will result in considerable cost and labor savings in the years ahead." □



Reporting the news and trends in law enforcement is an exacting task. Tandy microcomputers help an Illinois publisher whose monthly business is...

LAW & ORDER



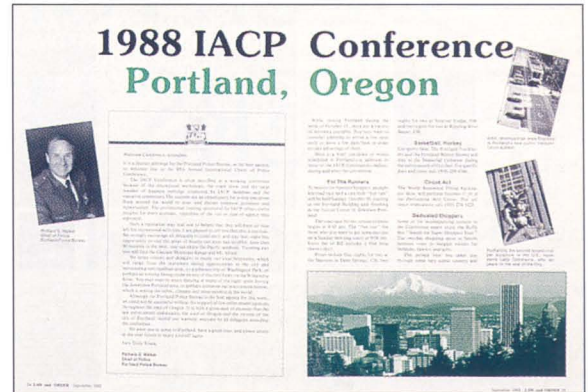
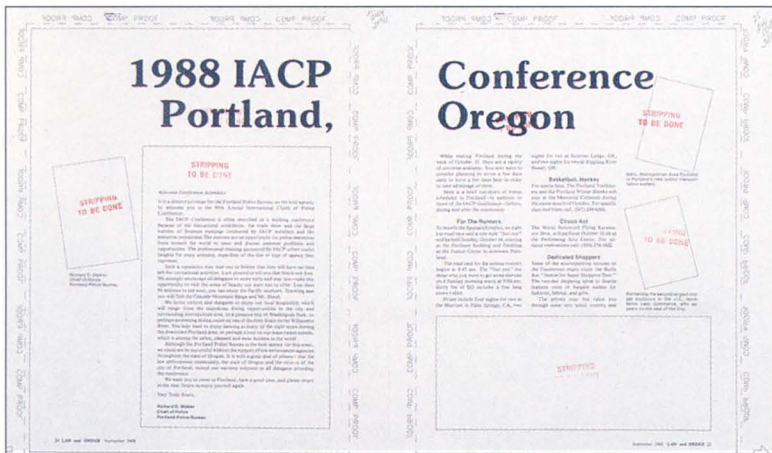
Bruce Cameron designs an upcoming issue on a Tandy 3000 HD using BESTINFO's Superpage 2.0 software.

Law enforcement agencies are making strides in the automation of policing and administrative functions. Although a 1982 study by the International Association of Chiefs of Police found that 90 percent of automated police agencies used computers simply as "electronic filing cabinets," law enforcement agencies have recently recognized the increased efficiency microcomputers can provide.

One entity which supports automation of law enforcement agencies also recognized the benefits microcomputers could bring to its own workday functions. The editors of *Law and Order*, an international police management magazine based in Wilmette, Illinois, began editing stories and designing pages on Tandy 3000 HD microcomputers in September 1987. Using BESTINFO's Superpage 2.0 desktop publishing software and Xyquest's Xywrite III word processing program, *Law and Order's* staff has cut four to five days off the magazine's monthly production schedule.

"It's given us more flexibility," Bruce Cameron, editorial director, explained. "In the past, when we had the type set at the printer, we were locked into what we had specified on the galleys. If we wanted to make any changes, it usually took four or five days. We're a four person operation; we just didn't have time for that."

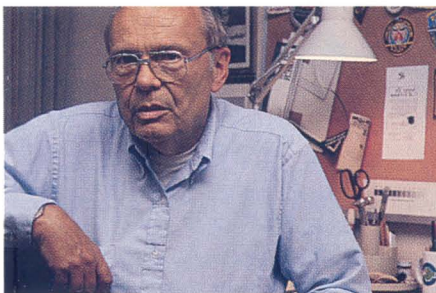
Cameron and *Law and Order* Publisher H. Scott Kingwill considered hiring another staff member to help produce the 80 to 250-page publication, which is sent to the administrative level of police organizations in the United States and numerous other



A printed layout (left) and pages of the final Law and Order product demonstrate the professionalism of the magazine's desktop publishing system.

countries and is read by an estimated 100,000-120,000 police personnel monthly. Their alternative was to automate the 36-year-old publication. Explained Cameron, "We decided we wanted something we could rely on because we had heard a lot of stories about people buying a piece of equipment and receiving no service. Also, we wanted economical but not cheap hardware, since we were buying an expensive program to run on it."

After evaluating both AT&T and IBM products, they purchased three Tandy 3000 HDs with 20 megabyte hard drives and 640K RAM. An additional 3000, also featuring a 20 megabyte hard drive and 640K, was later purchased for Kingwill's use. Remarked Cameron, "We bought equipment that did everything we wanted it to do, but didn't cost a fortune. John Slaughter, our Radio Shack representative, helped us get set up and we haven't had any problems with the hardware at all."



Scott Kingwill explains how Tandy computers cut Law and Order's production time.

Kingwill and advertising production manager Jackie Roche share accounting and advertisement order information on a TandyLink network, using the Publisher's Total Management Sys-

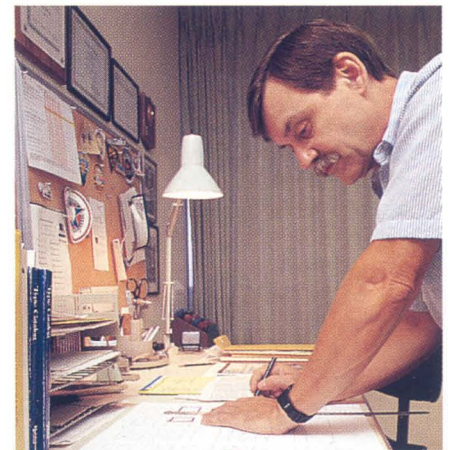
tem by Flint Hills Software. (Accounting functions were previously performed on a Radio Shack Model 16.) Another 3000 HD is used to edit free-lance manuscripts which are fed through an image scanner using ReadWrite software. Those manuscripts, which make up 90 percent of the magazine's editorial content, are then transferred to a floppy disk, which is given to Cameron for final editing and page layout. Hard copies of the page layouts are produced on a laser printer linked to Cameron's 3000 HD.

"All I have to do is paste the ads and some artwork to the hard copy and attach the photographs and send the hard copies and disk to the printer," Cameron said. "They input it into their typesetter, which sets the page complete with folios and dates, so we don't have any paste-ups or dummies. When I receive the blues, usually very few corrections are needed. I do all the corrections here, which has eliminated the proofing that the printer used to do and saves money."

A 30 to 35 percent savings in production costs has been achieved by automating Law and Order. However, Cameron has been required to assume additional duties. "The editor has to do a lot of things that the printer had to do before—such as specifying type, and keying and coding in," he explained. "There's a little more work involved, but it's still a lot faster. I can see immediately what it will look like on the page and if I don't like it, I can change it right there."

Automation has also made assistant editor Jill Hawkins' job easier. Hawkins scans and does the initial

editing on some of the 30 manuscripts the magazine receives monthly. "I definitely prefer a computer over a typewriter. I had not worked on computers before, but it was easy to learn." Hawkins' job may be further simplified in the future through use of a modem, which will eliminate the scanning step for many manuscripts. "More and more writers are using computers. In fact, we're already getting 20-25 percent of our articles on disk," Cameron explained. "With a modem, we will probably increase that even more."



Cameron adds finishing touches to a page layout.

In retrospect, automating Law and Order's production was simply a matter of practicality for Cameron. "Since we were doing frequent articles on computers, I realized being a computer illiterate wasn't helping me. So I decided I had better learn something about computers so I would know what I was talking about when I wrote the stories. What better way to do that than to apply it to our own needs." □

DESKTOP PUBLISHING ENTERS THE CLASSROOM

Students at a suburban Chicago high school use computer technology to produce a variety of school publications.

The art of the printed word has become a phenomenal study of technology's effect on civilization. Who could have foreseen the advancement from primitive cave etchings to 21st century electronic and desktop publishing?



Innovators Skorupa and Hyde.

Business, the fastest growing market for desktop publishing, does not, however, have exclusive use. After 25 years as

a high school English teacher and school yearbook and newspaper sponsor, Joe Hyde has put desktop publishing to the test in the classroom. And it passed.

Hyde teaches journalism at Thornton Fractional Township High School—South, District #215 located in the southeastern suburbs of Chicago. TF South is typical of other high schools—trophy showcases and bulletin boards line the maze of red and white halls—but, behind the door of the journalism lab, students are receiving state-of-the-art instruction not often found in college or university journalism departments.

Getting an electronic and desktop publishing project off the ground was no summer vacation.

For 13 years, Hyde and his

students relied on a Kroy headline machine and an IBM Electronic Selectric Composer for typesetting both the yearbook and newspaper. Although he concedes the equipment was better than what many schools had, an increase in printing costs and a discontinued service notice on the IBM composer plagued the summer-long yearbook process.

"What was I going to do? My typesetter was getting old and would eventually need repair and, frankly, after 25 years, I had to do something different just to keep going," Hyde explained.

With the technical assistance of his friend Milt Skorupa, the district's microcomputer coordinator, Hyde decided to try desktop publishing.

Supported in their decision by Department Chairperson Judith Lohr, Principal Herb Mansholt and Assistant Principal Rich VandenBerg, the lab was equipped with four Tandy 1000 SX personal computers in December,

1987. The computers, at that time, were used as word processors—replacing typewriters. Since their initial installation, the computer systems have been configured with a full 640K of memory, 20 megabyte hard cards, CM-11 color monitors and Logitech mice. One 1000 SX contains an accelerator board.

Production of the *Rebel Rouser*, the school's bi-weekly newspaper, became a much simpler process with the use of PageMaker by Aldus Corporation, one of the two leading desktop publishing software programs. Students write their articles using Professional Write, produce camera-ready pages with black-outs for photos using PageMaker and print the finished layout on a



The computer system reduced production time for TF South's POSTSCRIPT yearbook.

Journalism students Colleen Manuszak (foreground) and Joyce Pollacheck review copy files on the Tandy.



Tandy LP 1000 laser printer. Both photographs and copy are sent to a local printing company for photo negative paste-up, offset and final printing. Turnaround time is less than two days.

Hyde and Skorupa are also reviewing scanners, with the possibility of producing an absolute camera-ready newspaper within the near future.

The *POSTSCRIPT* yearbook, 240 pages of photographs and text, proved to be Hyde's greatest challenge. Previous years had taken production through mid-August, virtually eliminating any "normal" summer break.

After reviewing proposals by several large publishing companies, Hyde and Skorupa turned to Radio Shack and Taylor Publishing of Dallas, Texas, for a solution.

Using the Tandy 1000 SX computers and specialized software from Taylor Publishing, production time has been significantly shortened and simplified.

Taylor introduced its automated electronic publishing system to schools in 1985. Today, approximately 2,000 of its educational customers are contracting the system.

The Taylor software consists of three programs: PageVision to position text

and photo blocks, managing the overall page layout; TypeVision to provide text blocks, in which students can type copy and immediately see the finished effect; and IndexVision to store a student name data base and create a photo index by cross-referencing text.

As yearbook pages are created, text, photos and headlines can be positioned and re-positioned on the computer screen, until the layout is acceptable to the student and Hyde. A Tandy DMP 2110 dot-matrix printer is used to produce a hard copy of the page for a more realistic proof copy.

The finished product, a set of merged diskettes containing page layouts, photo references and text (complete with sized fonts created by Taylor Publishing) is mailed with numbered photographs to Taylor Publishing for final production.

By 1992, Taylor Publishing predicts a complete turnaround, from mailed diskettes to yearbook, in approximately six weeks. Record time.

The computer-based publishing system for the yearbook and newspaper has already reduced production costs for the school. For a one-machine system suggested by Apple Computer, the price would have been significantly greater, according to Skorupa.

"The reason desktop publishing came out on the Mac first was primarily because of the graphics the Mac can do on the screen. With the Tandy, now you can do the same kind of graphics that the Mac can do and, why spend the extra money for a Mac?"

With the Tandy PC-based system and Taylor Publishing's software, the school has already reduced its production costs by more than \$5,000, or \$5 per yearbook. Record savings.

"The system gives students more control over page contents and overall layout of the yearbook," agreed Hyde and Skorupa.

Although student control has relieved Hyde of much of the physical work, he still retains editorial control and management of the entire operation. "The student editor has total control of the project. For the first time in three years, I had a summer vacation," said Hyde. "For the first time in years, my job is really to teach." □

Providing human services for over 430,000 people is a FUND RAISING EXPERIENCE

The United Way of Allegheny County in Pittsburgh, Pennsylvania, is one of the largest United Way affiliates in the country raising more than \$34 million for approximately 430,000 people who will receive help during the coming year. When the annual pledge drive begins each fall, Allegheny County bands together with four other United Way affiliates to head up the United Way of Southwestern Pennsylvania to raise funds for the needed hu-

man services that are provided by its 144 member agencies.

An organization this large maintains massive data bases on large mainframe and minicomputer systems. When William Gubanic, director of Information and Technology, came to the Pittsburgh office he found a system that was approximately 20 years old and workstations that "represented a Tower of Babel."

"We were faced with situations in which incompatibilities existed either in operating systems as far as release versions or in products that could not be used by everyone throughout the organization," Gubanic explained. "We needed a system of intelligent workstations that could be used either

in the overall operation of the United Way or for specific applications. We could not afford the luxury of specialized equipment."

In the beginning

Every project has to have a beginning, so Gubanic's first order of business was to establish long-range plans that not only included updating their minicomputer but increasing the productivity of the staff by increasing compatibility of workstations throughout the office. In order to reach these goals, Gubanic wanted a vendor that could provide a product for use with specialized applications, such as desktop publishing, and also serve as a network workstation. Because the United Way is a nonprofit, community-oriented organization, it was important to save as much money as possible while increasing the productivity of the limited staff.

Originally, Gubanic purchased a Tandy LP 1000 laser printer that was tied to the IBM System 36 in the office. "The laser printer represented a significant purchase because it demonstrated its compatibility with the System 36 and Display Write 36 software and still offered the needed features of a departmental device so that it



Karin LaFramboise designs one of her many projects.



could be accessed throughout the network for output from the mainframe as well as the PC applications."

The time spent setting up the printer and making sure everything worked satisfactorily convinced Gubanic. He decided that Tandy would be willing to support not only the organization as a whole, but the specialized applications they wanted—like desktop publishing.

Time perspective

Gubanic felt one area that could benefit from today's trends in desktop publishing was the art department within the Marketing and Communications Department, which depended heavily on outside vendors. In March, a system built around the Tandy 3000 HL computer, another LP 1000 laser printer and Aldus PageMaker software was purchased and Art Director Karin LaFramboise found herself producing and redesigning documents she had never had the time to do before.

One of the major benefits of the system has been in materials planning and preparation. "I can produce a layout and format things so people have an idea what the product will look like ahead of time," LaFramboise said. "This has been really helpful in visualizing what the final product will look

like for the 14 to 15 people who have to approve every piece of literature that goes out."

One of her biggest projects, and one which she had never had time to do in the past, is a bimonthly newsletter sent to approximately 15,000 campaign volunteers and major corporations. Once approved, a copy of this two-page, self-mailing document is printed,

William Gubanic established long-range plans.



photographs are cropped and the banner is pasted onto the copy.

"Many graphic artists feel computers are too constraining," LaFramboise stated. "But I've been in this business for ten years and I feel the computer frees up my time to be more creative with layout, type specs and photos."

Materials planning and preparation for the fall campaign takes place in March and April, about the time the desktop publishing system was being implemented. Although it has not

been used to its fullest this year, it was used to redesign most of the campaign forms to be more appealing.

"Our actual cost savings are intangible," said LaFramboise, "because it's hard to place a value on time. I simply don't have time to implement a system to save time. PageMaker was easy to learn. I trained for eight hours and have worked on it every day since."

Campaign plans

Plans for next year's drive are already under way to use the system for mock-ups of products such as the campaign booklet that describes the agencies that United Way funds and lists all the member organizations for each county covered by the Southwestern Pennsylvania region.

"We feel the money has been well spent," Gubanic added. "There are other vendors with less expensive computers, but in the 1990's you can't go with a vendor based solely on price. You have to look at the quality of the product, the longevity of the vendor in the market, ability and willingness to offer technical support, and whether the company is in step with industry trends. We felt Tandy would be there when we needed them, no matter how small the problem seemed to be." □



Desktop Publishing from Radio Shack

The following represents hardware and software products available from Radio Shack which are designed to meet a variety of needs for desktop publishing applications. Radio Shack Computer Centers and participating Radio Shack stores and dealers have additional information on how to design a desktop publishing system based on Tandy personal computers.

HARDWARE

LP-1000 Laser Printer. Provides affordable, near typeset, professional quality printing

AVR MegaScan II Scanner System. Integrated hardware/software flatbed scanner

Ricoh RS-320 Scanner. Low-cost flatbed scanner

The Complete PC Hand Scanner. Handy hand-held image scanner

Microsoft Mouse. For use with Tandy and other PC-compatibles

Logitech Serial Mouse. Choose from two versions

Tandy Serial Mouse. Microsoft compatible

SOFTWARE

Entry level applications:

PrintPower. Create flyers, letterheads, posters and more

AwardWare. Design and print awards, certificates, licenses

The Print Shop: Design and print signs, flyers and more

Epyx Graphics Scrapbook I:

Sports. Illustrations

Epyx Graphics Scrapbook II:

Off the Wall. Illustrations

Epyx Graphics Scrapbook III:

School. Illustrations

PrintMaster Plus. Create greeting cards, calendars, signs

PrintMaster Plus Art Gallery I and II. Illustrations

PC Paintbrush. "Graphics design studio on a disk"

Mid-level applications:

PFS: First Publisher. Page layout program. First Publisher companion programs:

Personal Graphics.

Publications.

Holidays.

Leisure.

Business Symbols.

Executive Fonts.

Decorative Fonts.

Just For Grins.

Christian Symbols.

NewsMaster II. Produce newsletters, ads and more

Halo DPE. Versatile program for document preparation

Certificate Maker. Create certificates with a variety of border styles, typefaces

Certificate Library. Companion graphics program

The Newsroom. Create publications from start to finish

Newsroom Clip Art Collection 1 and 3. Illustrations

PC Paintbrush +. Offers support for image scanners and other features

Advanced level:

PageMaker. Comprehensive desktop publishing

PagePerfect. Create professional quality letters, proposals and more

Publisher's Paintbrush. Perfect graphics companion to page layout programs

Font Effects. Special effects software support package

WYSIFonts! Softfont support

NOTE: The above software packages may have specific hardware requirements.

Positive ID: The "eyes" have it

Computer technology helps a Marksville, Louisiana, sheriff keep an eye on prisoners.

Late in November, 1987, Cuban refugees at the federal detention center in Oakdale, Louisiana, seized control of the prison, took 28 officers and staff members hostage and held authorities at bay while bargaining with U.S. Justice Department officials in attempts to avoid deportation. Days later, when the siege at the fire-damaged prison ended, officials were faced with placement of hundreds of inmates left shelterless. One logical incarceration center was the Avoyelles Parish Jail in nearby Marksville, Louisiana. Automation of booking, prisoner tracking, accounting and other functions allowed the jail to accommodate dozens of inmates at that time, although the facility housed less than 40 prisoners a year and a half earlier.

The impetus for the change is an innovative data base management system devised by Thomas W. Tubre of Data Security Systems Inc. of Bunkie, Louisiana. The system uses a retina scanning device designed and manufactured by EyeDentify Inc. of Portland, Oregon, to identify inmates by recording the unique blood vessel pattern on the retinas of their eyes. According to Tubre, the combined system is the only one of its kind in the United States. The system is also extremely accurate. Scanning just one eye, chances are one in a million of receiving the wrong information. Scanning both eyes reduces those chances to one in a trillion.

The scanning device is linked to a Tandy 3000 HD microcomputer equipped with two 40 megabyte hard drives and uses the SCO-XENIX operating system. Booking officers can store, search and recall millions of eye

Lieutenant Vincent McGlone waits to conduct a data base search of a prisoner's eye signature.

signatures of past and present inmates, visitors and employees for state-of-the-art security. A "quick recognize" matching function built into the software allows the user to fully search the data base in less than two minutes. A Tandy 1000 SX equipped with two 10 megabyte hard drives is used to compile necessary booking information after eye signatures are obtained.

Regulated roll call

According to Booking Supervisor, Lieutenant Vincent McGlone, automation on the Tandys has reduced booking time for a single prisoner from 15 to 2-3 minutes. That time may be further reduced by using a faster Tandy 4000, which would enable agents to search in seconds the files of some 2,700 past and present inmates.

"Before, when we wanted to do a prisoner count we had to physically go into each cell and do a roll call or literally count each prisoner," recalled McGlone. "With this system, we can do a prisoner search by any number of methods. We can do a location search by dorm, cell or bunk."

The system is also helpful in alerting deputies to medical problems by quickly putting all booking information at their disposal, Sheriff Bill Belt noted. "This won't ever take the place of fingerprints, because no one ever leaves an eye signature at the scene of a crime, but it is a very useful tool for positive identification. It can't be altered and it's faster to check and takes up less storage space in the computer than fingerprints do." Belt said he hopes to someday link the system to a national network and establish a banking system for foreign inmates using

eye signature identification. "I feel like it's the wave of the future," he added. "That's why we have it."

Currently being implemented on the Tandys is a staff scheduling and overtime management system designed for correctional users by Hatrak Associates of Las Vegas, Nevada. This function, which will run as a menu item under the inmate management/tracking system, will have staff "clocking" in and out through the eye machine.

Tandy computers are also used for various other purposes at the facility. The 3000 HD is used to manage "room and board" billing for inmates who are housed for outside agencies. Also linked to the 3000 HD server via RS-232 serial ports are two additional 1000 SXs, which are used for billing outside agencies

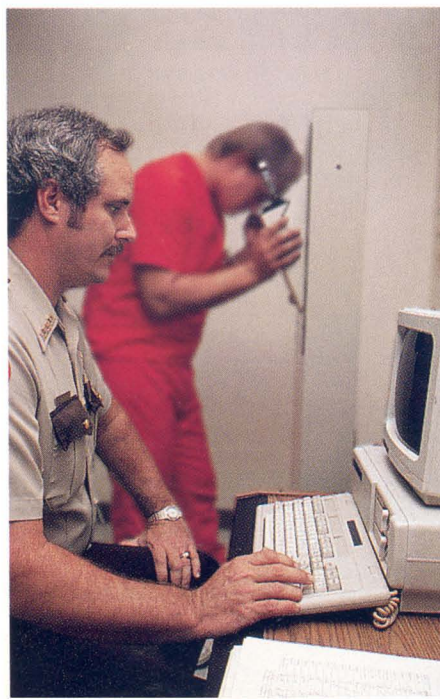
for medical and other costs incurred by their prisoners and for updating and accessing federal inmate records. A second 3000 HD is used in the department's accounting office for payroll and general ledger functions using Great Plains software. A Radio Shack TRS-80 Model 4 is used by detectives for case log management. All the Tandys have been reliable and trouble-free, McGlone noted.

The inmate management system/Tandy computer combination may find its way into law enforcement agencies all over the United States. Said Tubre, "We feel there are 4,000 to 6,000 agencies that could utilize the scheduling/overtime management system, the inmate management system or a combination of the two running on 3000, 4000 series Tandy computers." The company is targeting federal, state, county and municipal accounts. Some of its current accounts include Los Angeles County, California; Prince George's County, Maryland; Broward County, Florida; Cook County, Illinois and the state of New Mexico.

"We've come a long way since we installed the original beta version at Avoyelles," Tubre noted. "Two years ago when I contacted law enforcement agencies about the technology, they thought it was all James Bond. Now we're proving it can be utilized." □



Sheriff Bill Belt



Lab technology: Putting it to the test

A North Carolina hospital computerizes its laboratory testing functions.

Technology has been instrumental in breakthroughs that affect our daily lives, particularly in the field of medical science. Yet there is a serious side effect associated with those breakthroughs: the more capable physicians become, the more tasks health care institutions must perform in order to keep up with physicians' mushrooming demands.

The New Hanover Memorial Hospital in Wilmington, North Carolina is a prime example. With 10 floors, over 500 beds and a medical staff of 254 physicians, the flow of information throughout the hospital could be overwhelming. But NHMH has found a remedy: the computer. New Hanover



employs computers to some degree in almost every aspect of its operations. A recent innovation was the automation of the hospital's Laboratory Order Entry and Results Reporting System (LOERRS).

In order to develop a diagnosis, a physician relies on the crucial tests. At the doctor's orders, nurses and lab technicians collect specimens and carry out the specified analysis. The LOERRS manages this process, from the inception of the order to the delivery of the lab results.

There are several laboratories at NHMH, each with a different function. The Hematology Lab, for example, specializes in blood testing. A local

area network has been set up in each lab, with Tandy 3000 workstations interfaced with the labs' computerized testing equipment. The workstations are linked to a file server, which is in turn linked to the hospital's mainframe computer. The LOERRS uses software designed by Clinical Concepts of Miami, Florida. The software, called a Laboratory Module, interacts with the mainframe's Patient Care Control System software—PCCS—which was originally developed for Miami's Mt. Sinai Medical Center.

Exact information

For each test performed, data must be precisely interpreted and managed. The physician's name, patient's name, type of specimen to be collected, which test to perform, and ultimately the results of the test must be correctly supplied to the mainframe. Because of the serious nature of the information, there can be no margin for error or incomplete data.

Roger Arthur, NHMH's Director of Data Processing, explained how the LOERRS works. "The physician writes an order requesting that a certain test be performed on a patient. A nurse on the patient's floor simply enters the order on a mainframe terminal. That generates a request in the laboratory to draw the specimen. The request is in the form of a label; it is an order that tells the lab who the patient is, where the patient is, the type of specimen to collect, what tests to perform on the specimen, and even what color cap to put on the test tube. The lab technician then goes to the patient, draws the specimen, and labels the specimen with the original request.

"That's where the Tandy system comes in," Arthur continued. "Each lab's file server acts as an autolog station. As specimens come in, we scan the label with a light pen that reads an MICR code (similar to the numeric code on bank checks) that is printed on the label. That code gives the autolog computer the complete record of information about the specimen. The specimen is then routed to the appropriate piece of computerized testing equipment, which is in turn interfaced with one of the Tandy workstations."

File accountability

Test data is automatically passed back to the Tandy workstation, which is linked to the equipment through its RS-232 port. Technicians check the data and release it to the mainframe.

Records are automatically passed to the hospital's accounting system for billing and go into the patient's file.

In part, Arthur relied on the advice of NHMH's doctors when he chose Tandy computers for the LOERRS. "We talked to a number of our physicians who had good experiences with Tandy equipment. A number of our physicians had owned Tandy computers for several years. When I reviewed Tandy's prices, that cinched it for me."

The hospital environment can present situations that make Arthur's job as Director of Data Processing a unique challenge. "We simply cannot afford any downtime on our machines, so we are forced to keep spare computers on hand to meet any contingency," Arthur commented. "Similarly, transition to an automated system such as the LOERRS must also be planned with every contingency in mind. Initially, we had brought the entire system up at one time. We had barely put it in place when a disaster struck Wilmington—a gas main exploded, and several firemen were burned. We ended up with almost 20 patients in the Emergency Room, all at one time. Because our people were still learning the new system, we decided to use the old method in order to safeguard the health of our patients. After the crisis had passed, we went ahead by bringing up a single nursing station at a time, in smaller, more manageable sections."

Access and accuracy

The system's results have been impressive. The computer Laboratory Order Entry module has given New Hanover new speed and safety. Physicians can access test data almost immediately at a nursing station after the test is administered, rather than waiting for a hard copy of the results to be routed from the lab to the appropriate floor. And, by streamlining and automating the flow of information, the system has greatly narrowed the chances of human error.

"As with all hospital projects of this magnitude, teamwork is a critical factor. Our laboratory data processing and nursing personnel made this all possible," concluded Arthur. □



*Roger Arthur,
NHMH director of
Data Processing.*



*Orders are computerized
down to the color of the test
tube cap.*

Behind the scene party support

Months before the delegates arrived, Tandy was working to insure smooth, efficient microcomputer operations for the Grand Old Party.

The success of any event is largely dependent on the people involved in setting it up and making sure everything functions as it should. For the city of New Orleans, the success of the Republican National Convention was an important goal. With approximately \$55 million in revenues for the city during the four-day affair, a smooth operation could mean consideration for the 1992 convention.

With more than 48,000 delegates, alternates, guests and media personnel, an important aspect of a smooth operation is a dependable information system based on leading computer technology and a total support plan.

In March, the city of New Orleans selected Tandy computers as the official information system for the 33rd Republican National Convention, a major political event that would be seen by millions of Americans.

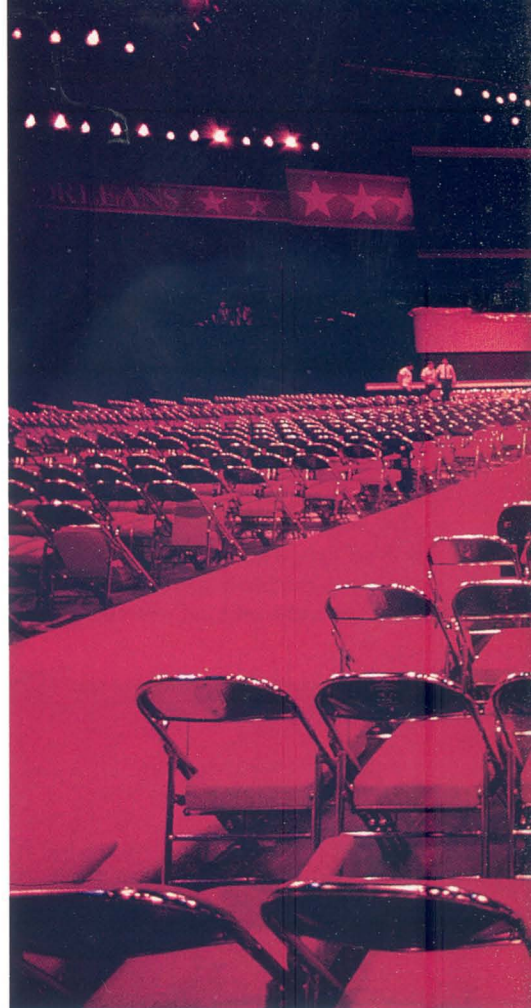
"We presented the city with a flexible implementation plan and total solution that could easily be customized to meet all the anticipated needs of the convention's staff," said Don Barnes,

district sales manager for Radio Shack's Business Products Division. "Part of the total solution was the involvement of Tandy's Training and Support engineers who were crucial to the installation and training. They also acted as the network administrators and were responsible for its day-to-day operation and maintenance."

In March, Mike Nugent, manager of the Tandy Training and Support Center in New Orleans, began meeting with convention management to map out areas where workstations were needed, schedule the installation, determine which software would best meet their needs and discuss training for the 200 staff and volunteers who would eventually use the system.

Nugent and Tandy Systems Engineers Jon Luckett and Randy Toups began the arduous task of installing almost two miles of Ethernet cable throughout the 52-acre Superdome facility in April. Because of the detailed installation plan established, implementation of the system ran ahead of schedule and was operational by May.

Computer Operations, the heart of the system, consisted of four 3Com 3S/401 file servers with 600 megabytes of online storage available to any user on the network. A Tandy 4000 microcomputer was also connected to the network to monitor and direct network traffic using 3Com's Etherprobe software program.



With rows of chairs soon to be filled, New Orleans'

To guard against power failures and loss of data, the file servers were attached to a universal power source. For added data protection, each 401 file server included a 150 megabyte tape backup system programmed to backup data every night. A duplicate file server system provided additional protection.

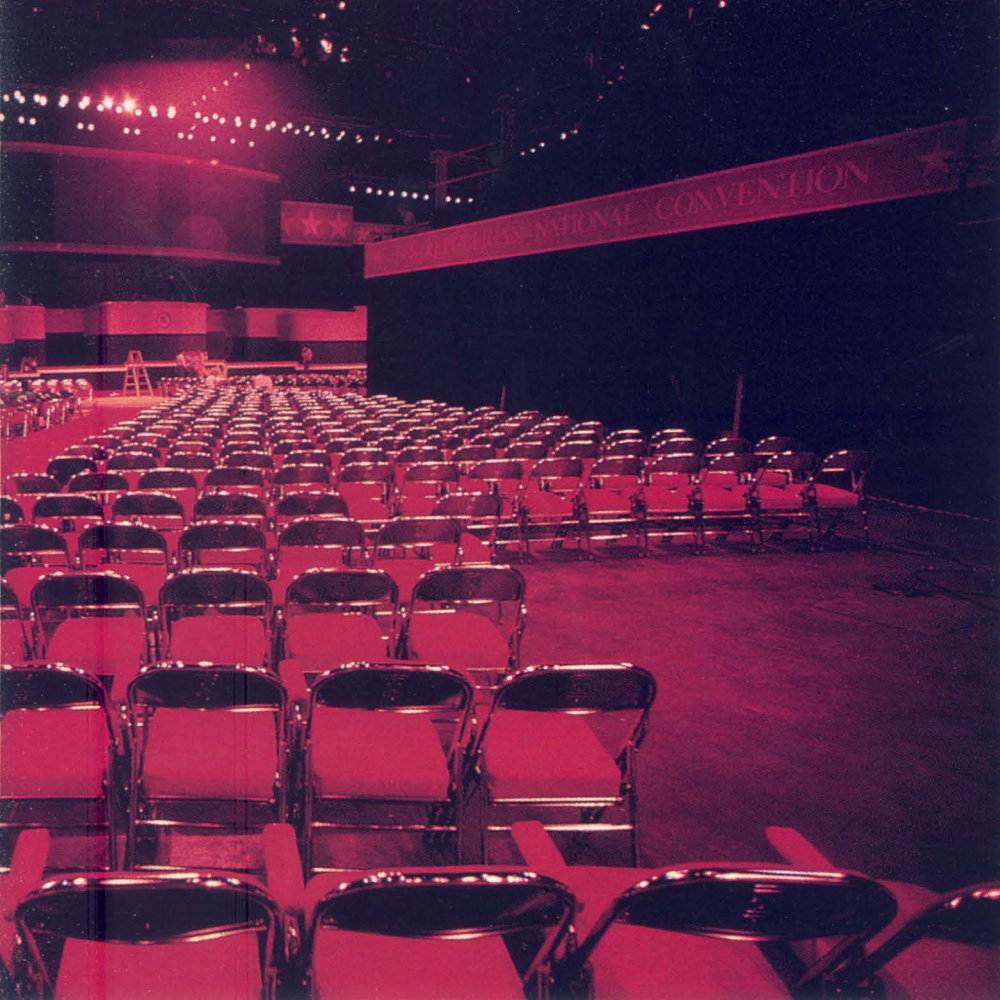
Also in the Superdome were 80 3Com diskless workstations in convention offices, 40 stand-alone Tandy 3000 HLs on the convention floor, and several Tandy LP 1000 laser printers and DMP 440 dot matrix printers.

Although the Superdome housed most convention activities, others, such as the Platform Writing Committee, Operations Committee and Media Operations, were headquartered at four remote sites capable of communicating with the system via 9600 baud modems from Microcom.

The largest remote network was located at the Rivergate Convention Center where the Platform Writing Committee met to debate the party's platform. The system included a 3S/401 file server, 12 3Com diskless workstations and three Tandy laser printers. As amendments and planks



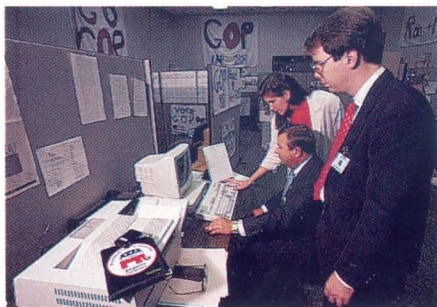
Randy Toups and Mike Nugent monitor activity on the convention network system using a Tandy 4000 computer.



gigantic Superdome undergoes last minute preparations for the 1988 GOP National Convention

were approved by the committee, they were entered into the system using WordPerfect and printed out on the laser printers. Information could then be transferred between the Rivergate and the Superdome as needed.

An event as large as a political convention requires specialized departments dealing with specific tasks. Convention offices for 11 departments were established in the Superdome's meeting and reception rooms to organize tasks such as security, transportation, volunteers and housing. Several standard packages were used including: WordPerfect, Paradox, PageMaker and Lotus 1-2-3.



Don Barnes (seated) provides assistance to volunteers using one of the more than 120 workstations at the convention.

Not only did hardware and software need to be installed, but large amounts of data had to be converted from the Republican Committee's mainframe system in Washington, D.C. Floppy diskettes containing data were sent to Nugent in New Orleans where the information was converted and added to the system. "The disks with the mainframe files came to us prior to the people arriving," explained Nugent. "When the staff arrived, each user's files were already installed on the system in their own directories which only they could access. All the user had to do was come in and start working." Training classes for the initial group of people coming to New Orleans were conducted in Washington, D.C., at the local Training and Support Center.

To further facilitate the training, a classroom containing 10 workstations was set up and tied into the network. As new volunteers arrived, classes were scheduled to familiarize them with the network and other operations. "The classroom was a big asset," noted Julie Perrier, special assistant to the convention manager. "If people needed extra training, they could go in there and get

help, or it could be used to put additional people to work on the system."

Paradox was by far the most important and most used application across the entire system. A single data base of information was established and divided into four sub data bases for certain departments. More than 17,000 hotel reservation forms were printed by Housing using the system, which also listed the 103 hotels and types of rooms available. The largest data base was used to keep track of more than 10,000 volunteers and their information.

Total support is an important part of a total solution. Prior to the convention, Tandy systems engineers were available to convention management on a 24-hour-a-day, seven-day-a-week basis while on-site support was provided to the convention staff from 7:00 a.m. to midnight each day. All support personnel were equipped with pagers to facilitate response time when any needs or questions arose at any convention location. Additionally, a telephone support line was manned at the Computer Operations office.

"When we had a problem, all the staff had to do was call Mike (Nugent) and it was effectively taken care of," noted Perrier. "The system worked very well."

Additionally, a mini Tandy Service Center was maintained in the Superdome during the convention to aid reporters with the ubiquitous portable computers and to provide batteries, cables, paper and other essential supplies.



Irma Canfield, Tandy systems engineer, conducts a training class for volunteers.

What took five months and several hundred man-hours to implement had to be removed within six days. Again, the total solution included a de-implementation plan for scheduled removal of the information network, and delivery and installation of the computers and printers to the city of New Orleans for internal use.

"We're very proud of what we accomplished here," Barnes stated, "and look forward to working with other conventions." □

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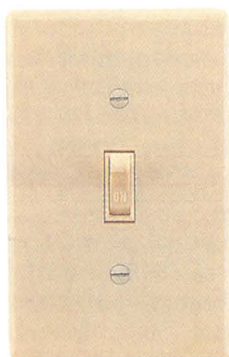
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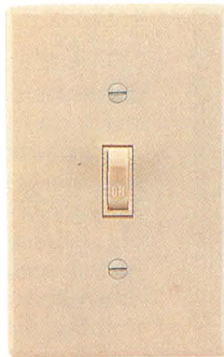
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