
APPLE-BUG

The Newsletter of APPLE-Q Inc.

the Brisbane User's Group

Post Office Box 721

South Brisbane

Queensland 4101

May 88 Issue

Volume 7 No.5

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[C R E D I T S]

The credit for getting this issue to press, must go to Dale Rodgie and the tireless efforts of the Executive Committee, along with the help of a few members who have taken the time to put fingers to the keyboard. The Hooper Education Centre has once again performed the impossible task of accepting our pages, making enough sense out of them to make the plates, doing the actual printing, collating, stapling, folding and stapling again, and getting them to Australia Post, who in turn attempted to get them to you in time for you to read them before the sun sets on another Open Day, for yet another month.

>>	Dale Rodgie	--	He typed it all in	<<
>>	Graham Black	--	He typed some too	<<
>>	The Members	--	For their contributions	<<
>>	Appleworks	--	Word Processing	<<
>>	ImageWriter II	--	Typesetting	<<
>>	The Hooper Centre	--	Printing & Distribution	<<
>>	The APPLE Computer	--	The reason for it all	<<

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Registered by Australia Post - Publication No. QBG 3485.

[Executive Committee]

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[Bulletin Board System (BBS)]

Apple-Q BBS : online 24 hrs

Telephone : (07) 284-6145 (DATA)

: (07) 883-1525 (VOICE)

Baud Rates : 300, 1200/75, 1200 and 2400 (CCITT and BELL)

Data Specs : 8 Data bits - 1 Stop bit - No Parity (Full Duplex)

Sysops : Graham Black - Vince Crosdale - Brett Dutton

Calls to the system : 10419

Registered Users : 470 (as of 9.00 p.m. 26th April)

SYSOP stands for : SYSTEM OPERATOR

BBS stands for : Bulletin Board System

[What's When]

at the Hooper Education Centre - Kuran Street - Wavell Heights

Open Day

Sunday 15th May 1988

Hours: 9.00.am. till 4.30.pm.

Committee Meeting

Monday 16th May 1988

Starts: 7.00.pm.

Open Day

Sunday 19th June 1988

Hours: 9.00.am. till 4.30.pm.

Committee Meeting

Monday 20th June 1988

Starts: 7.00.pm.

[Membership Fees]

Joining Fee: \$10

Adults/Family: \$20

Full Time Students: \$12

Pensioners: \$12

Corporate Membership: \$50

Associate Membership: \$ 5 plus \$5 Joining Fee (BBS only)

(Full Time Students under 21 years on production of Student Card)

(Pensioners on production of Pensioner Card)

[.....at the discretion of the Executive Committee]

Copying fees for the Club's Public Domain Software are 50 cents per disk side, with a minimum charge of of \$2.00 for 5.25" disks. The copying fee for 3.5" disks is \$3.00 per disk. We cater for the][,][+, //e. //c, //GS and MAC. The copying of Commercially produced software cannot be sanctioned by APPLE-Q Inc. and members who do so risk expulsion from the group.

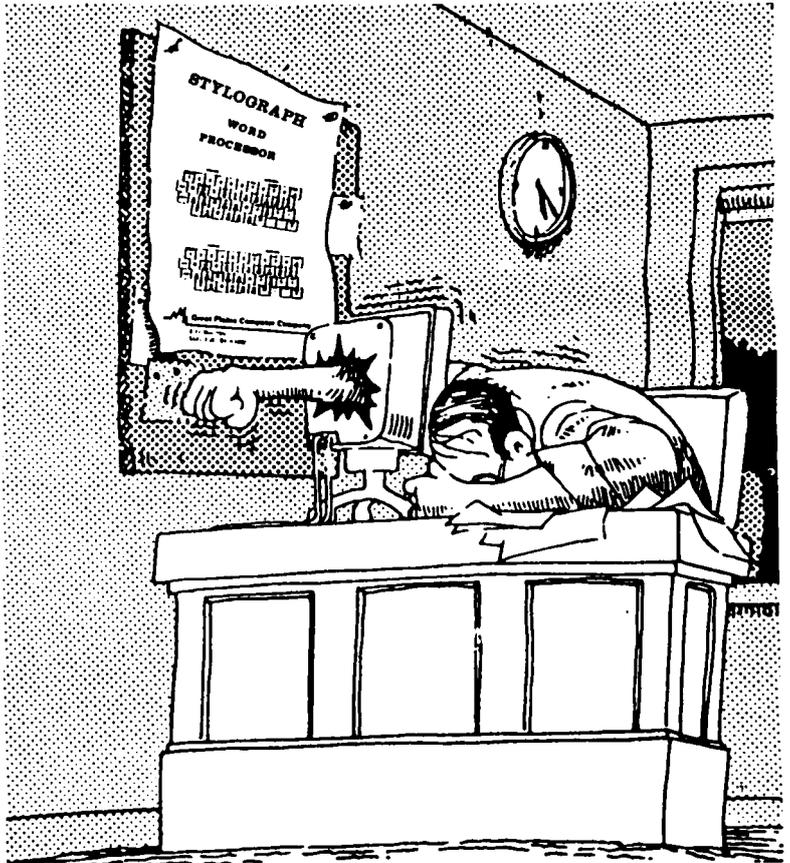
All contributions for the newsletter should be handed to a committee member at the Open Day, or posted to P.O.Box 698, Redcliffe, Queensland 4020. The deadline date is the committee meeting immediately following the Open Day.

[Editorial]

by Graham Black and Dale Rodgie

Last month, you were very lucky to get a newsletter at all. It was nearly cancelled the day it was due at the Hooper Centre for printing, due to a Hard Disk crash. The entire content of the newsletter was still in text files, and last minute updates had to be made to the membership list, because members did not get the info' in by the deadline date. If you want anything to get into the newsletter, then send your contributions (or complaints) to: P.O.Box 698 - Redcliffe - Queensland 4020, and of course, make sure sure they get in before the deadline date or you will miss out.

Well, once again the newsletter has changing. We are back to using the good old reliable Apple //e and ZARDAX II for this text. My opinion of the IBM's capabilities is not printable.



We don't allow that sort of language in the newsletter. Dale Rodgie has volunteered for the position of Editor, starting with this issue. Welcome to the committee Dale. I'll let you finish this column.

Thank-you Graham, may-be you could write an article titled "101 things to do with your IBM compatible without turning the power on", for the next newsletter. This part of the newsletter was written on my Apple IIGS.

Last month we had ten new members join the group, they are: Leslie Dodt, Neil Robertson, the Summerhayed family, Kevin Menr, Kevin Batterbury, Andrew Wright, Ian Stevenson, Hilary Turner, Leonard Giddens and D. Ma. Welcome to the group, and I hope we can help you to use your Apple computer better.

The group has had a few problems with missing power boards. We started with 24 and now only a few remain. If you mistakenly took home one of the power boards, please return it at the next meeting. Due to the disappearing power boards, a deposit of \$20.00 will be requested when you borrow a power board. Your \$20.00 will be returned when you bring back the power board. If any more go missing, the \$20.00 will cover the cost of a replacement. I recommend that you bring your own power board, since there are not enough of the clubs power boards to go around.

During the meeting, no one is allowed behind the counter except the committee members. Remember to display your membership card on your Apple. Due to the lack of space, only members are allowed to set up their machines. Anyone not displaying a membership card will be asked to leave or pay the membership fee. This is to help the members get a fair go.

You still have some time left to submit entries for the Logo Competition. We are looking for a logo to print on the front page of the newsletter each month. Remember that the prize is a full years membership and the competition will close on the June Open Day. The winner will be announced in the July newsletter along with the winning entry. So get those graphic programs warmed up. You can submit your entry to any member of the committee. We need both the logo on paper and on disk (in a high-res file).

A special interest group is starting up for serious users. So if you are interested in Business programs, Programming, etc. for both the Macintosh and Apple II's, the meeting will be held in room 22 in the main Hooper Centre Building between 1 and 4 p.m. on Open Day's.

[Hardcopy Library]

by Brett Dutton

Everything went well as usual. Just a reminder to bring back loans at the following meeting.

[Software Library]

This month we take a look at the growing Apple IIGS software now available through the group. All of the software listed below is on 3.5 inch disks and are formatted in ProDOS. The software is divided into three categories: Public Domain, Shareware and Demonstration.

Shareware is a cheap way to market computer software. The Author allows his programs to be copied. You then take a look at the software, if you want it, you simply send a small amount of money to the author. The amount usually is \$30.00 (U.S.). In some cases, the author will then send you the latest version of the program.

The Demonstration software allows you to use the program before you buy it. Of course, some of the features of the Demonstration software are omitted so that you need to buy the program if you want it.

The copying fee for one 3.5 inch disk is \$3.00. Some software require two 3.5 inch disks - this software is clearly marked below. CDA stands for Classic Desk Accessory and NDA stands for New Desk Accessory.

APPLE IIGS DEMO SAMPLER

Public Domain (2 Disks)

This disk includes eight demo programs, they are:

- | | |
|----------------|---|
| Daleks | - Your Dr. Who and you have to save yourself from the Daleks. |
| Colour Dabblor | - Experiment with the GS's Quickdraw tools with this program. |
| Hodge Podge | - Another GS tool demo - useful to pack and unpack pictures, and change a pictures graphic mode, ie. from 640 to 320 and visa versa. |
| Slide Show | - The slide show needs the APPLE IIGS SAMPLER DATA DISK. The slide show requires 2 x 3.5 inch drives, however, you could modify the basic program to work with one drive. |

- Quickdraw Sampler - Yet another GS tool demo. This one draws shapes on the screen.
- GS Paint - This is not the commercial version. This program was written by Apple programmers. Many of the options are not available and you can't load in pictures.
- Keyboard Sounds - Any key you press, a corresponding sound is played.
- Brick Out - Same as the old game except in colour.

APPLE IIGS SALES DEMO

Public Domain (2 Disks)

This program was the first demo the Apple dealers used to display the GS. It talks, plays music and shows some great pictures. The program needs 1.25 meg. of RAM and two 3.5 inch disk drives to run.

APPLE IIGS SUPER HIRES DEMO

Public Domain

This disk contains a slide show and some interesting coloured displays. The three Quickdraw options on the main menu don't work.

DELUXE PAINT II

Demonstration

This is a demo of what I think to be the best graphics program for the GS. So good I bought a copy (I could not afford the company). The disk contains some pictures drawn using Deluxe Paint II. You can experiment with the drawing tools. This demo has a bug - the tool icons are not drawn to the screen, but they do work. It also has a very interesting quit routine.

DIVERSI DEMONSTRATION DISK

Shareware

This disk contains five programs from Diversified Software Research. They are:

- Diversi-Cache - This program speeds up your Apple 3.5 inch drive almost to RAM disk speed.
- Diversi-Key - With this program, you can have macros with almost any program. It comes with macros set up for Appleworks 2.0.
- Diversi-Copy 5.25 - Quickly copy 5.25 inch disks. It even allows you to make multiple copies.
- Diversi-Copy 3.5 - This is the fastest 3.5 inch disk copy program I have seen. It only copies the necessary blocks and allows you to make multiple copies.
- Diversi-Hack - This program installs a CDA that allows you enter monitor at almost any time and return back to the program. You can also dump the text screen to a printer.

FANTAVISION

Demonstration

This demo plays a graphics movie drawn using Fantavision. It does not allow you to experiment with the drawing features. Fantavision allows you to animate your graphics images and add sound effects. It also has a feature called "Tweening" in which the program can draw up to 64 frames between the start and finish frame. Playing back the frames creates animation.

FREETERM GS

Public Domain

A mouse based communications program. Operates at 300, 1200, and 2400 baud. Send and receive files with Xmodem. Auto dial with either Pulse or Touch-Tone dialing. Also has a text capture feature. Voted the "All Star" Award for a GS communications program by A+ magazine.

GRAPHICWRITER

Demonstration

This was the first desktop publishing program for the Apple IIGS. It allows you to add graphics to your word processing documents and print it out in colour (ImageWriter II only). It has some simple graphics tools to draw your own pictures.

GS USERS GROUP DISK

Public Domain

A range of public domain programs demonstrating the Super Hires graphics, coloured text screen and GS tools. The disk includes programs from a special I.A.C. Apple IIGS disk. Programs include:

- Calendar - A calendar CDA.
- Mac.Trans.Gs - Transfer text files from a Macintosh to a GS (did not work on my GS).
- Master.Da - This CDA allows you to have up to 100 CDA's in your GS at the one time.
- Meltdown - This NDA melts your super hires screen like wax.
- Mtremove - This CDA replaces MouseText characters from any program that displays highlighted characters in MouseText. It can be used with DOS 3.3 programs also.
- Notepad - Take notes down while working in another program with this CDA.
- Pic.Saver - This CDA saves the current super hires screen to disk.
- Ratcalc - This Rational Calculator CDA can come in handy.
- Visibell - When you work into the wee small hours, this CDA will not wake the rest of the family. It replaces the GS bell with a flashing boarder.
- Stgs - Transfer ATARI ST graphic screens to the GS format. NOTE: Atari graphics must be on a ProDOS disk.
- Typelt - This CDA displays text files on the screen.

MICRO-ED GS LIBRARY DISK

Shareware

This disk contains many utilities for your GS. Most of the programs on the disk will work on the older Apple II's. The only one that I can find that only works on the GS is the slide show.

MULTISCRIBE GS

Demonstration

This is the GS version of the famous Multiscribe. The GS version was voted the "All Star" Award by A+ magazine in the word processing category.

MUSIC CONSTRUCTION SET

Demonstration

This demo plays a number of tunes written with this program. You can't experiment with this demo - it just plays and plays music.

NOTES N' FILES

Demonstration

Notes n' Files is a word processor and data base in one. It will store names and addresses in a data base linked to each letter you write to that person. You can quickly look at a particular persons details and all the letters you have sent to that person are displayed on the screen at the same time. It will also print labels and would be perfect for a small business.

SUPERSONIC CHRISTMAS DISK

Demonstration

If you don't know what a cold Christmas is like, play this Christmas Demo Disk one night. It plays heaps of your favorite Christmas carols and some you don't know.

SUPERSONIC SOUND EDITOR and DATA DISK

Demonstration (2 Disks)

This sound editor plays back the song on the data disk at almost CD quality. You can edit the music, change its playback speed, change reverb etc.

TOPDRAW

Demonstration

This demo allows you to use all its graphic tools and to save the completed picture to disk. Topdraw uses Object Oriented Graphics.

[Apple News]

Apple's New Software Company

Apple Computer, in the States, have just established a software company called Claris Corporation. Mr. Bill Campbell explains why Claris was set-up; "By developing outstanding applications we believe we can set new standards for Macintosh development." With a staff of 120 and a multi-million dollar budget, Claris plan to improve almost all the Apple software now available. Most of it for the Macintosh computer. We should see new versions of MacWrite, MacPaint, MacDraw, MacTerminal, Multifinder, Hypercard and AppleTalk. They are also working on some new programs. "SmartForm Designer and SmartForm Manager allow the user to do everything with forms - create, print, distribute and capture data.", said John Zeisler, vice-president of Claris.

A New Version of AppleWorks

While on the subject of new versions, Claris are planning to market a new version of AppleWorks by mid-year. Word is that this new version would be designed for the Apple //GS and use the mouse and pull-down menus etc. Claris have an double page add in the latest A+ magazine. It informs Appleworks owners that they can now upgrade to the latest version. More info as it comes to hand.

So What!!

Three new Apple IIGS programs are now available from So What Software in the States. They are the Disc Commander, Iconix and Sonix. Disk Commander is a disk editing program for the GS. Like the disk block editors available for the older Apples, you can edit any block on a ProDos, Dos 3.3 or Pascal disk. You can trace bytes, locate files, recover deleted files and reconstruct damaged disks. This is all done within the WIMP environment. The disk also contains a program called Longloader. This program enables your Applesoft programs to load and save data from any bank of the GS, except ROM.

Sonix is an Ensoniq synthesizer interface. With Sonix, you can use all of the features of the Ensoniq chip from Applesoft. You can extract sound files from disk, sample and record you own sounds, compose and play music, add a voice response to keyboard events. The disk includes a Waveform editor, 30-voice music editor, 30-voice sequencer, sound library and plans to build you own pre-amp for the GS.

Iconix is a Super Hires interface for Applesoft Basic. With Iconix you can load and save super hires pictures (loading in about 5 seconds), plot a single character, string or colour anywhere on the screen, use up to 256 colours on the screen at any one time, add animation, link you basic program to the GS's arrowhead. And the list goes on.

For more information, contact So What Software, 10221 Slater Ave., Suite 103, Fountain Valley, CA 92708, U.S.A.

240 volt System Saver on its way?

Kensington Microwave Ltd. in the United States have developed two Apple savers. Back in 1982 they released the System Saver for the Apple IIe. It is a surge suppressor and fan in one. Last year they released the GS version called System Saver IIGS. It is designed to fit in between the CPU and the GS monitor. It contains a fan and four power sockets at the back. You can then plug you GS into the surge suppressed power supply. There are two switches on the front marked "Main" and "Aux". After connecting your computer to the System Saver, to turn your GS on, just press one of the buttons. You don't need to reach around the back of your GS. Why din't Apple think of this?

Within the next few days they will decide whether to make the 220/240 volt European (and Australian) version. So keep reading Apple-Bug for more details.

[Tips & Techniques]

In this month's Tips & Techniques we look at how ProDOS programs finish (and how to use it in your own programs). Also we look at a routine to change RESET to RUN.

Bye-Bye

Here's another routine you can use when using ProDOS. It is used by many 8 bit ProDOS programs. When you type in the Quit command, the screen returns to 40-columns and asks for the Prefix of the next program, and then the System Program name. This routine is complete with error routines and can be used from either Applesoft or Machine Language. In Basic you use the command:

```
PRINT CHR$(4);"BYE"
```

If you are working in Machine Language, and have Basic System loaded into memory, you can use:

```
JMP $B028
```

Take a Running Jump

This tip originally come from the July/August 1982 edition of Apple Orchard Magazine. This utility will Run a basic program (in memory) if the <CONTROL>-<RESET> keys are pressed. This comes in useful if you want to user proof your program. "User Proof" is a term used to describe a program that can not be crashed by the user by pressing the incorrect key. This utility will only work in DOS 3.3. In ProDOS, the utility turns on the trace command.

```
10 CALL 1002: PRINT CHR$(21): FOR I = 768 TO 777: READ A: POKE I,A: NEXT  
20 FOR I = 1010 TO 1012: READ A: POKE I,A: NEXT  
30 DATA 32,101,214,133,51,133,216,76,210,215,0,3,166  
40 (the rest of the program goes here...)
```

Line 10 sets the DOS 3.3 Input/Output Hooks (CALL 1002), turns off the 80-column card (PRINT CHR\$(21)), and POKE's in a small machine language program that runs the Basic program. Line 20 sets up the Reset Vector and line 30 contains the DATA. Just add these first three lines to your Applesoft Basic program to set-up the RESET key. The machine language routine is located at \$0300 (768 decimal) in memory.

The "CALL 1002" used in line 10, does not work in ProDOS. If you can find the "ProDOS Reset the Input/Output Hooks", you can modify line 10 so it can be used in ProDOS.

[PC Transporter Review]

Thanks to Brian Clarke from Computerland, Gold Coast, I was able to have a look at one of the first PC Transporters in Australia. The PC Transporter, from Applied Engineering, is a card that turns your Apple //+. //e and //GS into an I.B.M. compatible computer. He had installed the card in slot 7 of a enhanced (platinum) //e and connected the I.B.M. type disk drive to the card. In a matter of minutes you are away.

When the Apple is turned on, it is just like your Apple without the card except you have a minimum of an extra 256K RAM. To switch to the I.B.M. mode, you just boot the disk supplied with the card. The disk is ProDOS based and both the 5.25 and 3.5 inch disks are supplied. You can choose to manually configure the system or the program will do it for you.

Now you are ready to run almost all the I.B.M. software available. It is said that it runs three times faster than the I.B.M. PC/XT computer. Even a program like Flight Simulator will work using this card. I have heard the Flight Simulator is affected by higher clock speeds on compatibles. Not so on the PC Transporter.

You can choose the amount of memory you want on the card - up to 640K. This memory can be used in either Apple or I.B.M. mode. However, 128K of memory is needed in I.B.M. mode as system memory. The card can be installed in any slot except slot 3. This is because it conflicts with the 80-column card.

When you enter the I.B.M. mode, you will notice the characters on the text screen are different. The PC Transporter uses its own character set which is the same as the I.B.M. character set. The card also re-maps the keyboard to look like an I.B.M. keyboard for programs.

If you own a Apple //+, you will need to buy an I.B.M. style keyboard. The cord from the keyboard connects onto the card. The card also has a socket for a 8087-2 math coprocessor chip which will increase the speed even more when number-crunching. It also has a socket for an I.B.M. style RGB monitor.

Using the card, you can transfer files from MS-DOS to ProDOS and back. If you have an Apple 3.5 inch drive (not Unidisk), you can use it as an 3.5 inch I.B.M. drive. However, in most cases you will need to buy an I.B.M. style 5.25 inch drive to use most of the current software. The I.B.M. style drive, also available from Applied Engineering, can be used with ProDOS disks as well.

The PC Transporter also allows you to use the mouse, printers, modems, etc. as I.B.M. devices. The card will work with the standard composite monitor and the Apple RGB monitor.

The cost of the card alone is just over \$1000.00. That is with 256K. A single I.B.M. style drive will be about \$350.00. Of course the cost rises as you add more memory to the card.

All I can say is I want one. Sure I can buy an I.B.M. compatible for about \$900.00, however, you would not also get a printer, mouse, etc. for that price. If you are a computer programmer like myself, you can see the advantage of writing a program say in Pascal and then converting it to an I.B.M. Pascal compiler. Also, it takes up very little room (if none at all). Great if you have limited space. If you want to know more about the card, contact Computerland in Southport.

[Graphics Image File Formats]

The following comes from "Apple //GS Technical Note #27". This is an update of "Graphics Image File Format Standard for Apple //GS", published 26/2/87. Unfortunately, the Technical Note does not completely explain how the graphic pictures are stored in the file. Where possible, I have added more information so you can understand the different file formats. At the end of the Technical Note, I have described how pictures are stored in Deluxe Paint II.

Unpacked Graphics Image Formats (ProDOS File Type *C1)

File Type *C1, Auxilliary Type *0000

This type contains a file with a full 32K unpacked picture image. Currently, it is being used by Apple, Activision's Paintworks and GS Paint. (Note: The first release of PaintWorks assumes the palettes' colours have been ordered from highest to lowest luminance.)

File Type *C1, Auxillary Type *0001

Unpacked Quickdraw PICT file. This contains an unpacked QuickDraw picture. See the chapter on the QuickDraw Auxillary Tools in the Apple //GS Toolbox Reference for more about pictures.

File Type *C1, Auxillary Type *0002..*FFFF

These are not yet defined. Auxillary types will be assigned and maintained by Developer Technical Support.

Packed Graphics Image Formats (ProDOS File Type *C0)

File Type *C0, Auxillary Type *0000

Packed format used by Activision's PaintWorks. Its format is as follows:

Bytes *000...*01F: Palette
Bytes *020...*021: Background colour
Bytes *022...*221: 16 patterns, 32 bytes each
Bytes *222...end: Packed picture

File Type *C0, Auxillary Type *0001 "PackBytes"

This type is created by passing a full 32K image (including SCBs and colour tables) to Miscellaneous Tools' PackBytes routine.

File Type *C0, Auxillary Type *0002 "Apple Preferred"

This is the recommended format to use and support. The file consists of a series of variable-length blocks, each with the same general format:

Length	LongInt (Length includes size of LongInt)
Kind	String with length byte (String is case-sensitive; upper case is recommended to avoid confusion)
Block-Specific Data	Variable amount of data

Standard blocks that most applications will want to put in a file are defined below. These aren't required, however. Other blocks can be defined by individual applications. Using this scheme, the format is extendable. Application-dependant information can be stored in a way that will allow other applications to ignore information not needed.

MAIN Information Block. A MAIN block usually, but not necessarily, will be in every file of this format. The MAIN block consists of the following elements (some of the terms used in the discription of the blocks are described later in the article):

SizeOfBlock	LongInt
IDString	str'MAIN' (first byte - count byte)
MasterMode	ModeWord (from QuickDraw's MasterSCB)
PixelsPerScanLine	Integer (must not be zero)
NumPalettes	Integer (may be zero)
Palette Array	[0..NumPalette-1] of Palette
NumScanLines	Integer (must not be zero)
ScanLineDirectory	[0..NumScanLines-1] of DirEntry
PackedScanLines	[0..NumScanLines-1] of PackedData

The palettes in the MAIN block are numbered from 0, corresponding to modes in the scan line directory.

PATS Information Block. The PATS block contains patterns which may be associated with the picture.

SizeOfBlock	LongInt
IDString	str'PATS' (first byte - count byte)
NumPats	Integer
PatternArray	[0..NumPats-1] of PatternData

SCIB Information Block. The SCIB block contains information relating to the current drawing pattern for the "document". These are used by paint programs that want to save a foreground pattern, a background pattern, and a frame with the image.

SizeOfBlock	LongInt
IDString	str'SCIB' (first byte - count byte)
ForegroundPattern	PatternData
BackgroundPattern	PatternData
FramePattern	PatternData

PALETTES Information Block. This block can contain any extra palettes you may need for an application program.

SizeOfBlock	LongInt
IDString	str'PALETTES' (first byte - count byte)
NumPalettes	Integer (must not be zero)
PaletteArray	[0..NumPalettes-1] of Palette

Data Types:

Integer	word	16-bit signed quantity (2 bytes)
LongInt	LONG	32-bit signed quantity (4 bytes)
ColorEntry	word	The nibbles in the word are interpreted as RGB values as follows: \$0RGB. The high nibble of the high byte must be 0. The low nibble of the high byte is the value for red. The high nibble of the low byte is the value for green, and the low nibble of the low byte is the value for blue.
Palette	array[0..15] of ColorEntry	
ModeWord	word	If high byte=0, then low byte is the mode bit portion of the SCB for the scanline. Specifically, the low bits determine the palette number and bit 7 determines if the mode is valid. Other bits are reserved and must be zero. Other modes are not yet defined.
DirEntry	Number of bytes to unpack	Integer
	Mode	ModeWord
PatternData	32 bytes of pattern information	

File Type \$C0, Auxiliary Type \$0003 "Packed QD PICT File"

This aux. type is assigned to packed QuickDraw PICT files. This contains a packed QuickDraw picture. The picture is packed using the PackBytes routine from the Miscellaneous Tools. See the chapter on the QuickDraw Auxiliary Tools in the Apple //GS Toolbox Reference for more details about pictures.

Deluxe Paint II Picture Files

That is where the Technical Note left off. So lets now have a look at how Deluxe Paint II stores its graphic picture files. Deluxe Paint II uses the "Apple Preferred" file format. It has a file type of \$C0 and an auxiliary type of \$0002. To get a good look at how Deluxe Paint works, boot up Deluxe Paint II (if you have it). Your screen should show the Menu Bar, Drawing Tools, Palette and white drawing area. Now save the picture to disk and call it "WHITE.PIC". Next, quit out of Deluxe

Paint, boot up a disk containing ProDOS8 and Basic.System and enter Applesoft Basic. Finally, type in the following commands:

```
CALL -151 <Return>
BLOAD WHITE.PIC,A#2000,T#C0 <Return>
2000.2080 <Return>
```

You are now looking at the first few bytes of WHITE.PIC. On the right hand side of the screen, you will see the word "MAIN" in the ASCII dump. Deluxe Paint II uses two blocks to store all the information about the picture. The first is called MAIN. Below I have listed the bytes found in this MAIN information block. You will notice that most of the bytes are in reverse order; i.e. MSB is last.

00 00 04 E1		Length of block (1249 dec.)
04		Length of Identification string
4D 41 49 4E		Identification string ("MAIN")
00 07		Master Mode - this does not seem to line up with description of ModeWord in the Technical Note.
01 40		Pixels per line (320 dec.)
00 01		Number of Palettes
00 00	colour 0	Palettes array - the array count starts from zero, therefore the term [0..NumPalettes-1] in the Technical Note.
07 77	colour 1	
08 41	colour 2	
07 2C	colour 3	
00 0F	colour 4	
00 80	colour 5	
0F 70	colour 6	
0D 00	colour 7	
0F A9	colour 8	
0F F0	colour 9	
00 E0	colour 10	
04 DF	colour 11	
0D AF	colour 12	
07 8F	colour 13	
0C CC	colour 14	
0F FF	colour 15	
00 C8		Number of Scan lines (200 dec.)
00 02	DirEntry	Number of bytes to unpack - for the scan line
00 00	DirEntry	Mode Word - the Scan Control Byte for this scan line
.....		

The bytes '02 00 00 00' are repeated 200 times. Once for each of the scan lines. The advantage of using such a format is that the screen size does not need to be 320 by 200 or 640 by 200. Deluxe Paint II takes advantage of this. Using Deluxe Paint, you can create pictures larger than the screen.

.....		
E7 FF		Packed Scan lines - each scan line is packed seperately. These bytes represent the 160 bytes needed to make up a 320 pixel scan line.

To understand how the picture is packed, we need to look at the PackBytes Tool in the Miscellaneous Tool Set. This tool is used to pack the picture before it is saved. The PackBytes tool packs bytes in four ways. It picks the best way by looking at the bytes to be packed. Lets have a look at the four ways it packs. After a block of bytes (it could be anything) is packed by the PackBytes Tool, you end up with two type of bytes. Lets call them control bytes and data bytes. The control bytes tell how the bytes are packed and either the number of data bytes

following, or, the number of bytes represented by the data byte(s). In the four different ways that the PackBytes Tool packs, bit 6 and 7 of the control byte tell which method is used. The remaining six bits are a count. As you will see the count has different meanings in each packing method:

00xxxxxx	The count plus one is the number of bytes following that are all different.
01xxxxxx	A count of 2, 4, 5 or 6 refers to the number of times the next byte is repeated. You must add one to the count to find the number of repeats.
10xxxxxx	The count gives the number of repeats of the following four bytes. The range is from 0 to 63 - again you must add one to get the correct count.
11xxxxxx	The last method is similar to the previous method. The count plus one is multiplied by four to work out the number of repeats. This method has only one data byte and can represent up to 256 bytes.

Now back to the dump of the Deluxe Paint II picture file. If you look a bit further into the file, you will see the packed picture data. As with the DirEntry before it, the bytes 'E7 FF' are repeated 200 times. In fact, they are tied together. The first block of '02 00 00 00' and the first two 'E7 FF' refer to the first line of the picture. The '02' tells us that 2 bytes were used to pack the corresponding scan line. The control byte 'E7' in binary is '11100111'. Therefore, it uses the fourth packing method and the count works out to be 160. So 'E7 FF' represent 160 bytes all of the value 'FF'. Also each byte contains the information for two pixels. That gives you 320 pixels in the scan line. The next set of bytes in the DirEntry and the packed scan line refer to the next scan line and so on. Of course, this is just a simple example. Most pictures need more than 2 bytes to pack a scan line. Try dumping some of the pictures you have on your Clip Art Disk. The more involved the picture, the larger the file.

As I said above, Deluxe Paint II picture file contain two blocks. The second block follows on from the end of the first. Lets have a look at a dump of the second block.

00 00 00 97	Length of block (151 dec.)
04	Length of Identification string
45 4F 41 20	Identification string ("EOA ")

I don't know what this block is used for. I do know that it is found on the end of all Deluxe Paint II picture files. I believe that the identification string "EOA " is the symbol of Electronic Arts, the publishers of Deluxe Paint II.

Programming Tips for Packed Pictures

Using the "Apple Preferred" file format, you can store a picture from 1 pixel square to 65,535 pixels square. Of course, most of the current paint programs will not allow you to draw a picture that big. It also takes up too much memory. Deluxe Paint II will not allow you to draw a picture more than 400 pixels down and you can not save a picture with less than 320 by 200 pixels. You can, however, save a portion of the screen as a brush.

The application program must be able to move the palettes into bank \$E1, move the Scan Control Bytes into bank \$E1. Unpack each scan line, one at a time, and move the graphic picture to bank \$E1. The UnpackBytes Tool (\$2603) in the Miscellaneous Tool

Set can unpack each scan line and move the bytes to bank \$E1. The program must also test to see if the picture is too large or too small for the Super Hires screen or the available memory. If this is the case, you should inform the user. It may be possible to display only part of the entire picture, even though you lack memory.

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[ImageWriter LQ]
Press Release

The following Press Release on the ImageWriter LQ printer was issued on the 11th of August 1987. Apple Computer Australia had planed to introduce this printer last November. At present, it is not available in Australia. It is expected to retail between \$2500 to \$2700.

Apple Computer Inc. today introduced the ImageWriter LQ, a letter-quality, wide-carriage dot-matrix printer offering versatile paper handling capabilities that satisfy a broad range of office printing needs.

The ImageWriter LQ, compatible with Macintosh and Apple // personal computers, responds to a demand from small and medium-sized businesses and education customers for a high-quality dot-matrix printer with diverse paper handling capabilities for

such tasks as creating letter-quality correspondence, processing multi-part forms, printing labels, addressing envelopes and producing colour-enhanced text and graphics. Its 15-inch carriage can handle full-sized spreadsheets and wide forms. "An all Apple solution offers users a high degree of hardware and software integration," said Delbert Yocam, Apple chief operating officer. "The ImageWriter LQ addresses general office needs in the corporate world as well as in schools and universities. It fills a market demand for an affordable, versatile letter-quality printer." High-quality printing.

The ImageWriter LQ's 27-pin print head provides the capability to produce letter-quality text and graphics at 216 by 216 dots per inch. It has double the dot density of the ImageWriter II and its print quality approaches that of the LaserWriter. The ImageWriter LQ prints in three modes: draft, near letter-quality and letter-quality.

The ImageWriter LQ uses impact print technology, enabling the printing of multiple-layer forms of up to five pages. Its paper handling capabilities include push tractor and pull tractor mode and bottom feed, which allows pin-feed paper and multiple-part forms to be processed directly beneath the printer, preventing jamming associated with top-through feed.

The ImageWriter LQ can also be configured with an optional expandable cut-sheet feeder, enabling unattended sheet feeding while operating on a network. The cut-sheet feeder can have up to three bins, allowing a variety of paper to be used. An optional envelope attachment is also available.

Apple also offers an AppleTalk option that allows the ImageWriter LQ to be a shared printing device on an AppleTalk network. AppleTalk can also improve throughput performance.

Like the ImageWriter II and LaserWriter, the ImageWriter LQ has been fully integrated with the Macintosh, offering many standard features such as automatic page size reduction and vertical or horizontal image orientations and cut-sheet feeder bin selection.

The ImageWriter LQ also offers a broad selection of Macintosh fonts--Times, Helvetica, Symbol, and Courier. Resident fixed and proportional fonts offer Apple // owners a wide variety of fonts, and it allows the Macintosh to print in draft mode. Colour printing is available by using the optional four-colour ribbon.

[Next Month]

In the June edition of the Apple-Bug we will review TML Basic and Copy II+ version 8. This newsletter is open to any articles from members of the group. So write an article on that new program you just bought or on programming in any language. Just hand it to any committee member during the Open Day.

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