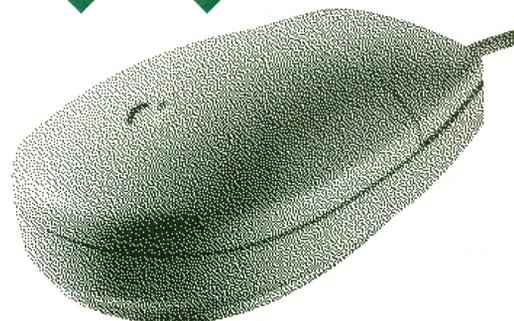


II ALIVE

CELEBRATING THE APPLE II

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An Off-Line Reader For The Masses

by *Brian Hammack*

The On-Line Crunch

Once again you are in front of your Apple using the modem, reading the messages posted to your favorite news groups. Popular groups such as Usenet's comp.sys.apple2 or Fidonet's MST3k have about 65 and 120 messages respectively in them today, and you only have an hour of on-line time to read them, plus read and answer the e-mail waiting in your box.

How do you do two or three hours of work in one hour? The solution is an off-line reader (OLR). For Apple II users this is a relatively new option, one which has been open only if you owned a GS. Even then, the program allowed reading messages but not writing replies. There is now a new option. It sends messages, and works on all Apple II's! It's 2qwk! 2.01, the first full-featured Apple II off-line reader.

Development

In 1992, Tom Larson of the Tri-Cities, Washington, began writing an OLR under the MacOS platform. Two years and several improvements later, he abandoned MacOS and wrote the program in a more concise, stand-alone fashion and released it concurrent to the Windows 95's debut as 2qwk!—version 2.0.

The new OLR proved an instant mini-hit, but a few annoying bugs persisted. For instance, enabling mouse support on

a IIe causes 2.0 to crash on installation unless the mouse card is unplugged. Users wanted more features, too. Several asked for direct printer capture of messages. Larson responded with an upgrade which took care of such needs. 2qwk! version 2.01 was released on January 14 of this year.

Cyberspacing with 2qwk! 2.01

2qwk! is very simple. Many PC-based BBS's and other servers have hidden among the door programs a "maildoor," which will package all unread messages in the user's chosen news groups and make them available for download as a single compressed file called a QWK packet. (Hence the name 2qwk!)

When you have a QWK packet sent to your machine, it takes a few seconds to a few minutes depending on how fast the modem is and how many messages are in it. After the packet has arrived, go off-line and launch 2qwk!. Selecting "Archiver" lets you start the utility of your choice (such as Angel 0.81b, available separately) to unpack the QWK packet and return to 2qwk!.

Now, you may select "Messages" to view your news groups, scan messages by author and subject, and, finally, read individual messages. When you find a post that needs a reply, you can decide how much of the message to quote and type-in your words of wisdom. You can also haul in text

Off-line Reader for the Masses

from disk and pick just the right tagline (snappy words at the very end of many messages seen on-line nowadays). Naturally, 2qwk! allows complete freedom to change a message title along with the group to which it is to be posted and to originate new messages.

When you are done reading and replying, you exit the program and it creates a reply file, called a REP packet. The next time you connect, you simply upload the REP to the maildoor. The maildoor will decide what goes where and your messages will enter cyberspace pronto!

Are You Ready?!

To use 2qwk! you will need an enhanced Apple IIe, IIc, or IIGS, with at least 128k RAM and drive space to hold the QWK data. The program itself will fit on a 5.25" disk with plenty of room to spare. Of course, the server to which you connect must have a QWK-compatible maildoor. 2qwk! runs under ProDOS 2.x. It comes with QuickFix, a program to patch ProDOS, and other utility programs to handle MSDOS-legal names.

To summarize, here is a list of the features found in 2qwk! 2.01: pick-lists, signatures, importing and exporting of message text, various quoting methods, taglines, mouse

support, printer support (driver source code included), editor, text file viewer, assimilation of taglines from text files, automatic creation of index files if they were not sent in the QWK packet, launch list, and help at the touch of Open-Apple-!?".

If some of the above sounds like cyber-Greek, don't worry. What matters is that the stuff you need for convenient, enjoyable off-line message handling is in there. This includes some fairly extensive documents which, if I do say so, are well worth reading!

FREE and Easy to Find

Incredibly, 2qwk! 2.01 is FREEware! Now that Dan Zimmerman's Caltech Apple II FTP site is up again, it should be available for downloading at apple2.caltech.edu. Just ftp://ftp.apple2.caltech.edu and use the indexes to locate the file named "b2qwk21.zip". (Be sure to get the file in "binary", not "ASCII" form.) By now, 2qwk! 2.01 should be found at other popular A2 FTP sites, as well.

Once downloaded, use Angel 0.81b or PMPunzip to unpack the file and you've got it. 2qwk! 2.01 is the compact, fast, feature-rich off-line reader you've been waiting for.

II infinitum!!! ■

D o y o u h a v e a n y

Questions?

Questions about 2qwk! can be directed to Brian Hammack on Fidonet's Apple Echo, Usenet's comp.sys.apple2, FutureNet (#7@#24), or via Internet email at brian.ham-mack@rook.wa.com. The program's author can be reached at tom.larson@pcwash.com

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A Quickie Catalog-to-Text File Program

by Michael Hackett

When a fellow user asked how to get a ProDOS catalog into a text file, my reply was "Easy! Just OPEN the directory and READ the entries into a string array." Then he explained that the catalog-to-text routine was to be part of a large, memory-hungry utility. "If I load-in 200 entries from a big subdirectory, that's more than 16K down the drain!"

So, I scribbled down a subroutine that would OPEN a directory and a target text file and, then, READ from one and WRITE to the other. No string arrays were required. "That should do it," I said, handing over the sheet. The next day he was back: "Doesn't work."

After some digging I discovered a bug in BASIC.SYSTEM—two bugs to be exact! They do not affect the handling of normal text files, but the reading of directories is a special case because directories are mainly packed with code for use by ProDOS, not text files. When you READ a directory, BASIC.SYSTEM accesses directory information and generates text lines on the fly using special routines. It is in this special code that the bugs reside.

One bug relates to a BASIC.SYSTEM variable named "CATFLAG". READ resets CATFLAG (\$BE4F) to 1, which causes the next line read to be blank. (It would be easy to fix this problem by patching BASIC.SYSTEM, but the location of the code moves from version to version.) You can get around this by executing two

INPUTs each time, and ignoring the first; but, I've provided an easier work-around below.

A bigger problem is that READ's Byte Count parameter (\$BED9, \$BEDA) is never updated after the first INPUT on a directory. BASIC.SYSTEM sets it at 39, the length of a directory entry, and expects it stay put. However, as the same parm block is used for both READ and WRITE, any intervening output statement will change Byte Count to the number of characters to be written, usually 79. This fouls up the directory reader. It looks at the wrong number of bytes and gets out of sync with directory entries.

The easy fix, without patching BASIC.SYSTEM, is to add a few statements between the READ and INPUT statements for each line.

```
POKE 48719,0: POKE 48857,39:
POKE 48858,0
```

The first POKE resets CATFLAG to 0, as it should be, and the second two reset Byte Count to the size of a directory entry. All POKES are to BASIC.SYSTEM's global page (\$BExx) and, so, do not change between versions.

The following short demo program lets the user enter a directory name and copy directory entries to a text file. The first text file is named DIR.1.TXT; the next will be DIR.2.TXT, etc.. The first entry in each text file is the name of the directory. Pressing RETURN without entering a directory name exits the program.

```
100 REM CATALOG-TO-TEXT BY
MICHAEL HACKETT
```

```
110 GOTO 420
```

```
120 REM * SUB TO READ DIR
ENTRIES & WRITE TO TEXT
FILE *6
```

```
130 PRINT D$;"OPEN";OUT$:
```

```
140 PRINT
D$;"OPEN";DIR$;"TDIR"
```

```
150 PRINT D$;"READ";DIR$:
INPUT A$: INPUT A$: INPUT
A$: A$ = DIR$: GOTO 190
```

```
160 PRINT D$;"READ";DIR$
```

```
170 POKE 48719,0: POKE
48857,39: POKE 48858,0
```

```
180 INPUT A$: IF A$ = "" GOTO
210
```

```
190 PRINT D$;"WRITE";OUT$:
PRINT A$
```

```
200 GOTO 160
```

```
210 PRINT D$;"CLOSE": RETURN
```

```
400 REM
```

```
410 REM * BEGIN DEMO MAIN
LINE *
```

```
420 D$ = CHR$ (4):N = 0
```

```
430 HOME : INPUT
"Directory: ";DIR$
```

```
440 IF DIR$ = "" THEN 470
```

```
450 N = N + 1:OUT$ = "DIR." +
STR$ (N) + ".TXT"
```

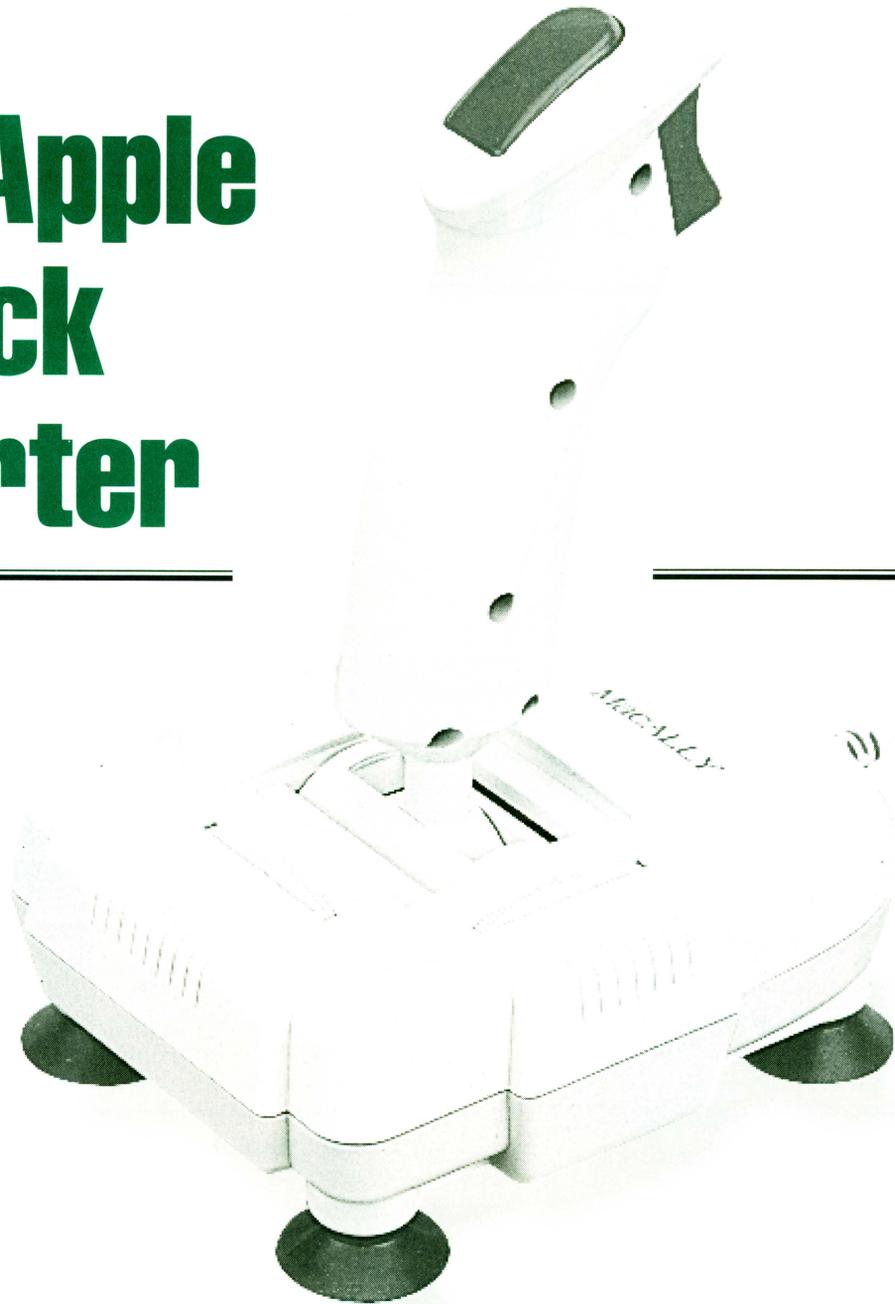
```
460 GOSUB 130: GOTO 430
```

```
470 END ■
```

Build a PC-to-Apple Joystick Converter

by Jeff Hurlburt

**Purchase a
new PC joystick
and easily
convert it
to work with
your
Apple II**



So, your old joystick finally cratered and it's beginning to look like getting a good-for-Apple replacement could be nearly impossible. Meanwhile, computer stuff stores seem to be knee-deep in classy PC sticks from CH Products, Kraft, and other quality makers. It ain't right, but it's not the end of your hot-sticking dreams either!

For some time I've advised staying away from over-priced no-name Apple II models and getting an "easy-to-convert" name brand PC stick. Logical, but when a II user asked for specifics, it suddenly dawned upon me that I've never seen a modern, pure-PC stick converted for use on an Apple II! It seemed like a good idea to actually try building a PC-to-Apple2 converter.

My PC stick is a standard CH Products FlightStick. (So is my IIGS stick, and it still works just fine.) Initial resistance measurements produced a disconcerting revelation: the PC stick's X and Y pots top-out around 100K Ohms—50K less than a standard Apple II model! Fortunately, you can compensate for the difference by adding a bit of capacitance.



Converting a PC Joystick

A few PC models may use Pin 5 (instead of Pin 4) for the Button common lead. It's a bit of extra work, but you can make your converter more universal by connecting lines 1, 4, and 5 from the PC connector to Pin 2 of the Apple connector.

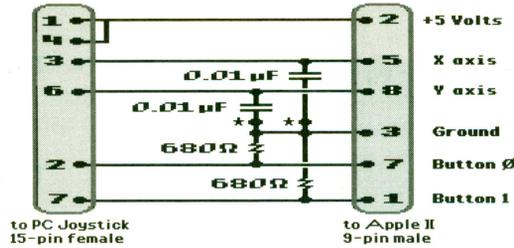
(X-axis) and .005 uF (Y-axis) worked well for the PC FlightStick when used with our Apple II. If you'd rather not experiment with C values, use 100K-200K mini-pots in series with the 0.01 caps. Adjust each pot for the spread you want.

```
40 IF PEEK (B0) > 127 THEN
    PRINT " B0";
50 IF PEEK (B1) > 127 THEN
    PRINT " B1";
60 PRINT
70 Z = PEEK (49152): IF Z < 128
    THEN GOTO 30
80 Z = PEEK (49168)
90 END
```

PC-to-Apple II Joystick Converter



* Note: For optional range adjust, insert 100K pot between capacitor and Ground.



C values are approximate. For standard 100K Ohm PC sticks, 0.01 uF pretty well guarantees you will be able to cover the full Apple II X and Y ranges (0-255 each). However, you may find that the stick tops-out too early on X and/or Y. For best control precision, what you want is for zero and max outputs to occur near the extremes of stick movement.

I experimented with capacitance values between 0.002 uF and 0.01 uF to get the best spread. Values of .01 uF

The program listed below is useful for testing and adjusting the converter. X output should go from 0 (Left) to 255 (Right). Y output should go from 0 (Up) to 255 (Down). Pressing a button should produce "B0" or "B1." (Pressing any key exits.)

```
10 REM STICK CHECK
20 B0 = 49249: B1 = 49250
30 PRINT "X= "; PDL (0); TAB(
    15);"Y= "; PDL (1); TAB( 30);
```

As usual with such projects, most of the real work is collecting the parts and making everything fit. For the circuit board I used the sawed-off fingers from an old circuit card (lots of free connection points). Encased in hint-shrinkable tubing, it makes a fairly rugged unit. If you put yours in a small plastic box and use pots for range adjustments, the joystick can be switched between Action Stick (small/medium active range) and Graphics Stick (large active range).

However you construct your converter, the payoff is astonishingly good performance. Good enough, for sure, to stop putting off the replacement of a glitchy clunker that's been costing you victories in Elite and Tomahawk. After all, now you can go for "the hottest stick in the place"! ■

Here's How it Works

The common leads of the PC stick's X and Y pots and buttons are connected to +5V just as they would be for an Apple II stick. Similarly, the PC active leads are routed to corresponding Apple II pins. For the buttons this also means adding 680 Ohm resistors connected to ground because pressing an Apple button must raise the button lead from '0V' to 5V. The Capacitors from the X and Y pot active leads to Ground are needed to correct the R-C time constant for the PC stick's smaller X and Y resistance ranges. The (optional) addition of mini-pots in series with each capacitor, allows fine-tuning the R-C time constant which, in turn, fine-tunes how much of the stick's X or Y swing actually produces a change. Bottom line: A PC joystick plugged into the converter looks, to an Apple II, exactly like a standard Apple II joystick.



Apple II



Apple II GS Q Drive

The Q Drive forever ends tedious disk swapping and slow-opening programs. All your programs can be stored on your Q Drive and you will be amazed at how much faster your programs open, and how much easier it is to run them.

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The Apple II GS Q Drive

270MB	\$329.95
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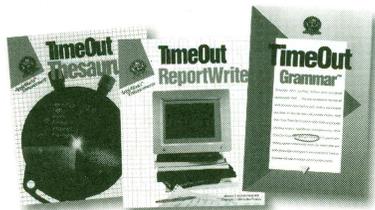
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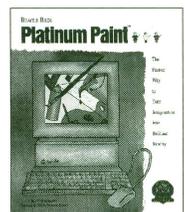
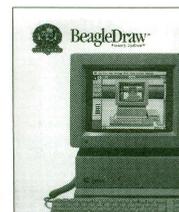
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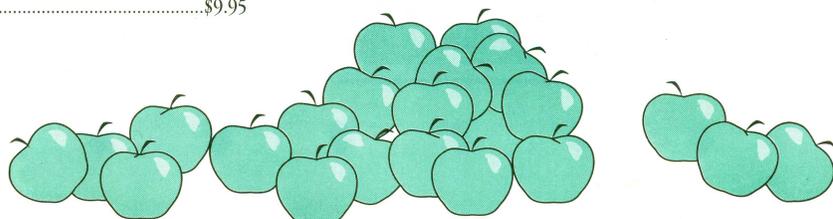
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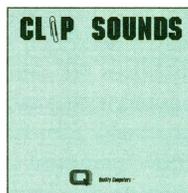
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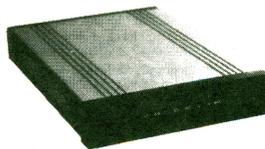
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Test Drives

by Jeff Hurlburt

II ALIVE Ratings

★★★★ Excellent
★★★ Very Good
★★ Good
★ Fair
x Poor

Contacts GS

★★★

Shareware Solutions

\$10.00, for 1.25MB Apple IIGS
Requires GSOS 5.0.2 or higher;
System 6.0.1 and hard disk recom-
mended

by Jeff Hurlburt

It's late afternoon on a Friday, you're engrossed in touching up a Platinum Paint graphic, and someone reminds you of the call you were supposed to make to Vitesse about Dungeon Master IIGS! With luck, once you save your work, exit to the Finder, start your word processor, and load the Vendors file, there will be time to find Vitesse's number and make the call. (Whew!) Then, you can restart the painter, reload your source windows, and continue working on your graphics project.

For sure, a little inefficiency can go a long way toward making the computer working environment much busier and more work than it should be. You SHOULD be able to click-start an electronic roll-a-dex, zip to the Vitesse card, and click-dial the number—all without leaving the painter. You should, and now you can, thanks to a nifty Bill Heineman utility called Contacts GS.

Contacts is a new desk accessory (NDA), which means installation is simply a matter of copying the program from the Software Solutions diskette to your SYSTEM/DESK.ACCS/ folder and rebooting. Even better,

when you're running a desktop program like Appleworks GS, Teach, or Platinum Paint, you can get to your on-screen roll-a-dex without scrapping the current application. Just click the menu bar's Apple symbol and select Contacts GS.

As you may have guessed, Contacts is actually a dedicated spreadsheet. It presents boxes for name, address, and phone number plus two boxes for miscellaneous information such as type of business, names of contact persons, net addresses, etc. Under GSOS 5.x entries are limited to box size (e.g. 41 characters for street address, 3 characters for area code, etc.). Under System 6, each box can hold 79 characters which can be scrolled using the arrow keys (up, down, left, right, etc.)

When you first start the NDA it creates a database file named Contacts Data (inSYSTEM/DESK.ACCS/) with one entry, for Software Solutions. This is your first card. Clicking the New button produces a blank card which you can fill in, using TAB to hop between boxes. You can also Cut & Paste entries to/from on-screen Teach, etc. documents via the standard Open Apple X,C, and V hot keys.

Regarding Cut & Paste, users need to be warned that Contacts fails to disable apparent access to the menu bar of background applications. For example, a user might start Contacts after copying an address from a Teach document. The NDA allows clicking Edit on Teach's bar and selecting Paste

with the expectation that the copied item will appear on the current card. Of course, nothing happens and the user wonders what went wrong. (He/she should have pressed OA-V as mentioned on page 12 of the manual.) To avoid confusion, a future update should beep or, at least, ignore clicks on inactive menus.

By far the quickest way to generate a collection of Contacts cards is to substitute an existing Appleworks names-and-addresses ADB file. You could rearrange and export such a file as ContactsData, but an easier route is available via a new TimeOut utility, ContactsMover, included in the Contacts GS package.

Editing is a snap, too. Naturally, you have full point-and-click flexibility for selecting boxes and doing inserts. Pressing the Clear key quickly blanks a box and a Delete button scraps unwanted cards.

The pay-off comes when you need that special address, phone number, or name. Clicking the horizontal slide bar lets you zip through your cards which are arranged in alphabetical order according to the entry in the upper left name box. For stacks of fifty or so cards, this is the way to go. For several hundred cards, your best bet is a search. You select category (box label) and enter the string to find. Contacts jumps to the first card with a match. An important limitation is that a search string must match beginning with the starting characters in a box.

Contacts GS™

Entries: 10

Name	Vitesse, Inc.		
Address	P.O. Box 929		
City, State	La Puente	CA	91747-0929
Phone #	818	813-1270	
Misc.	Apple II/IIGS software //Kevin re. Harmonie, Ultima/GS, Wolfenstein-3D, ...		

A [←] [→] Z

Apple

Field Misc 1

Modem Dial Reverse

Search New Delete

As the name implies, Contacts GS is about contacting people via telephone. The program assumes that, once the number is on-screen, you will want to place a call without the bother of punching buttons. Clicking Modem lets an external Hayes-compatible modem do the dialing and signals you when to pick up the receiver.

Modem worked fine with my Zoom 14.4V, but got nowhere with a venerable Patriot 2400e. Evidently, some Hayes-compatible modems are more compatible than others. (If Modem fails due to unit incompatibility, the program may appear to hang. Turn OFF the modem in order to continue.) Also, according to the manual, clicking Modem will definitely bomb your system when Spectrum 2.0 is the current application.

Fortunately, Contacts supplies a non-modem dialing alternative. Simply hold the receiver next to an external speaker plugged into the Sound jack and click Dial. The tones (or, if necessary, pulses) will get the job done so long as the mouthpiece is within an inch or so of the speaker.

At just 17K of memory use, Contacts is remarkably efficient. Trade-offs include access to just one database, absence of a Printout option, and, since you can not change the box labels, you're pretty well locked into name-address-phone content. Still, for low-hassle, user friendly people contacting, Contacts GS ranks among the best investments you can make in your computer working environment.

Quick Click Morph



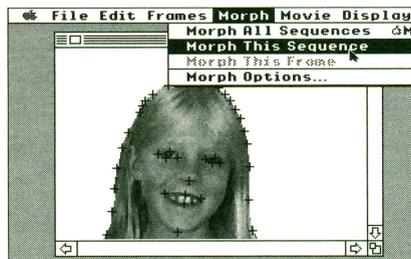
Byte Works, Inc.

\$60.00; for 1.25MB IIGs
Requires System 6.0.1 and 3.5" drive; 4MB RAM and hard disk recommended

by Colin Williamson

Most of us have seen morphing at one time or another. Introduced to the mass media in the movie Terminator 2, it's an impressive computer-generated

effect used to change one image into another which may be totally different. Now, via Quick Click Morph, GS users everywhere can do morphs of their very own.



The process of morphing is simplified with Morph's streamlined interface. The user loads in keyframes, the starting and ending images, then places control points, which are cross hairs that control how the morph will perform. In a simple morph of a scan of myself into a scan of Gus, the family cat, I placed a point over each of my eyes, and then shifted them on Gus to correspond with his eyes. I repeated the process with my nose, mouth, and eyebrows. All that was left to do was let the computer calculate the morph, and sit back and wait for some interesting results.

And wait I did. I generated a full screen, thirty frame morph, which took approximately ten hours to create. Needless to say, it's best to start calculating your morph before going to school, work, or going to bed. Even with a TransWarp GS, morph times are painfully slow, so set aside some time for your GS to do the dirty work. Those who like near-instantaneous results should stick with smaller morphs with less animation frames.

Finally, frame 30 of 30 was finished, I saved the animation, and played it back using the handy animation player that ships with Morph. The results of my labor was a smooth, professional-looking morph of myself into my feline companion.

I called on the family, who were amazed to see Colin sprouting cat ears and whiskers. Soon, everybody was dying to get a morph done of themselves. My computer had become the family's morph machine! (When, I

wondered, would there be chance to write the review?)

The amount of enjoyment you'll get out of Morph is determined by the hardware you have. If you own a hand scanner or video digitizer, morphable material is everywhere. Armed with an AST-VisionPlus Enhanced video digitizer and JVC camcorder, I could (and did!) grab pictures to morph at any given moment.

Of course, any image you can load can be morphed, but friends and family are the most fun. For those who don't own scanners, Byte Works offers to scan your pictures and ship them back on diskette. Some copier shops supply a similar service. They can turn your images into Morph-recognizable TIFF files.

Morph isn't perfect. The speed should be better. There is currently no support for the Second Sight video board, and the option to import TIFF pictures remains somewhat limited. If palette-swapping is involved, morphing color images can get pretty murky, too.

Is "Morph" for you? If you're looking for a way to spice up a newsletter or video presentation, definitely. Even if it's only for fun, you owe it to yourself to pick up the program. Quick Click Morph is one of those rare just plain neat applications that pushes the envelope of GS graphics.

Convert3200



By Brutal Deluxe

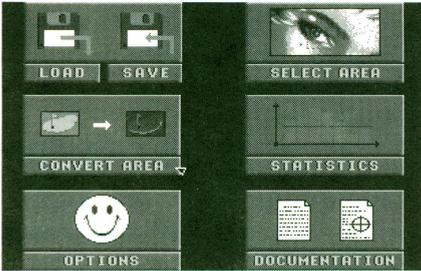
\$15 (\$20 with source code), for 2MB Apple IIGS. Requires: System 6.0.1; 4MB RAM, hard disk, and accelerator recommended; not compatible with Second Sight. Available from Shareware Solutions

by Colin Williamson

"THE FASTEST GIF CONVERTER AROUND!" screamed Joe Kohn's posts on the Internet. GS users were abuzz about Convert3200, the newest creation from the legendary French programmers at Brutal Deluxe.

Test Drives

I scoffed. SuperConvert was good enough for me, and when I wanted exceptional picture quality I'd just have one of my Amiga buddies convert the file. Besides, the GS is notoriously lethargic when it comes to converting GIFs and the like. There was no chance that a program costing a minuscule \$15 could ever eclipse the graphics conversion process I used.



Boy, was I wrong! After installing Convert3200 I fired up the program and loaded a large-format 217K GIF file. In a couple of seconds, the program had remapped colors to gray-scale and displayed an area of the pic on the 320x200 GS screen. Moving the mouse, it was easy to scroll the pic up-down and left-right to select the part I wanted. It took a few more clicks to set the format, 3200 Color, and start the conversion. This took around 45 seconds and resulted in a gorgeous display. Next, I switched to 16 Color format and, in under a second, was rewarded with an image which retained most of the clarity and beauty of the 3200 color version!

At this point I was totally blown away. What Convert3200 had done in under two minutes had taken me twenty or more with my old process. Other pictures were loaded, with equally attractive, blazing fast results. Need more speed with less bother? Just set things up the way you like and click the Convert All option. Zappo! Convert3200 processes all the pics in the folder you select! Convinced that this one's a winner, I began to play with the program's other gadgets—like options for editing color palettes and rescaling the graphic images to different resolutions.

The interface itself is very smooth, though it does deviate a bit from standard desktop guidelines. No problem.

Thanks to explicit menu screens, you'll soon be clicking around like a pro, and if there are any questions, you can always consult the on-line documentation. Amounting to about 25 pages of printout, Convert3200's documents are clear, concise, and offer a healthy dose of Brutal Deluxe humor.

GIF performance is a good benchmark, and for those who regularly download piles of GIF graphics, it's reason enough to invest in the Brutal Deluxe package. However, Convert3200 can both load and save in a variety of popular formats: PCX, TIFF (MacPackBits), raw PC binary, and BMP plus standard GS screen, Apple Preferred, 3200, and PrintShop. Load-only formats include GIF, LBM/IFF and GS DYA, French formats, Computer Eyes, and Paintworks Gold (320mode).

As the documentation explains, Convert3200's chief mission is to take graphics produced for other platforms in various formats and make them available to the GS user for processing via GS graphics utilities. It cannot display an entire 640x480 or other large-format pic at full resolution. For that you will need additional hardware. It can show (and Save) a full-resolution 320x200 portion, or a reduced-resolution full-screen conversion. The largest format Convert3200 can handle is 1280x800, big enough for all but a few truly mammoth pics in my collection.

For new users, the Load Cancelled, Too Many Colors error message is sure to come as a disconcerting surprise. (What?! I thought this program supported 3200 Color format!) As the documents explain, Convert3200 currently supports up to 16 16-color palettes (for 256 colors), not the maximum 200 palettes allowed by the format. Fortunately, the vast majority of pics users encounter, including many digitized images, employ fewer than two hundred fifty-six colors.

I was not surprised to discover that Convert3200 needs lots of memory. A user who wishes to process 320x200 GIFs will need to have at least 800K free RAM after starting System 6.0.1. For popular 640x480 images, this goes to 1.2MB, and for 1280x800 you'll want an extra 2.3MB! The lesson: it's a 4MB

world. (Well, at least until the next Convert3200 update!)

No question, this is an impressive piece of work by some of personal computing's most talented GS programmers. I have a pretty decent graphics collection and the Brutal Deluxe product took just about everything I could throw at it. If you're ready to push the envelope of GS graphics performance, get your hands on Convert3200. For \$15, you just can't miss this offer!

Lordlings of Yore v2.0



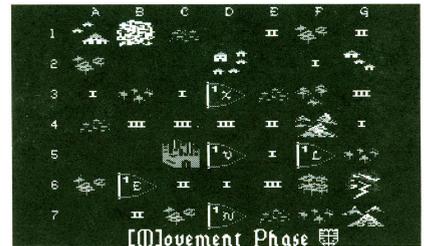
Softlore

\$18, for 48K Apple II's. Available from Hudson's Hobby Games. Requires: 5.25" drive; printer and accelerator recommended

by Jeff Hurlburt

Ah, yes! In days of yore, just as great lords battled with steel and magic to expand their domains, so did programmers battle with mini-RAM and hires to expand ours. Often, their efforts came to nought, but a few valiant souls succeeded in producing nifty Apple II strategy games!

In Lordlings of Yore, you and up to three friends compete for the crown of a 14x14 Realm. (If fewer than four humans are available, fear not! Power-hungry Computer Players stand ready to take the unclaimed roles.) Each



lordling begins in his/her own Shire, a 7x7 quadrant of the Realm, complete with a castle, peasants, villages, treasury, and loyal Necromancer.

As you would expect, the land is amply sprinkled with forests, swamps, and mountains. Since these act as bar-

riers to movement of armies or influence combat odds, you can control much about game play by selecting More Mountains, More Forests, etc. during initial setup. In case you are introducing newbies to Lordlings, another option permits handicapping by letting inexperienced players start with more troops and a larger treasury.

Ultimately, your goal is to be rid of those petulant knaves who would thwart your ambitions, but this takes time and preparation. At the start, your immediate objectives are to build armed units, scout nearby shires, seize easily plucked villages, and otherwise increase both your revenues and Esteem rating. (High Esteem insures peasant loyalty and reduces the chance of unpleasant surprises.) Later, you will be ready to take on enemy forces, and even knock out a competitor's castle whereupon his/her treasury, knights, and men at arms become yours!

To help you keep track of your own units, as well as any enemy forces sighted, the program will display and print out a current realm map. You can also obtain a roster which lists the composition and location of your units. These are valuable aids, and since units move slowly, pencil updating lets a printout serve for several turns. Users with no printer can copy the map and roster forms included in the game package and use these to record displayed information.

Spying, bribery, secret messages—Lordlings offers several options beyond the computer-resolved combats to spice up play. Of these, the Necromancer is the most interesting. Aside from free-bee spells for personal movement and fog creation, your magic user can employ powerful enchantments to transport armies, bog down enemy forces in storms, and blast enemy units or mountains to dust. My own favorite is Dragon. It pops a ravaging fire-breather into existence in the middle of an enemy shire. It's potent stuff; so it's just as well that each player's Necromancer is limited to one spell per turn and that major magic incurs a dent in the treasury.

A typical Lordlings contest can easily run 50-70 turns. At five minutes or so

for each player to move, the games are never brief. Computer players, too, can be tough adversaries, and by turn 30, even they may use a minute or more to consider moves on a 1MHz machine. The more units on the map and greater the number of possible combats, the longer the delay—up to several minutes. If you plan on tackling three computer players, use an accelerator on your Apple II.

Softlore's version 2.0 remains a tad short of user friendly. Messages may be hard to read at max accelerator settings. You should be able to use arrow keys for movement on a IIGS, and the full realm map should be available during spell casting. Still, the classy hires text and attractive new map symbols are solid improvements. The Save function works well, too—speedy, with plenty of space for several games.

Complete with forms and illustrated 30-page manual, Lordlings of Yore comes on protected diskette in a colorful (serial numbered!) box. Unlike many good strategy releases, this one supplies an enjoyable challenge without demanding that beginners endure several drubbings to learn the ropes. And, since each new game employs a different, randomly-generated, map, the challenge remains for many replays. Newbie or veteran, Softlore's classic is a genuine wargaming feast!

Exclusive to II Alive subscribers: Purchase Lordlings of Yore for only \$10.00 (includes shipping and handling). Offer expires July 15, 1996.

Golden Orchard CD-ROM

★ ★ ★ ★

Jim Maricondo

\$67 in U.S. (add \$1-Canada/ \$3-other), for 1.25MB Apple IIGS
Requires: System 6.0.1 and CD-ROM drive; 4MB RAM and hard disk recommended

by Jeff Hurlburt

When I reviewed *Sequential System's* DiscQuest it was easy to appreciate the value of CD-ROM to users who wished to access encyclopedias, histories, and

other CD data discs via their Apple IIs. On the other hand, CD-ROM drive prices were high and, most important, there was virtually zero Apple II stuff on CD! So, back went the demo hardware. Like many users, I was suitably impressed by Apple II CD-ROM's potential, but underwhelmed by the reality of it all.

That was before Golden Orchard. The big decision came after reading one of Jim Maricondo's moderately unbelievable ads and requesting a review sample. A call to Tony Diaz at *Alltech* revealed that a 2x SCSI CD-ROM drive, cable, and RamFast D interface system could now be bought for well below \$300—quite an improvement over the \$600+ price from a year before. I decided, the future is now. (Besides, there was a review commitment at stake!)

The CD-ROM system came together much as before, except that this time RAMFAST.SYSTEM would not save the setup! Evidently, a new "feature" has crept into RF's 3.01f ROM. RamFAST insists upon saving the setup to a hard disk or other writable media which it controls. In my IIGS, the hard disk is a separate IDE disk-on-a-card system. RamFAST only controls the CD-ROM drive. That's it.

A call to *Sequential Systems* (the current factory rep) produced two bits of information: 1) Sequential was aware of the problem; and 2) Sequential's tech person believes "there is some kind of work-around." Well, several weeks have passed and the work-around has yet to materialize.

So much for bad news. Fortunately, not being able to save RF's setup is a fairly minor inconvenience. Just set the options after each power-up, and admittedly, the buglet affects a relatively small number of users. Dauntless, I slid the CD into place. It was time to pluck a few goodies from the Golden Orchard!

Everyone knows that CDs have lots of space. Even so, it is difficult to imagine what 640MB means in terms of the sheer number of Apple II resources! Here, listed by partition, is just a sampling of what to look forward to on Golden Orchard.

Test Drives

I. GO.ProDOS

System 6.0.1, utilities, launchers, clip art, IIe/IIc games, BASIC programs, DOS 3.3 disks. This is the only ProDOS partition and the only one a IIe user might access. On a IIGS, System 6.0.1 can be booted from the CD! (19.5MB)

II. GO-Main

Classic AppleWorks, and AppleWorks GS databases, forms, labels, grade-book, grammar checker; HyperCard, stacks for HyperCard and HyperStudio, (69.3MB)

III. GO-Misc16bit

More than 100 files covering game deprotects, walkthroughs, and cheats (e.g. for Questron II/gs, ShadowGate, DreamZone); hundreds of bitmap and TrueType fonts, many NDAs, CDAs, system init files, Finder extensions, icons; numerous miscellaneous text files (e.g. Apple II history, 682K on Dr. WHO!), (77.2MB)

IV. GO-Programming

GS16Forth, Little Small Talk, HyperC, and other languages; many Assembly, C, and Pascal source code files plus libraries and macros; GNO utilities, AppleFest animation disks (121.8MB)

V. GO-Disks:

Image files of over 150 Apple II 3.5" disks including games (Blue Helmet, Space Harrier), music collections, GS/OS Systems 1.1 through 6.0.1, IIGS Dealer Demo disks, IIGS Diagnostics. An application program is included so that all the disk images can be easily accessed (143.3MB).

VI. GO-Applications

Music programs including Poly Sons, Noise Tracker, Super Synth, Sound Smith; telecom encoders, decoders, packers, etc. (GSCII, Blu, Angel, PMP Unzip, GS ShrinkIt, DeArc) plus Snow Term, Warp6 BBS, Metal; MahJongg, Defender of the World,

Stellar7/gs, and numerous other games; viewers for animations, GIF, JPEG, 3200 Color (80.3MB).

VII. GO-G.S.

Many sound and music files (rSounds, Diversi-Tune, Instant Music, SynthLab, mod, midi); many animation and picture files in various formats (127.7MB)

You can expect more of more kinds of software than ever before released on a CD for any computer!

While Golden Orchard is very good about supplying documentation for on-disc applications, it falls short when it comes to any kind of index to help users discover what does what and where it can be found on GO's considerable seven-partition, 639.1MB landscape. For instance, when you want to unwrap a BINSII file, it helps to know that GSCII will do the job and where to find it.

As explained in an info sheet included with the disc, your SCSI interface may not, initially, mount all seven GO partitions. For example, with RamFAST, only two partitions appear just after power-up. The simplest fix is to go to your interface utility (e.g. RAMFAST.SYSTEM) and make sure all partitions are activated. From this point you will

have access to all of Golden Orchard, even after re-boots.

The quest continues. Thus far I've plucked a bushel of golden Apples from the Orchard with no end in sight. You, too, are sure to discover treasures and surprises galore. If you're a new IIGS user, GO is the quickest, most entertaining way of getting up to speed. If a veteran, you simply will not believe "all the stuff" you've missed. There's no better value in personal computing than Jim Maricondo's Golden Orchard!

Jim Maricondo and other Apple II acers at DigiSoft Innovations have opened a net FTP site to collect software for the next Golden Orchard! If you have some game, utility, system patch, NDA, CDA, Stack, music, artwork, or text which you would like to see immortalized in GO-2, send your files to ftp.hypermall. (no space here) com/incoming/digisoft.

If you order Golden Orchard before July 15, 1996 and write "II Alive Special" on your check, the base price is only \$57 (including shipping)! Make checks payable to Jim Maricondo. You can get additional information on Golden Orchard and other products at the DigiSoft Innovations web site: <http://hypermall.com/cgibin/ssis/digi> (no space here)soft/digisoft/ ■

vendor info.

BYTE WORKS, INC.

attention: Patty Westerfield
8000 Wagon Mound Drive NW,
Albuquerque, NM 87120
(505-898-8183)

HUDSON'S HOBBY GAMES

attention: John Hudson
P.O. Box 121503
Arlington, TX 76012-1503
(817-461-0126)

SHAREWARE SOLUTIONS II

attention: Joe Kohn
166 Alpine St
San Rafael, CA 94901-1008
(net: joko@crl.com)

JIM MARICONDO

attention: Jim Maricondo
P.O. Box 11005
Stanford, CA 94309-1005
(net: digisoft@hypermall.com)

Solving the Memory Problem

many graphics are unavailable to Apple II users, graphics that are in the Graphics Interchange Format (GIFs) can be converted into standard Apple formats, thanks to an amazing freeware program called IIGIF by Jason Harper. IIGIF takes any GIF, no matter how large, and turns it into Hi-res and Double Hi-res graphics. Although the picture produced in the Apple format is naturally cruder than the original, the results can be impressive, especially when converting black and white pictures. Generally, it is best to set the preferences to "Black and White Double Hi-res" for the best results, but don't be afraid to try the conversion into different formats. Experimentation can lead to new and interesting solutions. With some very large pictures, I've found that converting to Hi-res color can give a better result than converting to Double Hi-res, curious as that sounds.

Storage Space

In order to take advantage of these programs, you have plenty of disk space. The 140K available on a standard 5.25" disk is often insufficient. You must have a hard drive or a 3.5" drive. As I mentioned at the start of this article, I own one of the original Apple IIc's, which lacked the necessary ROM chips for a hard drive or even a 3.5" drive. I was very pleased to discover "Unidisk for IIc" by Douglas Mitton, a freeware driver program that allows an original IIc to access a Unidisk drive. It is a RAM based driver that emulates the Unidisk drive at Slot 4, Drive 2. Unidisk drives are fairly cheap at second hand computer stores. Recently, *A+ Technologies* in San Diego has advertised them for as little as \$79. So for a very modest price, even owners of older models can have enough disk space to download large files onto a Unidisk drive.

The Unidisk driver works very nicely with Prodesk Plus. A disk with Prodesk Plus, the Unidisk driver and File Chopper together have become one of my favorite tools for handling files that I've downloaded from other computers. Prodesk Plus allows you to run a telecommunications program from one of your 5.25" drives, and use the 3.5" Unidisk drive to capture files. If you own an older Apple IIc, then a Unidisk drive and Mitton's Unidisk driver will open up a whole new world of large files (especially files with images).

So you see, with the right software, and a little patience, you can enjoy many of the large files available online. Downloading huge files can be very simple—even with as little as 128K memory. You don't need to expand the amount of memory in your Apple II, just expand your horizons.

Danger! Danger!

by Jeff Hurlburt

Copy II Plus Eats Resources

Well, kind of. Mainly, the problem is what Copy II Plus does NOT do. If you use the vintage utility to copy a IIGS file which includes resources, everything may seem to go well enough, but the resources will not be included in the copy!

Questron II Slimes Peerless Reviewer's Hard Disk

Too true. Our own Colin Williamson recently obtained Questron II/gS from a friend (who shall remain nameless, however, it's worth noting that the friend believed the Q2/gS to be the safe-for-hard disk version). Regrettably, it was the not-too-safe version, also known as "Disk Rotter/gS." When Colin had finished creating a character,

DR/gS proceeded to seek out the drive in Slot 7 and perform a direct-to-track write. Needless to say, DR's slime job rotted quite a lot of useful directory information.

HFS.FST Nailed

Maybe you've noticed that some files in those super-sized HFS partitions on your hard disk are beginning to turn up in bad places, like on top of other files. The bug, tracked down (and fixed!) by Dave Lyons, is in System 6.0.1's HFS file system translator. A faulty multiply algorithm sometimes results in misallocation of blocks which can lead to file-trashing over-writes. Jawaid Bazyar has been alerting II users to the perils of the evil HFS.FST and distributed the new, good HFS.FST

to popular FTP sites for downloading. The patched version will show up as "v01.02." Get yours today.

Fungus Among-Us

Indeed it is, or more precisely (and worse) it could be on your diskettes munching precious archives like M&M's! As you may recall, a number of the classier 5.25" diskette brands employ a lubricant on their jacket liners. While the lube worked to reduce drag and noise, it also, evidently, served as a growth medium for a particularly nasty plastic and/or oxide-eating fungus! You can check your oldies collection by selecting diskettes and rotating the disk in the jacket. Immediately backup any diskettes with splotchy discolorations.

IIGS Error Codes

004F GS/OS: buffer too small	0201 [02] MEMORY MANAGER: could not allocate memory	0606 emQSiz2LrgErr
0050 GS/OS: file is already open	0202 emptyErr	0607 emNoMemQueueErr
0051 GS/OS: directory damaged	0203 notEmptyErr	0681 emBadEvtQErr
0052 GS/OS: unknown volume type	0204 lockErr	0682 emBadQHndlErr
0053 GS/OS: parameter out of range	0205 purgeErr	0810 [08] SOUND: no DOC or RAM found
0054 GS/OS: out of memory	0206 handleErr	0811 docAddrRngErr
0055 P8: volume control block table full	0207 idErr	0812 noSAppInitErr
0056 P8: bad buffer address	0208 attrErr	0813 invalGenNumErr
0057 GS/OS: duplicate volume name	0301 [03] MISCELLANEOUS TOOL SET: bad input parameter	0814 synthModeErr
0058 GS/OS: not a block device	0302 noDevParamErr	0815 genBusyErr
0059 GS/OS: file level out of range	0303 taskInstlErr	0817 mstrIRQNotAssgnErr
005A GS/OS: bad bitmap address (block # too large/ damaged disk)	0304 noSigTaskErr	0818 sndAlreadyStrtErr
005B GS/OS: invalid pathnames for ChangePath	0305 queueDmgdErr	08FF unclaimedSntIntErr
005C GS/OS: not an executable file	0306 taskNtFdErr	0910 [09] APPLE DESKTOP BUS: command not completed
005D GS/OS: Operating system/file system not available	0307 firmTaskErr	0911 cantSync- "FATAL SYSTEM ERROR 0911" (often: bad ADB Controller)
005F GS/OS: too many applications on stack/ stack overflow	0308 hbQueueBadErr	0982 adbBusy
0060 GS/OS: data unavailable	0309 unCnctdDevErr	0983 devNotAtAddr
0061 GS/OS: end of directory	030B idTagNtAvlErr	0984 srqListFull
0062 GS/OS: invalid FST call class	034F mtBuffTooSmall	0B01 [11] INTEGER MATH: bad input parameter
0063 GS/OS: file doesn't have a resource fork	0381 invalidTag	0B02 imIllegalChar
0064 GS/OS: invalid FST ID	0382 alreadyInQueue	0B03 imOverflow
0065 GS/OS: invalid FST operation	0390 badTimeVerb	0B04 imStrOverflow
0066 GS/OS: FST Caution- weird result	0391 badTimeData	0C01 [12] TEXT TOOL SET: illegal device type
0067 GS/OS: device Name error/ internal error	0401 [04] QUICKDRAW II: QD II already initialized	0C02 badDevNum
0068 GS/OS: device List full	0402 cannotReset	0C03 badMode
0069 GS/OS: supervisor List full	0403 notInitialized	0C04 unDefHW
006A GS/OS: FST Error (generic)	0410 screenReserved	0C05 lostDev
0070 GS/OS: resource exists, cannot expand file	0411 badRect	0C06 lostFile
0071 GS/OS: cannot Add resource to this type file	0420 notEqualChunkiness	0C07 badTitle
0088 network error	0430 rgnAlreadyOpen	0C08 noRoom
0100 System Failure- cannot mount sys startup volume	0431 rgnNotOpen	0C09 noDevice
0103 [01] TOOL LOCATOR: invalid StartStop record	0432 rgnScanOverflow	0C0B dupFile
0104 tool cannot load	0433 rgnFull	0C0C notClosed
0110 specified minimum Version not found	0440 polyAlreadyOpen	0C0D notOpen
0111 specified message not found	0441 polyNotOpen	0C0E badFormat
0112 no message numbers available	0442 polyTooBig	0C0F ringBuffOflo
0113 message name too long	0450 badTableNum	0C10 writeProtected
0120 request not accepted	0451 badColorNum	0C40 devErr
0121 duplicate name	0452 badScanLine	0E01 [14] WINDOW MANAGER: parm list first word is wrong size
0122 invalid send request	0510 [05] DESK MANAGER: Desk Accessory not available	0E02 allocateErr
	0511 notSysWindow	0E03 taskMaskErr
	0520 deskBadSelector	0F01 [15] MENU MANAGER: menu started
	0601 [06] EVENT MANAGER: EM startup already called	
	0602 emResetErr	
	0603 emNotActErr	
	0604 emBadEvtCodeErr	
	0605 emBadBttnNoErr	

IIGS Error Codes

0F02 menuItemNotFound	1403 leNotActiveErr	EXPANSION: ACE already started
0F03 menuNoStruct	1404 leScrapErr	1D02 aceBadDP
0F04 dupMenuID		1D03 aceNotActive
1001 [16] CONTROL MANAGER: Window Manager not initialized	150A [21] DIALOG MANAGER: bad item type	1D04 aceNoSuchParam
1002 cmNotInitialized	150B newItemFailed	1D05 aceBadMethod
1003 noCtlInList	150C itemNotFound	1D06 aceBadSrc
1004 noCtlError	150D notModalDialog	1D07 aceBadDest
1005 notExtendedCtlError		1D08 aceDataOverlap
1006 noCtlTargetError	1610 [22] SCRAP MANAGER: scrap type does not exist	
1007 notExtendedCtlError		1E01 [30] RESOURCE MANAGER: resource fork used, not empty
1008 canNotBeTargetError	1701 [23] STANDARD FILE OPERATIONS: bad prompt description	1E02 resBadFormat
1009 noSuchIDError	1702 badOrigNameDesc	1E03 resNoConverter
100A tooFewParmsError	1704 badReplyNameDesc	1E04 resNoCurFile
100B noCtlToBeTargetError	1705 badReplyPathDesc	1E05 resDupID
100C noFrontWindowError	1706 badCall	1E06 resNotFound
		1E07 resFileNotFound
1101 [17] LOADER: id not found / segment not found	1901 [25] NOTE SYNTHESIZER: NS already initialized	1E08 resBadAppID
1102 OMF version error	1902 nsSndNotInit	1E09 resNoUniqueID
1103 idPathnameErr	1921 nsNotAvail	1E0A resIndexRange
1104 idNotLoadFile (often: file incompatible with system)	1922 nsBadGenNum	1E0B resSysIsOpen
1105 idBusyErr	1923 nsNotInit	1E0C resHasChanged
1107 idFilVersErr	1924 nsGenAlreadyOn	1E0D resDiffConverter
1108 idUserIDErr	1925 soundWrongVer	1E0E resDiskFull
1109 idSequenceErr		1E0F resInvalidShutDown
110A idBadRecordErr	1A00 [26] NOTE SEQUENCER: no room for MIDI NoteOn	1E10 resNameNotFound
110B idForeignSegErr	1A01 noCommandErr	1E11 resBadNameVers
	1A02 noRoomErr	1E12 resDupStartUp
1210 [18] QUICKDRAW AUX: pic empty	1A03 startedErr	1E13 resInvalidTypeOrID
1211 badRectSize	1A04 noNoteErr	
1212 destModeError	1A05 noStartErr	2000 [32] MIDI: MIDI tool set not started
121F bad picture opcode	1A06 instBndsErr	2001 miPacketErr
1221 badRect	1A07 nsWrongVer	2002 miArrayErr
1222 badMode		2003 miFullbufErr
1230 badGetSysIconInput	1B01 [27] FONT MANAGER: duplicate FM startup call	2004 miToolsErr
	1B02 fmResetErr	2005 miOutOffErr
1301 [19] PRINT MANAGER: driver not in DRIVERS folder	1B03 fmNotActiveErr	2007 miNoBufErr
1302 portNotOn	1B04 fmFamNotFndErr	2008 miDriverErr
1303 noPrintRecord	1B05 fmFontNtFndErr	2009 miBadFreqErr
1304 badLaserPrep	1B06 fmFontMemErr	200A miClockErr
1305 badLPFile	1B07 fmSysFontErr	200B miConflictErr
1306 papConnNotOpen	1B08 fmBadFamNumErr	200C miNoDevErr
1307 papReadWriteErr	1B09 fmBadSizeErr	2080 miDevNotAvail
1308 ptrConnFailed	1B0A fmBadNameErr	2081 miDevSlotBusy
1309 badLoadParam	1B0B fmMenuErr	2082 miDevBusy
130A callNotSupported	1B0C fmScaleSizeErr	2083 miDevOverrun
1321 startUpAlreadyMade		2084 miDevNoConnect
	1C02 [28] LIST MANAGER: listRejectEvent	2085 miDevReadErr
1401 [20] LINE EDIT: LE startup already called		2086 miDevVersion
1402 leResetErr	1D01 [29] AUDIO COMPRESSION	2087 miDevIntHndlr
		2110 [33] VIDEO OVERLAY: no Video device
		2111 vdAlreadyStarted

IIGS Error Codes

2112 vdInvalidSelector	2308 msBadPortNum	2606 mcBadAudio
2113 vdInvalidParam	2309 msPortBusy	2607 mcDevRtnError
21FF vdUnImplemented	230A msParamRangeErr	2608 mcUnrecStatus
2201 [34] TEXT EDIT: TE already started	230B msMsgQueueFull	2609 mcBadSelector
2202 teNotStarted	230C msRecBufFull	260A mcFunnyData
2203 teInvalidHandle	230D msOutputDisabled	260B mcInvalidPort
2204 teInvalidDescriptor	230E msMessageError	260C mcOnlyOnce
2205 teInvalidFlag	230F msOutputBufFull	260D mcNoResMgr
2206 teInvalidPCount	2310 msDriverNotStarted	260E mcItemNotThere
2208 teBufferOverflow	2311 msDriverAlreadySet	260F mcWasShutDown
2209 teInvalidLine	2380 msDevNotAvail	2610 mcWasStarted
220B teInvalidParameter	2381 msDevSlotBusy	2611 mcBadChannel
220C teInvalidTextBox2	2382 msDevBusy	2612 mcInvalidParam
220D teNeedsTools	2383 msDevOverrun	2613 mcCallNotSupported
2301 [35] MIDI SYNTHESIZER: MS already started	2384 msDevNoConnect	4201 [66] FINDER: bad input
2302 msNotStarted	2385 msDevReadErr	4202 fErrFailed
2303 msNoDPMem	2386 msDevVersion	4203 fErrCancel
2304 msNoMemBlock	2387 msDevIntHndlr	4204 fErrDimmed
2305 msNoMiscTool	2601 [38] MEDIA CONTROLLER: MC unimplemented	4205 fErrBusy
2306 msNoSoundTool	2602 mcBadSpeed	4206 fErrNotPrudent
2307 msGenInUse	2603 mcBadUnitType	4207 fErrBadBundle
	2604 mcTimeOutErr	42FF fErrNotImp
	2605 mcNotLoaded	

RESOURCES

GS/OS:	Apple IIGS GS/OS Reference (pg. 438-439).
PRODOS 8:	ProDOS Technical Reference Manual (pg. 77-79) Beneath Apple ProDOS by Worth & Lechner (pg. 6.59-6.61)
SMARTPORT:	Apple IIGS Firmware Reference (pg. 156).
TOOL SETS:	Volumes 1-3 of the Apple IIGS Toolbox Reference set.
A good on-screen listing of errors encountered on the IIGS (plus lots of other toolbox, softswitch, etc. info) is available via Dave Lyon's NiftyList CDA package (\$15, Shareware). Another good on-screen list is Jeff Tarr Jr.'s ErrorCodes CDA v1.7 (\$5, Shareware).	
Applesoft, DOS 3.3, ProDOS BASIC, SYSTEM, and ErrorWindow error codes are not listed because errors are reported directly in text messages. For codes and descriptions see...	
APPLESOFT:	Basic Programming Reference Manual (pg. 81)
DOS 3.3:	The DOS Manual (pg. 114-115) Beneath Apple DOS by Worth & Lechner (pg. 8.20)
BASIC.SYSTEM:	Exploring Apple GS/OS and ProDOS 8 by Little (pg. 83-87)
ERRORWINDOW:	Toolbox Reference: Volume 3 (pg. 52.53-52.56)

Physical Disabilities & the Apple II

by Thomas R. Sicoli, Ed.D.

The Apple IIe and IIGS are excellent machines for adaptation for users with physical disabilities. Many of the initial prototype products that were originally developed for the handicapped were created for these machines. Disability can be conquered easily when it comes to working with the Apple II.

If there is a problem with manual dexterity, Easy Access in GS/OS 6.01 has Stickykeys. Stickykeys creates an "electronic way to hold down" the Shift, Control Open Apple and Option keys. Mouse keys will allow the numeric key pad to be used to move the mouse cursor, and to click the number five key is used. TASH and Don Johnston have keylogic, which mechanically hold down shift and control keys, as well as a keyguard, which fits over the IIe or GS keyboards and has holes above each key to guide impaired fingers to desired keys, while also accommodating mouthstick users. Keyguards also have built in key locks.

For those who cannot use the keyboard but who have some head control, graphic user interface can be achieved on the IIGS using a Headmaster from Prentke Romich. As

the head (with the headset attached) is moved, a mouse emulator using ultrasound moves the mouse cursor across the screen. Either dwell time or a plastic tube for puffing or sipping can be used for clicking. Word processing and other applications can be accessed using this device with an on screen keyboard, such as Video Keyboard (included with GS/OS 6.01), while writing with a GS/OS based word processor, such as Beagle Write GS, Appleworks GS or Write Away—all available from Scantron Quality Computers. The Headmaster can also be used for GS/OS pain and drawing applications, such as Beagle Draw and Platinum Paint.

Intellikeys markets a redesignable membrane expanded keyboard called Intellikeys, which plugs directly into the ADB keyboard socket or into a card in the IIe and requires no additional interface. Overlays come with the keyboard for many users, and they are barcoded for easy loading of compatible software. A kit is available for use in designing custom overlays for the keyboard.

When the range of motion of the user is even more limited, the Adaptive

Firmware Card 32e (AFC) for the IIe and the IIGS from Don Johnston, allows many types of adapted access. The card is plugged into a slot, such as 4 or 5, and has an interface box outside the computer. Using the serial port on the interface box, and setups included with the device, the TASH Mini-Keyboard or the Unicorn Expanded Keyboard can be used as the keyboard. The Unicorn Boards by Intellitools can be customized for use depending on the level of the user or on the activity. Scanning or morse code input (using a single switch to operate the computer is plugged into the interface box) is also possible using the AFC. In scanning, a scanning array is imposed at the bottom of the monitor regardless of the application, making the adaptation transparent to the computer. Arrays can be custom designed, and large print and or synthesized speech reinforcement (though the Echo II synthesizer) are available. A mouse emulation scheme is available. A large variety of switches, such as Toggle, Chin, Tongue, Membrane and Sip and Puff, some with mounting goosenecks, are available from Prentke Romich, Don Johnston, TASH, Ablenet and a number of other sources. There are also several switch assessment kits on the market. Ablenet has a switch mounting system which is more permanent, featuring the locking joints.

Although it is possible to use a standard IIe or GS with all of these applications, a hard drive and a t least 2 MB of RAM and a Zip card are recommended, due to the difficulty of loading and unloading disks for a user with disability. ■

*This article was contributed by
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Ablenet

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Don Johnston Inc.

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Prentke Romich Co.

1022 Heyl Road
Wooster, OH 44691
800-262-1984

Scantron Quality Computers

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St. Clair Shores, MI 48080
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TASH Inc.

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Running Un-RUNable DOS 3.3 Oldies

by Jeff Blakeney

Have you ever wished that you could move your DOS 3.3 programs onto ProDOS disks? If you could, then you would be able to use 3.5" disks and hard drives to store those golden oldies. Folders make it easier to organize the programs and they might load a good deal faster, too. You would also have a bit of insurance against losing any of those precious programs due to rapidly aging disk media.

As you know, many DOS 3.3 programs can be copied to a ProDOS disk and run with no problem. The user may have to adjust names of text, binary, and other files a program uses, but, often, that's about it. Copy II Plus (versions 7.x through 8.x) and GS/OS with the DOS 3.3 FST installed are two of several systems which can handle the copying with minimal hassle.

Unfortunately, some programs that look like easy ProDOS transfer candidates don't work. Everything copies just fine, but try to RUN them and you get a NO BUFFERS AVAILABLE error message! Suddenly, tried-and-true DOS 3.3 classics have become un-RUNable! When this happened to me, it piqued my curiosity. Actually, it annoyed me, and I pulled out my ProDOS 8 Technical Reference Manual to find out what was happening and how to get around it.

It turns out that ProDOS has a memory protection system of sorts. Certain areas of the lower 48K of memory can be marked as protected and ProDOS will not allow loading into these areas. Of course, DOS 3.3 doesn't know about all this protected memory stuff. It is perfectly willing to allow loads into any RAM it can reach. When ProDOS tries to load a 3.3 program which wants to go into a protected

area, ProDOS discovers the intrusion, refuses to allocate the required buffer, and sure enough, there are NO BUFFERS AVAILABLE.

The root of the problem goes back to the early days of Apple II computing. Before Beagle's ProntoDOS and similar upgrades, DOS 3.3 was horrendously slow. To make the wait for a load less vexing, some programmers would save the text screen with the

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title/intro information on it at the beginning of the program. This way, when the program was loaded, the title information would be put directly into the text screen so that you could read it while the rest of the program was loading at the same time.

With the advent of the IIe and ProDOS, information, such as the state of the mouse buttons and mouse position, has come to be stored in non-displayed parts of the text screen (i.e. the holes). ProDOS believes this information should not be over-written during a load, hence the protection feature.

What needs to be done is to deprotect the memory that problem programs load into, specifically, the four pages spanning addresses \$0400 through \$07FF used for text screen and lo-res displays. (A standard page is 256 or \$100 bytes of memory. For example, page \$07 includes addresses \$0700-\$07FF.)

ProDOS keeps track of what memory is protected by using a bit map. The System Bit Map has 24 bytes running from \$BF58 to \$BF6F. 24 bytes x 8 bits/byte = 192 (\$C0) bits. There is one bit in the System Bit Map for each page from page \$00 through page \$BF. This covers all memory in the range \$0000-\$BFFF.

If a bit is set (= 1) the corresponding page is protected. For instance, if map byte #0, \$BF58, contains the value \$FF, then all its bits are set, and pages \$00 through \$07 are marked as protected.

ProDOS begins the marking at the high end of each map byte (bit 7). If map byte #0 contains the value \$80 (10000000 in binary), then page \$00 is protected. If the value is \$01 (00000001 in binary), then page \$07 is protected, and so on.

On start up, ProDOS marks pages \$00, \$01, \$04-\$07, and \$BF as being protected:

```
map byte #0 ($BF58) = $CF 1 1 0
0 1 1 1
map byte #23 ($BF6F) = $01 0 0 0
0 0 0 1
```

Since we want to deprotect the Text Screen (pages \$04-\$07), bits 0-3 of byte \$BF58 must become 0's. At the same time we do not want to change any other protection ProDOS may have set in the byte.

One approach requires just a few machine code instructions typed in

from the monitor at, say, address \$0300:

```
300: AD 58 BF LDA $BF58 ; get
current protection for pages $00-$07
303: 29 F0 AND #$F0 ; clear
bits 0-3 (deprotect pages $04-$07)
305: 8D 58 BF STA $BF58 ; store
the new protection for pages $00-$07
308: 60 RTS ; return
from subroutine
```

With this routine in memory, a CALL 768 from BASIC will get the job done.

You can accomplish the same result using only AppleSoft BASIC, but the programming is more cumbersome:

```
100 REM *SUB TO DEPROTECT
TEXT PAGE*
110 REM GET CONTENTS OF MAP
BYTE #0
120 P = PEEK(48984)
130 REM SAVE EACH BIT IN BO
140 FOR Z = 7 TO 0 STEP - 1
150 B(Z) = INT(P/2^Z) : P = P -
B(Z) * 2^Z
160 NEXT Z
170 REM CLEAR BITS 0-3 TO ZERO
```

```
180 FOR Z = 0 TO 3 : B(Z) = 0 :
NEXT Z
190 REM FIGURE NEW VALUE OF
BYTE
200 P = 0
210 FOR Z = 0 TO 7
220 P = P + B(Z) * 2^Z
230 NEXT Z
240 REM SAVE NEW MAP BYTE #0
250 POKE 48984,P
260 RETURN
```

This BASIC subroutine reads the value of the map byte, places bits 7-0 into the B() array, clears only the Text Screen protection bits, obtains the new value, and puts it back into the System Bit Map. Not exactly elegant; but, after GOSUB 110, the Text Screen WILL be deprotected!

Should you build one of the above routines into ALL your ProDOS STARTUP's? Probably, not. It's too easy to mess up on setting protection; and, permitting Text Screen area loads is sure to cause problems with some properly written ProDOS programs. I have no idea what might happen if, for example, you should start AppleWorks after deprotecting Text

Screen memory!

Besides safety, there's at least one additional advantage in restricting memory deprotection to ProDOS diskettes on which mainly DOS 3.3 oldies are stored. Because you need not be concerned about special protection situations, deprotect is much simpler. Just use a POKE 48984,192 to modify the bit map. This protects pages \$00 and \$01, and unprotects pages \$02-\$07.

Now that you can deprotect the Text Screen, it will be a snap to write a STARTUP program to launch those problem DOS 3.3 oldies. If you'd rather begin with a tested product, check your favorite ftp sites and download my Selector launcher. Besides letting the user rename, delete, unlock, etc. each program, it also permits zapping Text Screen protection prior to running a selection.

So, go on and give those un-RUNable DOS 3.3 classics another try on ProDOS. You just might discover some old favorites ready to enjoy like they were new again! ■

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Letters

Dear II Alive,

Thank God somebody still backs the Apple IIs! I also want to thank you for properly laying out the problem at the feet of the Apple Computer Company. I am a senior citizen who has been an Apple fan since the early 1980's. Like the other readers you quoted, I can heartily say that my enhanced Apple IIe does everything I want it to do.

I am in the process of writing my life history for my immediate family. I was amazed to read in your publication almost the exact words that I had written in my Prologue about the Apple Computer Company.

I would never consider buying a Macintosh after the way the Apple Company has treated their customers. The happiest day of my life was when I heard that John Scully was fired as CEO. Now I see they are still playing leap-frog with their CEO's to see which one stays on the lily pad. Looks as though the whole company may drown and never reach that lily pad.

My theme song this year is "76 Trombones." I just hope my Apple IIe lasts as long as I do!

Dorothy Viets Schell
Moscow, Idaho

Dorothy: *There are a lot of Apple II people that tend to share those same feelings toward the Apple Computer Company.*

I just wanted to say "Thanks for II Alive." It gets lonely when you feel like an abandoned child—thanks to Apple Corp. I'm hoping you will be able to publish more often than you've been able...and who knows—by the year 2000 your release date and issue date will coincide with each other! The Winter '95 issue which I just received in January was fantastic. Even my wife read it and she has never shown an interest in any computer publication. Thanks!

I've owned a IIGS since 1988. I've

updated with increased RAM/ROM, hard disk, System 6.0.1, etc. But every since I've owned the machine it crashes (freezes) when I'm making a number of editorial changes in a document or try to run certain games that came with System 6.0.1.

My Question: Is this a power supply problem inherent with the GS? I know of no one else in my area who has a IIGS and ask if they are experiencing this problem. I'm writing now because of your review of the Focus 80 RAM Disk in the Winter 95 issue—the reviewer mentioned the possibility of a crash because of power supply failure. I've about given up using the IIGS because of this problem.

Apple II forever!
Robert Blakely
Lake Placid, Florida

Robert: *The power supply may be the cause of your problem, but it may not be the only one. The easiest way to check is to first check the serial number located on the front side of the supply. It will have a bar code, with a number below it. If the serial number starts with *I, you definitely need a new power supply. You may also test your power supply with a normal multimeter. Set the meter to test DC voltage. Place the black lead in the back of any of the black wires on the power supply connector. The connector should still be connected to your GS. Place the red lead in the back of the blue wire. That should read between -5v and -5.5 v. Move the red lead to the back of the brown wire. That should read -12 to -12.5. The read wire should read +5V to +5.5V. The yellow wire should read between +12V to +12.5V. Finally, move the black lead to the other black wire. You should get very close to the same reading from the yellow wire.*

Another cause of your problem may be your memory card. In your letter you did not mention which card you have, but if my guess is correct, you probably have a memory card that uses socketed chips such as the Apple memo-

ry card or any of the Applied Engineering memory cards.

The problem with these cards is that they can become victims of a phenomenon called "thermal creep." This is caused by the expansion of the chip as they are heated from the normal operation of your computer. This expansion causes the chips on the card to rise a tiny bit from their sockets. When the computer is turned off, the chips will stay in their new position. Each time you turn the computer on, the chips will rise a little further and eventually lose contact with their sockets.

A solution to this problem is to upgrade to a memory card that uses soldered chips or one that uses simms. Because the chips are soldered they cannot rise and therefore are not likely to be victims of thermal creep. Simms are also soldered and then held in position by a clip. However because there is no soldered connection, you may occasionally need to reseat the simms by removing them and placing them back into their sockets. Therefore, in the Apple II, soldered chips are best. Also, newer cards use less power and produce less heat than the older cards from either Apple or Applied Engineering.

Dear II Alive,

My wife had never really taken an interest in the orphaned computers I'd bring home. She'd be nice enough to tolerate some Laser 2128 with missing keycaps or some Apple IIe with its guts all over the place sitting in the living room. I'd always been a sucker for abandoned stuff—just to see if I could get it to be useful again. I would then run out of space and have to sell the computer for some "bargain basement" price.

Being a business person, my wife had always worked with IBMs. She never understood my infatuation with Apple II's (especially my pride and joy, souped-up Apple IIGS) and all my Apple II friends.

All the "junk" I brought home she tolerated. She complained but never

wanted to take an interest in anything Apple related except an occasional business application or email. Then, one week, my place of work was throwing out a perfectly fine Mac Plus. Of course, I couldn't pass that up, but I wondered (and worried) about bringing it home. I have a IIe in the trunk of my car, a IIc I left at a friend's house, a Laser 128 in the closet, I had just sold a couple Woz GS's, and of course, my loyal and trusty IIGS in the living room. So I was worried that this Mac Plus might be the final straw that broke the camel's back.

I tried to sneak the "Plus" in late at night, but she caught me. Much to my surprise, she wasn't annoyed at all. Instead, her eyes lit up and she said, "That's a nice looking computer". I was aghast. I told her it was free, trying to discourage her eagerness. She then said it was "cute".

She had me set it up in the bedroom and she actually liked the thing. I took the fax modem off the IIGS and hooked it up. She can send faxed with it very fast and receive crystal clear faxes too.

The Mac Plus even seemed to boot up seconds faster than the a IIGS with the Focus 120 card. When she clicked on a document it automatically opened it and it's application too. She was impressed.

No RGB color I told her. I didn't want to tell her we could hook up the IIGS's monitor. I didn't want to tell her that she could get graphical internet with this machine.

I didn't see what attraction she had to this—to this "box." Next to the IIGS, it is an ugly brother, like Danny DeVito next to Arnold in the movie "Twins." This Mac Plus with the little black and white screen, the clumsy keyboard that plugs into the computer with a phone cord and the huge block for a mouse—all seem to make her like it, I guess?

I assume we're keeping it—or at least she is. Can this marriage be saved?

Darren Johnson

Dear II Alive,

Back in the middle ages of 1965, when the Federal government was just really starting to make an entry into computers, I was hired away from Motorola Radio, Chicago, as an Electronic Technician, for employment with the Army and Civil Service as a computer programmer. Apple Computers were not on anybody's minds at that time.

Time went by and various computers were being brought onto the market and purchased by the Army in their attempts to handle their many problems. It was a very free wheeling time and computers were in their infancy.

Apple appeared on the scene in the early 1980's, IIe came along about '82, and I was put on a job involving Distributed Processing with the IBM Mainframe and COBOL, to try to better coordinate the activities of main depots and their subordinate supply depots scattered around the country.

The troubles started when some of the supply depots had already purchased their own IIe's and were not about to get another unit, but we purchased IBM's for our use. My boss informed me that I was expected to learn something about the IIe and to help to see where the loose ends might fit together. We did not have any IIe's at our place but our local Public Library did and they were available for our use. I was to learn all about the IIe and become an "expert" in it.

My wife was starting to feel like a stranger about this time so she took a IIe Word Processing course at the local community college.

To make a long story short, I did learn about it and BASIC programming, and, with the able assistance of your local Techniques division, was able to complete the circuit so that the supply depots could use their IIe's to put data onto the LAN circuit for us to pick up, convert it to IBM orientation, process it to fit our needs, convert the reports back to IIe orientation, and send it back to them to be

printed by their IIe ImageWriters. I was informed that it worked quite well and my boss was well satisfied.

Meanwhile, I was assigned to other jobs utilizing improved IBM technologies and the IIe business was shelved. Time passed and I was eventually retired. Now there are not very many IBM mainframes in private homes so I settled on my past experiences and picked up a IIe from the local User Group. My wife and I bought it together with AppleWorks 3.0 and Quicken for our household enjoyment and financial records and we have progressed from there.

I have a definite affection for my pet "dinosaur" but my wife likes her various games and likes to keep up with the current market so that means that we have also purchased a Macintosh Performa 6110CD but I still use my IIe and expect to continue to do so well into the future. There are still a good many things I can fall back on, to help her out with her "Mac" problems.

Thanks and I will be looking forward to future issues.

*Jack R. Chichester
Kerrville, TX*

Thanks for sharing your story, Jack!

Send your II Alive letters to:

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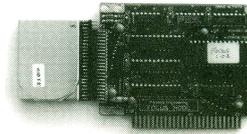
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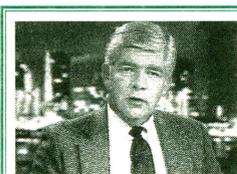
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