



CADRE

*(kad're) a small, unified group organized
to instruct or lead a larger group*



A newsletter for business professionals interested in Autodesk computer software products

How NC-Auto-Code Facilitates CAD/CAM

Microcomputers running CAD/CAM software offer the most important element to increasing productivity in manufacturing, automating the design, drafting, and machining cycles. Systems can now be run on suitably-equipped, single-unit, turn-key personal computer systems ranging in price from \$15,000 to \$35,000.

WHAT IS NC? — Numerical Control (NC) programming consists of codes that instruct machine tools to perform operations, such as drilling a hole. Early programming attempts were a big improvement over manual coding, but the programmer still had to mentally translate drawing geometry into code. With a modern CAM system, however, the programmer enters motion control statements, and the tool path is displayed on the computer monitor in real time.

ENTER NC-AUTO-CODE — Developed by Kramer Consulting, NC-Auto-Code (NAC) is add-on software that allows a machinist using AutoCAD to have full NC programming power for any two- or three-axis NC application.

NAC (1) translates NC programs directly from AutoCAD and then (2) the resultant code is overlaid on the displayed drawing for visual checking, reducing costly errors. It's then (3) electronically transferred between the computer and the machine tool using communications hardware, or via several media types common to both machines.

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Manufacturers Rate NC-Auto-Code Workshop A Success



Over 30 representatives of 12 companies showed up at Crossover's recent AutoCAD/NC workshop, held at Traverse City's Career Tech Center (CTC). Kramer Consulting's Jesse Ramey demonstrated their newest version of NC-Auto-CodeTM, a third-party AutoCAD software application for machining, to representatives of manufacturing concerns and educational institutions from all over Northern Michigan. Autodesk's Jeff Neese talked about upcoming releases of AutoCAD and how they will speed up performance.

Later, the group adjourned to the Machine Shop, run by CTC instructor Terry Apps, where a program generated from NC-Auto-Code cut a part on a Bridgeport mill (see photo).

Our old buddy Murphy, the nemesis of every sales demonstration, was lurking

about for the classroom portion. It was for the good, however, as Kysor Cadillac's Jim Ressler remarked that he learned more by watching Jesse work out a problem by a non-traditional method. Like AutoCAD, NC-Auto-Code is so flexible that there's usually many ways to accomplish the same task, as was clearly demonstrated to the group. Fortunately, Murphy was back enjoying the coffee and donuts in the classroom during the Machine Shop demonstration — there's never room for error there!

Everyone seemed well pleased with this first workshop, which lasted half a day. Crossover's next NC-Auto-Code workshop is tentatively planned for early this spring. You may indicate your interest to us now and we'll keep you posted as to the date. As with the November workshop, seating will be limited. ■

Moving Closer to a "Heads-Up" System

Communication Intelligence Corporation's (CIC) Proficient AutoCAD Enhancer may seem futuristic to those who are still fumbling with dual input devices, i.e. keyboard and digitizer. Through highly-accurate pattern recognition and artificial intelligence, Proficient takes handwritten characters drawn with a stylus on a tablet and converts them into AutoCAD commands. Consisting of an IBM-PC add-in board, software and a template to attach to your digitizer, Proficient virtually eliminates the need for the keyboard altogether. Instead, the stylus is used for inputting handwritten commands, making AutoCAD jump through hoops without so much as turning your head away from the graphics monitor — a so-called "heads-up" system.

According to CIC literature, up to 80% of potential computer users are uncomfortable with the thought of having to enter commands through the keyboard. Recognizing the need for an all-in-one input device that takes a minimal amount

of desktop real estate, they settled on a handwritten character recognition system based on existing stylus/digitizer technology. With the keyboard out of the way and the need to continually refer to a template for command selections virtually eliminated, the user is free to focus more intently on the work appearing on the screen. Distractions from continual head/eye reorientation are reduced by 75%, says CIC, cutting down on fatigue and increasing drawing productivity.

HOW IT WORKS — With Proficient, using AutoCAD becomes a simple matter of using the stylus to write macros (one- to three-character alphanumeric short-cut commands) in block-lettered format anywhere on the digitizer. CIC provides over 250 macros for Release 10, with the user having the ability to create new macros. The Proficient AutoCAD Enhancer can utilize up to 348 macro commands, for use with both AutoCAD and third-party add-on applications.

Crossover gets influential AutoCAD writing assignments

The accompanying review, written by Crossover staff, is slated to appear in an upcoming edition of *Cadence* magazine, one of two AutoCAD-specific trade journals distributed internationally (the other is *Cadalist*). Crossover has just completed another review, this time for *Architectural & Engineering Systems*, on a third-party AutoCAD software package entitled *Architectural Power Tools*.

Because of our in-depth research and continual interest in new AutoCAD-related products, Crossover Technologies' representatives are better equipped to properly advise you about their availability and usage. These enhancements allow you and other AutoCAD users in your organization to realize greater potential and productivity from your company's computer systems investment.

INSTALLATION — Using a variety of old and new equipment, setting up Proficient was easy — we've had more difficulty with various mice we've tried in the past. An 8-bit interface board was first installed in an available slot, with a cable running from the board to the digitizer. The setup program prompts for the version of AutoCAD you're using and installs the appropriate files to your hard disk; Proficient is then called up through a two-step series of batch commands.

NEW RELEASES — The system tested is actually the second release of Proficient. CIC has enhanced Proficient's macro capabilities and has provided added functionality to the Macro Editor. They've also added software drivers for additional digitizers.

CIC's "Write-On" series of software/templates includes versions for Aldus PageMaker, WordPerfect, Lotus 1-2-3 and DOS, with each package enhancing the Proficient system. CIC also makes available a signature verification system, whereby authorized users are identified by their signature when inputted with the stylus on the tablet. Firms that exercise security clearances for AutoCAD drawings will want to learn more about the benefits of this system.

All CIC products work with IBM PCs, XT's, AT's and compatibles, including most 80386 machines. The Proficient AutoCAD Enhancer System lists for \$649. CIC's Write-On software/template series retails for \$189 each.

CIC proudly claims that, using their device and software, "You don't have to be a typist to use the computer. Head, eye and hand movements are reduced by 75%, minimizing fatigue and distraction." If you're from the old school of AutoCAD, you'll probably continue typing in commands at the prompt out of habit. But if you're looking to obtain greater speed and power while also substantially reducing training time for new users, Proficient is for you.

An AutoCAD upgrade offer that can't be beat...

For a limited time, registered AutoCAD customers can upgrade from any previous release of AutoCAD to Release 10 and receive a copy of Autodesk's AutoShade rendering software all for just \$500. Depending on the release of AutoCAD you have, that works out to a discount of between \$250 and \$1,000 off the suggested retail price for the bundle! Without a doubt, this will be your best opportunity to own Autodesk's most sophisticated release of AutoCAD enhanced with the power of realistic, full-color 3-D rendering. This offer is good only through **January 25th, 1990**, so call or see Crossover Technologies, Inc. today for details.

Memory prices drop in recent months...

AutoCAD Release 10 can make use of up to 16 megabytes (MB) of random-access memory (RAM) to increase its performance. While current AutoCAD releases will work with systems that only have 640K of RAM, Crossover Technologies recommends that basic AutoCAD systems start out with a minimum of 4MB — the newest releases of AutoCAD (described elsewhere in this newsletter) require this much memory! Until very recently, however, this additional memory was very expensive, if not outright cost-prohibitive.

Within the past two months, however, memory prices have been steadily dropping to the level they were at two years ago; this is good news for all users of systems that have heavy graphics requirements, such as AutoCAD. DRAM chip and single-inline memory module (SIMM) prices are now at such affordable levels that companies can acquire several additional megabytes for a few hundred dollars.

Crossover Technologies' technicians are very knowledgeable in upgrading all types of PCs and compatibles with additional RAM. Why not call today to learn more about how you can dramatically increase AutoCAD's performance with this simple upgrade?

The Autodesk CAD/CAM Showcase is coming...

Autodesk will showcase the best that the CAD/CAM industry has to offer at the Spring National Design and Engineering Show (NDES) in Chicago. At the show, taking place from February 26th to March 1st, Autodesk will host their first-ever Autodesk CAD/CAM Showcase, an expansive show within a show that will occupy more than 7,000 square feet in Chicago's McCormick Place. The Showcase will feature demonstrations of the entire Autodesk product family, including their sophisticated new Release 10 products for extended DOS 386, OS/2, and SCO Xenix platforms. Dozens of Autodesk third-party developers will also be on hand to demonstrate integrated AutoCAD solutions in a variety of CAD/CAE/CAM disciplines. If you're a mechanical design or manufacturing professional, the Autodesk CAD/CAM Showcase at NDES promises to be the computer event of 1990.



AutoCAD Sourcebook catalogs third-party products...

Que Publishing, in cooperation with Autodesk (publishers of AutoCAD software), has just released the AutoCAD Sourcebook, a comprehensive reference that lists more than 350 third-party companion software products available for AutoCAD. These third-party products let you adapt AutoCAD to just about any design application you can imagine, enhance the efficiency and productivity of AutoCAD, or interface it to a wide variety of peripheral devices and other programs. The 480-page Sourcebook also lists products in the Autodesk product family. The AutoCAD Sourcebook can be obtained directly from Crossover Technologies for \$24.95.

AutoCAD video training tapes available...

Last summer, Crossover Technologies sent out information about an excellent set of AutoCAD VHS training tapes. Many of you have picked up a set and have found them to be professional instructional aids that really do shorten the learning curve required by sophisticated software like AutoCAD.

Since they represent a very modest investment (\$375 for the two-volume set), you've also reported back to us that the tapes are a cost-effective method of onsite training of existing personnel, as well as for newcomers that have come on the scene. The tapes fit into anyone's busy schedule; they're fully indexed so viewers can watch small portions at a time. The set even includes self-test materials, so viewers can make certain they've adequately grasped the material presented.

We don't suggest that they be used alone for instruction; we do recommend the tapes, however, as an aid in getting beginners introduced to all that AutoCAD has to offer. Order your set today.

AutoCAD 386 betters AutoCAD performance...

AutoCAD 386 is now shipping — and *speed* is the watchword. This version of AutoCAD Release 10 lets AutoCAD users access the power of the 80386 chip within DOS, version 3.3 or later. AutoCAD 386 achieves better performance because of the 386 chip's 32-bit addressing capability and a DOS extender built into the program. AutoCAD 386 can load large drawing files without having to page to a disk and the program can read drawings much faster.

The suggested retail price of AutoCAD 386 is \$3,300, and the fee to exchange any Release 10 version for the AutoCAD 386 program is a suggested retail price of \$300. Customers can upgrade to AutoCAD 386 from Release 9 for a suggested retail price of \$500.

You may place your upgrade order through Crossover Technologies, even though you may have originally purchased AutoCAD elsewhere.