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Ottawa IBM-PC Users Group

March, 1989

3 Thatcher Street, Ottawa, Ontario, K2G 1S6

Thousands of colors per 'frame' Computer graphics are complex

by Jackson Hibler
OPCUG

I guess everyone has seen the opening graphic that CBOT Newsday uses: You are flying along over streets and the canal towards capitol hill, suddenly you swoop out over the river to turn and hover for a sunset view of the parliamentary library. Nice, eh? Well at the February meeting we met the fellow who created it.

John Barter, came out of computer music, FORTRAN programming, the ashes of NABU and video camera work to form Juniper 4D Graphics with his partner...another musician!

"Walt Disney animation training is of little use in our work," Barter explained. "Computer trouble shooting and debugging skills are essential. Electronic musicians get plenty of that sort of experience!"

Juniper 4D uses Cubicomp System software on a '386 with a math co-processor, 4MB of RAM, a 70MB hard disk and a Diquet Video controller board. This last has a 24-bit 'frame buffer' that enables the generation of an image composed of a very large palette of colors...did I hear him say millions? All of this goes into making just a single picture, called a frame. Each frame can be stored to disk - at 100K to 700K per frame, you'll need a big one! Thirty of those frames make up one second of an animated sequence.

(When they did the CBOT sequence, they were using an AT: it took almost 45 minutes to render a single frame...and more than two months to make the entire half-minute sequence.)

Each frame is piped to another company located next door where that firm's Beta Cam-overcorder (not Beta-max, unfortunately) 'takes' a picture of each frame that can be strung together and edited with professional video equipment into an animated film.

If you've seen the ads for the Targa or Vista video boards by AT&T in the computer press, you will get an idea of

the realistic effect possible with these systems. What the Cubicomp system adds to these boards is the image itself. Three dimension modelling, sequencing, animation key frames, light source control, color control (not just red-green-blue, but diffuse effects, hue, saturation, ambient light...).

Textures? If you can't draw what you want, you can work backwards from reality. They once brought back a video still of denim fabric on disk...imported that into the Cubicomp system and then incorporated electronic

See Animation... page 6

Writer needed

The Ottawa IBM-PC Users Group has lost a reporter. Jackson Hibler, who wrote interesting and timely articles on the club's guest speakers and other topics for the club's newsletters, has given up his writing duties due to other personal commitments.

Jackson was a mainstay of the newsletter and his articles will be missed. Now the club is looking for another reporter/writer to fill the gap created when Jackson left. If you attend the club meeting on a regular basis and you feel you can report on the guest speaker's topic in an informative and interesting way, then contact the newsletter editor Mike Roy at 744 0047.

Printer driver definitions

WordPerfect offers many choices

by: André Cyr

WordPerfect v5.0 Printer Definition Program or PTR for the initiated... I heard and read about this abominable monster in trade magazines and through the network of consultants and govern-

WordPerfect's printer drivers oc- cupy 8 or 9 disks...

ment departments... I even downloaded the preliminary documentation floating around the BBS and I was not impressed.

Then I got the real thing, a 400-plus page manual produced by WordPerfect Corporation... a big jump from the mere 80-plus pages from the preliminary documentation.

There is a lot of similarity with the WordPerfect Workbook format in terms of clarity. I will not describe the above book as a 'power user' workbook but as a workhorse for using the PTR program. A good introduction on the purpose and structure of PTR is provided with instructions on starting, exiting, and working with printer files. The book lists various features and provides keystroke-by-keystroke instructions for accomplishing specific tasks. Many charts describing the menu programs to help you navigate through the menus are included in the package.

The inner guts of a PRS (Printer Resources) files are described as well as how to access each feature of a Printer Resource are described (eg: how to customize for non-American characters or how to add additional options to the printer are described in some detail).

A cautionary note, the various releases of WordPerfect v5.0 have corrected 'bugs' in the compose area which is used to generate 'foreign' characters and there are 'variations' between releases in this area which can confuse printer developers. In addition printer drivers developed under 'older' versions of the PTR program are not fully compatible with the most recent release of PTR and you have to go through a conversion program to the level of your release... a translation

being just that, a translation... how good is the resulting conversion?

For your own sanity I will suggest that any customization of existing printer driver should start with a set of WordPerfect's printer diskettes of the same release level as the set of WordPerfect disks that you are using (note: the most recent release is dated 12 Dec. '88).

How to work with Postscript printers and Bitstream products is explained as well as a short introduction to the WordPerfect Printer Description Language (WPD) - the programming language behind the PTR program.

With a little bit of patience... and a good printer manual... you can modify an existing printer driver to suit your particular needs or start from scratch and develop a WordPerfect v5.0 printer

See WordPerfect... page 6

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Customizing DOS v3.3 codepages

by André Cyr

One of the interesting features of DOS 3.3 is in recognizing that there is a need to support foreign, ie: non-English language such as French, Spanish, Dutch, Danish . . . etc. for EGA and LCD monitors. To achieve such support Microsoft added three new DOS commands:

NLSFUNC
CHCP
SELECT

And enhanced two other DOS commands:

KEYB
MODE

As well as two configuration commands:

COUNTRY
DEVICE.

Other DOS commands such as

DATE, BACKUP, RESTORE and TIME were enhanced to use country specific date and time conventions based on the country and codepages selected.

If you don't make the effort to implement codepages to take advantage of foreign language your computer will default to the U.S. mode (i.e. codepages 437).

How to Implement Codepages

To implement codepages for the 'French-Canadian keyboard standard - IBM selectric bilingual keyboard type' you must make sure that the following elements are on your system.

After ensuring that your computer graphic card support EGA or LCD display you must keep the following SYS files in your root directory:

KEYBOARD

ANSI
COUNTRY
DISPLAY
PRINTER

and the following files:

MODE.COM command.
KEYB.COM

EGA.CPI (if you have an EGA monitor)

LCD.CPI (if you have a LCD monitor)

In addition you will have to insert the following lines in your CONFIG.SYS file:

device=ANSI.SYS for
an EGA monitor:

device=DISPLAY.SYS
CON=(EGA,863,5)

or

for a LCD monitor:
device=DISPLAY.SYS
CON=(LCD,863,5)

and

for Canadian French COUNTRY=002.

To obtain the French characters, including the French upper case accented characters, on you display screen you have to execute the following batch file, which must also reside in your root directory.

Name of batch file:

FRAN863.BAT
NLSFUNC

for an EGA display:

MODE CON CODEPAGE
PREP=((863) EGA.CPI)
MODE CON CODEPAGE
SEL=863

KEYB CF.

This batch file can be part of an AUTOEXEC.BAT file.

To return to a normal U.S. Standard keyboard you have to execute the following command at the root directory level:

KEYB US.

If you replace code 863 by the proper

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MicroSoft offers support

MicroSoft Canada Inc. has established a toll-free technical support telephone service for members of the Ottawa IBM-PC Users Group.

The service operates from 8:30 a.m. to 8 p.m. EST and can be reached by calling: MicroSoft's customer service department at (416) 673 7787 or through its toll-free service for Ontario and Quebec residents at: 1 - 800 - 268 4781. Residents in other areas are asked to call: 1 - 800 - 268 4741.

Club members have been given an access code (2149) that should be quoted when seeking support from MicroSoft's customer service department.

Living with technology

by Mike Roy

Computer technology can be wonderful as new hardware and software products enter the marketplace to make living with computers a little easier. This same technology can also create more problems than it solves... the recent fiasco with the newsletter is a case in point.

For more than a year, the Ottawa IBM-PC Users Group has been using PageMaker v.1.0A to create the club's newsletter. After the editor had 'laid out' the pages electronically (via PageMaker), the printer would create 'camera-ready' copy from the information stored on the disk. This 'camera-ready' copy is an intermediate step in the printing process where the text, headlines, graphics, etc., are photographed so a 'plate' can be made. After the platemaking process, it's off to the press where the newsletter is printed.

Inadvertently, the club was caught up in the David-and-Goliath battle between IBM and Apple. While IBM has the lion's share of the business market, Apple is well entrenched in the graphic arts and publishing worlds. In fact, some of the best desktop publishing software, such as PageMaker and Adobe Illustrator, were developed for the Apple. (Editor's note: Adobe announced an IBM version of Illustrator just a few months ago.)

Like the computer industry, the printing industry has its own giants. In the case of typesetting equipment, it's Compugraphic and Linotronic. Linotronic was one of the first firms to sign licensing agreements that allowed it to process documents, etc., such as PageMaker, generated in the PostScript environment.

Compugraphic decided to go its own way and offered its customers typefaces and fonts that were close, but not the same, as those found in the PostScript environment. (Editor's note: Compugraphic recently signed with PostScript.)

Because of the low number of people using the IBM/PageMaker combination, it was difficult for the OPCUG to find a suitable typesetter for the newsletter. The club ended up with an excellent compromise, a typesetter that would take the PageMaker files and print our newsletter by converting the files to a Compugraphic format. (The club continues to use this firm for printing the newsletter because of the excellent service it has given to the club.)

As long as the club was using PageMaker v1.0A, there wasn't a problem. When the club upgraded to the new PageMaker v3.0, things began to happen. In the November, 1988, issue, a number of clip-art (general purpose line drawings, etc.) items were inserted in the

newsletter to allow for the compression that had taken place. For instance, the folded newspaper at the bottom of page 2 and the 3.5" disks on page 6 were used to fill up the white space.

This white space was a result of incompatibility between PageMaker v3.0 and Compugraphic. Simply put, the fonts used by PageMaker were not identical in size and spacing as the same fonts used by Compugraphic. During the conversion process, the text would be 'shrunk' as adjustments were being made to accommodate the differences between the two different systems.

November's issue was just the first hint of the problems to follow as January's issue clearly demonstrated the need an immediate solution of finding a typesetter that could handle PageMaker v3.0 material. In a word the January issue was a disaster... nothing worked. The printer, former editor Andre Cyr and I spent many hours trying to solve the problem including the regrettable decision to cancel the January issue until the problem was resolved. PageMaker was re-installed on my machine no less than three times with different fonts and printer drivers and the printer spent numerous hours experimenting to discover both the cause and, hopefully, the cure for the problems besetting us.

I was also attempting to solve the problems and was fortunate to find a typesetter that could handle the IBM/PageMaker combination and produce the needed camera-ready copy. The difference this time is that this typesetter is using Linotronic and the results are encouraging. The compression problems seem to have been solved and the club is back on track with the newsletter.

As I mentioned earlier... technology can be wonderful. It allows me to produce, at home, the club's newsletter that would have taken a highly skilled team of typesetters and layout artists hours to produce the same material just a few years ago. Desktop publishing is marvellous and the freedom it brings to publishers and journalists is amazing. While there are the expected and, in some cases, unexpected, growing pains, such as the January issue, I feel we are witnessing a real revolution that is happening on two major fronts... in the computer world where software producers are creating excellent programs for both IBM and Apple (PageMaker and Illustrator come to mind.) and in the graphics and printing world where the two giants, Linotronic and Compugraphic, are finding ways of offer customers, like us, the versatility and high quality products we need. And I think the real winners of these revolutions will be us, the computer consumers of today and tomorrow.

New 'power board' introduced

No longer will the serious computer professional or home hobbyist suffer the pangs associated with a dreaded power failure. Now, available for the first time, the atom-smashing QBX-1 add-on nuclear reactor card provides backup power for up to 12 years. The full-length plug-in card fits IBM PC computers or compatibles.

When the card senses a power failure, explosive bolts eject moderator

and control rods from the reactor's interior within 20 nanoseconds, bringing the reactor to its fully rated output of 20 kW in less than a millisecond. During its 12-year active life, the reactor's power decreases by 25 per cent to 15 kW.

Integral heat fins provide convection cooling of the reactor's 500W power dissipation while the reactor remains in its standby condition. If your

computer's fans can't furnish 400 ft²/sec. of forced air for cooling, consider buying the manufacturer's heavy water cooling jacket and stainless-steel pump module, which fit conveniently under a desk or workbench. Latches on each side of the reactor module let you quickly exchange the radioactive core, should you need to replace it.

An optional circular viewing port of lead glass lets you check the reactor's internal mechanical assemblies.

To protect users from undue radiation, each reactor includes a shielding kit comprising five lead plates, complete with adhesive tape backings, and 20 radiation-monitoring film badges. The lead plates mount inside your computer's enclosure and reduce gamma rays that cause soft errors to floppy disk and RAM data. For added protection, consider buying the manufacturer's 200 ft. extension cords for keyboards and monitors.

Because the reactor can supply more than enough power for your computer, you can sell excess power to your local utility company. An add-on phasing and metering kit (PMK-1), optional at extra cost, lets you connect your reactor to the local power grid. Each PMK-1 includes standard power-sale contracts and Rural Electrification Board rules and regulations. Ontario and Quebec customers will receive the appropriate documentation for their respective utility companies.

Although not required in all localities, each reactor card package includes a standard 23 volume site evacuation plan. The plan includes blank forms for you to fill in the name and address of your reactor site and then mail to the Nuclear Regulatory Commission. As an option, the manufacturer supplies the plan on 12 MS-DOS compatible disks in Wordstar format.

Reactor prices start at \$2.3 million with more units. Delivery time is 7 years. Inquiries can be directed to: Luminescent Electronic Products Inc., Box U-235, Trinity Site, NM 43210.

Customizing DOS characters

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codepages code and your keyboard KEYB by the proper code you can obtain Spanish, Danish, Italian and more on your screen.

Only two drivers

The catch is that the people at Microsoft are providing you with only two printer drivers to work directly at the DOS level - and both are IBM products. This is a secondary limitation because to take full advantage of the characters generated on your monitor you will usually need to rely on the printer interface provided with the product that you are using (e.g. WordPerfect 5.0 and its PTR program, Lotus AGENDA appears to support directly codepages according to the documentation...) to print them either directly with your actual printer driver or with a modified printer driver through your printer set up program. Except for the upper case French accented characters, a good quality dot matrix printer will print most of the non-American characters generated by the codepages with the proper KEYB command definition.

As a result of the above your enhanced AT type keyboard will be reconfigured as follow:

Original	Reconfigured
@	“
<	‘

2	2
,	,
#	/
>	.
3	3
.	.
^	?
“	„
6	6
‘	‘
?	Cap. accented E
{	^
/	é
[^
+	>
}	diacesis
\	<
]	cedilla sign
~	
‘	#

The trade off of implementing "french canadian" codepage is the loss of the backslash (\). However you can still access the backslash by pressing <ALT><SHIFT>tilde key --- odd but effective.

Telephone surge protectors

Modem protection often overlooked

by Mike Roy
OPCUG

You paid a lot of money for your computer and its associated peripherals including a power surge protector to guard your equipment against electrical spikes and power surges. There's one piece of equipment you may have overlooked... your modem.

During one electrical storm, a friend of mine had his modem destroyed when it was zapped by a power surge, yes a power surge, on the telephone line. During the same storm a circuit breaker was destroyed, not just tripped, at his neighbor's house.

While many manufacturers offer a wide variety of power surge protection, very few offer any type of protection for telephone lines or modems.

Heath Zenith Computers, home of the famous HeathKit, does offer a telephone and modem spike and surge protector (model SK - 201) for about \$25.

The kit comes complete with all the necessary hardware and parts, as well as detailed and well illustrated documentation, circuit description and step-by-step assembly instructions. The average person should be able to complete this kit in an afternoon.

The Heath unit uses six varistor which operate like back-to-

back zener diodes. When exposed to high-energy voltage transients, the varistor impedance changes from a very high standby value to a very low conducting value and, consequently, clamps the transient voltage to a safe level. The energy from the incoming high-voltage transient is absorbed by the varistor and it is this absorption that protects equipment on the telephone line against damage.

Heath isn't the only firm offering this type of equipment as the club's bulk purchasing section has two or three different models of telephone surge protection. For details on these units, call Tim or Terry at 225 2630.

dBase sale...

dBase III plus - asking \$400. dBase IV (unopened) asking \$575. Owner currently using Framework and does not need these programs. The software can be viewed by calling Ottawa 232 7601 or 232 0248 and asking for Leslie. Owner can be reached by calling: John Cleland in Kingston at (613) 384 3154.

New telephone monitor announced

Ositech Communications has announced a new telephone monitoring and cost control system: the CS7000 SMDR Call Sorter. Designed and manufactured in Canada, the unit can generate reports such as telephone system traffic analysis.

Business Computer News reported

in its Jan. 16 edition that the stand-alone unit could maintain 3,500 call records while additional storage options could boost the figure to 7,000 call records.

A parallel printer can be added to the unit for printing reports. The unit, which includes battery backed-up memory, carries a Canadian list price of \$1,500.

For more information you can call (519) 836 8063 or write to: Ositech Communications, P.O. Box 1353, Guelph, Ontario, N1H 6N1.

Animation is complex...

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denim into the 'frame' they were building.

Although Barter's presentation started out with some real home movie footage - much to our amusement - the price and complexity of the system they use renders it well beyond the reach of those of us who would like to experiment with our computers and

home video camcorders.

But perhaps things are not all that far beyond us. I suspect we will see some interesting systems in the public domain soon. The big problem will be inexpensive graphics boards that can generate the multiple-color palettes necessary to hide the low graphic resolution of our screens. Maybe VGA would be enough to start...

WordPerfect...

From page 2

driver for your unique printer - if it's not already on the long list of printers on the eight or nine printer drivers diskettes from WordPerfect.

From the February issue

Multi-Edit loaded with features

(Editor's note: In the February issue of the newsletter, parts of Chris Taylor's article on Multi-Edit were missed. Here is the final part of that article.)

You can now undo up to the last 64K editing operations in each window! This includes text entry, cursor movements, block changes, virtually everything.

The way Multi-Edit looks and acts can be easily modified from within the editor. Colors may be changed, tabs expanded into spaces, the cursor size may be modified for both insert and overwrite modes, and the keyboard typematic rate may be changed. The command structure can be remapped to the keys of your choice. The EGA 43-line and VGA 50-line modes are supported. A mouse may be used and the sensitivity may be modified. The commands assigned to the mouse buttons are easily re-defined.

One of the interesting features of Multi-Edit is its ability to save its status

when exiting. Load Multi-Edit again without a file specification and you will find the files you were last working on all re-loaded, with the windows set up the same way. Of course, this is optional.

Every program that has multiple definitions of function keys could learn a lesson from Multi-Edit. The last line of the screen indicates the definition of keys F1 to F10. Press the Alt, Ctrl, or shift keys and the line will change to indicate the new definitions of the keys. F11 and F12 are also supported but keyboard templates are not supplied with Multi-Edit.

Multi-Edit comes with language support for Assembler, BASIC, C, dBASE, Modula-2, and Pascal. These macros supply a range of useful features such as smart indenting, template editing where a couple of keystrokes can provide complete constructs ready to be filled in, and finding matching pairs of constructs such as braces or key words. The source code for all these macros is supplied so that they may be modified to your heart's content.

The need for programmers to write documentation has not been overlooked. Multi-Edit provides a document mode with word wrap, justification, a full set of print formatting commands, Table of Contents generation, and more.

Multi-Edit's macro language is very

rich. The entire user interface for the editor is written in it! Within it, you can open windows, write text, move blocks, check for existence of specific text, and so on. You can even do low level operations such as PEEKs and POKEs to memory, generate software interrupts and examine the registers. The macro language is structured like Pascal. This is one point where, for me at least, Multi-Edit leaves the competition in the dust. Most extensible editors have macro languages that look like C. Only C programmers can easily make head or tails of a C program listing. Even novice programmers will be able to deal with Multi-Edit's macro language. There are many macros supplied with Multi-Edit. There is even a macro to provide a sub-set of the B.R.I.E.F. editor!

Multi-Edit requires 200K of free memory. Although it can run on a floppy-based system, a hard disk is recommended.

Available from: American Cybernetics, 1228 Stadem Dr., Tempe, Arizona, 85281, U.S.A. Or you may call: (602) 968-1945

The \$99 U.S. price includes one free upgrade.

Subsequent upgrades are \$30 U.S.

Demo disk available from the software library and on The PUB (see download area 2 Applications - Word Processing)

Calendar...

Meetings of the Ottawa IBM-PC Users Group are held on the last Wednesday of the month except in July and December. The meetings are held are available from 7:30 p.m. with the regular meeting beginning at 8 p.m. Free parking is available behind the Gothic Building.

The next regular meeting will be on:

April 26.

Toshiba laptop for sale...

TOSHIBA T3100 laptop computer c/w: 286 processor, 10 megabyte hard drive, one 720k 3.5 inch disk drive, 640 by 400 amber glass plasma screen, less than two years old, asking \$3,000. For more information, contact Tony Frith at 728 7597.

Ottawa IBM-PC Users Group

3 Thatcher Street, Ottawa, Ontario, K2G 1S6

Membership Renewal

Name:

(Please print or type clearly.)

Address:

(Please include your complete mailing address, Apt. number, street, road, etc.)

City:

Prov:

Code:

Home: ()

Office: ()

Memberships in the Ottawa PC Users Group (OPCUG) are \$20 per person per year and include access to the OPCUG Bulletin Board and are valid until March 31, 1990. Members may also subscribe to the OPCUG's Disk of the Month (DOM) service which entitles the subscriber to 10 consecutive DOMs. The DOM service is offered at \$25 plus the membership fee of \$20 for a total of \$45. Please make your cheque payable to the OPCUG and mail it to the address at the top of this form.

Check one:

New :

Renewal :

1989 Membership Fees:

Membership: \$20.00

Membership & DOM: \$45.00