CROSSOVER gets
⫴ NOVELL.
LAN authorization

To complement our business productivity services, CROSS-OVER TECHNOLOGIES has become an authorized reseller and installer of Novell networks. Our staff uses a six-station local area network (*LAN*) daily for a variety of office software applications, as well as for laser printing and business forms output. Since we're well beyond the theoretical operation of the Novell software and know what it *really* takes to setup and maintain such a system, we're able to take up much less of your time getting your LAN working properly. This equates to reduced downtime and external support fees.

A typical small office network comprises five to ten workstations and a selection of printers. "Once a LAN is up and running, one person should be responsible for backing up data, installing new software, adding new users, and acting as liason with the vendor and the technical consultant. You need not hire a programmer to serve in this capacity—the administrator does not necessarily need to be a technical person."*

As you consider setting up a LAN in your office, we at CROSS-OVER would be pleased to share our expertise with you. ◼

*"Why Everyone Works Smarter When They're Connected", Working Woman; Oct. '88

Vocational Graphics Program Wins Award

Dale VanHouzen was awarded with the Exemplary Vocational-Technical Program at the 16th Annual Michigan Occupational Association Conference held last November. He has also recently received the International Association of Printing House Craftsmen's Van Hanswyk-Jasser Outstanding Achievement Award. Dale has been at the

CROSSOVER TECHNOLOGIES translates "technobabble"

Building Office Productivity

In John C. Dvorak's column entitled *"The End of the Computer Dealer"* (PC Magazine; Feb. 14, 1989), he refers to "a July 1988 market research study conducted by Techtel Inc., a California-based research firm, (that) indicates that nearly half of the respondents who had an opinion about computer stores had a negative opinion. ComputerLand, BusinessLand, MicroAge, and Entre were all cited." Commission-based salespeople are often not motivated to learn about new developments in their industry. These volume-oriented outlets frequently sell *solution packages* that represent nothing more than this week's special. Operating on low margins, managers hesitate to send salespeople to industry-related seminars and expositions. Opportunities for gains in business productivity are lost because the computer salesperson was unable to adequately instruct and educate the buyer regarding use of software and hardware, work-environment factors *(see article top of page 3)*, related reference books and magazines that address specific applications, knowledge of regional classes and seminars dealing with

Data Entry: Merging Database Records and Forms

Business Forms Software
Saves Time, Printing Costs

If you...

...invoice clients with standard forms and individualized customer information,

...produce correspondence, catalogues, contracts, newsletters, overheads or price lists

...have a substantial investment in pre-printed forms,

then you can dramatically increase the efficiency of your business communications and substantially reduce your printing costs permanently with Graphic Development International's (GDI) Business Publisher Series!

An increasingly important function in major corporations and small businesses alike is the need to automate the creation and use of forms, not only for greater control, but for improved productivity and cost savings. To accomplish this, there is an interesting new software category that's gaining attention — it's called **forms management**. Companies that are actively investigating or using forms management software include insurance companies, banks, title companies, hospitals, public utilities, realtors, and governmental agencies.

There are four types of forms management software on the market. The simplest lets you design a form on screen that can be printed on a dot matrix printer or, sometimes, on a laser printer. Another category lets you fill in existing printed forms. The third type supports onscreen forms design with data entry and printing of completed forms. At the high-end of forms software is the forms management software that supports design, data entry, and printing with the ability to store entered data in associated database files. GDI's powerful **FormEasy** falls into this last category.

The real power of forms management software is its ability to merge designed forms with the automatic retrieval of data such as customer invoicing information. Alternatively, data can also be entered on the form

BATCH FILES

TBA Career-Tech Center in Traverse City since 1983. Principal Connie Riopelle nominated Dale because of his "ability to educate all of the students to a career learning level. This program has a high placement rate for all students. I am very proud to have Dale's program recognized at the State level."

Initially, Dave Hoyt of Radio Shack beat out bids from IBM and others to install ten state-of-the-art 80386-based, IBM-compatible computers in Dale's lab for graphics applications. When additional experienced help was sought to fully configure the new lab setup, *CROSSOVER TECHNOLOGIES* was called in to assist.

We equipped Dale's classroom with a pair of Postscript-compatible laser printers and a combination graphics/text scanner, then set about to properly configure the assorted hardware for maximum performance. Since Dale's job does not include teaching the DOS operating system to every new class, he asked *CROSSOVER* to write and install a series of "batch files", DOS command sequences that are logically arranged to perform file and disk maintenance operations "behind the scenes". Now all a student has to do when using a workstation is to choose numbered selections from a screen menu program, which first transfers a current project file from his or her personal diskette to the system harddisk, then runs the selected software application. With this, much of the learning-curve period has been eliminated upfront, allowing Dale to focus his energies on instructing the students in graphics, not computers.

Computer Solutions for Business

By Doug Dayton
Microsoft Press, 1988
$17.95 (softcover)

"Written for the small-business owner with little or no computer experience, this book paves the way to planning and implementing a business computer system. Real-world illustrations of how computers are used in business add much to the scope of the text, says reviewer William J. Lyncott."

Online Today, Dec. 1988

CROSSOVER Now Offers Complete Electronic Publishing Services

CROSSOVER TECHNOLOGIES has become a clearing house agent for *Number One Graphics*, a full-service desktop publishing (DTP) service bureau. You can now send your **PC or Macintosh** DTP files to us and, after a final check for errors, Number One will process them in accordance with your specific requirements. They are equipped with a pair of **LInotronic 300** typesetters that can send your output to either paper or film. Number One's graphics department can even electronically enhance your publication with scanned-in photos, artwork, or different typefaces selected from their **complete Adobe Postscript library** to give it a professional appearance. Overnight rush processing is available, with typical UPS delivery of camera-ready art within 48 hours. Number One can start from your computer diskettes or ideas scratched out on a napkin and produce colorful, professional work that you will be proud of.

ABOUT THIS ISSUE — *PC Deadline* was written, edited and designed in-house on an **AST Premium 386** computer using **Aldus PageMaker**. A **Datacopy** flatbed scanner was utilized to scan in both graphics and text. Proof copies were output to a **QMS PS-810** Postscript-language compatible laser printer, then the final publication file was compressed and sent via our 9600 baud modem for processing at Number One. With many interruptions, this project went from the initial copywriting phase to camera-ready art in two weeks, during which time we had full control over additions and corrections without wasting valuable time traveling all over town.

Call us at (616) 929-4540 to learn more about taking advantage of this fast, no-fuss method of developing business publications. Also, if you require assistance with editing, layout, or printing (or would like specific information about other matters pertaining to professional electronic desktop publishing), *CROSSOVER* would be pleased to consult with you.

From the Editor's Disk

specialized areas of interest, and other useful information that help you get the most out of your computer investment.

CROSSOVER's Doug Cunningham studies the finer points of customizing **AutoCAD Release 10** at a recent seminar held at Grand Rapids Junior College.

After months of discussion and planning, *CROSSOVER TECHNOLOGIES* opened its doors on June 1st, 1988, to address these industry shortcomings. Our clients appreciate our ability to translate bewildering *computerese* into terms that they can understand. While our staff is well-versed in just about all areas of microcomputer operations, we focus the majority of our research in the following areas:

- *Business Electronic (Desktop) Publishing*
- *Electronic Business Forms Generation*
- *Office Networking & Multi-User Applications*
- *Integrated Database/Spreadsheet Accounting*
- *Interoffice Communications (Modem/Fax)*
- *Computer-Aided Design & Mfg. (CAD/CAM)*

Co-founded by Chris Morton and Doug Cunningham, *CROSSOVER* provides consultation, sales, installation, training, software integration, and support to companies, government, and educational institutions across Michigan and outlying states. Morton spent many years in magazine advertising, graphics layout and business marketing, and bought his first computer for telemarketing an international trade journal. Taking advantage of advances in com-

puter graphics technologies and the introduction of **Aldus PageMaker**, he later created a wide variety of business publications for the **Leelanau Center for Education** while serving as their publications and microcomputer consultant.

Programmer Doug Cunningham has provided a wide range of microcomputer services to businesses across Michigan, operating as an independent consultant. He has experience in computer retailing from working at **Inacomp Computer Center** and has consulted to **Traverse Industrial Automation**, a firm that specializes in automating manufacturing facilities.

CROSSOVER TECHNOLOGIES maintains an extensive reference library and is *online* with many national databases which we use to conduct client research. Our staff scours a multitude of computer trade publications weekly and attends national conferences, training seminars, and expositions in order to stay on top of new computer applications. It's this type of dedication to advanced learning and research that distinguishes us from the rest. We don't just *talk* about a business solution and then only deliver the *concept*; rather we strive to show you how to turn your computer investment into a true business-enhancement tool.

We are a member of the *Independent Computer Consultants Association*, which is dedicated to professional competence, objectivity, and integrity. *CROSSOVER* believes that client satisfaction can only be accomplished through a carefully implemented, five-step program that begins with a detailed needs analysis study, then continues through the hardware/software acquisition phase into turn-key installation, personnel training, and ongoing support.

Our initial interview to discuss your business computer consulting or purchasing requirements is *on the house*. Discounted daily rates are available and annual service contract retainers may be arranged to realize additional savings. Give us a call — we might be able to help you, even if your needs seem small!

"100% increase over manual programming"

CAD/CAM with NC-Auto-Code

Slashing design time is the key to increasing productivity in the industrial manufacturing environment, and modern, microcomputer-based workstations running CAD/CAM software offer the most important element to achieving this gain in efficiency. "CAD means Computer-Aided Drafting (or Design), while CAM is an abbreviation for Computer-Aided Manufacturing (or Machining). Therefore, CAD/CAM indicates a system that automates the entire design, drafting, and manufacturing cycle using computers." Prohibitively expensive to even medium-sized companies only a few years ago, sophisticated CAD/CAM systems can now be run on suitably-equipped personal computer (microcomputer) systems ranging in price from $15,000 to $30,000, which includes both hardware and software.

WHAT IS NC? — Numerical Control programming consists of a series of "functions or codes that instruct (a) machine tool to perform various operations, (such as) starting a spindle (or) drilling a hole. Dimensional information and operation parameters" may also be incorporated. "The beauty of Numerical Control is that all of (the) seemingly diverse machining methods have been broken down into operations (known as G and M codes) that are common to all tools and (other) operations that are specific to certain tools. In the early days, the NC part program was (usually) developed by an experienced machinist (familiar with) the machine's capabilities and the limitations of the material being machined." He would write out the commands, which would then be punched out on tape that could be read by the tool.

"Computers were applied to the task early in the development of Numerical Control (but) not as part of the machine control systems." Early attempts at "Computer-Aided Part Programming (were) a great improvement over completely manual part programming from the outset, but (they were) not interactive. The part programmer inspected the drawing and mentally translated its geometry into statements that related to the programming language being used. With a modern CAM workstation, however, "the programmer can define the tool path interactively. He enters motion control statements, and the tool path is displayed on the screen" in real time.

Office Requires Flawless Power

"Our dealer has talked with the hardware vendor who blames the software. Our software vendor says it's the hardware. Both claim their products have been proven in the marketplace, but for us it's proven to be a problem. The last vendor we would have ever suspected was the electric utility company."[1]

CROSSOVER TECHNOLOGIES experienced similar problems soon after we moved into our new offices. Continuous voltage fluctuations were enough to send our PCs into an advanced state of confusion. Being suspicious, we called in an electrical contractor to monitor the power supplied by the local utility for a week. After reviewing the results, we installed line voltage conditioners which solved the problem immediately. Going far beyond the protection afforded by surge protectors, conditioners "smooth out" AC voltages and prolong the operating life of computer equipment, we learned. A line conditioner also contains surge suppression circuitry, eliminating the need for separate electrical protection devices.

"Contaminated power lines are most likely the cause of hardware failures. As the microcomputer brings the power of the mainframe to the desktop,...imperfect power can be the cause of many system problems. Unscheduled system crashes, data loss and intermittent errors (become) familiar problems. Money and time are lost trying to identify these 'ghosts'. These...processing applications require a greater degree of power protection."[1]

During the early 1970s, **IBM** and **Bell Laboratories**..."concluded that power problems sufficient to interrupt computer operations occur on an average of (twice) a week, with outages accounting for less than 5% of the occurrences. Because 25% of the problems are created within the building itself, ***the office represents one of the most challenging environments in which computers might operate***. It is essential...to isolate critical data installations from all types of power line disturbances, including the sags, surges and transients that represent 95% of system failures."[1]

Although most computer retailers know to recommend the purchase of a surge protector, these devices alone are not sufficient to ward off failures caused by continual voltage fluctuations that destroy a harddisk in no time. A "practical solution would be the addition of a power line conditioner or voltage regulator."[1]

Line voltage conditioners, as well as battery-operated, uninterruptable power supplies (UPS) are available in varying capacities from **CROSSOVER**. Requiring no special installation, they cost between $130 and $340. Considering that the retail price of a replacement harddisk is $750 on up (not including downtime and the cost of data recovery), this is a small investment for a bit of self-insurance.

STATIC CONTROL — "Integrated circuits...are sensitive to static damage, (with) the threshold of sensitivity... (being) lower than 100 volts." This can be generated by "virtually any body movement. The damage may occur anytime in the life of...individual components, or circuit boards. Touching the device is not (even) necessary to cause damage — (it) occurs when the device is introduced to a voltage field. Static damage can be either (total) failure or gradual degradation, which is not only the most common form of static damage, it is the most expensive. **McDonnell Douglas Corp.** has determined that 90% of all static damage occurs as degradation, (with) failure occurring at any time. Static control is no longer a luxury, it is a requirement."[2] The simplest and least expensive methods of doing this are the following:

- *Periodically wipe the monitor and keyboard with a staticide cleaning pad. A box of pads costs $5.25.*
- *Attach a $20 static-control strip to your keyboard. Upon touching it, static will be grounded out.*
- *If the computer room has nylon carpeting, spray it with diluted fabric softener.*

OTHER PROBLEM AREAS — During winter months, many employees use electric heaters under their desk, with little thought given to plugging these devices into the same outlet as the computer. ***DON'T DO THIS!*** Your computer system will suffer extensive damages over a prolonged period if operated under these conditions. Similarly, don't operate your system on the same line as the following: photocopiers, furnaces, hot water heaters, refrigerators, coffee pots, hot pads, vacuum cleaners, shop equipment, or any other device that has an irregular current draw (motors) or heating coil. **CROSSOVER** recommends installing dedicated AC lines that are to be used strictly for computer equipment.

CROSSOVER stocks all of the power protection equipment and supplies mentioned in this article, and we would like the opportunity to visit your site to make recommendations regarding the prolonged life of your computer system investment. ◾

1) *"Desktop setting requires flawless power"*, <u>Computer & Software News</u>; May 23, 1988

2) Abstract of a speech given by a representative of **3M Company** (author unknown), maker of *"First Touch"* Keyboard Strips and other devices.

The Power of Prayer Department — Shoe

GDI Business Publisher Series

manually and stored in the database files. Prior to the filled-in forms being output on the laser printer, (1) incoming data may be manipulated by mathematical formulas prior to printing, (2) invoice, serial and other numbering sequences may be automatically incremented and, (3) validation checking can be defined. Several copies of the same form may be printed, with designations such as "Original," "Customer Copy", etc. **FormEasy** can be used to easily generate all types of invoices, statements and reports from your existing business database files.

Computer Specialist Ionia Tansill of the U.S. SBA's Disaster Assistance Division says, "Before FormEasy, the agency created forms using WordPerfect.' This proved awkward, so agency staffers tried out two low-end forms packages. 'Both were extremely difficult and tedious to use, with limited functionality in our applications,' Tansill comments." She then began evaluating other "programs based on cost, systems requirements, printers they supported, and additional functionality, such as portrait and landscape (sideways) support, right justification, and proportional fonts."[1]

Users can make use of FormEasy's ability "to import files from various word processors, databases and spreadsheets. (It) allows creation of data-entry screens that (link up to) various database files, and printing of forms with or without data on several popular laser and dot-matrix printers."[2]

COST —The Business Publisher Series quickly pays for itself — in lowered printing costs, in more efficient forms management, in saved time and effort. "Based on her evaluations, Tansill chose FormEasy as the best program for her money. 'FormEasy is relatively inexpensive... compared to the other software packages on the market. Packages priced three times as much were basically the same thing."[1] "The program will probably save (companies) a lot of money."[2]

PRODUCTIVITY INCREASE — Another SBA employee "started creating a form using Form Tool (a competitor's software product) for three months, every day, and he still could not produce camera-ready copy good enough to be printed...When we installed **FormEasy**, I converted the form, which consists of of eight pages varying in complexity, in a couple of days. Using FormEasy eliminates the back and forth, back and forth routine,' Tansill says. Forms are now created, checked, and modified at the office instead of having them done at a printer, who sends them back to the agency for modifications, and so forth."[1] It "flawlessly performed as advertised and as stated in the user manual. Its capabilities, especially to easily create lines and boxes, place its performance in the top of the class. We find performance very good."[2]

DOCUMENTATION, LEARNING & EASE OF USE — Tansill reports, "' I learned the package within a few hours...it is extremely easy to use. I can get the user up and running with this program within a few hours."[1] FormEasy's "on-line help (is) easy to access and understand. The user manual is clearly written in a non-technical vocabulary and is very easy to read. Because of the capability of inexperienced users to make rapid use of the package, we find ease of learning very good. The excellent use of menus and function keys throughout...offers a very responsive package, (which) enabled us to rapidly complete our work...this is one of the easiest software packages on the market in which to construct and complete forms."[2]

ADDED FEATURES — "In addition to forms, Tansill uses FormEasy to redesign and develop control and input cards. She recently completed 15-20 control cards of varying complexity all within three days." She also uses the new Fill-In function. "'With this, users input information directly into forms designed with FormEasy. The form, with the information contained in it, is then printed out...This is ideal for government agencies because they work with so many forms."[1]

NETWORKING — Network compatibility is essential for all forms management software, and FormEasy is no exception. As forms are revised, the latest revision is always immediately available to users. **FormEasy** maintains the number of times a given form has been used, and how many copies have been printed.

WHAT ABOUT USING PRE-EXISTING FORMS? Tansill plans to purchase GDI's Business Publisher companion package, **FormScan**, in the near future. "FormEasy is fantastic if you want to develop new forms from the ground up,' (she) says. 'With FormScan, users feed pre-existing blank forms through a scanner (a device that can input text or graphics from an existing page into a computer software application). Forms are saved in memory and can be retrieved, modified, and printed.' She estimates FormScan could save 60% of the time it takes to develop forms from scratch."[1]

Database files may also be merged with these forms and output on a variety of laser, dot matrix, and daisy wheel printers. Link your database to a scanned form — Place data fields exactly where you want them to print, then specify the typestyle and size desired. A new data file may also be created directly from your pre-printed forms. First, display the form on the screen, then simply fill it in and save the data to a database file. **FormScan** can be easily integrated to work from within your own application when you utilize its easy-to-learn customization features and it even supports optional fax transmission modes.

SOFTWARE SUPPORT — GDI "offers a 90-day warranty that guarantees the software will operate as described." The "technical support staff...appeared to have a fine knowledge of the product and were able to provide helpful hints for solving (any) problems."[2]

LOCAL AVAILABILITY AND EXPERTISE —**CROSSOVER TECHNOLOGIES** is one of a select group of authorized GDI representatives nationwide, and has already integrated Business Publisher Series software at a number of installations, including a Fortune 1000 company and a Michigan governmental agency. We're able to fully demonstrate **FormEasy** and **FormScan** and can show you how it could be put to work at your place of business. In lieu of doing it yourself, we also offer a custom electronic form development service, complete with your digitized company logo. ◾

> *The Business Publisher quickly pays for itself – in lowered printing costs, in more efficient forms management, in saved time and effort.*

1) *"FormEasy's Capabilities, Simplicity Make It Stand Out,"* <u>InfoWorld</u>; Oct. 31, 1988

2) *"Federal Disaster Assistance Agency Uses FormEasy to Develop Government Forms"*, <u>PC Publishing</u>; August 1988

Glen Lake Schools Gets New Computer Lab

Just prior to reopening school last September, *Crossover Technologies* received the nod from Glen Lake Community Schools to re-equip their Senior High computer lab with all new **Packard Bell** computer systems. Although we had barely two weeks to complete the installation from the initial order to final set-up, all machines were in place and ready to go when the students returned after Labor Day weekend.

Crossover has since furnished the school's Journalism Department with its own desktop publishing system, which will enable the students to do much of the pre-press work on their 1989 school yearbook. After making the rounds of Traverse City's computer retailers, journalism instructor Ivan Ford came to *Crossover*. He realized that we had the experience necessary to make the correct recommendations regarding hardware, software and accessories to suit the department's special requirements after he reviewed a number of professional publications and advertisements our staff has put together for others using **Aldus PageMaker** (we've been running it on IBM-PC AT compatibles since it was first released).
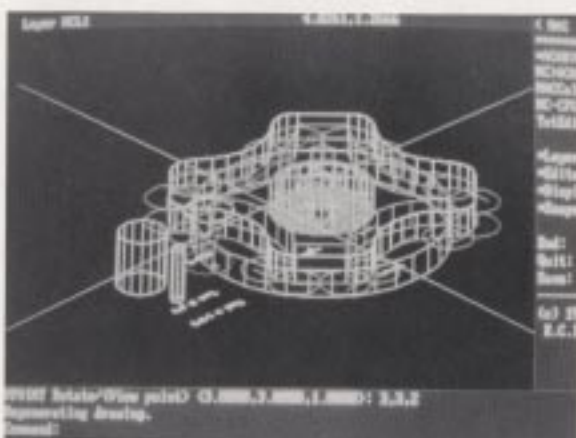
Since a number of students are first-time users, we integrated the software programs using an easy-to-use, numbered menuing system. We programmed basic DOS functions into the menu program, making it easy for them to do such rudimentary tasks as formatting diskettes and copying workfiles from the harddisk. Using computers is fun — we make it a part of our job to take the pain out of learning to operate them!

Machining with NC-Auto-Code

ENTER *NC-AUTO-CODE* — Manufacturers need CAD/CAM software that is affordable, reliable and complete. Developed by Kramer Consulting (Dublin, Ohio), NC-Auto-Code is the most flexible CAM software on the market today and can handle any two- or three-axis NC application, including cutting, drilling, milling, turning, profiling, punching, lasers and wire EDMs.

NC-Auto-Code (NAC) is an add-on software package that allows a machinist using **AutoCAD** (Autodesk, Sausalito, CA) on an IBM-compatible microcomputer to have full NC programming power. Being bi-directional, NAC "translates part programs (directly) from an AutoCAD drawing" and then overlays the resultant NC code sequences on top of the original geometry for visual checking, greatly reducing costly programming errors. The NC code is then "transferred electronically between the (computer) and the NC machine tool (using standard) communications hardware," or via several media types common to both machines.
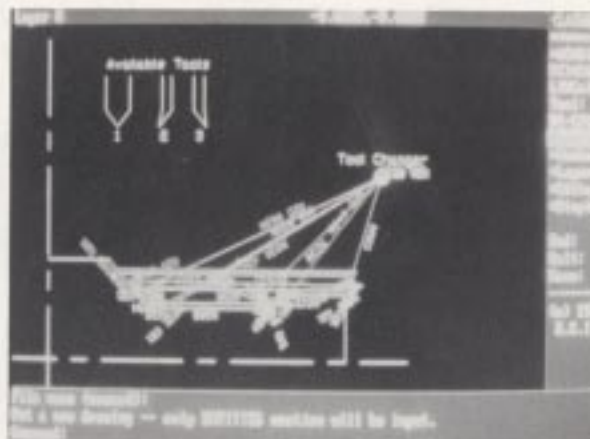
"From the NC-Auto-Code screen menu (which appears as an AutoCAD screen overlay), the part programmer can make selections to define tool paths and tool switching, in addition to functions such as turning coolant on and off. The part geometry can be (easily) changed since all normal AutoCAD commands are available from" within the program.

3D Milling Example

FLEXIBILITY — "Tool motions can be displayed in (several) ways," including the use of colors to differentiate command sets such as rapid versus cutting movements. "Similarly, NC-Auto-Code will place the NC statements in the drawing in text form, (allowing) the part program to be checked graphically, statement by statement." Parts programs that were "generated without the use of the program can (also) be edited with NC-Auto-Code," and any code text file may be edited to correct sequencing errors. NAC code files may be translated from one post-processor to another, allowing for portability between various controllers.

In the AutoCAD tradition, NC-Auto-Code can be custom-tailored to meet your specific installation requirements. It makes full use of AutoCAD's AutoLISP programming capabilities, with source code being supplied as part of the NAC package. The software includes configuration files for over thirty NC controllers, and Kramer produces custom files on a consulting basis.

COST — "Compared to any one of the NC machine tools supported by NC-Auto-Code, the cost of adding an AutoCAD workstation and NAC is minimal. If AutoCAD is already in use, the addition of NC-Auto-Code and a communications link is even more attractive. Finally, one AutoCAD workstation and one NC-Auto-Code package will support a large number of diverse NC machine tools."

SATISFIED USERS — Companies using NC-Auto-Code software have reported dramatic increases in productivity in their NC departments, with many of them using several types of NC equipment at a single site. Jerry McTaggart of **Accudyne Corporation** reports a "100% or more increase in productivity over manual programming. This includes time, accuracy and quality of finished programs." Other NAC users reporting increased productivity include:

- *Bassett Furniture*
- *General Electric*
- *Kenworth Trucking*
- *Texas Instruments*
- *CONOCO Inc.*
- *Hughes Aircraft*
- *Motorola*
- *TRW Inc.*
- *DANA Corporation*
- *Johnson Controls*
- *Pittsburgh Plate Glass*
- *Westinghouse Electric*

Many educational institutions are also using NC-Auto-Code software, with most incorporating it into their curriculum.

2D Turning Example

TRAINING & SUPPORT — *Crossover Technologies* is your authorized dealer for NC-Auto-Code software consultation, sales, training, and customization services. We also recommend, sell, install and provide training for a full line of microcomputer CAD/CAM hardware, peripherals and accessories. Call us — we'll be happy to send you complete NAC information or to schedule a demonstration to show you how you can increase your machining and manufacturing productivity using NC-Auto-Code!

Several training and support options are offered with the NC-Auto-Code package either directly from Kramer Consulting or through *Crossover Technologies*. Technical phone support and a subscription to Kramer's 24-hour-per-day bulletin board support service (accessible through a modem device) are included with each NAC package. ◾