

<p>OTTAWA IBM P.C. USERS' GROUP</p>	<p>NEWSLETTER</p>
--	-------------------

August 20th, 1986 - Issue 86(3)

E X E C U T I V E

<u>Position</u>	<u>Name</u>	<u>Res. Phone</u>	<u>Bus. Phone</u>
President	Gord Hopkins	828-3834	726-3590
Past-President	Harry Gross	733-7989	N/A
Treasurer	Mike Luckham	832-3829	592-6500 x2034
Membership	Anne Moxley	592-4933	230-9096
Software Librarian	Chris Taylor	727-5453	995-4987
Assistant Libr. #1	Michel Lemire	568-8429	993-5033
Assistant Libr. #2	John Ings	N/A	N/A
Editor	Sandy Harris	230-5201	238-6709
Secretary	Eric Clyde	749-2387	993-3291
Meeting Facilities	Stu Moxley	592-4933	N/A

***** MEETING DATES *****

*
* NEXT MEETING DATES ARE: Wednesday, Aug 27th & Sept 24th at 8:00 p.m. *
*
* MEETING LOCATION IS: NRC AUDITORIUM, 100 Sussex Drive *
* (Gothic Building opposite Ottawa City Hall - Parking in Rear) *
*

Many of you are probably wondering what has been happening with the newsletter schedule this year. Unfortunately, Sandy Harris's job has been very demanding of his time and energy. Consequently, he has not found the time to commit to the newsletter. I have tried to put something together for the August meeting, but on very short notice. I would like to express my thanks to Eric Clyde and Chris Taylor. Without their input to this issue, the newsletter would be nothing but advertising.

We are trying to find someone to take over the newsletter. We have had some people offer their help but we could use more. If any of you would like to take on this activity, please let us know at the August meeting. Thanks for your patience.

I would like to take this opportunity to welcome all the new members to the club. This club is for you the members. Please let your comments and suggestions be known to the executive so that we can best serve your needs and interests.

Gord Hopkins, President

SOFTWARE SIDE OF THE NEWS

From the Software Library

C.J.T.

Disk 33

This month's feature program is ANSIDRAW. It is a "screen editor" that allows you to easily create custom screens for use in batch files or menus. You can use the upper half of the ASCII table for drawing boxes, foreign characters, and so forth. The function keys may be set to any of 10 predefined sets of symbols with the 25th line indicating the definition of each function key. Colours may be used and there is full support for character attributes such as blink and intensity. A very nice program.

Also this month:

BOSSSW - A memory-resident program that will pop a fake Lotus 1-2-3 spreadsheet over the application (read GAME) you are running. Just in case the boss drops by your office.

IOMON - A memory resident utility that indicates disk activity. It will let indicate the type of IO in progress; read, write, format and lots more.

LPTX - Redirect output from the COM port to a file. This program can handle three CON ports at the same time.

MTS - Multi-tasking system. Run programs in the background while you do other work on your computer.

PFM - Professional file manager. Yet another disk housekeeping program for managing your files. Better than most. For the best (but not public domain), see my review on the Norton Commander.

ROUND42 - For the game fanatics, here is a really nice arcade style shoot-em-up type game. Great action !

SIL2 - Silence your PC. Great for those games whose writers are convinced that you need to hear blaring sound effects.

Recent additions to the Specialty library:

C-WARE - 2 disks of C utilities from C-WARE.

Express Graph - A very nice program for creating 10 types of graphs. Data can be input manually, or it can come from File Express, Lotus 1-2-3, or any program that can export to a DIF file.

Magic Key/Pad - A not-too-shabby screen editor (similar in function to ANSIDRAW on this month's disk)

pBASE - A relational database program with a procedural language similar to dBASE II/III.

PC-DBMS - Another relational database.

PC-DESKTEAM - Sequel to PC-DESKMATES - a Side Kick type program.

Folks, this is YOUR software library. If you have specific types of programs you want in the library, let me know. I have access to lots of types of programs ... games, utilities, programming hints/routines, so let me know what you would like. No promises, but I will do what I can. Thanks.

Chris

In Search Of .. SOFTWARE C.J.T.

There will be a software contest this fall. If you have written a game, utility program, enhancement to an existing program (such as an order entry system in dBASE, or an accounting template in Lotus 1-2-3), or whatever, now is your chance to win a prize.

There will be one prize of a free 1987 membership to the IBM-PC Users' Group with a software library subscription in each of three categories; games, utilities, and enhancements. Judging will be done by a panel selected by the executive.

All entries will be put onto a disk(s) entitled "SOFTWARE CONTEST 1986" and will be available from the software library. ALL entrants will receive a copy of this disk in exchange for the submitted disk.

The rules are simple:

- 1 - Contest is open to members of the Ottawa IBM-PC Users' Group.
- 2 - Entries must be submitted on disk, no later than the October meeting. There must be a documentation file on disk explaining the operation and software/hardware requirement of the program. Label the disk "CONTEST ENTRY" along with the program name, your name and phone number.
- 3 - The program must be original work. If modules of the program were written by someone else, credit must be given. Judging will only be done on your portion of the program.
- 4 - The program becomes part of the software library and may be distributed through any of the normal channels for public domain/freeware software.
- 5 - If the program requires special hardware/software, you must be willing to demo the program or supply the hardware/software for judging.
- 6 - Only one prize per membership may be won. Prizes are not transferable.
- 7 - Decision of the judges is final.

Winners will be announced at the November meeting.

HINDSIGHT**Report on the PC Users' Group Meeting, 25th March
1986****By Eric Clyde**

In the absence of Gord Hopkins, who was away on business, Sandy Harris chaired the meeting.

Chris Taylor, Software Librarian, announced that the executive had decided that disk 00, the catalogue of all programs in the library, would be given to everyone who joined. In addition, anyone who took out a disk subscription by the end of the meeting would be able to order any of the available disks of their choosing. On the March disk, disk 29, there is a utility called UNCRASH, which can sometimes help get a program out of an infinite loop when <CTRL-BREAK> can't.

Chris also reported that there hadn't been much PCUG activity on the Heath Bulletin Board. Another board called 'Access' has been brought to our attention. It is available through Datapac. To log on, dial the Datapac number (300 baud, 567-91009 1200 baud, 567-9300), then, when you get the Datapac response, hit the '.' key once or twice, followed by ENTER. Then type the access number, 49700019. To get a demonstration, type 'hello demo.demo'. There is an initiation fee of \$40, which includes a manual plus four hours of connect time. The connect charge is \$5.95 per hour, which includes Datapac charges.

Bill Howell talked about the NIAL program language, which was developed by Professor Jenkins, Queen's University. NIAL stand for Nested Interactive Array Language, and it is a generalization of APL

After the break, Chris McElvey announced that two more SIGs had started, and that he is trying to start others on PASCAL and DOS, if he can find someone to be responsible for chairing them.

Tom Mimee, coordinator of the PC-Jr SIG reported that there had been nine at the meeting, most of them hobbyists. One of their objectives is publicity, including the news that the PC-Jr is not dead. One member has the Captain board installed, giving 640K. They would like someone to talk to them about DOS.

Eric Clyde, coordinator the SIG on Packages, including database management systems, spreadsheets, integrated packages, and word processing, reported that there had been sixteen at the inaugural meeting. Most were using 1-2-3 (release 1a or 2) or dB ASE (either II or III), with a few other packages also represented. Many suggestions for programs were made.

Ann Moxley, last year's Treasurer, gave the financial report for 1985, indicating the Group's finances are on a sound footing.

Attendance at the meeting was about 100.

**Report on the IBM PC Users' Group Meeting, 30th April 1986
By Eric Clyde**

Cord Hopkins opened the meeting, welcoming new members. He pointed out that this year's membership card is combined with the name badge and, if applicable, the disk subscription record, so members should bring them to each meeting.

Terry Mahoney, bulk purchasing, mentioned the price list for items available to members, as well as describing some of these. Eric Clyde, SIG on Packages, spoke briefly of the SIG meeting.

The speaker for the evening was Ian Easson, BNR, whose topic was the tribulations and joys of setting up a Local Area Network on PCs. In 1983 there was a need to improve the productivity of the Acoustics Section, as well as a hiring freeze, so he decided that the way to go was to assist the professionals with the preparation of their reports. They didn't do a study,- but decided that the 'solution' had to be 'off the shelf', but flexible so that it could be customized. They bought one IBM PC and an Epson printer, with Crosstalk XVI and the Multimate word processing packages, and used these for online searches and to produce printed reports.

By mid 1984 they had problems -- floppy disks everywhere and lineups to use the PC. The solution was to buy a local area network, the emphasis being on a low cost solution. They added a 30 MB hard disk and an IBM clone, connecting everything with a coaxial cable. They also acquired 1-2-3 for budgets and graphs.

By late 1984 they again had problems. The LAN was very slow and awkward to use. Also the software had not been designed for network use. The solution was to keep the same hardware, but to buy a different network operating system. Novell Netware was chosen as being the most promising. It is optimized for networks (5 times that of the former system) and for efficiency, and has many nice features, including very tight security. It is also compatible with all versions of PC DOS from 2.0 up.

By mid 1985 there were more problems. Expectations from the system were rising, and they were running out of space on the hard disk. So they expanded the system by adding a second file server (an IBM AT with a 73 MB hard disk), 4 new PCs and a Corona laser printer. They also added Autocad and SPSS/PC+.

Since then they have started assisting the technicians by adding equipment which will assist in the capture of experimental test results (a TV camera and a video digitizer), and have also gone into the typesetting business.

The problems now are 1) backup (it takes 150 floppies) They are now on the fourth or fifth hard disk drive with tape backup unit (these don't last much more than a year), and 2) 'connectivity', meaning the integration of the different software packages with each other.

The important lessons learned are: -- Technology scan: it is important to keep up with the literature, -- Technical support: hot lines and on site service are a must, -- Risk taking: have to be willing to junk all or part of the present system, and -- Patience.

The biggest element of cost is for the system administrator, whose job is to maintain the LAN and take care of upgrading. He estimates it takes one system administrator for every 20 users, and that the time factor is linear.

The benefits are difficult to quantify, but he feels the biggest gains are in effectiveness of staff. As far as BNR are concerned, the result has been worth all the trials and tribulations.

After the coffee break, Chris Taylor, Software Librarian, spoke of the changes in the format of the monthly disk, and of the new software available.

Attendance at the meeting was about 90.

Report of the PC Users' Group Meeting, 28th May 1986
By Eric Clyde

Cord Hopkins opened the meeting. The SIG on ATs, of which he is convenor, meets on the second Wednesday of each month. The last meeting was held at Quantum Software, the topic being an introduction to QNX. He has some demo disks available, Anyone interested should phone him.

Eric Clyde reported on the SIG on Packages, which covers database management systems like dBASE, spreadsheets such as 1-2-3, integrated packages like Framework and Symphony, and also word processing. The major topic of the last meeting was word processing, specifically PCW rite.

Tom Mimeo gave a report on the activities of the SIG on the PC Junior. To date there have been two meetings; one dealt with modems, the other with printer files. For more information, phone him at 828-9705.

Terry Mahoney then reported on bulk purchasing activities, followed by Gord announcing that two introductory courses on DOS will be given, the first on June 3rd, the second on June 17th. There will be a charge of \$5 for each evening, which cover the cost of a disk containing examples of commands discussed that evening and also the notes.

The speaker of the evening was from the Boston office of Borland International. A very lively and impressive demonstration was given of Travelling Sidekick, Turbo Lightning, and Reflex. New products on the horizon include Reflex Workshop, a book giving applications on how Reflex can be used, Word Wizard, which hooks onto the Turbo Lightning and gives the source code, allowing programmers to write their own applications, and it was also stated that Turbo C is in the works. A very appreciative audience asked lots of challenging questions, which were very well fielded. Door prizes consisting of these programs, plus Turbo Prolog. Demonstration disks were left for club members to try out for themselves.

Attendance at the meeting was 144.

Report of the PC Users' Group Meeting, 25th June 1986
By Eric Clyde

In the absence of Gord Hopkins, who was on vacation, Eric Clyde chaired the meeting.

The speaker was Mike Burrows of the Ashton-Tate Eastern Canadian office in Ottawa, which had been open for just over a month. He discussed some of the features of dBASE III, and pointed out some of the places that dBASE III Plus had improved on these, specifically in speed of indexing and sorting, and in debugging of programs through the history feature. He recognized that some users had had trouble getting information on the upgrade policy from dBASE III to III Plus, especially since the announced time limit was the end of June, but promised to assist anyone who was having difficulties.

For those with difficulties, the mailing address and phone number of the Ottawa office are: Ashton-Tate 301 Moodie Drive, Suite 103, Nepean, Ont. Telephone: 820-2523 There is still no technical support staff in Canada. For that information, the phone number is: 213-329-0086.

If there are any difficulties in getting a response in a reasonable time, let him know and he will follow up.

A door prize of a working evaluation copy of Framework II was kindly donated by the speaker. The lucky winner was Tom Mimmee. The donation and the efforts of the speaker were very much appreciated by an enthusiastic audience.

After the break, Terry Mahoney then reported on bulk purchasing activities, followed by Chris Taylor who described some of the new software in the library, and announced a contest for the best original program or enhancement. There will be a prize of a free membership and a free disk subscription in each of the following categories: best utility, best game, and best application.

Eric Clyde then announced that the Executive had been discussing the club name, recognizing that it is no longer as appropriate as it was at first, since most of the present members have clones. Consideration is being given to a competition for the best proposal for a new name and also for a logo for the club.

GENERIC TRANSFORMS 733-7989

BORLAND INTERNATIONAL
=====

Turbo Pascal - Versions 2.0 and 3.0

8087 and BCD options available

Turbo Toolbox	Turbo Graphics	Sidekick/protected
Turbo Tutor	Superkey	Sidekick/unprotected

QUAID SOFTWARE
=====

Copywrite	ZeroDisk	Disk Explorer
-----------	----------	---------------

Also:	GTx Loan Planner v2.0	Generic Transforms
	Microsoft QuickBASIC	824 Fleming Ave.
	GEM Desktop	Ottawa, Ontario K1G 2Z2
	etc.	Phone: 733-7989

GENERIC TRANSFORMS 733-7989

MACCOM SYSTEMS LTD.

SOFTWARE HARDWARE COMMUNICATIONS



DISKETTES & SUPPLIES

749 -1232

ADDISON-WESLEY
ALPHA SOFTWARE
AMDEX
ANALYTICA APPLIED SOFTWARE
ARCTIC DATA
ASHTON-TATE
A57
ASYST
ATI-AMERICAN TRAINING INST.

BALCONES
BASIC SOFTWARE (PUS)
BERNOULLI
BLUE CHIP
BORLAND Sidekick
TurboPascal, SuperKey
BPI
BRIGHTBILL Grafix
BROOEABUND

CDE%
CHANG
CITIZEN Printers
COHPUSERYE
COMWAY Colour/Graphic Cards
CONTINENTAL
CORVUS
COUNTERPOINT

DATA TRANSFORMS "Fontrix"
DAYFIA
DECISION RESOURCES
DIGITAL RESEARCH
DILITHIUM
DOW JONES

EDU-WARE
ELECTRONIC ARTS
ENERTRONICS
EPSON
EYEREX Graphic cards

FLIP .FILE
FOX & GELLER
FUNK Sideways

HARVARD
HAUPPAUGE
HAYDEN
HAYES Modems
HERCULES

IMSI PC-Paintbrush
INFOCOH
IOMEGA Bernoulli
IQ TECHNOLOGIES
IUS-INFO UNLIMITED (BASIC)

KENSINGTON
KEYTRONIC
KNOWARE
KOALA
KRAFT

LATTICE "C"
LIFETREE
LINK
LIVING VIDEOTEXT
LOGITECH Mouse
L07V5 1-2-J and Symphony

McGRAW-HILL
MICRO DATA SYSTEMS
MICROCOMPUTER ACCESSORIES
MICROGRAPNX PC-Draw
MICROPRO
MICRORIM R Base & Clout
MICROSOFT

MICROSTUF
MOUSE SYSTEMS
MULTIMATE

NEC Printers
NORTHWEST
NORTON

GKIDATA Printers
OPEN SYSTEMS
ORCHID

PARADISE
PEACHTREE
PEARISOFT
PERFECT DATA
PERSYST
PETER NORTON Utilities
PLANTRONICS
PRENTICE-HALL
PRINCETON
PURE DATA

QUADRAM
QUE Books
QUME Disk Drives

RITEMAN Printers
ROLLAND
ROSESOFT Prokey

SAMS Books
SANTA CLARA Hard disks
SATELLITE - SSI
SCARBOROUGH
SMA-Syst.Mgt Templates
BGFTCRAFT Fancy Font
SOFTSTYLE Printworks
SOFTWARE ARTS
SOFTWARE PUBLISHING
SOFTWARE RESEARCH
SORCIM / IUS
SOURCE
SPINNAKER
SSI Word Perfect
STREET ELECTRONICS
STS
SUELOCPC
SWITCHCOM Canadian Modems
SYBEX
SYDNEY DEVELOPMENT

T-MAKER
TALLCRASS
TA%AN
TECMAR
THE LEARNING COMPANY
THORNE
TSENG LABS

UNITED SOFTWARE IND.
US ROBOTICS

VERBATIM Disk Analyzer
YISICORP

Z-SOFT
2ANTNE

... and more ...

Business or pleasure, we're your one-stop shopping center for any IBM PC product

Service the way you like it - It's standard with everything we sell.

DISKETTES

IBM-AT			SSDD 5 1/2"	DSDD 5 1/4"
	XIDEX	10	\$29.99	\$34.99
\$99.00	MEMOREX	10	\$24.95	\$32.95
	AXIOM	10	\$29.95	\$38.95
\$99.00	DYSAN	10	\$32.99	\$41.95
	VERBATIM	10	\$37.50	\$49.50
	MAXELL	10	\$39.50	\$52.50

*Knowledgeable
Experienced
Sales-Staff*

* MAINTENANCE *
* We now repair IBMs *
* We even make house-calls *

We also have products for
MACINTOSH APPLE COMMODORE
And diskettes for
WORD-PROCESSOR Systems

HOW TO SHOP AT

MACCOM

749-1232

BY PHONE

Diskettes Software Accessories
NOW IN STOCK
43 William St.
749-1332

SUBMITTED ARTICLES

Thank You Peter Norton
By Chris Taylor

Programs from Peter Norton Computing Inc. have made my work with microcomputers a little easier. There are few programs I have used that I would call elegant. Norton programs deserve that description.

The original "Norton Utilities" have been joined by two new programs; the Norton Editor (written by Stanley Reifel) and the Norton Commander (written by John Socha).

After using Peter Norton programs, I wonder how I could get along without them. The folks at Microsoft should consider adding such programs to DOS as a fast, capable editor, an intelligent DOS "shell", or a file recovery program.

The Norton Utilities (Version 3.1)

BEEP - produce a beep with control for frequency, duration and number of repetitions.

DIRECTORY SORT - reads in the disk directory, sorts it by name, extension, date, time, or size and writes it back out to disk. Type DIR and you will get the new sorted order.

DISK TEST - tests a disk for damage. Tries to read all sectors and/or files on the disk. Very thorough.

FILE ATTRIBUTE - display/change the attributes of a file.

FILE FIND - locates a file in any sub-directory.

FILE SIZE - list size of a group of files, the disk space actually used by the files and optionally verify if there is enough room on another disk for these files.

LIST DIRECTORIES - lists all directories on the disk.

LINE PRINT - print files with margins, page numbers, etc.

NORTON UTILITIES - the heart of the Norton Utilities.
View/modify files, explore the disk, and unerase files.

QUICK UNERASE - Recovers files quickly.

SCREEN ATTRIBUTES - Controls the screen colour attributes.

SYSTEM INFORMATION - technical information about your computer.

TIME MARK - A stopwatch for your computer.

TEXT SEARCH - Searches a disk for a string of text. Can search erased files as well as regular files.

UNREMOVE DIRECTORY - Required to unerase a file that was in that directory.

VOLUME LABEL - Add, delete or change the disk volume label.

WIPE DISK - Overwrite an entire disk to remove confidential data.

WIPE FILE - Overwrites a file to remove confidential data.

The Norton Editor (Version 1.3)

A great little editor written in assembler. It is small (32K), flexible, and FAST. Designed as a programmer's editor, it will also handle basic word processing chores quite well. It is small enough to leave in a RAM drive all the time.

It will use every byte of available memory and swap to disk after that. Most commands are executed by pressing a function key. This brings up a menu on the 25th line. A single letter finishes the command. F1 will present 3 screens of help.

Some of the features of the Norton Editor are;

Word wrap with paragraph reformatting Auto-indenting (terrific for structured programming) Output is always straight ASCII text Undelete command Window two documents and share the data between the two Search and replace function Tabs optionally expanded into spaces. Maximum line length - 64K bytes (that's right - 64K !?) Compressed mode where the only lines displayed are those with a character in the first column May specify different input/output file names Many options for the editor configuration can be saved as defaults

Version 1.2 of the Norton Editor had a (documented) nasty habit. If you swapped disks before exiting, and then quit the program (even if you quit without saving the file), the Editor wrote the old directory onto the new disk, thus trashing everything on it. This has been fixed in version 1.3.

The Norton Commander (Version 1.0)

A disk housekeeping program, DOS shell, and more, written in C and assembler. The Commander presents two panels side-by-side in the top half of the screen showing directory listings from any two directories/disks. The parent directory, if any, is listed first, followed by all subdirectories (sorted alphabetically). Following that are the files, also sorted alphabetically. By pressing Ctrl-L, one panel will change into a status panel, giving information about total and free memory and disk space. Single keystrokes can also turn off one or both panels.

Files may be easily copied or moved (copied and then the originals deleted) from one directory/disk to another. Deleting single files or groups of files is equally easy. You can move through a subdirectory structure simply by pointing to the subdirectory and pressing Return.

You can view files of any size with forward and backward paging and a search feature. You can also edit files up to 20,700 bytes in size. The editor is rudimentary, with no word wrap, auto indents and the like. It does include a search function. It is ideally suited for such work as batch files and quick notes.

You can run a program from the Commander simply by "pointing" to it (moving the cursor to the file name) and "shooting" (pressing Return). Data files may also be "run" from the commander. For example, if you point to a .TXT file and press Return, the Commander can call up your favorite word processor. This can be set up for every type of file extension; .PRG or .DBF for dBASE, .WKS for Lotus 1-2-3, .XTK for Crosstalk, and so on.

The Commander also allows you to set up custom menus. Menu options may consist of a command (such as DIR), a program name, (such as PROCOMM), or even a series of commands (similar to a batch file). Pressing F2 calls up the menu and you can execute any menu option with one keystroke. You can even have different menus in each subdirectory if **you want**.

So much for the top half of the screen. The lower half of the screen is always open for DOS operations or commands. In this way the Commander need never be in your way. It is a great way to work in a shell environment that never stifles you because anytime you **want you can** just start typing as if the Commander wasn't even there. Also, if you truly want to get rid of the Commander, F10 will remove it from memory completely.

The Commander may be loaded in either of two modes. With the NC.EXE file, the entire program is held in memory while other programs are run. With NCSMALL.EXE, if you execute another program from the Commander, only a small reloader is held in memory and the main portion of the Commander is reloaded from disk when the other program finishes.

Just over 100K bytes are used by the Commander. If you use NCSMALL.EXE, only about 14K bytes of the Commander are held in memory while other programs run.

Of interest to floppy disk users - NC.EXE is 65 K. If you want to use the reloader version, add 12K. Each user designed menu may be up to 4K. The .EXT file, which allows you to "run" data files is not likely to run over 1K. It all starts to add up, but if you have 100K bytes of memory to spare, once the NC.EXE file is loaded, the only files used are the menu files and the .EXT file, both of which are small and not essential for the operation of the program.

There is one quirk I came across. If you are running under a secondary copy of COMMAND.COM, the Commander status panel will report total and available disk space of 0 bytes.

In all the time I have spent with computers, I never regretted spending money on products from Peter Norton. None of the programs are copy protected. As a matter of fact, 2 disk labels are included for your working disks. Version 1.3 of the Norton Editor was forwarded free of charge. As Norton explained it, there were significant enough changes that he felt it should be distributed, but the changes were too small to warrant an upgrade fee. Nice touch.

ALL programs are available
from:

Peter Norton Computing Inc.
2210 Wilshire Blvd.
Santa Monica, California
90403

Norton Utilities
US\$99.95 Norton Editor
US\$50. Norton Commander
US\$75.

Most computer stores carry the Norton Utilities, the best price I have found is mail order to the states (US\$47. Northeastern Software). I have not seen the Editor or Commander listed anywhere. I got my copies direct from Peter Norton Computing.

C.J.T.

LATE NEWS FLASH » » »

For August, we have arranged for a presentation about Enable, an integrated software package. Enable will be demonstrated by PC-Nova and a technical representative will be on hand to answer all your difficult questions.

**That's all for now!!!
HAPPY COMPUTING**

Gordon Hopkins
President



TYPESETTING REDEFINED

laser n. [light amplification by stimulated emission of radiation] : a device that utilizes the natural oscillations of atoms for amplifying or generating electromagnetic waves in the visible region of the spectrum.

LASERTYPE



n. The ultimate in computerized typesetting and graphic design, providing presentation quality text and graphics at substantially less than the cost of conventional type setting. LASERTYPE clarifies and beautifies manuscripts, proposals, newsletters, flyers, business forms, briefs, resumes, scientific and mathematical documents, and social announcements - all your graphic and type setting needs.

v. To transform difficult copy into sparkling print; to enhance with graphics: i.e. " HAVE THIS LASERTYPED ! "

type n. **a** : a rectangular block typically of metal or wood bearing a relief character from which an inked print is made
b : a collection of such blocks.

DON'T BE TYPECAST ↔ LASERTYPE EXPANDS YOUR HORIZONS

FOR AS LITTLE AS \$6 A PAGE

563-1615

LASERTYPE INC., 68 CHAMBERLAIN AVE., OTTAWA, ONT. K1S 1V9



**Complete AutoCAD Workstation
INCLUDES**

High speed Blue Chip computer (Norton Sysinfo score = 3.0)
 360 K floppy - 20 meg. hard drive - V20 processor
 2 serial ports - 2 parallel ports - Real time clock - DOS 3.1
 8087 math co-processor - 150 watt power supply
Hi-res monochrome graphics card (720x348)
 Hi-res amber or green monitor
 Digitizing tablet with cursor & stylus
 Roland DXY 800 8-pen plotter
 AutoCAD 2.18 with ADES 2 & 3.

\$8,950.00

All specials are for **Blue Chip** or other high quality IBM compatibles.

300/1200 baud Hayes compatible internal modem w/communications software\$	\$ 300.00
V20 high speed cmos replacement for your 8088	29.00
QMS KISS laser printer	3,500.00
Hi-res TTL monitors (amber or green)	179.00
Microsoft mouse with PCpaint software	225.00
8087 math co-processor	219.00
Summagraphics digitizing tablet c/w 4-button cursor	898.00
Roland DXY series plotters	ASK
Inside AutoCAD training manual	39.00
DAC Easy accounting with AR, AP, GL, Inventory & Forecasting	99.00
DAC Easy Word	89.00
Bedford Accounting c/w Canadian payroll, GL, AP, AR	229.00
PC Unix with source code (the personal operating system for systems programmers)	150.00
XTC the ultimate programmers editor	150.00
The operating system toolbox (the personal operating system construction set)	150.00
PCVMS operating system for applications programmers	150.00
The Visible Computer	99.00
PC Tools from Central Point Software	55.00

This page image merged and typeset by **LASERTYPE** on a QMS KISS 300 dpi laser printer