


88 COMPUTIST

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Readers Data EXchange

New COMPUTIST readers using Apple IIs are advised to read this page carefully to avoid frustration when attempting to follow a softkey or entering the programs printed in this issue.

What is a softkey, anyway?

Softkey is a term which we coined to describe a procedure that removes, or at least circumvents, any copy-protection on a particular disk. Once a softkey procedure has been performed, the resulting backup copy can usually be copied by the normal copy programs (for example: COPYA, on the DOS 3.3 System Master disk).

Commands and control keys

Commands which a reader is required to perform are set apart by being in boldface and on a separate line. The return key must be pressed at the end of every such command unless otherwise specified. Control characters are preceded by "ctrl". An example of both is:
6 ctrl P

Type 6. Next, place one finger on the ctrl key and then press P. Don't forget to press the return key.

Other special combination keypresses include ctrl reset and open-apple ctrl reset. In the former, press and hold down the ctrl key then press the reset key. In the latter, press and hold down both ctrl and open-apple then press reset.

Software recommendations

The Starter Kit contains most of the programs that you need to "Get started". In addition, we recommend that you acquire the following:

- Applesoft program editor such as "Global Program Line Editor (GPLe)".
- Assembler such as "Merlin/Big Mac".
- Bit-copy program such as "Copy II Plus", "Locksmith" or "Essential Data Duplicator".
- Word-processor (such as AppleWorks).
- "COPYA", "FID" and "MUFFIN" from the DOS 3.3 System Master disk.

Super IOB and Controllers

This powerful deprotection utility (in the COMPUTIST Starter Kit) and its various Controllers are used in many softkeys. (It is also on each Super IOB Collection disk.)

Reset into the Monitor

Softkeys occasionally require the user to stop the execution of a copy-protected program and directly enter the Apple's system monitor. Check the following list to see what hardware you will need to obtain this ability.

Laser 128: Your ROM includes a forced jump to the monitor. Press ctrl return reset.

Apple II+, //e, compatibles: 1) Place an Integer BASIC ROM card in one of the Apple slots. 2) Use a non-maskable interrupt (NMI) card such as Replay or Wildcard.

Apple II+, compatibles: 1) Install an F8 ROM with a modified reset-vector on the computer's motherboard as detailed in the "Modified ROM's" article (COMPUTIST #6 or Book Of Softkeys III) or the "Dual ROM's" article (COMPUTIST #19).

Apple //e, //c: Install a modified CD ROM on the computer's motherboard that changes the open-apple ctrl reset vector to point to the monitor. (This will void an Apple //c warranty since you must open the case to install it.)

Apple //gs: If you have the 2.x ROM, there is a hidden Classic Desk Accessory (CDA) that allows you to enter the monitor. In order to install the new CDA, you should enter the monitor (CALL -151) before running any protected programs and press # return. This will turn on two hidden CDAs, Memory Peeker and Visit Monitor. Thereafter press open-apple ctrl esc to go to the Desk Accessories menu. Select Visit Monitor and there you are. Use ctrl Y to exit.

Recommended literature

- Apple II Reference Manual (or IIe, IIc, etc.)
- DOS 3.3 & ProDOS manual
- Beneath Apple DOS & Beneath Apple ProDOS, by Don Worth and Pieter Lechner, from Quality Software

Typing Applesoft programs

BASIC programs are printed in a format that is designed to minimize errors for readers who key in these programs. If you type:

```
10 HOME : REM CLEAR SCREEN
```

The LIST will look like:

```
10 HOME : REM CLEAR SCREEN
```

Applesoft inserts spaces into a program listing before and after every command word or mathematical operator. These spaces don't pose a problem except when they are inside of quotes or after a DATA command. There are two types of spaces: those that have to be keyed and those that don't. Spaces that must be typed appear in COMPUTIST as special characters (◊). All other spaces are there for easier reading.

NOTE: If you want your checksums to match, only type spaces within quotes or after DATA statements if they are shown as (◊) characters. SAVE the program at periodic intervals using the name given in the article. All characters after a REM are not checked by the checksum program so typing them is optional.

Typing Hexdumps

Machine language programs are printed in COMPUTIST as hexdumps, sometimes also as source code.

Hexdumps are the shortest and easiest format to type in. You must first enter the monitor:

```
CALL -151
```

Key in the hexdump exactly as it appears in the magazine, ignoring the four-digit checksum (\$ and four digits) at the end of each line. When finished, return to BASIC with:

```
3D0G
```

BSAVE the program with the filename, address and length parameters given in the article.

Typing Source Code

The source code is printed to help explain a program's operation. To enter it, you need an

"Assembler". Most of the source code in older issues is in S-C Assembler format. If you use a different assembler, you will have to translate portions of the source code into something your assembler will understand.

Computing checksums

Checksums are 4-digit hexadecimal numbers which tell if you typed a program correctly and help you locate any errors. There are two types of checksums: one created by the CHECKBIN program (for machine language programs) and the other created by the CHECKSOFT program (for BASIC programs). Both are on the "Starter Kit".

If your checksums do not match the published checksums then the line where the first checksum differs is incorrect.

CHECKSOFT instructions: Install Checksoft (BRUN CHECKSOFT) then LOAD your program. Press & to get the checksums. Correct the program line where the checksums first differ.

CHECKBIN instructions: Enter the monitor (CALL -151), install Checkbin at some out of the way place (BRUN CHECKBIN, AS6000), and then LOAD your program. Get the checksums by typing the Starting address, a period and the Ending address of the file followed by a ctrl Y.
SSSS.EEEE ctrl Y

Correct the lines where the checksums differ.

Writing to the RDEX editor

RDEX (are-decks) stands for: Reader's Data EXchange. We print what you write. When you send in articles, softkeys, APTs, etc., you are submitting them for free publication in this magazine. RDEX does not purchase submissions nor do we verify data submitted by readers. If you discover any errors, please let us know so that we may inform our other readers.

Remember that your letters or parts of them may be used in RDEX even if not addressed to the RDEX editor. Correspondence that gets published may be edited for clarity, grammar and space requirements.

Because of the great number of letters we receive and the ephemeral and unpredictable appearance of our volunteer staff, any response to your queries will appear only in RDEX, so it would be more appropriate for you to present technical questions to the readers and ask for their responses which will then be placed in the Apple-RDEX.

How to get a free library disk

Whenever possible, send everything on Apple format (5.25" - DOS/ProDOS or 3.5" - ProDOS) or IBM format (3.5") disks. Other formats are acceptable but there may be some delay as we look for someone to translate it for us. (If you use a 5.25" disk, when we print your letter, we will return your disk with the current library disk copied onto it.) Use whatever text editor you like, but tell us which one. Put a label on the disk with your name (or pseudonym) and address (if you want to receive mail). Don't reformat any programs or include them in the text of your letter. Send Applesoft programs as normal Applesoft files and machine language programs as normal binary files. We have programs to convert them to the proper format for printing. If you are

sending source code files, and you are not using the S-C Assembler, send them as normal text files.

When to include a printed letter

Don't include hardcopy (printout) unless:

- You are writing about a bug or other printing error.
- You are writing to ask for help.
- You are answering another readers help request.
- You are writing about your subscription or sending an order for back issues or software.

Bugs, requests for help and answers to requests for help are bumped to the head of the line and go in the very next issue. All other letters are printed in the order that we receive them.

Writing to get help

When writing to request help, be sure to include ALL relevant information. The more information you include, the easier it is to find a solution. There's an old saying that goes "A properly framed question includes 90% of the answer".

How to get mail

If you are interested in receiving mail from other readers, be sure that we have a current address. If you use a pen name and want to receive mail, we need to have your address. Our readers privacy is important, so we will not print your address unless you specifically say too.

How to write to RDEX authors

When writing to one of the RDEX authors. Write your letter and seal it in an envelope. Put your return address, the authors name (as it appears in RDEX) and the correct postage on the envelope. Put this envelope into another and send it to RDEX. We will put the correct address on your letter and mail it for you. Check to the right of the authors name to see if the author is writing from a foreign country and include the proper postage.

Help Line

These readers have volunteered their time to help you. Please call only within the given time frames (corrected for your time zone). No collect calls. (You can write anytime!)

Jack Nissel (Disk Protection, 7-10PM EST) (215) 365-8160

Marc Batchelor, 6025 Coker St., Cocoa, FL 32927

Rich Etarip, 824 William Charles Ct. #2, Green Bay, WI 54304-4018

The BBS (Bulletin Board System)

Vince Andrews is the sysop for the Computist BBS. The NEW number is:

(206) 964-8730

If you already have a User ID# and password, sign-on using the User ID#. If you are a new user, it may take a day or so to validate your new ID# and password.

You have a LEGAL RIGHT to an unlocked backup copy of your commercial software.

Our editorial policy is that we do NOT condone software piracy, but we do believe that users are entitled to backup commercial disks they have purchased. In addition to the security of a backup disk, the removal of copy-protection gives the user the option of modifying programs to meet his or her needs. Furthermore, the copyright laws guarantee your right to such a DEPROTECTED backup copy:

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- 2) that such new copy or adaptation is for archival purposes only and that all archival copies are destroyed in the event that continued possession of the computer program should cease to be rightful.

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United States Code title 17, §117

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Editorial Notes

Last minute change: In the Hardware Corner article on page 12, the Super II card is being offered for \$170 **not including** memory. Memory prices change too fast to keep track of so you decide how much you want to put on the card.

The minimum is 1M byte using a SIMM (Single Inline Memory Module). We called around and here's the best price we found. (Prices at press time were going up.)

1 Mbyte x 8 SIMM (80ns)	\$32.00
4 Mbyte x 8 SIMM (80ns)	\$109.00

If you're quick on the order or if you already have a 1 Mbyte SIMM laying around, you can get a Super II card for about \$200 or less.

File Edit Tools Sound Settings **Sound Shop - by Dave Robbins**

Current file name is: UNTITLED

MEMORY STATUS	BUFFER STATUS	EDITOR STATUS	Record
Total memory: 979712	Sample size: 111104	Size: 14105	Record
Maximum time: 43 sec.	Record time: 32 sec.	Start: 106547	Play
Available: 868608	Play time: 5 sec.	End: 106113	Stop
Clipboard: empty	Clip time: empty	Level: 2	

Record Rate 22824 Playback Rate 22824 Echo Delay off

Record Threshold off Play Volume 10 Repeat Count off

'Studio's sound recording features.

Note: The package includes a microphone and easy to install A/D input module which needs no slot space. The module is compatible with other sound-input software; and, as claimed, is notably less noisy than input boards which depend upon slot-supplied power. If you already have a good A/D input, it will work fine. To record, edit, and, if desired, compress sounds, 'Studio includes a flexible "Sound Shop" utility. There is also a large Library of sound effects on diskette. Since many classroom, university, etc. IIGs tend to be bare bones installations, RW offers an attractive compact amplified speaker unit for \$12.95.

On disk, a stack is a file with a name (like "Animal.Book"). Its cards are where you put the graphics and text. Aside from your own Clip Art collections and graphics created via 'Studio's painter, you can draw upon the package's on-diskette libraries of 640-mode pictures and icons. Naturally, a blank card can be colored or 'patterned' to taste OR a full-screen picture can become the card 'background'. Either way, the artwork you import can be pasted into the background or treated as 'graphic objects' which retain their separateness for special effects like animation. Similarly, text can be typed onto the card or brought into 'text object' areas which can be scrollable windows!

Most important, cards are where you place "buttons" to make things happen. For example, you might use a bent arrow icon as a button to let the user move back to the previous card in a stack. HyperStudio 3.0's Button Editing menus make it a snap to create buttons of any size and shape, tell what each does, assign special properties (like invisibility, sound effects, and time-delayed auto activation) and move them around on the card. Usually, the action you want will be a choice in the editor menus (e.g. go to next card, hop to a specific card, start another stack, RUN a .sys type program, etc.). If not, you can use a BASIC-like script language to get just the action desired.

Roger Wagner knows that stack authors will want users to be able to run their creations without having to boot HyperStudio 3.0; so, they supply "HyperStudio" in two flavors. "HYPERSTUDIO" is for running AND editing stacks. Depending upon patched-in options, it gobbles a hefty 350 or so blocks of disk space. "HS.SYS16", at only 139 blocks, is the run-only program you can copy to diskettes to produce 'stand alone' modules any IIGs owner can access under GSOS 5.04 or System 6. The user simply clicks HS.SYS' (or whatever you've renamed it).

Jeff Hurlburt TX

The PRODUCT MONITOR

RATINGS

- Superb ★★★★★
- Excellent ★★★★
- Very Good ★★★
- Good ★★
- Fair ★
- Poor ☹
- Bad ☹*
- Defective ✖

GUI

The "Graphical User Interface idea" has received a lot of PC press attention due, mainly to revolutionary products like Microsoft "Windows" and "Visual BASIC". On the IIGs, it's been 'standard stuff' since Pro-

DOS 16. GUI means that the user makes things happen by clicking, dragging etc. objects on the screen which 'look like what they do'. (For example, dragging a program's icon to a folder icon puts the program into the folder.) The main reason HyperStudio 3.0, Visual BASIC, etc. and their products are so popular and easy to use is that you are dealing with 'obvious' prompts and clear choices. At times, the GUI press releases, conferences, etc. may look like hype (sometimes it is). What matters to programmers and users is that GUI works!

HyperStudio 3.0

★★★★

\$129.95, for 1.25MB IIGs

Roger Wagner

Some of the most absorbing computer-fun I've experienced in '92 was in using, of all things, a IIGs "productivity" utility. Roger Wagner's HyperStudio 3.0 is your ticket to becoming a builder of such GUI applications as video magazines, computer books, learning & testing modules, manuals (like the stacks

employed by ZIP/GS), on-line family photo albums, games, and more—all with full IIGs sound and options to employ such peripherals as a video overlay card and touch screen. Your medium is a collection of "cards" called a "stack"; and your first message—the one you get running the 'Studio startup and tutorial stacks—is that "Hey, this stack-making stuff looks EASY!"

It is. Flexible, straightforward editing tools let you take your vision—say, of an interactive widget sales presentation, and make it work! AND, like Platinum Paint, Appleworks, and other powerful wares, 'Studio is ground-up learnable: you don't have to 'know about everything' to begin producing attractive, useful applications.

The 74-page Tutorial booklet and stacks deliver a good 'first-pass' learning experience; but, really, you learn about 'Studio by using it to do things YOU want to do. For instance, you decide "what I really need is a nice voice saying 'Hi, there! Widget buyer'" and viola! you're into the 208-page (indexed) Reference hungry for info on using

File Edit Move Tools Objects Colors Options Extras Card 13

Brooklyn Landmar

- A- Brooklyn Bridge
- B- Verazzano Bridge
- C- Brooklyn Botanical Gardens
- D- Brooklyn Museum
- E- Brooklyn College
- F- Coney Island

The program automatically looks for and runs your Home .stack, which can be the whole presentation, an auto-starter for another stack, or a selector for any number of additional stacks.

As noted last issue, a major incentive for going to AE's GS-RAM III and 3.25MB was my experience with Hyperbole and similarly ambitious HyperStudio'-based productions. Thanks to options which allow cards to share backgrounds and for memory-gobbling components (like sound effects) to be part of a stack OR loaded when needed, you CAN do some great stack building with just 1.25 MB. You can not, however, control the RAM expectations of other authors who may feel that load delays detract from carefully crafted presentations. Anything less than 2MB looks very puny once you're into the horizon-broadening possibilities and just plain fun of HyperStudio'!

Quest for Clues: The Book of Orbs

★★

\$16.95, 144 pg. softcover book

Origin

"QFC V" is due soon; but, lest you be caught 'without a clue', Origin's 'Orbs release covers 20 of the newer adventures including "Ultima Underworld", "Monkey Island 2", "Might and Magic III", "Hare Raising Havoc", and "Lost in L.A.". For each, Shay Addams and the crew from "Questbusters" present a review and walkthrough with critical hints coded to prevent accidental spoilage of challenges. (There's a new code—only vowels and 3 consonants are affected—just in case users have over-learned the simple letter-shift scheme of earlier QFC's.) Each section is nicely tailored to get the job done, with well-written prose and illustrations adding to the fun and good use of Bold face to make it easy to zero-in on the hints you need.

'Orbs can, as claimed, save you big bucks versus individual clue books IF, that is, how-to-win hints and playing tips are what you're after. SSI's 60-page Clue Book for "Gateway to the Savage Frontier" and the Accolade book for "Elvira II" both include complete, detailed maps which players can use without otherwise fishing for hints. Orbs' coverage can enhance play beyond just winning; but, relatively small available space means maps, encounter details, etc. must, sometimes, be abbreviated or omitted. Conversely, the need for efficiency results in some very handy charts and tables such as the "Robin Hood" Riddle Answers and Location of Objects lists.

For someone who can 'spot a good one' by scanning an entry's hints, charts, and maps, 'Orbs can also serve as a guide to likely prospects for future questing. The reviews present helpful overviews, but sometimes pass over critical flaws or contain inaccuracies. "Martian Memorandum" is not, as indicated, free of arcade sequences—it incorporates several, including one very good, fairly stiff challenge. Nor are D&D questers well served by comments like "The best thing about 'Pools of Darkness'... is that it's the last game of the series". Believe that, and, if you normally enjoy character building, exploration, and tactical combat, you miss out on a first rate adventure.

Orbs, as Shay notes in the introduction, turn up in one form or another in practically every adventure. So do those tough, quest-snagging obstacles. When next you sally forth into "Willy Beamish", "Spellcasting 201" or any of the other 18 adventures, you may be knee-deep in crystal balls, helm-view gems, or power globes; but, you'll seldom be 'dead stuck' when you pack 'The Book of Orbs!

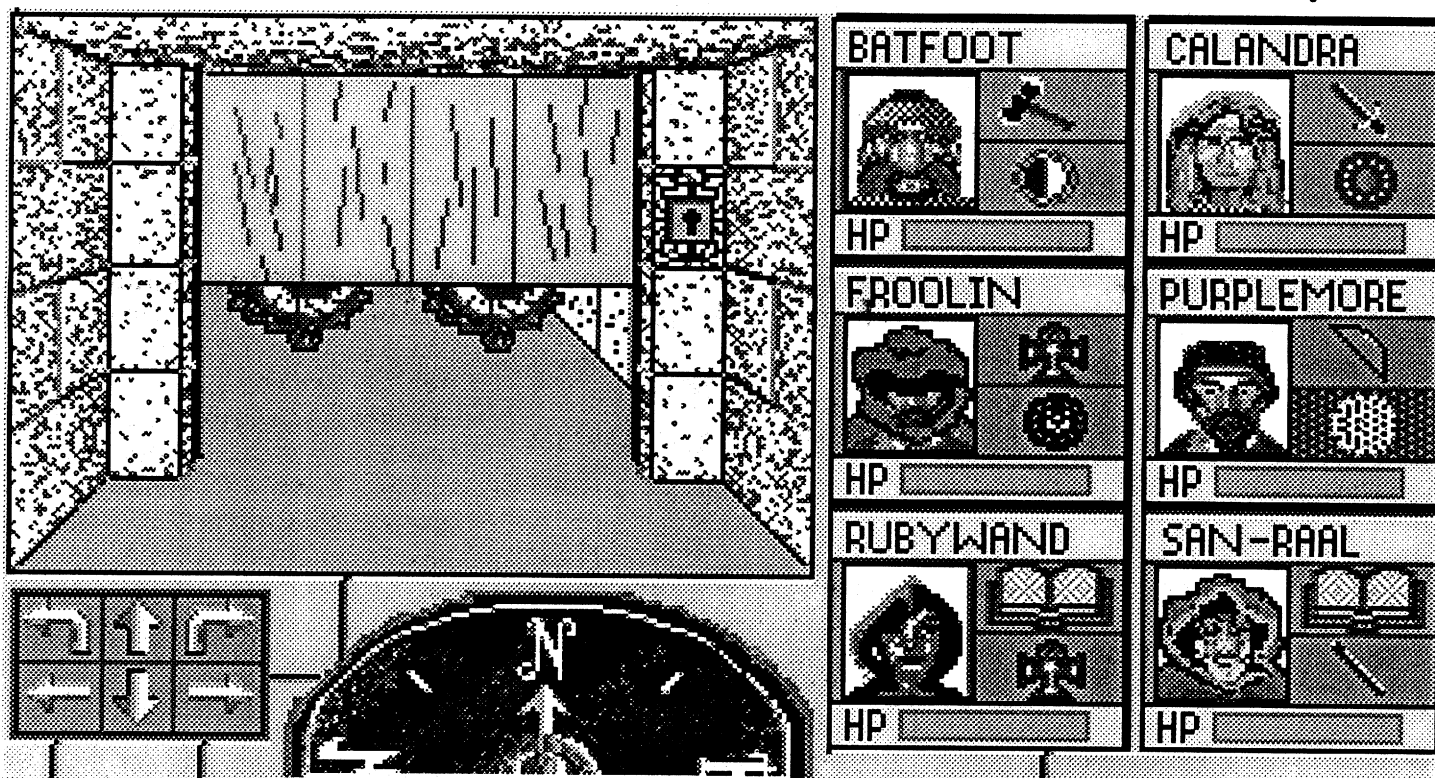
to find his missing apprentice. She was supposed to infiltrate the ranks of Darkmoon clerics and discover the source of "some gathering focus of Enormous Evil" in the area. Being public spirited (and, perhaps, just a tad smashed), you make some crack about being in "the EE-busting business", slip on the ring Khelben gives you, and TZAPPO, the 'Fearless Four' are off to plumb The Legend of Darkmoon!

The first EOB was also the first multi-character D&D quest for PC to rely exclusively upon a 'real-time', animated, 3-D environment as viewed by the adventuring party. (THE first, of course, is "Dungeon Master"/Iigs.) Thanks to fine artwork, a large display window, great sound, and well thought-out point-and-click controls, it worked! Step-by-step a player could turn to examine walls or look down a corridor for approaching monsters. You could actually reach out and pull levers, fit keys into portals, etc. AND handle multi-monster combats without experiencing arcade-class demands on mouse handling skills. 'Darkmoon retains all of these features but presents a more complex games-

storm giants, mind flayers, and beholders encountered later on.)

Explorations yield opportunities to acquire weapons, armor, etc., plus food, potions, and critical artifacts, such as keys and the stone symbols required to activate teleports. You will also discover several potential recruits, some as prisoners in cells, others as bones which must be resurrected. If, like me, your mage transferee from EOB I is only a slow-to-advance mage/cleric, fill one of your six character slots with a full-mage recruit. In 'Darkmoon', magic is very important! A party with ready access to critical spells like Improved Identify, Haste, Hold Monster, Wall of Force, and True Seeing has significantly improved odds for success.

Unlike EOB I's maze, the corridors and chambers of the Darkmoon complex boast countless traps, illusions, and puzzles. On more than one occasion I had succeeded in suppressing local monsters only to find that the REAL 'opposition' was some puzzle-locked grating, shifting walls illusion, fireball gauntlet, or other such device. (To which you can add some particularly wicked trickery, courtesy of Darkmoon's mysterious



Click!
Purplemore picks the lock!

GAMP

Eye of the Beholder II: The Legend of Darkmoon

★★★★

\$59.95 for EGA-VGA 640K PC

Strategic Simulations

AdLib or Sound Blaster recommended

Darkmoon Temple is not a place you are anxious to visit, especially in the midst of city-wide celebrations of your recent victory (re. EOB I: freeing Waterdeep of The Beholder, Xanathar). Still, when a message arrives addressed to "The Fearless Four" there's no choice. A local mage, Khelben, wants you

cape, richer scenario, and a much tougher, longer-playing challenge.

In 'Darkmoon you encounter not a single 'dungeon' but several. First, you must wend your way through a wolf-infested forest to reach the temple. (HINT: The forest is worth exploring.) The temple proper, itself a respectable challenge, branches downward to sprawling Catacombs and out to three sizable towers and a prison. Each maze-escape offers its own 'look' ranging from crudely cave-like through luxurious; and, dominant monster groups are tailored, roughly, to match expected level of character development. (Your party would not last long if, for example, you waltzed into the temple and met the

overlord.) That I was well into the middle of the quest (and had done several pages of maps!) before the \$14.95 Clue Book arrived underscores the success of 'Darkmoon's maze makers. The game is exceptionally good about providing clues, giving 'fair warning' of traps, and placing levers, key holes, etc. where they can be noticed. Yes, it IS nice to have the Clue Book, especially if you'd rather leave the mapping to SSI. 'Darkmoon's CB is comprehensive, well organized, and attractive; but, nevertheless, optional!

Temple Darkmoon's twisted passages and vaulted chambers guard many dark secrets. You will encounter characters with sorrowful tales (and hints) to relate, overhear conversations of evil arch minions, free un-

willing servants of the overlord, be taunted by foes you'll 'love to hate', and more; much more than mere monster bashing. (Still, monster bashing IS loads of fun!) From the night of that first fateful meeting with Khelben to the final confrontation with Evil in the Crimson Tower, once you take on 'The Legend of Darkmoon, you're in 'for the duration' on one of the greats of D&D computer adventuring.

Heaven & Earth

★★

\$49.95 for 640K EGA-VGA PC

Buena Vista / Walt Disney

According to a sticker on the box, this first release on Disney's new Buena Vista "adult stuff" label is by the creators of "Shanghai" and "Ishido". Whereas the latter feature elegantly simple rules and structure, H&E is a collection of mini-challenges. Chiefly these are maze, jigsaw, pattern-matching, and other kinds of non-text visual puzzles; but, you can also play "oriental rummy" or try the Pendulum "computer toy". When confident of your skills, you embark upon the 108-step Pilgrimage. Each step is a puzzle, rummy hand, Pendulum setup, or Tantra (an inspirational poem to read—i.e. a 'free-bee' step). Your goal is increased wisdom in the Way of the Warrior and, specifically, to uncover all 108 pieces of a "visual reward".

Featuring mainly 16-color 640 x 480 VGA displays and minimal sound support (AdLib/SB and Sound Source), H&E delivers a crisp, smooth-running, but rather bland gaming environment. The puzzles are just that, no Tetris-style scenery or music scores. Still, there ARE lots of puzzles, 576 in all; and with 12 kinds, you can expect some interesting new twists. For instance, an "identity maze" requires that you guide a pair of locked cursors through two different side-by-side mazes. H&E's "Pendulum" is chiefly for show. Mouse-pushing the pointer to turn off gravity wells may have some mystical appeal; but, it's too easy to qualify as a challenge.

According to H&E's manual, the Card Game is "an original computer card game". This explains a great deal, since no such rummy variant could ever have gained popularity among real players. Aside from dealing with twelve derived "month" suits—each is defined by an "element" and a "season"—becoming skilled in applying the obtuse grouping rules, hierarchies, and scoring conventions is far more trouble than the game is worth. It's too bad that the attractive, occasionally animated card illustrations were

not applied to some tried-and-true diversion like, for instance, plain old rummy.

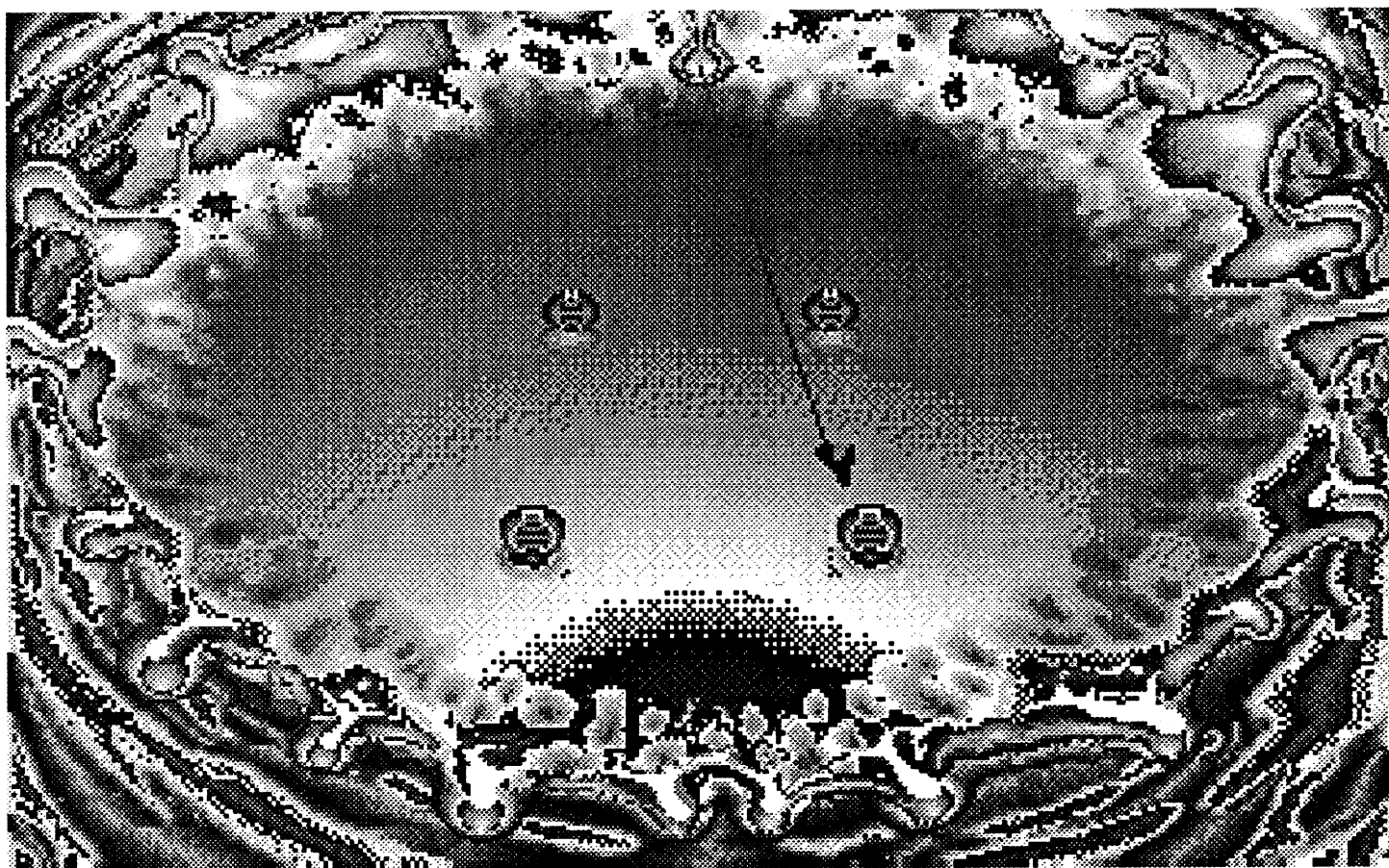
Including a handsome 80-page manual, Heaven & Earth belongs in the collection of any dedicated puzzle fancier. As a quest, it suffers somewhat from low-pizazz sound and the need to play through 30 Card Game hands. "Hey, like nobody said The Way of the Warrior is all peaches and cream!" True enough. In fact, it could be fun to maintain the program on hard disk and nibble away a few steps every day or so. Since the game can keep track of player name and position for up to six separate pilgrimages, you and several friends might even begin a kind of 'race to wisdom'!

it and had to rebuild it literally dozens of times while I was learning to fly.

You see, anybody can get an RC plane off the ground; getting it back down where you want it in one whole piece is the tough part! (It cost me about \$2000.00 buying balsa wood and replacement radio parts, to which you can add numerous hours spent patching and rebuilding.) Once flying the trainer became 'second nature', I built another airplane. This one, a 'classic model' replica, was a higher performance craft, much bigger and faster than my trainer. I didn't know it at the time, but when you move up, the process of 'wreck em', 'rebuild em', and 'learn em' starts all over again.

ally stable model that is very forgiving of mistakes. The "intermediate" planes are a little less tolerant; and, the "advanced" model generally won't forgive anything. That's all right.... If ya wreck it, start all over again. The software does, however, figure out a repair estimate for a crashed plane or helicopter depending on how hard you hit the ground.

As you progress up through the ranks of planes and learn to fly, you can experiment with wind changes and modify performance characteristics like Elevator sensitivity, Rudder sensitivity and so on. There are 15 variables total; and, the user's manual covers each in detail. Getting started is no problem at all for novice users. For



Guest Reviews

RCFS PC Radio Controlled Flight Simulator (v3.1)

★★★★

\$53.95 for 640K PC XT/AT (also available for Mac)

Dave Brown Products

review by Douglas Hecht

Requires two joysticks and standard Y-adaptor or custom Transmitter Box (hardware, \$100.00)

I have been flying remote controlled model airplanes for about twelve years. My father got me started building them at around the age of eight and it has been a hobby ever since. We had to wait however, to actually go out and buy the remote control equipment because it is rather expensive, (around \$400.00 for a good six channel radio).

When we bought our first radio we took it home and installed it in an old plane. It was a trainer craft and let me tell ya, it was one tough piece of work to destroy, but I managed to wreck

Enough of my sad tales. This is the 90's. You don't have to spend a lot of money on kits, balsa wood, and radios to learn to fly a model airplane or helicopter. All you need is a PC and the RCFS PC Radio Controlled Flight Simulator to 'test the waters' and see if the hobby is right for you. If "yes", you just keep practicing, have hours of flight-sim fun, and learn the basics of what is required to fly RC. (Despite all the woeful tales of those who take up the hobby, I do recommend it highly. There are few thrills that match RC-flying.)

Supplied with manual on 5.25" or 3.5" media, the Dave Brown package is truly as close as your PC can get you to being out on a model airplane field at the controls of a real model. The optional "transmitter" is a typical two-gimbal stick box that plugs into the 'game' input; or, you can use two joysticks in a 'Y' configuration. Your "real models" include a basic "trainer", electric glider, ducted fan jet, and four others PLUS a helicopter!

Probably, your first plane will be the Trainer. Designed for those who are just starting out in the hobby, this is an unusu-

ally stable model that is very forgiving of mistakes. The "intermediate" planes are a little less tolerant; and, the "advanced" model generally won't forgive anything. That's all right.... If ya wreck it, start all over again. The software does, however, figure out a repair estimate for a crashed plane or helicopter depending on how hard you hit the ground.

As you progress up through the ranks of planes and learn to fly, you can experiment with wind changes and modify performance characteristics like Elevator sensitivity, Rudder sensitivity and so on. There are 15 variables total; and, the user's manual covers each in detail. Getting started is no problem at all for novice users. For the advanced user there's the fabulous opportunity to design and test-fly a working model from scratch BEFORE actually building it! That's how accurate this simulator is.

I never knew how difficult it was to fly an RC helicopter! Like the planes, the RCFS' helicopter has many different characteristics you can alter (such as Tail Rotor Mixing, Sensitivity, etc.). Accurate? Could you, for example, design and test a for-real flyable 'bird'? I was curious to find out, so I had a friend of mine, a 'pro', give it a whirl. He was amazed at how realistically handling matches changes in characteristics. The pro's bottom line comment was: "For the money, you won't get a better deal!"

a pro RC-er, the delays might be a bit frustrating. On my 12MHz '286, (running under "Windows") RCFS' delivers practically 'real time' response! The speed and power of the '386 and '486 platforms did not have much impact.

Overall I give RCFS PC Radio Controlled Flight Simulator two thumbs up. Dave Brown's software does everything you expect and more. It can save you an incredible amount of time and money learning to fly model airplanes and it does so with incredibly accurate speed and graphics capabilities. Installation is simple, too. Just copy the files to a directory, fire up the program, and you're ready to fly. The only problem that I could find with the package was that, once you get started, you can completely lose track of time. It's that much fun!

Fast frames, Updates, etc.

More Cities to Sim! ★★★

"Sim" stands for "simulate" and for would-be city simulators, the 'place' is Sim City (\$49.95 for CGA-VGA 640K PC) from Maxis. The practically universal appeal of the package, of course, is the opportunity to build something, tinker with it, and manage its performance in the face of challenging obstacles. (Proof: Baywoof's teenage daughter, Andrea, is one of many young-Computist "City freaks".) Sim City permits starting from scratch or loading in "San Francisco 1908", "Tokyo 1957" and six more pre-built scenarios featuring special challenges like earthquake, monster attack, etc..

Neat; but, suppose you could try out your 'City skills building an empire in ancient Asia, a medieval kingdom, or an empire in the Wild West? How about 21st century cities in the U.S. and Europe, or a colony on the Moon?! Now you can, via

SYSTEM OPTIONS DISASTERS WINDOWS



'Ancient Cities and 'Future Cities (\$34.95 each). The new "Graphics Sets" and animations 'overlay' existing scenarios with text and sound effects mods to accommodate differences in disasters and other challenges. (i.e. You have problems with oxygen supplies on the Moon, tumble weeds in the Wild West, etc..) According to the manuals supplied with each set, some 'old scenario' stuff may slip through; but, so far, I haven't noticed any. As before, you must make do with PC-sound or Covox support; the new "Graphics Sets" do not expand sound options. With more places and times to build, they DO expand the fun!

The 1992 Viewer's Guide to Professional Golf ★★★

Anyone who gets into Accolade's Jack Nicklaus Golf spends some time checking the overhead course maps and marking off distances prior to shots. "Gosh," you may have thought, "these maps sure help. Too bad real golfers on real courses can't do this." Pending satellite links and pocket PC's, they soon may! For now, 'real

golfers' and TV golf fans can come pretty close via Intergolf's 'Viewer's Guide' (\$24.95). Arranged by month, the 200-page guide covers some 50 major televised tournaments with the focus on detailed course diagrams. You'll find an event introduction plus full-course and individual hole maps for Bay Hill, Augusta, Pebble Beach, Barton's Creek, and other favorites. In vivid color by Golfax, every hole map includes text describing 'best play' for each shot and marked-off distances.

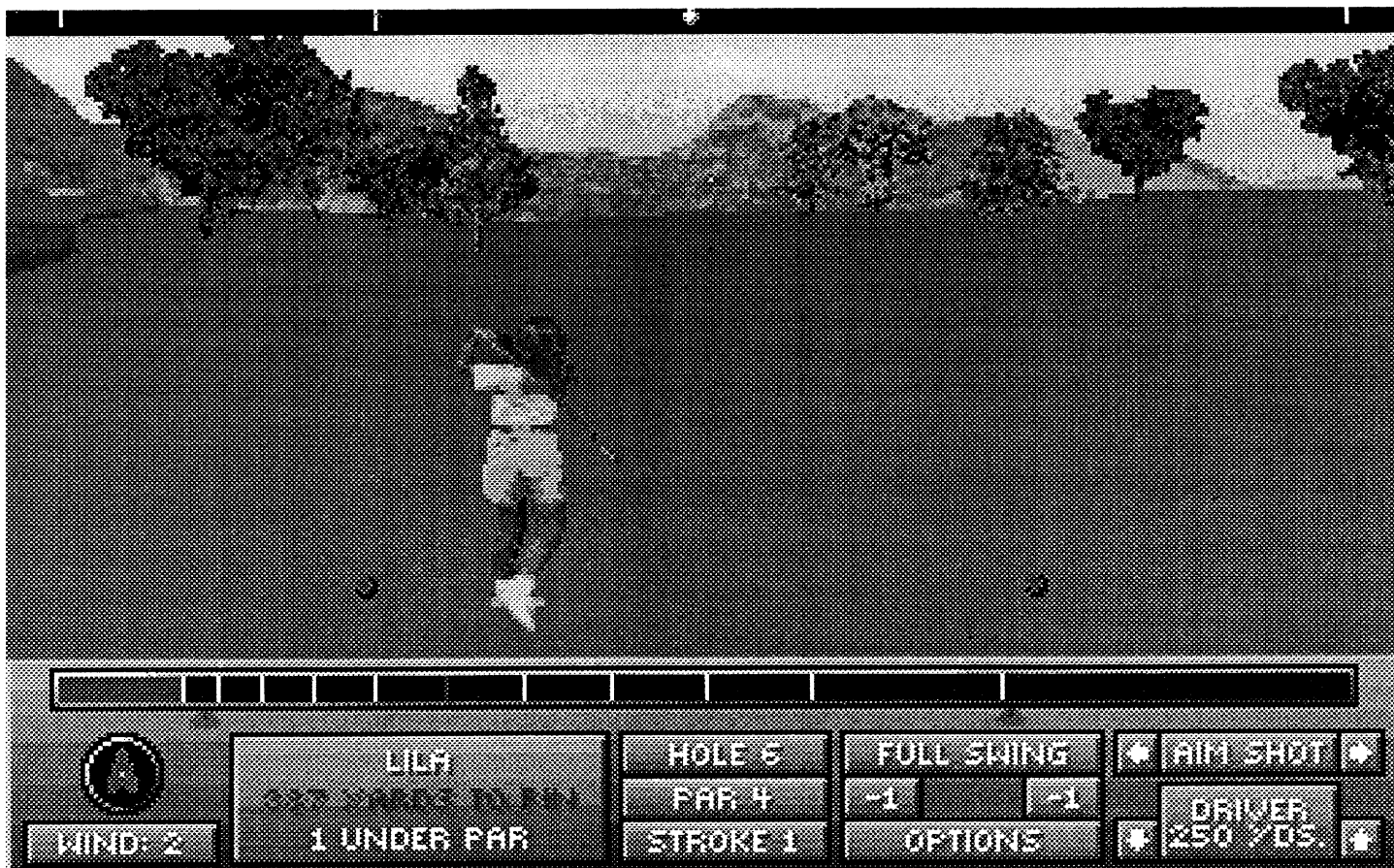
In large, 8.5" x 11" spiral-bound format with plastic-coated covers, the 'Guide' is intended for the coffee tables of upscale TV golf devotees—that's why broadcast dates, times, and networks are listed for all 50 highlighted events. (Dates and networks appear for a total of 75.) Computer golfers, however, will find the descriptions and JNG-style maps very helpful in both selecting a course to play AND picking the best shots. Oddly, there are no page numbers; so, you may end up adding index tabs. (Not to worry, the 1993 edition is due soon. You can put IT on your coffee table.)

Including several golfing lore pieces by Bob Hope, Herbert W. Wind, and others, the 'Viewers Guide' looks pretty good on your computer table, too!

Dick Tracy: The Crime-Solving Adventure ☉

Disney's Dick Tracy' adventure challenges you to smash the octopus-like empire of the arch crime lord Big Boy. Since BB is far too slippery for a 'direct hit', this means a piece-by-piece assault against his chief lieutenants: Flattop, Shoulders, Pruneface, ... (i.e. the "usual suspects"). Answering a succession of "Calling Dick Tracy" alerts (music, effects, AND voice via Disney's Sound Source adapter), you stick-guide your police cruiser through the multi-screen street map to the scene. Leaving your vehicle switches to a detailed side-view so that your Tracy figure can search rooms, rooftops, sewers, etc. for evidence and deal with criminal types whom you interrogate, chase, and, if necessary, blow away.

Supplied with classy manual, commands card, and Infotator-style copy protection wheel, DT, takes care of basics (like Game Save) but, nevertheless exhibits numerous rough edges. That Infotator illustrations do not look much like the display pictures you're supposed to match is a minor annoyance. Cumbersome car-steering controls and, when on foot, sloppy action figure response are the major league 'downers'. Still, DT could attract a youthful action gamer following were it not necessary to maintain notes and actually do something with evidence. Adventure players might enjoy the latter activity; but, few are going to put up with anything short of flawless 'action' controls. Who, one wonders, IS supposed to play the Dick Tracy?! (\$39.95 or \$59.95 with Sound Source, for EGA-VGA 640K PC)



North
Dungeon

DEMON'S FUN-TIME WHIPPING CHAMBER

#	NAME	BODY	STATUS	MAGIC	CLA
1	BATFOOT	66/72	Fine	00/00	FTR
2	WACKEE	51/77	Fine	00/00	FTR
3	MOTHNOSE	48/74	Fine	20/27	PRI
4	RUBYWAND	51/51	Fine	02/31	WIZ

Dark Designs III -- (c) 1991, Softdisk

ties. After seeing the beautiful near photo-quality course views PLUS optional resizable windows (for simultaneous overhead, green, etc. views), there really was no choice. Links386' comes with the Harbour Town course in new "high-res" format and a utility to convert your old courses. I converted the latest old format course to arrive and, as promised, the desert scenery, and twisty water traps of Troon North looked great! (Of course, maximum detail at all distances is obtainable only from new format courses.)

AdLib/SB sound (including voice comments) is improved; and, though there are still no 'computer players', a new Record Game feature is a decent (in some ways, better) substitute. You can load a game you or someone else has 'recorded' and play against the perfor-

Of Dark Designs, Gons, and 8's

As promised, SoftDisk G-S's Lee Golden delivered a patched version of Dark Designs III; so, the bug is gone and I'm back into the quest. DD3 boasts an SSI AD&D 'look', including attractive 3-D forward views, and adds a very helpful self-mapping feature. Since the entire game must fit on a single diskette (along with the rest of the stuff in SDGS Issue #17!), weapon and spell variety is limited and "tactical" combat is chiefly a matter of trading blows. Still, with quality sound, a large monster-infested mazescape to explore, goodies to find, and Text messages to enrich the scenario, the third Dark Designs is good for many sessions at your IIGs.

Among more current SDGS entertainment offerings, Lift-a-Gon challenges you to move triangular, circular, pentagonal, etc. "Gon" creatures from ground level, into an elevator, and up to safety. Not so easy, since both body and eye shapes (Gons have faces) govern who may go/remain safely with whom. The same issue (#33)

File
Edit
Extras

Computer Has 11 Cards

Player Moves... ♠

Player Has 10 Cards

Skip Turn

Sort Hand

presents an attractive, smooth-playing version of the vintage cards favorite, Crazy 8's.

Links386 Pro ★★★★★

After two enjoyable, productive years with our 12MHz '286 machine, we have, at last, been

dragged into modern PC computing. What did it was a visit to Baywoof's and a look at Links386 Pro from Access (\$69.95; \$39.95 for registered Links owners). It REQUIRES at least a '386 and extended 640 x 480 256-color VGA capabili-

mances of recorded players. The Links386 package includes several recordings to try out. Since the courses are built directly from digitized images, we may never see a course construction utility like the one in "Nicklaus" golf. It would be a nice feature; but, at the rate Access produces new course disks, and the high challenge level of each, users are unlikely to complain.

The most notable Links series deficit remains the absence of 'big time golf' pizzazz (i.e. something like "PGA Tour Golf"'s TV-style fairway fly-through before each tee-off). The game's current, low key ambience is pleasant and relaxing; but, not golf like the 'big guys' play. Eventually, the best solution may be to build-in pro golf hype and add some kind of 'Set Atmosphere' option. For sure, 'the handwriting is on the wall' for '286 AT's; on '386/486 machines, ultra-real computer golf is better than ever.

Darkmoon:

Return of the Golem

The Horns of the Four Winds, wasp colonies, and flying snakes

File
Extras
narf

LEVEL 1
TRIPS 5

were behind us. But now, with the "Clue Book" still a distant promise, we needed to satisfy the cryptic demands of seven Magic Mouths to continue. While pacing the corridor and mulling over these riddles, whom/what should we stumble upon but the famous Computist Golem!

As usual, it was in a nearly hidden alcove standing rock still and silent beneath a flickering neon sign which advised: "Cross my palm with silver." Not so easy; the Silver Tower (and everywhere else we'd seen on this quest) was notably devoid of silver coins. Then I remembered the 5-Zorkmid piece sewn into the lining of my boots. In a thrice 2.5 ounces of fine Venusian silver plunked into the Golem's enormous paw....

years. Once in place, it should keep your ROM 01 IIgs clock ticking for at least 5 years—a BIG improvement over the 18 months our original IIgs battery lasted!

To install, you move the power supply out of the way and mark the old battery "+" side on the motherboard. (Probably, "+" faces toward the back of the computer.) Cut the old battery leads leaving about 1/2" on the board; straighten the old leads and slide on the 'springy' leads of the new battery. No soldering is required. The Slide-On kit includes directions with pictures, an "Installation Date" label, and a tube for disposal of the old battery.

"Rats! Everything looks so easy, it's a shame I have to write down all of those Control Panel

"Itsssss niiiice tooo seee yooo againn," it groaned, slowly coming up to speed as the granite fist closed. "Listen well:"

"Who's refuse is gold wants Food that's too Old.
To the one 'born of greed', several Rocks you must feed.
The cursed Hungry Sword a long hunger retires.
Another, I think, any Potion desires.
'No matter how parched' means matter quite dry;
something of paper is what you should try.
In the Idol, of course, is a green Hidden Glow.
And the Red Gem possesses Nature's own soul.
When seven are sated, a sound you shall hear.
The lock is defeated, the passage is clear!

Slide-On Battery ★★★

Some day soon you may power-up your computer and discover that it 'don't work right'. The clock is set to Quetmo Standard Time, the screen colors are blue and light blue, and all of those Printer and Modem settings have been forgotten. Probably, that little lithium battery—the one that runs your Clock/Calendar/Control Panel—is out of juice.

For some users, this could be VERY inconvenient—they must start calling local shops to find a replacement battery; and, then, worry about restoring the lost settings. (Believe it or not, the precipitating event for Baywoof's bailing out of IIgs computing back in 1989 was battery failure! When he couldn't find anyone in town who sold a replacement, it was the proverbial "last straw".) YOU, however, are prepared! Being a Computist reader, you've written down all of your Control Panel (and/or Hard Disk) settings AND you have a fresh Nite Owl replacement ready to pop into place.

For owners of the pre-1MB ROM 01 IIgs (with the battery leads soldered to the motherboard) the choice is a handy Slide-On unit selling for \$14.95. (The company also stocks Tadiran batteries priced at \$10.00-\$14.95 to fit Mac, PC, and New IIgs models.) According to Nite Owl's Bob Shofstall, their Slide-On model is an improved design with a rated shelf life of 10

settings and then type them in again." Exactly my feelings, which is why I wrote BATRAMMER, a quickie BASIC program to do all the work for IIgs users. BATRAMMER pokes in a short machine language routine to access Tools in the Miscellaneous Toolset which read and write Battery RAM. To save your settings, the program tells Tool 9 to copy all 256 bytes of Battery RAM to addresses \$1000-\$10FF and BSAVES the contents to BATRAM.SAVE. To restore the settings, it BLOADs BATRAM.SAVE at \$1000 and calls Tool 10 to move the data into Battery RAM.

RUN it now to record your settings. After replacing the battery, RUN it to restore Battery RAM. BATRAMMER even reminds you to set your clock to the correct time!

BATRAMMER

```
100 REM BATRAMMER: Save/
Restore IIgs BatRAM
settings/ JH,
Computist 1992
110 FOR I = 768 TO 795:
READ X: POKE I,X: NEXT
I
120 PRINT CHR$(4)
"FRE(0)": TEXT: HOME
: PRINT "B#a#t#r#a#m#
m#e#r": PRINT
130 PRINT "[S]#SAVE#cur
rent#BATRAM#values#to#
file#BATRAM.SAVED"
140 PRINT "[R]#RESTORE#
saved#BATRAM#values#
from#file#BATRAM.SAVED"
150 PRINT "[Q]#Quit":
PRINT
```

```
160 PRINT "[#]#Select"
;: HTAB 2: GOSUB 220
170 IF Q$ = "S" THEN
GOSUB 310: GOTO 200
180 IF Q$ = "R" THEN
GOSUB 410: GOTO 200
190 IF Q$ = "Q" THEN
PRINT: END
200 PRINT: PRINT
"Continue#>>#" ;: GOSUB
220: GOTO 120
210 REM GET KEY
220 GET Q$: PRINT Q$:X =
ASC(Q$): IF X > 95
THEN Q$ = CHR$(X -
32)
230 RETURN
300 REM SAVE
310 POKE 786,10: CALL
768
330 PRINT CHR$(4)
"BSAVE#BATRAM.SAVED,
A$1000,L$100"
340 PRINT "Battery#RAM#
values#saved#in#file#
BATRAM.SAVED"
350 RETURN
400 REM RESTORE
410 PRINT: PRINT "LOAD#
in#values#for#BATRAM#?#
(Y/N)#" ;: GOSUB 220:
IF Q$ < > "Y" THEN 460
420 PRINT CHR$(4)
"BLOAD#BATRAM.SAVED,
A$1000"
430 POKE 786,9: CALL 768
450 PRINT "Battery#RAM#
values#restored.":
PRINT "Visit#Control#
Panel#to#set#TIME."
460 RETURN
500 DATA 169,0,72,169,0,
72,169,16,72,169,0,72,
24,251,194,48,162,3,9,
34,0,0,225,226,48,56,
251,96
```

Checksums

100-\$0236	190-\$6D4D	350-\$0422
110-\$DCFO	200-\$8FFD	400-\$7AEO
120-\$D792	210-\$8B5D	410-\$3900
130-\$3DE0	220-\$B00D	420-\$2C0D
140-\$5621	230-\$908D	430-\$CC72
150-\$F9BF	300-\$395C	450-\$CCB9
160-\$7CE8	310-\$05FF	460-\$BE29
170-\$7BC3	330-\$B89A	500-\$50D1
180-\$C779	340-\$D6B3	

Next

Expect SSI's 'Dark Queen of Krynn, Interplay's Battle Chess II, Super Space Invaders and Pit Fighter from DOrmark/Accolade, Martian Dreams and the new Quest for Clues 'Orbs book from Origin... PLUS an in-depth look at Eamon text adventuring along with souped-up programs for play and editing... and, for sure, More!

Vendors

Access Software
4910 W. Amelia Earhart Drive
Salt Lake City, Utah 84116
atten: Susan Dunn/ Steve Witzel (800-800-4880/ 801-359-2900)

Accolade
5300 Stevens Creek Blvd.
San Jose, CA 95129
atten: Melinda Mongelluzzo (408-985-1700; orders: 800-245-7744)

Dave Brown Products

4560 Layhigh Road
Hamilton, Ohio 45013
atten: Dave Brown (513-738-1576)

Intergolf

6016 Bridgewater Circle
Ponte Vedra, FL 32082
atten: Witney McClelland (800-999-4106)

Maxis

2 Theatre Square, Suite 230
Orinda, CA 94563-3346
atten: Sally Vandershaf (orders: 415-376-6434; 415-253-3705)

Nite Owl Productions

5734 Lamar Blvd.
Mission, KS 66202-2646
atten: Bob Shofstall (913-362-9898)

Origin Systems

110 Wild Basin Road, Ste 330
Austin TX 78746
atten: Wayne Baker (800-999-4939)

Product Monitor

7814 Santa Elena
Houston TX 77061
atten: Jeff Hurlburt (713-645-8680)

Roger Wagner

1050 Pioneer Way, Suite P
El Cajon, CA 92020
atten: Garland Buckingham (619-442-0522)

Softdisk

PO Box 30008
Shreveport, LA 71130-0008
atten: Lee Golden, Ed. (800-831-2694)

Strategic Simulations Inc.

675 Almandor Ave
Sunnyvale, CA 94086
atten: Kathleen Watson (408-737-6800) dist: Electronic Arts

Susan & Company

319 Carpenter Avenue
Sea Cliff, NY 11579
atten: Susan Kornick, Kim Adamo (516-759-4475) ref: Disney/Buena Vista

Walt Disney Computer Software

500 South Buena Vista
Burbank, CA 91521
atten: Kirk Green (800-688-1520 orders, 818-567-5360) ref: Susan & Co.

W M Carroll CA

About your comment on only having enough material for the next 1 1/2 issues. How about filling out an issue with some specific articles on CDA, NDA, TIF and PIF files. What are they, what do they or can they do, how are they installed, etc, etc. It seems that very little is available in regular Apple publications.

Well readers! Anyone who knows how to explain these files got some time to help a fellow Computist in his quest for knowledge?RDEXed

Softkey for...

Advanced Blackjack*Muse (1983) Iota Systems***Requirements:**

The original Advanced Blackjack disk

A empty initialized disk

A blank disk

Demuffin+

A way to reset into monitor

1. First place a write-protect tab on Advanced Blackjack disk.

2. Boot Advanced Blackjack disk.

3. When you get the prompt to remove tab, break into the monitor. (On a Laser, I use ctrl M reset.)

4. Remove Advanced Blackjack disk.

5. Insert the blank disk and type:

INIT D *call this Disk A*

6. Fresh Boot DISK A. Type:

CALL-151 *to enter the monitor*

Note: Steps 5 & 6 may be skipped if the monitor prompt (*) is shown. Skip to step 7. (If skipping 5 & 6 doesn't work try with them.)

7. When asterisk appears type: 6600<B600.BFFFM *move RWTS to a safe spot*

8. Place a "helloless" disk into drive. Type:

C600G *to boot disk*

9. Place disk with DEMUFFIN+ into drive. Type:

BLOAD DEMUFFIN+, A\$803

CALL-151

FF59G

B600<6600.6FFFM

A851G

803G

10. Copy all files to INITIALIZED DISK.

11. With CopyIIPlus change boot program to SETUP.

12. Do not write protect. Boot and enjoy.

Note: Try above crack with other similar protections.

© This is a request for contact with APPLE IIe/IIc owners. Where are the APPLE programs? It seems companies have forgotten all about us. So how about if someone out there can contact me, so I might be able to get new or used software and we'll talk.

Steve Kalynuik
936 Southdale Rd E
London, Ontario
Canada N6E 1B2

Sang J. Moon MD

Softkey for...

Buzzard Bait*Sirius***Requirements:**

Apple II+ or IIe with at least 48K

DOS 3.3 Master Diskette

Blank disk

This is an old game, and there is probably a softkey for this out there already, but I thought I'd start out small with my first submission. I tried originally to try to copy this program using Locksmith 4.1 & 5.0 and Copy II Plus 8.4; but being a fair novice at bit copying, I could not do it. I also could not find parms for bit copying this program in any Computist issues I had. I found the softkey in Computist issue #5, but it required an Apple with an old F8 ROM which I did not have. So I finally decided to boot trace Buzzard Bait.

Thanks to the boot trace article in Computist issue #5 on Hard Hat Mack, I was able to take my first steps. I started my Apple without a disk, and reset to the Applesoft prompt. I then entered the monitor by typing "CALL-151". I cleared all user RAM to make it easier to see where code is being loaded by typing "800:00 N 801<800.BFFEM". Then I copied the boot routine from \$C600 into \$9600 using "9600<C600.C6FFM", and I changed the jump address at \$96F9 from \$0801 to \$FF59 by typing "96F9:59 FF". This makes the Apple jump into the monitor after loading the first stage boot instead of executing the first stage boot. I then typed "9600G" at the monitor prompt with the Buzzard Bait diskette in the drive (write-protected of course). Then I turned off the drive by typing "COE8", and I looked at the first stage boot code at \$800 by typing "800L". Noticing that the byte at \$800 was \$01, I knew that the first stage boot was only one page long, so I scanned the disassembly of the code from \$801 to \$8FF. Luckily I found only one JMP, and it was at address \$08C8 to address \$B000. I then changed the jump from my modified boot routine to a short program I created to let me look at the code loaded at \$B000 after the first stage boot executed by typing "96F9:00 97", I typed in my code at \$9700 so that after loading the first stage boot, the jump address to \$B000 would be changed to a jump to \$FF59 (the monitor again). the following is the actual code I used:

```
9700:8D 00 98 STA $9800
9703:A9 59 LDA #$59
9705:8D C9 08 STA $08C9
9708:A9 FF LDA #$FF
970A:8D CA 08 STA $08CA
970D:AD 00 98 LDA $9800
9710:4C 01 08 JMP $0801
```

I saved accumulator before I actually changed the address at \$8C9 and reloaded it before I executed the first stage boot because the first stage boot required the original accumulator value.

After booting the disk again using "9600G", I typed "COE8" again to shut off the drive, and looked at the code at \$B000. I assumed that this code was the one that actually loaded the game code because I had booted

the original disk, and what I had done so far did not do all the disk access to load the game. I again looked for JMP commands which would go to the next stage. Luckily, the article in Computist issue #5 gave me the clue that \$8000 was a possible starting point for executing the game after loading, so I was pleasantly surprised when I found a JMP to \$8000 at address at \$B0F9. I then repeated the steps for making my modified boot routine at \$9600 because it was erased, and I created the following code at \$9700 to load in the first stage boot, modify the first stage boot so that it would modify the jump to \$8000 to \$FF59 before executing, and execute the first stage boot:

```
9700:8D 00 98 STA $9800
9703:8E 01 98 STX $9801
9706:A2 0D LDX #0D
9708:BD 19 97 LDA $9719,X
970B:9D C8 08 STA $08C8,X
970E:CA DEX
970F:D0 F7 BNE $9708
9711:AD 00 98 LDA $9800
9714:AE 01 98 LDX $9801
9717:4C 01 08 JMP $0801
971A:A9 59 LDA #$59
971C:8D FA B0 STA $B0FA
971F:A9 FF LDA #$FF
9721:8D FB B0 STA $B0FB
9724:4C 00 B0 JMP $B000
```

I saved the accumulator and X register because I used them to copy the routine starting at \$971A to \$08C9 and the first stage boot needed the original values in the accumulator and X register. I didn't worry about the code after address \$08C9 because it looked like it would only be executed if the first stage boot failed. I then typed "9600G", and the game proceeded to load and then stop before actually executing. I then verified that I had the program in memory by typing "8000G". I was rewarded with Buzzard Bait executing normally as if nothing unusual happened. I then created a DOS 3.3 slave by booting the DOS 3.3 master diskette and initializing the blank diskette with the following hello program:

10 END

I then repeated all my steps up to the point before executing the game at address \$8000. I did a quick scan of the user memory to see how much memory Buzzard Bait took by typing 800.BFFF. It seemed that Buzzard Bait took up memory from \$0900 to \$97FF (the code at \$800 and at \$B000 were from the boot and load process and were not used anymore). The DOS 3.3 slave would only overwrite the memory at \$800-\$8FF and at \$9600-BFFF, so I transported the code at \$9600-97FF to some unused memory at \$3000 by typing "3000<9600.97FFM".

I then booted the slave and typed "MAXFILES 1" so that the DOS buffers at memory lo-

cation \$9600-\$97FF would not be used. I then entered the monitor and typed "9600<3000.31FFM" to move back the code and pressed **CTRL** C to return to the Applesoft prompt. I then saved Buzzard Bait into two files because DOS 3.3 will not allow me do save it as a single large file. I cold started my Apple and ran the copy of Buzzard Bait, and for some reason, the disk access normally done between levels of the game disappeared. I think I might have accidentally removed that copy protection by not including the code at \$800 or at \$B000.

Step-by-step

1. Boot from the DOS 3.3 Master Diskette and enter the "Hello" program.

NEW

10 D\$=CHR\$(4)

20 PRINT D\$"MAXFILES 1"

30 PRINT D\$"BLOAD BUZZ

ARD.OBJ0"

40 PRINT D\$"BRUN BUZZARD.OBJ1"

2. Remove the DOS 3.3 Master Diskette and insert the blank diskette. Initialize the blank disk with the "Hello" program. The blank diskette will now be referred to as the slave diskette.

INIT HELLO

3. Enter the monitor and setup the altered "Boot0" code.

CALL-151

9600<C600.C6FFM *move boot0 to lower mem*96F9:00 97 *set up link to \$9700*

9700:8D 00 98 8E 01 98 A2 0D

:BD 19 97 9D C8 08 CA D0

:F7 AD 00 98 AE 01 98 4C

:01 08 A9 59 8D FA B0 A9

:FF 8D FB B0 4C 00 B0

4. Insert the write-protected Buzzard Bait diskette and boot it.

9600G

3000<9600.97FFM

5. Insert the slave diskette.

C600G *you should get an error message*

MAXFILES 1

CALL-151 *to enter the monitor*

9600<3000.31FFM

BSAVE BUZZARD.OBJ0, A\$900, L\$7700

BSAVE BUZZARD.OBJ1, A\$8000, L\$1800

You now have a COPYable backup of Buzzard Bait. Installing a fast loader on this disk or replacing the DOS 3.3 with a faster DOS would be an optional step.

Bitkey for...

Pensate*Penguin Software***Requirements:**

Apple II

Copy II Plus 8.4 (may work on other versions)

I found that using the "TRY HEADER" autocopy parm in Copy II Plus 8.4 can be used to copy Pensate.

Hail and well met, Eamon adventurer.

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"The Eamon Adventurer's Guild"

Tom Zuchowski is the editor and driving force behind it. The newsletter is printed on 8.5" x 11" bond, double sided with dot matrix type. It is non-profit (it's his hobby) and Tom's avowed purpose is to maintain a single point collection and clearing house for Eamon Adventures. He also intends to fix all known bugs in these adventures.

This is a grand concept worthy of support. We highly recommend that you subscribe. This newsletter will help you keep in touch with other Eamon adventurers. But more important, it will improve the state of Eamon adventures and encourage new adventures to be written. Tom has accomplished a great deal along these lines already, not only fixing bugs but also improving the Eamon Main program and authoring the version 7.0 Dungeon Designer Disk.

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Adventure Gaming doesn't have to cost a lot. The Eamon Adventure Gaming system was created by Donald Brown and placed into the public domain. Since then it has been updated and improved by game players all over the world. Take a look at what \$1 will buy. (Get free games too.)

Note: Some Adventures are multi-part and take more than one disk. Be sure you have selected all of the disks.

The Eamon Master disk (#1) is required to play most adventures.

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Hardware Corner

Charles R Haight WA

I think it's about time for us Computists and all other Apple II enthusiasts to admit to ourselves that Apple doesn't care about us. They're too wrapped up in the MAC and in making money. We had better start taking care of ourselves. And if we want new hardware, we're going to have to make it ourselves. So if you've done something neat with your machine (even if it involves cutting holes in your motherboard) how about writing and telling us all about it. In line with that, here's what I've been up too.

The Super][GTS card (2GTS: Too Good To Stop)

This one is for all of us who don't have the money or the inclination to buy a IIGs or Mac. The Super II card works in all of the IIs *except* the IIGs.

What it won't do

First let me say that the Super II card is **not a IIGs clone card** and will not run IIGs software. Plugging the Super][into your IIE is more like dropping a 454 cubic inch V8 engine into a VW Bug and bumping out the body to give the same room as a stretch limo. But it doesn't add plush carpets, power seats and windows and a super stereo system. There's only so much that I can do for \$200. So if you need the capabilities of the IIGs then you should buy one!

What it will do

But if you want to stick with your IIE and just need some zip and some elbow room for your programs, the "Super2" is for you. This card is intended to extend the useful lifespan of the Apple II. In "90's" vernacular, it going to "empower" the older II's. The card plugs into a regular slot and replaces the on-board 65C02 processor with the more powerful 65C816 proces-

sor. It also increases the clock frequency to 4MHz (4 times faster than the normal II clock), has its own 128K bytes of system ROM and adds up to 15.8M bytes of directly addressable memory. (1M byte minimum memory.)

The Super II card uses the DMA line to take control of the IIE. Other cards that use DMA should be in lower numbered slots so that they may override the Super II card to access the IIE.

Programs that "run" on the card will execute 4 times faster than in the IIE. From a speed standpoint, that's better than installing an 8Mhz Zip chip.

any references to Apple II screen, I/O or ROM should be changed to long references.

A Hefty Power Supply

Caution: This card is a power hog. You must have a beefed up power supply. One of the 60 or 80 watt aftermarket supplies will do. You can find these for about \$50-60 in electronic supply catalogs. The "JDR Micro-devices" catalog (1-800-538-5000) has a 83 watt unit for \$60 (plus \$7 postage & packing).

An add-on fan is also a good idea. The price of speed is increased power consumption. And more power means that your II will run hotter.

The Super II Upgrade Kit

**Includes: A 65C816 —16 bit processor
zooming along with a 4MHz clock speed
and 1Mbyte of memory (expandable to
15.8Mbytes using SIMM memory modules)**

(\$200⁰⁰ w/1Mbyte memory—For II, II+ and IIE)

While the Zip chip has a faster clock speed, it must continually slow down to the IIs 1MHz clock speed for writes and cache misses. The best average speed that we know of for an 8MHz Zip is 3.9MHz. Hey, even the IIGs only runs at 2.8MHz.

Running on the card also gives programs access to all of that extra linear memory. The (minimum) 1M byte of memory is 16 times more that the 64K byte regular memory in the II. There are no banks to switch nor any arcane access rules to follow. Just acres of DRAM for your programs to play in.

Initially, we will be patching programs to run on the card and encouraging software publishers to convert their titles. Conversion is simple in theory,

What's your "Pain Level"?

I've tried to keep costs down. Every design decision was made with an eye towards reducing the final cost without giving up speed or power. This is a complex board using state-of-the-art Advanced Schottky (AS) chips. You'll find that these chips cost more than the garden variety LS (Low-power Schottky) chips.

There's about \$168 in parts including the 8MHz 65C816 processor and a 1Mbyte (SIMM) memory module.

The cost of the bare board alone is \$43 each in small quantities. (That includes \$15 of shared setup fees which can be reduced if we order larger quantities.) You could order the bare

board and acquire the other parts yourself or you can order the assembled card from me.

I am offering the initial run of assembled cards for \$200 each to hackers who are willing to help convert popular software to run on the card. We need to jump into the water first to warm it up for the casual users who are unable to patch their own software. And just think of the programs that you could write with 1M byte of linear addressable memory and a 4MHz processor.

This is not a vapor attack. The circuit has been fully simulated and checked. I've sent away for two prototype boards. At \$328 for two bare boards, that's \$164 each. Ouch! So I am serious and I'm looking for some far sighted individuals who want to get in on the ground floor.

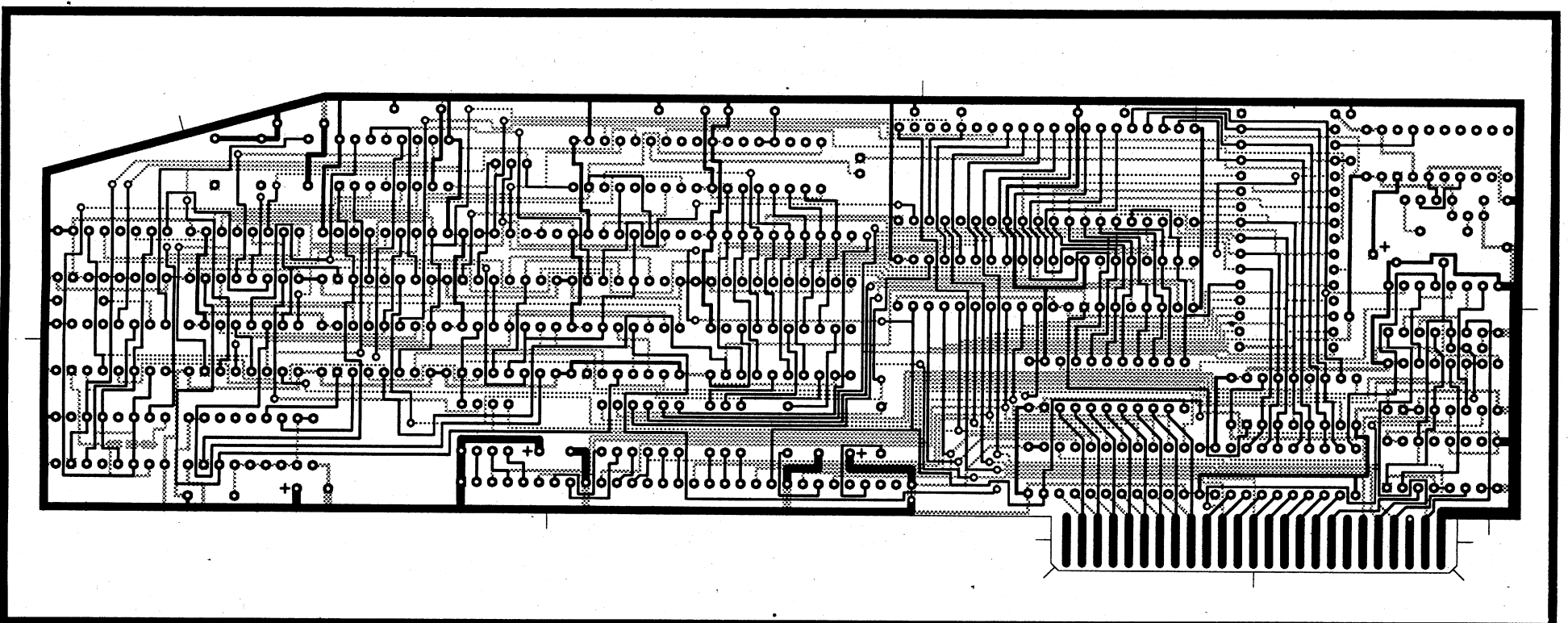
What's Needed

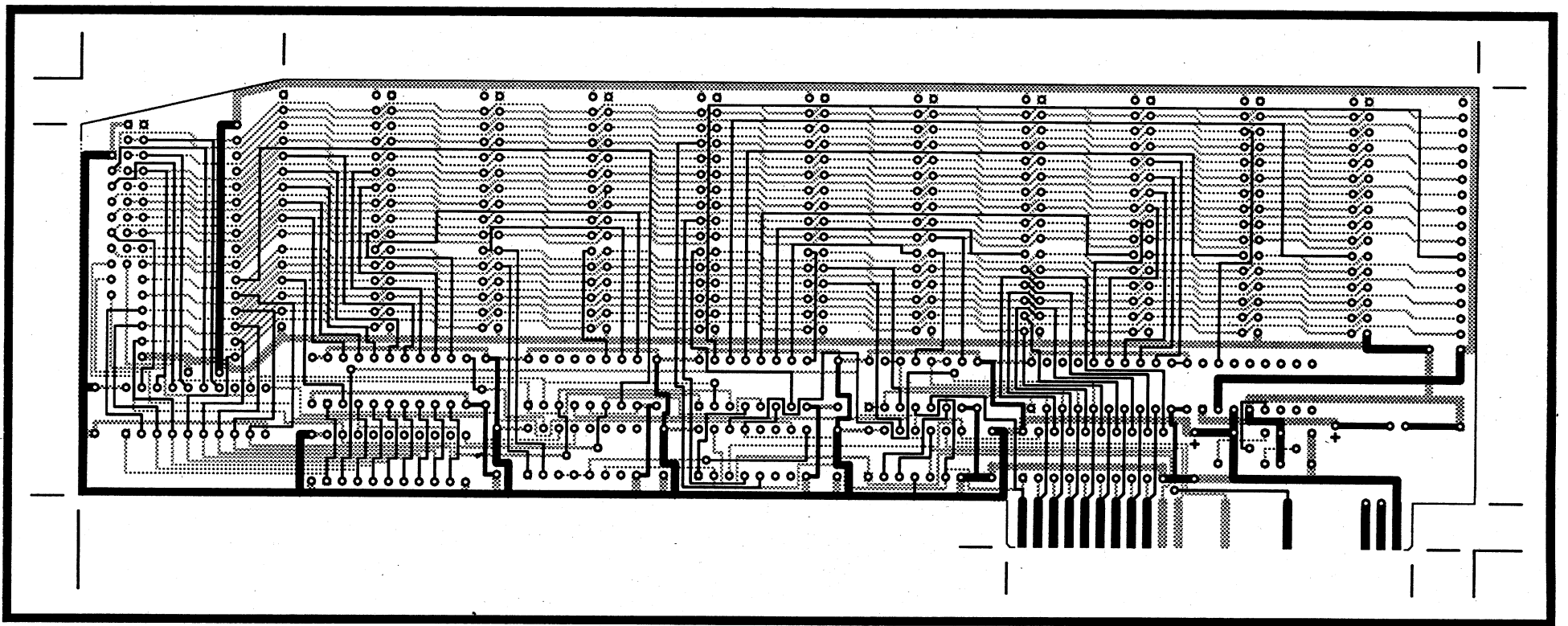
Besides patching some of the popular software programs to run on the card, we need to convince someone to convert a BASIC interpreter. We can port (and patch) Applesoft BASIC but I think we need something better, compatible with Applesoft but with cleaner code and more commands. Also, we need to consider a custom operating system. We will use DOS 3.3 or ProDOS to start with but we'll eventually want something else. Perhaps the folks who wrote GEOS would be interested.

What do you think? Is this something that you can get interested in? Or am I barking up the wrong tree. I've already spent my money for my card. Don't ask me to front the money for everyone else's cards. If you want this then **Vote** with your wallet! It's the only way to keep this going. Send COMPUTIST your checks, we will hold them for 45 days. If enough readers respond, we'll have the boards made. Otherwise, we'll return your checks with regrets.

Remember, at the beginning of every great enterprise there is always a core group of believers and doers who get the job done.

Send your letter, today.





The Presto! card

(for all][s)

Now that I've hyped the Super][lets move on. Here's a card for everyone who has twiddled their thumbs while their Disk II drive loaded DOS 3.3 or who goes out for coffee while their IIGs loads GSOS. Here's an "Instant On" battery-backed RAM disk that's better than aspirin.

Instant On

The Presto! card has sockets for up to twelve (12) 128Kbyte static RAM (SRAM) chips. A little arithmetic (12 x 128K) gives us 1.5M bytes (1,572,864 bytes) of memory.

I made room for 12 SRAM chips because of the new 1.44Mbyte super drives. With 1.5Mbytes of memory you can configure the card to look like a 1.44Mbyte disk. You can even make it the "boot" drive on your IIGs or IIE. If you're tired of waiting for your machine to boot GSOS or ProDOS 8 (or DOS 3.3 even), use this card for "Instant On" relief. Or store your most often used software on it for reduced delays when switching programs.

Making the card look like a disk drive simplifies access. There's no new protocol for you

to learn. Just LOAD, SAVE or RUN as if you were using a regular disk drive. Only this one is a heck of a lot faster.

Non-volatile memory

SRAMs have a special mode that the Presto! card takes advantage of. When you turn off the enable lines and drop the supply voltage to around 3 volts DC, the chips current consumption is reduced to a handful of microamps and the data is not lost. This means that a very small battery will keep the information stored in the chip "alive" and intact. When you turn on your machine in the

morning, the data will still be there.

circuits (IC). There are only 2 items that will impact your wallet. The SRAM and the bare board. The SRAM chips are about \$22 each (last time I checked). If I order a dozen bare boards, the cost is about \$43 each, (\$10 more if we want gold plated connector fingers). If we order 50 boards the cost drops to \$30 each.

So it's about \$76-89 (depending on the number of boards that we order) to assemble the board with one 128K SRAM. Then you can add SRAMs whenever you have another \$22 until the board is fully stuffed with the whole 1.5M bytes.

bled, send \$81 (includes \$25 for assemble and testing) plus \$22 for each SRAM chip.

We'll hold your checks for 45 days then if we have enough, we'll cash them and order the boards. Otherwise, we'll return your checks with our regrets that not enough readers responded. Think about it while you read the rest of this article.

How to use the card

I started with the Presto! card because it is the easiest to understand (and fairly easy to assemble). Ignore the cluttered look of the schematic diagram. It's just all the lines that make it look complex. There's really not that much there.

Addressing

The SRAM is accessed at the (16 byte) slot I/O locations. Eight of these locations are used to read or write data and the other 8 are used to read or write three latches. These latches store the address of the bytes that you want to access on the card.

Let's take it a piece at a time. The card (fully stuffed) has 1.5M bytes of memory. It takes 21 bits of address (A0-A20) to specify any single location. There are eight bytes in the slot I/O (Input/Output) location that are used to read or write data on the card. It takes three bits to address one of eight locations. So three of the 21 bits that you need to access the 1.5M bytes are actually the three lowest bits (A0-A2) of the I/O address. These three bits are driven onto the card at every access. That leaves 18 bits to be stored in the three latches.

Latch U22 and U24 each store 8 bits so latch U23 stores the remaining two bits. These latches are accessed at slot I/O locations \$C0n8 thru \$C0nF (where n is the slot number).

Address	Bits
\$C0n8/C0nC	A3-A10 (8)
\$C0n9/C0nD	A11-A18 (8)
\$C0nA/C0nE	A19-A20 (2)
\$C0nB/C0nF	unused

When you access any of the latches, the latched address is not driven onto the cards address bus. The resistor networks

The Presto! card

Instant relief from long waits for system boots or disk intensive software

(For II, II+, IIE and IIGs)

morning, the data will still be there.

The hole in your Wallet

Cost is pretty reasonable. A quick look at the parts list shows that there are only about \$24 in miscellaneous parts including sockets for the integrated cir-

If enough readers are interested, I'll have the bare boards made. It's up to you, readers, how many of you are willing to vote with your wallets. If you want the bare board, send COMPUTIST a check for \$32 (\$30 +\$2 packing & postage). If you want the card already assem-

Presto! card Parts List

B1	3-3.6 VDC	battery (see text)	3.00	3.00
C1-15	.1 µf	ceramic disc capacitor	.12	1.80
Q1	2N2907	PNP transistor	.13	.13
Q2	2N2222	NPN transistor	.10	.10
R1	10K Ω	resistor	.05	.05
R2, 3	10K Ω	resistor network (10 pin SIP)	.29	.58
U1-U12	128K SRAM	(see text)	22.00	22.00
U13	Maxim 691	Special battery control chip	6.95	6.95
U14	74LS573	Octal transparent latch	.88	.88
U15	74LS245	Bidirectional (TS) buffer	.69	.69
U16	74LS32	Quad 2-input OR	.25	.25
U17	74LS00	Quad 2-input NAND	.25	.25
U18, 20, 21	74LS138	1 of 8 decoder	.39	1.17
U19	74LS139	dual 1 of 4 decoder	.39	.39
U22-24	74LS574	Octal latch	.91	2.73
2 ea.		14 pin DIP socket	.11	.22
5 ea.		16 pin DIP socket	.12	.60
5 ea.		20 pin DIP socket	.18	.90
12 ea.		32 pin DIP socket	.28	3.36
1 ea.		Circuit board		30.00
				\$76.05

"Vaporware Announcements"

Iigs RAM card

I was working on a \$150—4M byte memory card for the Iigs but I delayed and got skunked. The latest issue of A2 Central featured a 4M byte RAM card for, you guessed it, \$150. Well, you can't win them all.

But I hate to give up the idea so easily so here is the revised Iigs RAM card specs:

4 SIMM connectors using 1, 2 or 4 Mbyte SIMMs. That's anywhere from 1 Mbyte all the way up to 14 Mbytes of DRAM. There's some question as to whether the memory above 4 Mbytes would be "fast" DMA compatible due to reports that the FPI doesn't put the DMA bank address onto the data bus soon enough in fast mode.

768K bytes of battery-backed SRAM used as a ROM card. The ROM card is supported by the Iigs operating system. I suppose that no one has done much in this direction because in the past all of the memory card space was taken up by DRAM chips. But with the SIMM chips, more card space is available.

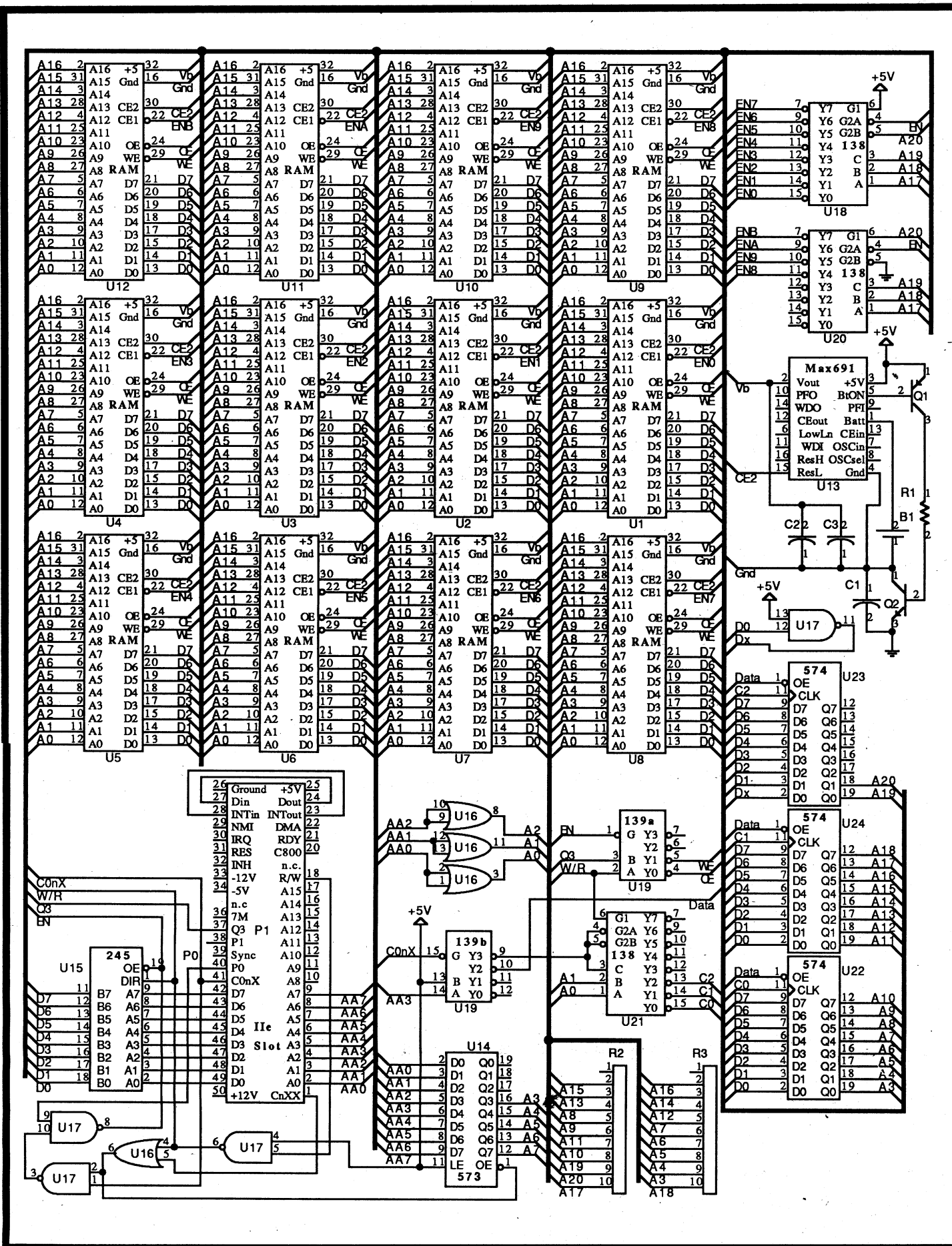
The card with 4 Mbytes of RAM would sell for the same price as the 4 Mbyte card offered by A2 Central. Or you could buy it with only one—1 Mbyte SIMM for about \$80 and add more memory yourself as you get the funds. Drop me a postcard and let me know how to feel about it. I'll finish the card if there is real interest. Otherwise, it's just so much hot air.

The Hyper Iigs

Some of the local hackers have been jawing about ways to make the fastest ever Iigs. One of their less crazy ideas sounded possible so I burned some midnight oil on the simulator and, what do you know, it works! It would be more expensive than a Zip GS or a Transwarp and you would need a beefed up power supply. Also, (shudder!) you would have to do a little "mod" on your motherboard (frowned on by Apple) in order to disable any memory on the motherboard. (The "mod" could be removed if you ever needed to take your machine to an Apple dealer.)

And wow, does it ever scream. What is it? Well, it seems that Western Design has reliable 12MHz 65C816 processors and some that even run at 14MHz. The crazy idea? Use two caches; a high speed 64K byte cache just like the other speedup cards and a second cache of high speed DRAM, an 8 Megabyte cache.

It requires two cards, one regular slot card and one that plugs into the memory expansion slot. That's one reason why it costs more, the other is all of that high speed DRAM. The DRAM cache runs at an effective speed



(R2, R3) pull address lines A3 thru A20 high. This means that when you read or write to a latch, you are also reading or writing to the eight (8) highest locations in SRAM.

Reading & Writing the Memory

The card is accessed by reading or writing to the lower eight slot I/O locations at \$C0n0-C0n7. Think of it as an eight (8) byte window onto the card. You determine where the window is by writing an address into the latches. Then you read or write the eight bytes thru the window (at the lower slot I/O locations).

When you read or write data, the contents of the address latches (A3-20) are driven onto the card address bus. The latched address (18 bits) plus the lower three bits of the slot I/O address (A0-2) form the 21 bit address necessary to access any one byte of data.

The reason for using the lower bits of the slot I/O address to address the card memory is two-fold. First, the multiple address access allows the Iigs (in 16 bit

mode) to transfer data almost twice as fast as the Iie. Second, the latches are write only and I wanted to be able to read them. So I designed the card so that when you write to the latches, you also write to the SRAM and when you read the latches, you read those same locations in the SRAM. This allows greater flexibility in programming.

The Slot ROM

For the card to be a bootable device, you must have a slot ROM (\$CnXX). But after stuffing twelve (12) SRAM chips onto the card there wasn't much room left. Besides that, I have a strong objection to ROMs; they're hard to change/update. You need an ultraviolet eraser to scrub out the old data and a PROM burner to program them with the new data. That's too much trouble and most users don't have the equipment.

So I came up with a better idea. I'm already using the highest eight bytes of SRAM to mirror the contents of the address latches. Why not use the highest 256 bytes as the boot ROM.

Then the Pseudo-ROM could be changed any time you please. So that's what I did.

One other note on the slot ROM. The slot ROM is not required to access the card. You only need it if you want the card to be a bootable device. That means that you can put the cards driver somewhere in memory and then use the card in slot 3 on a Iie or a Iigs.

Assembly

This is a good project for anyone who has a modicum of dexterity even if you have never soldered before. The board can be assembled using sockets so that the ICs won't be fried by an over zealous soldering iron. And the board is tin plated so the solder will flow quickly and adhere easily. If enough people are interested, we can make up a kit of all parts with detailed instructions. A local reader has told me that he is willing to assemble and test boards for \$25 each. You supply the board and parts. So do it yourself or have it done for you. Don't just sit there, vote with your wallet.

of slightly more than 5MHz. The 64K byte cache card (12MHz) plugs into the regular slots and allows DMA access to the DRAM as well as updating the 64K cache.

So your new Hyper IIgs runs at 12MHz in its 64K cache. On a cache miss/write thru it slows to 5MHz and only if the access is to bank \$E0-FF does it slow to 2.8 or 1MHz. While its running at high speed it outputs an address of \$FF/FFFF to the FPI to fool it into thinking that a continuous read to that address is occurring. Making only a few of these card sets would cost \$500 each, assembled. Sounds crazy to me, workable but crazy. What do you think?

On that note I'm going to call it a day. But don't you go to bed before you've scrawled a note on a postcard and sent it to COMPUTIST to let us know what you think. Bye!

Curt Patch CT

Softkey for...

Teacher's Tool Kit, v3.1

Hi Tech of Santa Cruz

A copy of this 3.5" startup disk boots to a title screen that warns 'This is not a valid.. STARTUP DISK! Press a key to restart...' I loaded up Copy 2+ sector editor and searched the startup disk beginning at block \$00 for these words. I found them at block \$25 along with some logical code. I found I could bypass the protection with a jump command. At block \$25 starting at bits \$0200 I found 20 76 21 and changed it to 4C F0 21. So deprotect TTK as follows:

1. Make a copy of TTK with your favorite disk copy program and put your original away.

2. Boot up your block editor and change as follows:

Blk	Byte	From	To
\$25	\$200	20 76 21	4C F0 21

3. Write the changes to the disk and you are done.

The accompanying program disk is not copy protected. Bless all you teachers out there in Computist's Land. May all of your backups work for you.

Robin Locksley MO

Placing PaintWorks Gold on a Hard Drive.

Requirements:

Apple IIGS
Copy II Plus v9.1

I have been trying to get PaintWorks Gold on the hard drive by updating it to GS.OS as suggested in Computist 73 page 6. The article suggested doing a search for the string C9 08 00 00 CE. I searched but never found that string. But never fear I have found a string that works.

Boot Copy II Plus and go to the Sector Editor. Do a search for C9 08 00 D0 CE and replace the 08 to 7F. This will allow PaintWorks Gold to load on the hard drive. I don't know if the original code was in error or if there are more than one set of codes (sometimes programers have several sets of copy protection) but this worked for me.

I would also like to be able to place the following programs on hard drive. If anyone out there has succeeded please send in your results.

Dungeon Master
Hunt for Red October
Spirit of Excalibur
The King of Chicago
War in the Middle Earth

Joe Trodello MA

Softkey for...

Algebra I v1.7

Eduware

Requirements:

COPYA
Copy II Plus
1 blank disk
1 formatted disk

The softkey in a previous issue would not work on my disk, but here is how to deprotect this version.

1. Run COPYA. Press ctrl C at the prompts.

CALL 151

B942:18

RUN

2. Copy files from the copied disk to a formatted disk. Use Copy 2+ to copy DOS onto the new disk and to change the boot file from Hello to Boot.

Aaron Culliney HI

Softkey for...

Space Rogue

Origin Systems

A while back, a friend asked me to take the (code wheel) protection off Space Rogue. He was angry that each time he requested to play a saved game, he was asked for a word from a certain page in the manual. This can be very annoying especially when you enter the incorrect answer and the game reboots. I'm not sure whether there is already a COMPUTIST issue detailing this krack, (it is an older game), but here is my method:

In order to deprotect the disk, make a copy of both sides. I have to note that I had trouble using Copy II+ on the boot side for some mysterious reason, but Copya and Super IOB FAST .CON seemed to work just fine. Once copied, I set about snooping through the code on the boot disk.

I found the specific calls to the code wheel protection on track \$13 sectors \$04 and \$05. After some trial and error here, I pinned down the branch routine that handled the right and wrong answer on track \$13, sec-

tor \$05. In bytes \$71 and \$72 there was a BNE +\$0A which I changed to BNE +\$08 (\$D0 0A TO \$D0 08). This change to the code enabled any answer to be entered without a problem.

Step-by-step

1. Make a copy of both sides with COPYA or Super IOB FAST.CON.

2. Make sector edits with any standard editor to the SPACE ROUGE boot disk:

Trk	Sct	Byte	From	To
\$13	\$05	\$72	0A	08

If you prefer to scan for code, search for \$D0 0A C8 C0 04 and change the \$0A to a \$08.

Alan Chaney MD

Softkey for...

Manhunter: New York

Sierra On-Line

Requirements:

4 Blank 3.5 disks
3.5 Disk Copier
3.5 Sector Editor

I fought this program for 3 months before I finally got lucky and found a softkey. There was two reasons why this program took me so long to softkey. First I am about as new as you can get to Assembly Language, and secondly this program don't make regular jump long to some locations. Not knowing for certain, but I think the addresses minus the 22 is pushed on the stack and are pulled off the stack in a way that I could not follow. An example of what I mean is the call to the routine that checks to see if the typed in word matches the total amount that is asked for (as long as the amount matches the letters don't matter, the letter amounts are A=41 thru Z=5A). There is no 22 64 21 01 to the

put a RTL(6B) at the beginning of the Prodos Quit routine 01/2B86:6b (by the way it ended with a RTL). Now the Sorry screen repeats after pressing Return. I found that the Sorry screen clears of everything before rewriting the Sorry screen (it's quick), But doing that period you can reset into the Monitor and put a 20 at 01/7F8D: and the Question screen will be rewritten automatically when you return from the Monitor. Be aware that that area of memory is also rewritten up to and including 01/7F8D, So if you wish to repeat the question screen you must insert another 20 at 01/7F8D:.

The letters typed from the Keyboard are stored beginning at 01/7F6A, But no where in the program is that address ever checked. I did find a great many 8D 7E 01 or 01/7E8D, and since the load instruction was BF 8D 7E 01 or LDA 017E8D,X , I thought I would look thru the Operation Codes to see what the compare would be if the load is BF. Looking in the same column on the chart, DF was the byte for compare in the column. So, (you guess it) I searched memory for any references to DF 8D 7E 01 it only took 2 Banks because I found what I was looking for at 01/217E. So I went back to the beginning of the routine (01/2164) and placed the old stand by (I changed 0B 3B 38 to 68 FA 00) and placed a 20 at 01/7F8D and returned to the program. After the screen rewrote it self, I typed in the correct word and pressed Return. The program hit the code almost instantly (before the screen cleared).

So I restarted the program all over again got into the Monitor at the Question screen and started to look at the code beginning at 01/2164. I changed a



protection routine nor is there a call of 22 05 2C 04 for the Sorry Manhunter Screen, But the last 3 digits of that address is at 01/8141.

Here are some of the things I tried while working on this program. When you type in the wrong word and press Return, the program jumps to a screen that simply says "Sorry that is the wrong word. Pressing return again takes you to the Prodos Quit Screen. So I decided to

BEQ +05 (F0 05) to BRA +05 (80 05) at 01/2184 and placed a 20 at 01/7F8D to get a new question and also to see if the new question screen being rewrote would effect the patch. I returned to the program from the monitor, After the screen rewrote itself, I typed in a known incorrect word and the program polled the drives and asked for Disk 2, just like the original program. I didn't play the game

very long, so there might be still some surprises remaining.

Here is some of the code as well as the protection code from the disk.

```
20BE:48 PHA ;Started at 01/208e
20BF:4B PHK
20C0:FC EB 20 JSR (20EB,X) ;Jump to protection
20C3:7A PLY
20C4:7A PLY
20C5:85 F0 STA $F0
```

This routine ends at 01/20EA

```
20EB:A9 2B 01 LDA #$012B ;Changes 00 to 22 in
addresses below?
20EE:00 BRK
20EF:37 21 01
20F2:00 BRK
20F3:64 21 01 ;Protection Address
20F6:00 BRK
20F7:97 21 01
20FA:00 BRK
20FB:C4 21 01
20FE:00 BRK
20FF:F7 21 01
```

These addresses continue thru 01/2136

```
2164:0B PHD
2165:3B TSC
2166:38 SEC
2167:E9 F7 00 SBC #$00F7
216A:5B TCD
216B:69 F2 00 ADC #$00F2
216E:1B TCS
216F:E2 30 SEP %00110000 ;set 8-bit
accumulator
2171:A7 FD LDA [$FD] ;load keyboard bytes
2173:AA TAX ;put bytes in X reg
2174:A0 01 LDY #$01 ;put 1 in Y reg for
compare
2176:B7 FD LDA [$FD],Y ;load bytes to compare
2178:A8 TAY ;put those bytes in Y reg
2179:BF 8D 7E 01 LDAL $017E8D,X ;load keyboard byte
totals
217D:BB TYX ;get compare byte, put in
X
217E:DF 8D 7E 01 CMPL $017E8D,X ;do they MATCH?
2182:C2 30 REP %00110000 ;restore 16-bit
accumulator
2184:F0 05 BEQ 218B ;YES,they match
(BRANCH)
2186:A0 00 00 LDY #$0000 ;NO MATCH,load Y reg
with 0
2189:80 03 BRA H218E ;Y=0 so go to SORRY
screen
218B:A0 01 00 LDY #$0001 ;Y=1 ask for DISK 2
218E:7B TDC
218F:18 CLC
2190:69 F7 00 ADC #$00F7
2193:1B TCS
2194:98 TYA
2195:2B PLD
2196:6B RTL
```

As you can see the program is looking for the Y register to be 0001 upon return from this area or it's a copy. So I changed 01/2187:00 to 01/2187:01. Now you can type a word up to 13 letters or just PRESS RETURN from the Question Screen.

Note: the longest correct word to be typed in the program is 9 letters. If you type more than 13 letters the program automatically knows the disk is a copy.

Step-by-step

1. Copy all 4 diskettes and hide Originals.

2. Make this edit to the copy of disk one only or scan for 01 C2 30 F0 05 A0 00 and change 00 to 01.

Blk	Byte	From	To
\$14	\$15F	00	01

3. Write change back to disk copy and you're done.

Ⓢ I seem to have read where the Computist BBS is on line for 20 hours a day, but what 4 hours are the BBS down or off line?

Ⓢ I just wrote this article and included my first edited code. This work was done with Appleworks 3.0. My question is when code is included in an article is it common to type that code into your article by hand or Send the binary and text code along separate from the word processor article?

Enter the disassembled listing into your article. Send binary programs as separate binary files.....RDEXed

Ⓢ How would I go about getting another copy of DISKEDIT or another Computist starter disk, because the one I have on my Computist kit disk don't work?

Return your old disk and request a new copy. Send along a dollar for the postage and mailer or send a sturdy mailer with return postage on it....RDEXed

Ⓢ What is the Computist Club and what are the pluses if any of joining?

The COMPUTIST Club is a support group for COMPUTIST. Besides BBS access, the plus is Good Karma.....RDEXed

If the universe is endless, where is the edge? Bye now.

Take one quick step past endless and you'll be right at the edge of nowhere.....RDEXed

Robert Goehring Scotland

This is my first time to send in some softkeys. I recently moved to Scotland and most of my COMPUTISTs are in storage back in the States. Hopefully, I won't repeat any. I would like to thank all you COMPUTISTs out there that helped me learn how to do some of these softkeys. Many of these were softkeyed using a brute force technique, that is, change things until you get what you want.

Softkey for...

Grammar Gremlins

Davidson

Requirements:

Apple Pascal
Disk copier that ignores errors

This disk has normal tracks except for \$22. Making a fast copy of the disk was easy (read error \$22) but still would not boot. After several hours of looking at the disk for the old LDA C08C,X, I finally made one sector edit too many. I received an error code telling me to "PUT

PASCAL.SYSTEMBACK INTO DRIVE".

It's been a long time since I did anything with Apple's PASCAL system so I had to break out my books and my system disks. Once I knew the disk was in the PASCAL operating system, I was halfway home. I booted up my system disks and did a directory of the GREMLIN disk. Not too much of interest except a file named "PROTECT3.CODE". Could this be possible?

I tried replacing this file with a PASCAL.CODE file which would just return to the file GG.CODE. No go. Executing the GG.CODE file would show the logo but wouldn't run. But by executing the PROTECT3.CODE by itself, the program would run fine. So the protection was not in either the PROTECT3.CODE or the GG.CODE files. That left either the PASCAL system files or the SYSTEM.STARTUP file.

I deleted the STARTUP file (easier than boot tracing the PASCAL system!) and used PROTECT3.CODE as the SYSTEM.STARTUP file. Works fine and is totally COPYA-able! I'm sure that there is probably a way to sector edit the disk but I couldn't find a way.

1. Copy both sides disk with any disk copier. Ignore errors on track \$22.
 2. Boot Apple Pascal.
 3. Enter the (F)iler. (R)emove file GREMLIN: SYSTEM.STARTUP.
 4. (T)ransfer the file GREMLIN:PROTECT3.CODE to GREMLIN:SYSTEM.STARTUP.
- You're done.

Softkey for...

Alphabet Sequencing

Random House

Requirements:

COPYA
A Fast DOS
Copy II Plus or other general disk utility

At first, I thought this was going to be a hard break but I was pleasantly surprised at it. It uses AA DE for epilogues so we use COPYA on it.

1. Boot your DOS 3.3 system disk and startup COPYA.
- RUN COPYA
CTRL C at the prompts
70 prevents reload of COPY.OBJ0
2. Tell DOS to ignore address epilog and checksum errors and use COPYA to copy the disk.
- POKE 47426,24
RUN
3. Put a Fast DOS on the copy disk.
 4. Make boot program "STEX".
 5. Load the Applesoft program named "ALPHA1" to change the POKEs for the Protected DOS to normal DOS.
- LOAD ALPHA1

6. Change line numbers 31040, 31230, 31370, and 32440 to read "REM ". List each line. They should have a REMARK that says "REM PROTECTED DOS". If any are different, use a program like Beagle Brothers PROGRAM WRITER (a superb program) to SEARCH for the words 'PROTECTED DOS'. Change each of these lines to only a REM.

LIST 31040

LIST 31230

LIST 31370

LIST 32440

31040 REM

31230 REM

31370 REM

32440 REM

7. Save the program back to disk.

SAVE ALPHA1

Softkey for...

Math Problem Solving

Addison-Wesley

Softkey for...

Science #2: Geology

Decision Development Corp

Softkey for...

Multiplication 3

Fractions

Division 3

Multiplication 1

Strategies in Problem solving:

Dinosaurs & Squids

Scott, Foresman & Co

Softkey for...

Rocky's Boots

Learning Co.

Requirements:

COPYA or Super IOB
Sector editor

These disks have FF FF for the address and data epilogues.

1. Boot your DOS 3.3 system disk and startup COPYA.

RUN COPYA

ctrl C

at the prompts

70

prevents reload of COPY.OBJ0

2. Tell DOS to ignore address and data epilog errors and use COPYA to copy the disk.

POKE 47496,24

POKE 47445,96

POKE 47397,24

POKE 47398,96

RUN

3. Make the sector edits to the copy from the following list.

Or

1. Use Super IOB to copy the disk.

LOAD SUPER IOB

2. Enter the controller for EPILOGUES FF.FF FF.FF.

Note: I could not get IOB to work on Multiplication 1.

3. Start Super IOB.

RUN

4. Make the required sector edits.

Science #2: Geology

Trk	Sct	Byte	From	To
\$00	\$05	\$AC	38 60	18 60

Math Problem Solving

Trk	Sct	Byte	From	To
\$00	\$05	\$AC	38 60	18 60

Multiplication 3

Trk	Sct	Byte	From	To
\$00	\$07	\$8E	4C F3 09	EA EA EA

Fractions

Trk	Sct	Byte	From	To
\$00	\$07	\$8E	4C F3 09	EA EA EA

Division 3

Trk	Sct	Byte	From	To
\$00	\$07	\$8E	4C F3 09	EA EA EA

Multiplication 1

Trk	Sct	Byte	From	To
\$00	\$05	\$68	BD 8C C0	18 60 C0
			10 FB 88	10 FB 88

Rocky's Boots

Trk	Sct	Byte	From	To
\$00	\$01	\$8D	18 90 3E	38 90 3E

CONTROLLER

```
1000 REM "EPILOGUES
FF.FF FF.FF.CON
1010 TK = 0:LT = 35:ST =
15:LS = 15:CD =
WR:FAST = 1
1020 GOSUB 490: GOSUB
160: GOSUB 270: GOSUB
610
1030 GOSUB 490: GOSUB
230: GOSUB 610: IF
PEEK (TRK) = LT THEN
1050
1035 RESTORE
1040 TK = PEEK (TRK):ST
= PEEK (SCT): GOTO
1020
1050 HOME : PRINT "COPY
DONE."
1056 END
10400 DATA 255,255,255,
255
10401 REM "EPI'S OF FF
FF FF FF
```

Checksums

1000-\$356B	1035-\$49A6	10400-\$EC47
1010-\$2544	1040-\$EF21	10401-\$4831
1020-\$AFDB	1050-\$5259	
1030-\$FEF0	1056-\$A7BC	

Save this controller to your Super IOB controller disk. You do have a disk that you use to save all Super IOB controllers, don't you?RDEXed

Softkey for...

Strategies in Problem solving: Dinosaurs & Squids

?

Make a copy of the original disk. Copy a FAST DOS onto the copy. Make the boot program a BRUNable HELLO.

Softkey for...

Early Elementary I Compu-Tations, Inc

Requirements:

Bit copier
COPYA

This disk was really hosed. Tracks \$0-2 have ED AA for the address epilogue. Tracks \$3-1A and \$1C-22 had D4 instead of D5 in the prologues. Track \$1B is blown.

1. Bit copy tracks \$00-1A and \$1C-22.

2. Boot your DOS 3.3 system disk and startup COPYA.

RUN COPYA

ctrl C *at the prompts*
70 *prevents reload of COPY.OBJ0*

3. Tell DOS to ignore address prolog and epilog bytes and use COPYA to copy the disk.

POKE 47496,24

POKE 47444,41 *ignore 1st addr prolog byte*

POKE 47445,0

POKE 47496,24 *ignore addr epilog bytes*

POKE 47497,96

RUN

4. Put a Fast DOS on the copy disk.

Softkey for...

Ace Reporter Cat N' Mouse

Mind Play

Requirements:

COPY II PLUS

Trk \$1F is blown. Otherwise, pretty normal.

1. Format a disk.

2. Use COPY II+ and copy tracks \$0-1E and \$20-22 to the formatted disk.

3. Sector edit the copy.

Trk	Sct	Byte	From	To
\$01	\$01	\$022	80 65	90 65

Softkey for...

Money with Bluebeard's Ghost

Gameco

Requirements:

COPYA

A Fast DOS

Has address epilogues of AE AA instead of DE AA.

1. Boot your DOS 3.3 system disk and startup COPYA.

RUN COPYA

CTRL C *at the prompts*
70 *prevents reload of COPY.OBJ0*

2. Tell DOS to ignore address prolog and epilog bytes and use COPYA to copy the disk.

POKE 47507,0 *ignore 1st addr prolog byte*

RUN

3. Put a Fast DOS on the copy disk.

4. Get into BASIC and load the HELLO program. List line 10. If it has a "POKE 1012, ?" in it, delete the line and resave the HELLO program.

Softkey for...

Elements of Geometry:

Intro to Geometry

Word Problems:

A Practical Approach

SVE

Requirements:

COPYA

A Fast DOS

Has messed up address epilogues and alternate tracks have D4 in address prologue.

1. Boot your DOS 3.3 system disk.

2. Tell DOS to ignore 1st address prolog byte and epilog

and use COPYA to copy the disk.

POKE 47426,24

RUN COPYA

CTRL C *at the prompt*

CALL-151

B954:29 00 *ignore 1st addr prolog*

B988:18 60 *ignore epilog*

RUN

3. Copy a Fast DOS onto the copy.

Note: On Word Problems, make SVE LOGO1.1988 the hello program.

Softkey for...

Gertrude's Puzzles

Learning Co.

Requirements:

Super IOB

Has the FF FF epilogues. But only has \$12 tracks.

1. Format new disk.

2. Enter the following controller and save it where ever you put your controllers.

CONTROLLER

```
1000 REM "GERTRUDE'S
PUZZLE
1010 TK = 0:LT = 18:ST =
15:LS = 15:CD =
WR:FAST = 1
1020 GOSUB 490: GOSUB
160: GOSUB 270: GOSUB
610
1030 GOSUB 490: GOSUB
230: GOSUB 610: IF
PEEK (TRK) = LT THEN
1050
1035 RESTORE
1040 TK = PEEK (TRK):ST
= PEEK (SCT): GOTO
1020
1050 HOME : PRINT "COPY
DONE."
1056 END
10400 DATA 255,255,255,
255
10401 REM "EPI'S OF FF
FF FF FF
```

Checksums

1000-\$356B	1035-\$5DAE	10400-\$CC53
1010-\$71CC	1040-\$E735	10401-\$0CB9
1020-\$AFDF	1050-\$5651	
1030-\$FEF4	1056-\$AFB8	

3. Load Super IOB and merge the controller. Startup Super IOB if it is not already going and copy the disk.

4. Format a new disk with a Fast DOS on it

5. Copy all files to the newly formatted Fast DOS disk.

6. Make the boot program "PUZZLEHELLO&TITLER.OBJ0"

Softkey for...

Writer Rabbit

Learning Co.

Requirements:

Sector editor

1. Copy both sides using disk copier.

2. Use sector editor. Scan for bytes A9 56 85 08 A9 08.

3. Change from 85 08 to 38 60.

Note: I found the bytes twice on the front of the disk (side 1) and once on the back (side 2).

Side 1

Trk	Sct	Byte	From	To
\$03	\$0E	\$79	85 08	38 60
\$10	\$09	\$C6	85 08	38 60

Side 2

Trk	Sct	Byte	From	To
\$08	\$03	\$C6	85 08	38 60

Softkey for...

Kindercomp

Spinnaker

Requirements:

Copy II Plus or other general disk utility

Normal disk except for track \$00, sector \$0A.

1. Load the program named "MENU".

LOAD MENU

2. List line #7. If "CALL 6380" is there, delete line 7.

LIST 7

7

3. Insert a blank disk and format it with a Fast DOS using "MENU" as the hello program.

INIT MENU

4. Copy all files to the new disk.

Softkey for...

Collamore Castle: Level II

D.C. Heath

Requirements:

COPYA

ProDOS boot disk

Address epilogues were DE DE.

1. Boot your DOS 3.3 system disk and startup COPYA.

RUN COPYA

CTRL C *at the prompts*
70 *prevents reload of COPY.OBJ0*

2. Tell DOS to ignore 2nd address epilog and use COPYA to copy the disk.

POKE 47517,0

RUN

3. Boot ProDOS. Copy a new ProDOS onto disk.

Softkey for...

Technology and Basic Skills:

Estimation

At The Races

Bull's-Eye

Estimation Invasion

Round Up, Round Down

Britannica

Requirements:

COPYA or Super IOB

All of these disks used the same protection. They have BF AA as the data epilogues. Either use COPYA or IOB.

1. Boot your DOS 3.3 system disk and startup COPYA.

RUN COPYA

CTRL C *at the prompts*
70 *prevents reload of COPY.OBJ0*

2. Tell DOS to ignore 1st data epilogue and use COPYA to copy the disk.

CALL-151

B934:29 00

RUN

3. Put a Fast DOS on the copy disk.

-or-

1. Enter the following controller and save it wherever you put your controllers.

CONTROLLER

```
1000 REM "CON.BRITANNICA
SERIES
1010 TK = 0:LT = 35:ST =
15:LS = 15:CD =
WR:FAST = 1
1020 GOSUB 490: GOSUB
160: GOSUB 270: GOSUB
610
1030 GOSUB 490: GOSUB
230: GOSUB 610: IF
PEEK (TRK) = LT THEN
1050
1035 RESTORE
1040 TK = PEEK (TRK):ST
= PEEK (SCT): GOTO
1020
1050 HOME : PRINT "COPY
◇DONE."
1056 END
10400 DATA 222,170,191,
170
10401 REM "EPI'S OF DE
AA BF AA
```

Checksums

```
1000-$356B 1035-$49A6 10400-$8DE6
1010-$2544 1040-$EF21 10401-$6596
1020-$AFDB 1050-$5259
1030-$FEF0 1056-$A7BC
```

2. Load Super IOB and merge the controller. Copy the disk.

3. Put a Fast DOS on the copy disk.

Alan Chaney MD

Iigs monitor tidbits

Here are some nice little tidbits for 2 GS users. You must be in the monitor to make these changes.

ctrl N return: Sets bits e,m, and x to Native mode (0).

ctrl R return: Returns registers and flags to default Monitor configuration.

ctrl X: Stops a memory dump in progress.

FF=F: Changes filter value for ASCII characters to \$FF for high bit on.

7F=F: Changes filter value for ASCII characters to \$7F for high bit off.

For a more complete list see issue 66 page 28 by Mr. Jim S. Hart.

Softkey for...

Club Backgammon

California Dreams/Logical Designs

Requirements:

- 1 Blank 3.5" Disk
- 3.5" Disk Copier
- 3.5" Sector Editor

The softkey for this program was previously done by the man I call The WIZARD (Mr. Brian A. Troha) in issue #62 page 28. But since then the code has moved around a little. The code is now on block \$1C5 instead of \$13 as was the case in issue #62. His softkey for Vegas Craps (same issue) is a perfect example of what I found on Club Backgammon, with a few byte changes. The listing of this code might help someone better understand how this letter protec-

tion works. Or maybe help someone to find a letter or word protection on another program.

```
930A:22 40 A1 02 JSL 02A140
930E:68 PLA
930F:FA PLX
9310:85 F0 STA F0
9312:86 F2 STX F2
9314:A0 04 00 LDY #0004
9317:B7 F0 LDA [F0],Y
9319:48 PHA
931A:22 AD 8F 01 JSL 018FAD :Letter press in routine.
931E:7A PLY (22 53 0D 00 on disk)
931F:7A PLY
9320:7A PLY
9321:7A PLY
9322:FA PLX
9323:86 F0 STX F0 :Store letter here.
9325:C6 F0 CMP F0 :is match equal?
9327:D0 06 BNE 932F :No, go to 2nd try
9329:A9 01 00 LDA #0001 :Yes, go start game
932C:82 35 00 BRL 9364
932F:E6 EC INC EC :Increment trys
9331:A5 EC LDA EC :Load trys
9333:C9 02 00 CMP #0002 :is it 2nd try yet?
9336:D0 02 BNE 933A :No, go start over again
9338:80 27 BRA 9361 :Yes, go load $0000 to quit
933A:F4 05 00 PEA 0005
933D:F4 29 6D PEA 6D29 :This is a message saying you
9340:F4 05 00 PEA 0005 selected the wrong letter
9343:F4 10 6D PEA 6D10 and the BRL 9240 will
take
9346:F4 05 00 PEA 0005 you back to the
beginning of
routine for your 2nd try
9349:F4 FE 6C PEA 6CFE
934C:F4 05 00 PEA 0005
934F:F4 FD 6C PEA 6CFD
9352:22 15 15 01 JSL 011515
9356:A8 TAY
9357:3B TSC
9358:18 CLC
9359:69 10 00 ADC #0010
935C:1B TCS
935D:98 TYA
935E:82 DF FE BRL 9240
9361:A9 00 00 LDA #0000 :if code comes here you
9364:A8 TAY are headed for the
9365:7B TDC ProDOS Quit routine.
9366:18 CLC
9367:69 F5 00 ADC #00F5
936A:1B TCS
936B:89 TYA
936C:2B PLD
9364:6B RTL
```

As you can see the code is kind of easy to by-pass once you find and understand what it is doing. There is one little catch to this code and the code on the disk. In the monitor 01/931A is 22 AD 8F 01, But on the disk that jump is 22 53 0D 00. So to by-pass the letter check all together, Perform these changes to your copy of Club Backgammon.

1. Copy disk
 2. Scan for 22 53 0D 00 change 22 to AF.
 3. Scan for C5 F0 D0 06 A9 01 00 change D0 06 to EA EA.
- Both changes should be in the same sector.
4. Write changes to disk copy.

Save your printed manual to a safe place, you are now free of that habit.

Advanced Playing Technique for...

Club Backgammon

California Dreams/Logical Designs

Backgammon Tidbits

```
01/74BD:40 Equals 64 game bet limit in game
01/806B-6C:# Total games for bottom player (Hex)
01/806D-6E:# Total games for top player (Hex)
02/13C4:00-01 Computer plays itself at your pace
02/31C5:F0-80 Every game the bottom player wins becomes a
Gammon game (worth 2 times betted amount)
02/31C5:F0-80 These two changes together, makes bottom
02/3209:58-00 players won games worth a Backgammon (worth
3 times betted amount)
02/341A:03-00 Top player wins ONLY bet amount (1 times)
05/75FA:00-01 Makes computer double bet always
05/4CA3:# Chips taken off (bottom player)
05/4CA9:# Chips taken off (top player) when either of these
locations reach $0F the game's over
```

Note: For the above patches of Gammon and Backgammon to work properly location 05/4CA9 must be changed to \$00 before last chip is removed by bottom player.

Notes on Squirt 8 and Copy II Plus

For those of you that are not familiar with squirt, Squirt is a shareware program that attaches itself to ProDOS and replaces that ENTER PREFIX and ENTER PATHNAME with a program selector that will scan your disk drives as many times as you like, and tell you what is on each disk in each drive (ProDOS disk only). You then select which program to run (System file only). Squirt 8 is for ProDOS 8 disk and Squirt 16 is for ProDOS 16. Since I use copy II plus a lot in the course of dealing with Computist cracks, that is why I put the selector in the program. Enough lip jabbering, here we go.

Copy II Plus 9.0 has ProDOS 8 version 1.8 on it. Squirt will install on this version, But the message portion of the program patches over some vital information needed by ProDOS (I will explain later). One of the problems is, this version of copy II plus doesn't use the quit code in ProDOS to exit the program (why? I don't know). This version uses a quit code that has the same result as the ProDOS code, except the quit code is located in the file Util. More which is a binary file that loads at \$5C00 with a length of \$5A18 (23063). The quit code within this file is jumped to when you quit from the utilities section of the program.

I guess some explaining is in order before we continue on. Apple has rewrote and added \$100 bytes of code to Version 1.8 of ProDOS 8. Now this would not be a problem for anyone that is not trying to patch ProDOS. But as you might have guessed I install Squirt on as many ProDOS's as I can, because I like the program. That extra \$100 bytes causes this ProDOS not to work when I auto install Squirt in it. The Squirt program needs to be update to compensate for the additional bytes. The \$2B40 patch needs to be moved up to \$2C40 and the

code needs to address the new location to work. The JSR to run the patch at \$260C also has to be changed to the new page of the patch. With the following change to the Squirt auto install program, Version 1.8 will now operate properly. Here is a partial listing of the code.

```
65AA:A0 00 LDY #00
65AC:E6 06 INC 06
65AE:D0 16 BNE 65C6 (+16)
65B0:E6 07 INC 07
65B2:A9 2B LDA #2B :change to 2C, for
Version 1.8
65B4:8D EE 65 STA 65EE
65B7:8D F8 65 STA 65F8
65BA:8D FF 65 STA 65FF
65BD:8D 02 66 STA 6602
65C0:A5 07 LDA 07
65C2:C9 27 CMP 27
65C4:B0 36 BCS 65FC (+36)
```

Skip some code

```
65EC:C8 INY
65ED:A9 2B LDA #2B :Stored at 260E for the
JSR
65EF:91 06 STA (06),Y to patch
65F1:A2 3A LDX #3A :Number of bytes in code
65F3:BD FC 65 LDA 65FC,X :Get code to print
message
65F6:9D 3F 2B STA 2B3F,X :Address to place code
at
65F9:CA DEX
65FA:DO F7 BNE 65F3 (-09)
65FC:60 RTS
65FD:AE 50 2B LDX 2B50 :Get Squirt message
6600:BD 50 2B LDA 2B50,X :Load message in X reg
6603:9D 4F 06 STA 064F,X :Print message to screen
6606:CA DEX
6607:DO F7 BNE 6600 (-09)
6609:AD 30 C0 LDA C030
660C:60 RTS
```

This code is transferred from page 25 to page 65 once you select the auto install program. The Selector code that does the work (\$2100-23FF transferred to 6100-63FF), finds the right address of \$5A00 to install. By the way the 4K Squirts selector is located at \$2300-25FF and is NOT transferred.

I am not sure of this, But I think Copy II Plus put the quit code in a file to keep people like me from installing program selector into thier programs? At any rate, the way that the quit

code is aligned in the file, is with the first six bytes of the code at the very end of a sector (now you tell me), so that a sector transfer from another program just would not line up right. (Come to think of it the above ProDOS fits that alignment problem also). I guess I should stop CRYING?

Here is how I got squirt on Copy II Plus 9.0 and ProDOS 8 Version 1.8. Format a blank 3.5" disk, On this disk copy the programs PRODOS, BASIC SYSTEMS and UTIL.MORE from the Copy II Plus disk. Boot your newly made disk and at the basic prompt, remove disk and insert a disk with Squirt already installed in ProDOS and load that ProDOS with the following command:

```
BLOAD PRODOS, A$2000, TSYS
Move this ProDOS to bank 1
CALL-151
01/2000<00/2000.6000M
Return to BASIC
3D0G
```

```
Insert disk you made and load
ProDOS.
BLOAD PRODOS, A$2000, TSYS
CALL-151
260C:20 40 2C
00/2C40<01/2B40.2B80M
2C42:2C
2C45:2C
```

```
Scan bank 1 for D8 AD 82 C0.
\D8 AD 82 C0<01/0.BFFFF
```

```
I got $5900.
00/5A00<01/5900.5BFFM
3D0G
BSAVE PRODOS, A$2000, TSYS
```

ProDOS is done, now for the C2 quit code.

```
BLOAD ULIT.MORE, A$1C00
CALL-151
00/6FFA<01/5900.5BFFM
3D0G
BSAVE UTIL.MORE, A$1C00,
L$5A18
```

```
Remove disk and insert C2+
disk
PR#5
```

Start Copy II Plus 9.0 or 9.1 and go to the sector editor

Insert your disk for Reads and C2+ for Writes

Read block 95 and write to block 66

Read block 96 and write to block 67

Read block 97 and write to block 68

Insert copy II plus and return to Utilities section

Now copy ProDOS and Util. More files from your disk to the copy II plus disk.

Your done!

Notes on ProDOS 8 Quit code

Upgrading ProDOS 8 with a new program selector (Compliments of A2 Central page 5.70 and 5.71). The Quit code of different ProDOS 8 Versions start at different locations depending on the Versions (These locations are my assumptions only).

ProDOS 8 Version 1.1.1 and earlierA\$5700,L\$300

ProDOS 8 Version 1.2 thru 1.7.....A\$5900,L\$300
ProDOS 8 Version 1.8 thru ?????.....A\$5A00,L\$300
ProDOS 8 Version 2.0.1.....A\$5D00,L\$300

To Upgrade a ProDOS Version try this:

Boot a disk with just ProDOS 8 and Basic system on it.

Insert disk with selector in ProDOS 8.

BLOAD PRODOS, A\$2000, TSYS

Insert Basic disk and Save selector with the name you choose and the address where it starts.

BSAVE ????????, A\$????, L\$300

Insert ProDOS 8 disk to be Upgraded and Bload.

BLOAD PRODOS, A\$2000, TSYS

Insert Basic disk with saved selector

BLOAD ????????, A\$????, L\$300

Insert ProDOS 8 disk to be Upgraded and Bsave ProDOS

BSAVE PRODOS, A\$2000, TSYS

Your ProDOS is now patched with the new Selector.

I just purchased Proterm 3.0 and on this disk is a ProDOS 8 Version 2.0.1 with a date of 04-MAR-92. This selector will not poll all drive and ram disk at once like Squirt would. But instead polls one drive or ram disk for every press of the TAB key (I like that option). It even displays subdirectories with folders beside that file. The selector in Version 2.0.1 lives at \$5D00-5FFF. I think I am going to install this selector in my auto install Squirt program.

The print function in Copy II plus 9.0 is suppose to dump 255 bytes of code while in the sector editor when D and Return is pressed and slot 1 is selected. But my program will dump to the printer endlessly, until I hit Control-Reset. Someone please let me know what's the DEAL?

A Bug in Fastcopya Enhancement Problem

The article by Mr. Dan Reid on track selection (issue 68, page 20), was used when I made my copy of Super 6.0 Fastcopya (Mr. B. Dudley Brett, issue 72 page 20-22). But because I had a problem installing the track selection patch in the proper place, I installed the patch at the end of the article with line# 1381, 1382, 1383, 1384 and 1385 (issue 85, page 19-20). What I failed to realize, is that if the patch is not altered a bit you will never be able to make any changes to the Fastcopy program. That is because the patch reloads the Fastcopy program again and cancels out all of the changes you made with the Fastcopya program. To my amazement the patch that I put at the end of the Fastcopya program, didn't stay at 1381-1385. The patch adjusted itself to 1390,1400,1410,1420 and 1430 (There is a reason for this state-

ment). The patch should have been as follows.

FASTCOPY PATCH

```
1390 TEXT : HOME : REM
NO NEED TO RELOAD
FASTCOPY AGAIN, IT IS
LOADED BY THE PROGRAM
LOADER. S6FCA
```

```
1400 VTAB 10: HTAB 10:
INPUT "START*TRACK*(0-
34):" ;A$:S = VAL (A$)
: IF S < 0 OR S > 34
THEN 1390
```

```
1410 VTAB 12: HTAB 10:
INPUT "****END*TRACK*
(0-35):" ;A$:E = VAL
(A$): IF E < S OR E >
34 THEN 1390
```

```
1420 POKE 8754, S: POKE
8758, E: CALL 8192: REM
LINE 1430 HAS BEEN
CHANGED TO LINE 1420
```

Note: You can just delete the line that Bload N\$ and the program will work like a charm.

Rich Etarip WI

This should have been part of Rich's article in issue #86 on page 12. Sorry folks. My fault, I forgot to merge the controller and checksums into the text of his article.RDEXed

CONTROLLER

```
1000 REM EDUCATIONAL
SOFTWARE SWAP
CONTROLLER
```

```
1010 TK = 0:LT = 35:ST =
15:LS = 15:CD =
WR:FAST = 1
```

```
1020 GOSUB 360: GOSUB
490: GOSUB 610
```

```
1030 GOSUB 360: GOSUB
490: GOSUB 610: IF
PEEK (TRK) = LT THEN
1050
```

```
1040 TK = PEEK (TRK):ST
= PEEK (SCT): GOTO
1020
```

```
1050 HOME : PRINT "DONE"
: END
```

Checksums

```
1000-$356B 1020-$C809 1040-$1078
1010-$2544 1030-$FA9D 1050-$FFD3
```

Bug in Airheart softkey

Softkey Airheart on a IIc

A reader called to say that the Airheart softkey (issue #85) didn't work on his IIc. Since I used a IIe for the softkey, I was unaware of the differences that existed between the IIe and the IIc.

The problem occurred in the final step of the softkey procedure (page 21, top of column 3). This step involved using part of the \$C600 boot code (on the disk controller card) to calibrate the disk head. After corresponding with this reader, I discovered that the IIe and the IIc have a different \$C600 boot code.

To correct the problem, IIc users should ignore the procedure at the top of column 3 on page 21 and do the following.

```
CALL-151 to enter the monitor
B7E1:01
B7EB:00 01 0A FB B7 00 47 00 00
01
```

```
B793G
471C:75 07
4772:4C F6 07 A2 60 BD 8E C0
:BD 8C C0 BD 8A C0 BD 89
:C0 A0 50 BD 80 C0 98 29
:03 0A 05 2B AA BD 81 C0
:A9 56 20 A8 FC 88 10 EB
:A9 00 85 FF 60
479F<FCA8.FCB3M
B7E1:01
B7EC:01 0A FB B7 00 47 00 00 02
B793G
```

Jack R. Nissel PA

Softkey for...

States and Traits
Crypto Cube
DesignWare

Requirements:

The original disk(s)
A blank disk for each title
Any fast copy program
A sector editor

Jim S. Hart's Softkey, in issue #52, for European Nations and Locations works for these titles as well.

1. Fast copy your original disk.
2. Search for the byte string A9 38 8D 9E B9 and change to EA EA EA EA.
3. Write the sector back to the disk.

Jack R. Nissel PA

Softkey for...

Operation: Frog
Scholastic Software

Requirements:

The original Operation: Frog disk
A blank disk that has a notch on both sides or two blank disks

COPYA from your DOS 3.3 system master

A sector editor
Any fast copy program

1. Boot your DOS 3.3 system master and at the applesoft prompt enter:

```
POKE 47426,24 ignore checksums and
epilogues
```

```
RUN COPYA
```

2. Copy side 1 of your original disk to your blank disk.
3. Use any fast copy program to copy side 2
4. Make the following sector edits to side 1 of your copy.

```
Trk Sct Byte From To
00 05 93-95 C6 2A D0 4C 86 02
```

5. Write the sector back to the disk.

Softkey for...

Explore-a-Science Dinosaur
Construction Kit Tyrannosaurus
Rex

D.C. Heath

Requirements:

The original disks
2 blank disks
COPYA from the DOS 3.3 system master

1. Boot your system master and at the Applesoft prompt enter:

CALL-151 enters the monitor **B942:18**
 ignore checksum and epilogues
B954:29 00 ignore first byte of the
 address header
3D0G gets you back to the Applesoft
 prompt
RUN COPYA
 2. Copy both original disks to
 your blank disks.
 3. You can put your original
 disks away your copy is done.

Softkey for...

Parts of Speech I Level 3
 Parts of Speech I Level 4
 Parts of Speech I Level 5
 Parts of Speech II Level 3
 Parts of Speech II Level 4
 Parts of Speech II Level 5
 Punctuation 1-3
 Punctuation 4
 Punctuation 5
 Punctuation 6
 Punctuation 7
 Punctuation 8

Bertamax

Requirements:

The original disk(s)
 A blank initialized disk for each
 title
 A blank initialized slave disk
 Super IOB v1.5
 A way to reset into the monitor
 Copy II Plus

These Bertamax titles can be
 deprotected by using Super IOB
 with the Swap Controller and
 use the RWTS of the protected
 disk to read the original disk
 then use a normal RWTS to
 write the information back to
 your blank disk.

1. INITIALize your blank disk(s)
INIT HELLO
DELETE HELLO
 2. Boot your original disk and
 at the Applesoft prompt reset
 into the monitor.
 3. Move the RWTS to a safe
 place by entering:
1900<B800.BFFFFM
 4. Put in your slave disk and
 boot it by entering:
C600G
 5. After the disk boots and the
 Applesoft prompt appears insert
 your Super IOB disk and
 save the RWTS to it by entering:
BSAVE RWTS.BERTAMAX, A\$1900,
L\$800
 6. Install the controller into
 Super IOB, run it and copy
 your original disk to your
 blank disk. Answer NO when
 asked if you want to INITIAL-
 ize the blank disk.

CONTROLLER

1000 REM BERTAMAX
CONTROLLER
1010 TK = 3:ST = 0:LT =
35:CD = WR
1020 T1 = TK: GOSUB 490:
GOSUB 360: ONERR GOTO
550
1030 GOSUB 430: GOSUB
100:ST = ST + 1: IF ST
< DOS THEN 1030
1040 IF BF THEN 1060
1050 ST = 0:TK = TK + 1:
IF TK < LT THEN 1030

1060 GOSUB 490:TK =
T1:ST = 0: GOSUB 360
1070 GOSUB 430: GOSUB
100:ST = ST + 1: IF ST
< DOS THEN 1070
1080 ST = 0:TK = TK + 1:
IF BF = 0 AND TK < LT
THEN 1070
1090 IF TK < LT THEN
1020
1100 HOME : PRINT "COPY
DONE" : END
10010 IF PEEK 6400 < >
162 THEN PRINT CHR\$
(4) "BLOADRWTS.BERTA
MAX, A\$1900"

Checksums

1000-\$356B	1040-\$6342	1080-\$6CA2
1010-\$3565	1050-\$ABA3	1090-\$9DCA
1020-\$6170	1060-\$20C0	1100-\$9A4D
1030-\$7771	1070-\$28C5	10010-\$8CC6

7. Boot Copy II Plus and use the
 CATALOG DISK option to
 view the files on the disk. If
 your first file is an Applesoft
 file other then HELLO use the
 CHANGE BOOT PROGRAM
 option to change the boot pro-
 gram to this other Applesoft
 file.

Softkey for...

Case of the Great Train Robbery

Troll Courseware

Requirements:

The original disk
 A blank disk
 Copy II Plus

This disk is in normal format
 except for track \$03. When I
 looked at the HELLO program
 using Copy II Plus VIEW FILES
 option there was some strange
 code there but I found nothing
 that resembled a normal HEL-
 LO program. I thought that this
 might be a check for the pro-
 tected track and decided to by-
 pass it by changing the boot
 program to one of the other files
 on the disk. The file MENU
 seemed like the right choice and
 when I changed the disk to
 BRUN MENU it booted and ran
 fine.

Step-by-step

1. Fast copy your original disk
 and ignore a read error on
 track \$03.
 2. Use Copy II Plus CHANGE
 BOOT PROGRAM option to
 change the boot program to
 MENU.

Your done with the disk.

Softkey for...

Division Skills
Vocabulary Skills

Milton Bradley

Requirements:

The original disk(s)
 A blank initialized disk for each
 title
 A blank initialized slave disk
 Super IOB v1.5
 A way to reset into the monitor

These titles can be deprotect-
 ed by using Super IOB with the
 Swap Controller and use the
 RWTS of the protected disk to
 read the original disk then use
 a normal RWTS to write the

information back to your blank
 disk.

1. INITIALize your blank disk(s)
INIT HELLO
DELETE HELLO
 2. Boot your original disk and
 at the Applesoft prompt reset
 into the monitor.
 3. Move the RWTS to a safe
 place by entering:
1900<B800.BFFFFM
 4. Put in your slave disk and
 boot it by entering:
C600G
 5. After the disk boots and the
 Applesoft prompt appears insert
 your Super IOB disk and
 save the RWTS to it by enter-
 ing:
BSAVE RWTS.MILTON BRADLEY,
A\$1900, L\$800
 6. Install the controller into
 Super IOB, run it and copy
 your original disk to your
 blank disk. Answer NO when
 asked if you want to INITIAL-
 ize the blank disk.

CONTROLLER

1000 REM MILTON BRADLEY
SWAP CONTROLLER
1010 TK = 3:ST = 0:LT =
35:CD = WR
1020 T1 = TK: GOSUB 490:
GOSUB 360: ONERR GOTO
550
1030 GOSUB 430: GOSUB
100:ST = ST + 1: IF ST
< DOS THEN 1030
1040 IF BF THEN 1060
1050 ST = 0:TK = TK + 1:
IF TK < LT THEN 1030
1060 GOSUB 490:TK =
T1:ST = 0: GOSUB 360
1070 GOSUB 430: GOSUB
100:ST = ST + 1: IF ST
< DOS THEN 1070
1080 ST = 0:TK = TK + 1:
IF BF = 0 AND TK < LT
THEN 1070
1090 IF TK < LT THEN
1020
1100 HOME : PRINT "THAT
'SALLFOLKS" : END
10010 IF PEEK (6400) < >
162 THEN PRINT CHR\$
(4) "BLOADRWTS.MILTON
BRADLEY, A\$1900"

Checksums

1000-\$356B	1040-\$6342	1080-\$6CA2
1010-\$3565	1050-\$ABA3	1090-\$9DCA
1020-\$6170	1060-\$20C0	1100-\$F120
1030-\$7771	1070-\$28C5	10010-\$F50E

Softkey for...

Arithmetic Critters

MECC Software

Requirements:

The original disk
 A blank initialized disk
 DOS 3.3 system master
 Super IOB v1.5

1. Boot your system master and
 at the Applesoft prompt put
 your blank disk in the drive
 and enter:
INIT HELLO
DELETE HELLO
 2. Install the controller listed
 below into Super IOB, run it
 and copy your original disk to
 your blank disk. Answer NO
 when asked if you want to INI-
 Tialize the blank disk.

CONTROLLER

1000 REM ARITHMETIC
CRITTERS CONTROLLER
1010 TK = 3:LT = 35:ST =
15:LS = 15:CD =
WR:FAST = 1
1020 RESTORE : GOSUB
190: GOSUB 210
1025 GOSUB 490: GOSUB
610
1030 GOSUB 230: GOSUB
490: GOSUB 610
1035 IF PEEK (TRK) = LT
THEN 1050
1040 TK = PEEK (TRK):ST
= PEEK (SCT): GOTO
1020
1050 HOME : PRINT
"COPYDONE" : END
5000 DATA 170, 213, 173,
213, 150, 170

Checksums

1000-\$356B	1025-\$FOC7	1040-\$F69F
1010-\$2445	1030-\$6686	1050-\$7098
1020-\$288C	1035-\$FDBB	5000-\$E673

Softkey for...

Notable Phantom

DesignWare

Requirements:

The original disk
 A blank disk
 COPYA from the DOS 3.3 sys-
 tem master
 Copy II Plus

1. Boot your system master and
 at the Applesoft prompt enter:
POKE 47426,24 ignore checksum and
 epilogues
RUN COPYA
 2. Copy your original disk to
 your blank disk.
 3. Boot Copy II Plus and use the
 COPY DOS option to copy the
 DOS from your system master
 to the copy you just made.

Softkey for...

Troll Math Class level 4
Advanced Addition &
Subtraction

Troll Courseware

Requirements:

The original disks
 A blank disk
 COPYA from the DOS 3.3 sys-
 tem master

1. Boot your system master and
 at the Applesoft prompt enter:

CALL-151 enters the monitor
B942:18 ignore checksum and epilogues
B954:29 00 ignore first byte of the
 address header
3D0G gets you back to the Applesoft
 prompt

RUN COPYA
 2. Copy your original disk to
 your blank disk.
 That's all to that disk.

Unknown

IBM Softkey for...

Artwork (v2.43)

West End Film

1. First, make a copy of the orig-
 inal disk. Never, ever, fool
 around with your only work-
 ing copy of a program!

2. Search the file ARTWORK .EXE. (Note: all bytes are in hexadecimal.) Search for the byte string: A0 A2 19 30 E4. Change it to: B8 61 00 30 E4. This forces ARTWORK to see the letter "a" of its signature, even if no "a" is there...

3. Search for the byte string: 80 FC 10 1F 58 75 03. Change to: 80 FC 10 1F 58 90 90. This causes ARTWORK to believe that the expected diskette error has occurred, even if it hasn't.

4. Search for the byte string: B4 3D CD 21 73 03. Change to: B8 02 00 90 90 90. This prevents a diskette check.

5. Search for the byte string: 8B 46 0A E8 7C 00. Change to: 8B 46 0A 90 90 90. This prevents one of the two accesses of the copy-protect tracks.

6. Search for the byte string: 8B 46 0A E8 1A 00. Change to: 8B 46 0A 90 90 90. This prevents the second access of the copy-protect tracks.

7. Search for the byte string: 72 02 33 C0 C3. Change to: 90 90 33 C0 C3.

8. Using DEBUG, load the original copy of ARTWORK .EXE.

9. At the "dash" prompt, type:
G 8bd:9AA
G 9b1
G 8bd:9aa
G 9b1

This sequence has caused ARTWORK to read in a signature from the protected tracks of the original disk.

10. Type: (where xxxx is the current contents of the BX register)
D DS:xxxx

11. Write down the byte pattern displayed! On my copy, the pattern is: 4B 61 78 78 00 00 (=Kaxx). The "4B" is the signature of the graphics board which ARTWORK expects to see. The "61" is the letter "a", which says "I am a valid ARTWORK". This signature is for the Tecmar Graphics Master. If your copy was installed for a different board, the bytes given above will differ from yours.

12. Remove the original disk from drive A:.

13. Now quit DEBUG and return to Norton or some other disk utility.

14. Search the modified copy of ARTWORK.EXE (NOT the original) for the byte string: A0 A1 19 30 E4 and change it to: B0 xx 90 30 E4. The "xx" stands for whatever the byte was in the signature string you wrote down. For me, xx was "4B".

Artwork is now unprotected. Have fun, kids!

IBM Softkey for...

Electric Desk v1.04

?

This information is provided to allow legal owners of the

above software to liberate themselves from the dependance of a single floppy diskette. Using the below patches, you will be able to make unlimited backups of the floppy, but more importantly, be able to boot the entire system off a hard disk.

The copy protection method used on this program expects an unusually formatted Track 9. The easiest way around this was to bypass the entire 'Verify Track 9' routine.

I assume that you are familiar with DEBUG (found on the 2nd DOS diskette). Everything displayed below in upper-case will be supplied by the computer; you must type everything that is in lower-case. Make a copy of the file "ELECTRIC .EXE"; never work with your only copy. Place the program diskette in Drive A, and Debug in Drive B.

A> ren electric.exe electric *Debug can't resave an EXE file*

A> b:debug electric *Enter Debug*
-r cs *Get CS from debug (always different)*

CS XXXX *Add 2000 to the number returned by DEBUG. This becomes yyyy.*

: <return key> *Example: CS 2502, + 2000 = 4502 (yyyy)*

-s yyyy:0 ff00 b8 00 bf 78 *Use above calculated yyyy in this line.*

YYYY:D145 *DEBUG should return this number. If not, you have a different vers & should quit.*

-e yyyy:d145 e9 b0 00 00 *Tell prog to skip copy prot. routine.*

-w *Save the program with the changes. Writing 2D230 bytes DEBUG displays this message.*

-q *Exit DEBUG*

A> ren electric electric.exe *REName the file to it's original name*

That's it. Use "COPY A:*.* B:" to move all files to a formatted diskette and you will have the whole system unprotected and copyable.

IBM Softkey for...

Brown Bag Word Processor v2.55

?

The following unprotection scheme is for the diskette that was distributed with the April 15, 1986, issue of "PC". At the time of this writing, the code is known to start, but it is unknown if there is a secret gotcha. Anyway do the following:

1. Insert original into drive A: and a formatted diskette into drive B:

COPY A:*.* B:

2. Remove diskette from drive A: and put it away.

B: *change to drive B:*
REN ED.EXE ED.XXX
DEBUG ED.XXX
U E7BC

You should see the following:

```
xxxx:E7BC CD13 INT 13
xxxx:E7BE 7249 JB E809
xxxx:E7C0 8A87FF01 MOV AL,[BX+01FF]
```

More lines follow these. If you don't see the above three lines, quit now.

3. Edit the code then unassemble some more.

E E7BC EB A1
U E7BC

You should now see the following line:

```
xxxx:E7BC EBA1 JMP E75F
U 2B9D
```

You should see the following lines:

```
xxxx:2B9D 9A0000470C CALL 0C47:0000
xxxx:2BA2 9AFE8E2C03 CALL 032C:8EFE
xxxx:2BA7 C7061AEF0000 MOV WORD PTR [EF1A],0000
```

4. If you don't see the above three lines, something is really wrong, since you got the first change. I would give up again.

E 2B9D EB 03
U 2B9D

You should now see the first line changed to:

```
xxxx:2B9D EB03 JMP 2BA2
xxxx:2B9F 00470C ADD [BX+0C],AL
```

5. Enter:

W
Q
REN ED.XXX ED.EXE

The first code change removes the copy protection checking routine and the second change removes the number of tries checking. These changes can be done, even after the three tries have been used up.

That is it. The program is now ready to use. You can install it on the hard disk by just copying the files from the floppy to the hard disk. Don't use the programs included.

As a side note, you can not print the manuals using the PR command. You must print them using something else, as embedded printer controller commands are in the file and PR tries to do them, failing.

As another little tidbit of information, you can get more than three tries if you had made a copy of the original diskette BEFORE using any of your tries. The file AFILEONE.TXT contains the number of tries. You keep a copy of that around and when you use it three times, you copy the backup copy to AFILEONE.TXT and you end up with three more tries. The AFILEONE.TXT is not needed and can be removed from the hard disk, if you did the above stuff.

IBM Softkey for...

Banner Builder

Power Up/Software Publishing Corp

1. Copy BANNER.EXE to some other disk where DEBUG can get to it.

2. Rename BANNER.EXE to something other than an .EXE extension. DEBUG does not allow writing to an .EXE file.

I will name it BANNER.DBD
DEBUG BANNER.DBD
S CS:0 L FFFF CD 13

This Debug command searches Banner.DBD for all INT 13's. If you don't know, INT 13 is the disk sector read interrupt. You

should find 3 such interrupts at the following locations:

```
XXXX:AA44
XXXX:AC72
XXXX:AC80
```

The XXXX above is different on every machine depending on where DOS decides to load it into memory. The Hexadecimal numbers following the XXXX: indicate the location of each INT 13. The second number, AC72, is the first diskette sector read. We are going to change the CD 13 bytes to EB 15 which will cause the program to jump over all the diskette sector reads and go right into BANNER without looking at drive A:.

3. Enter the following:

E AC72
XXXX:AC72 CD.EB 13.15

Make sure to press the space bar after entering EB and a carriage return after entering the 15. The space bar moves DEBUG to the next byte. The carriage return terminates the entering of bytes and returns you to the DEBUG prompt. Now, write the file.

4. Enter the following:

W *Writing 16180 bytes*

5. Then quit by entering the following:

Q

You should now be at your DOS prompt. Now, rename BANNER.DBD back to BANNER .EXE and you now have a clean program, one that will not look to drive A: for the original diskette.

IBM Softkey for...

BAKUP

Software Integration

BAKUP is fairly well protected. You must use a good copy program such as COPYWRITE, or a hardware copy device such as the Copy II Option Board to copy the distribution disk. If you use COPYWRITE, you must also run RAMKEY before INSTALLING BAKUP. Because BAKUP is "installed" on the hard disk, and makes notes to itself about your system's configuration, about the best you can do is to INCREASE the number of allowed installs. The way to do this is as follows:

First, copy the distribution disk! NEVER fool around with your original disk!

Next, using Norton Utilities on the copy, use SELECT FILE and select the ROOT DIRECTORY. Look at the byte at offset 48 (hex 30). This byte is one of the "reserved" bytes for a hidden file whose name is the serial number of your copy of BAKUP. For instance, if your serial number is 04123122442, the file name would be 04123122.442.

On a "new" copy of BAKUP, the value of this byte is 03, indicating 3 installs. If you've installed the distribution disk once or more times, this byte may show 02, 01 or possibly 00.

Move the cursor to the byte, and type "FF" (FF hex, or 255 decimal, the largest number that one can put in a byte). Next hit ESC, and then RETURN or F1 to write the new number of "installs" to the diskette.

If you now run the INSTALL program, you will find that BAKUP has obligingly granted you 255 installs before you have to repeat this procedure for 255 more installs.

For those unfamiliar with Norton's NU program, here's a script of keystrokes for doing this. Assume NU is on B: and default drive is A:. BAKUP copy is in A:.

```
B:NU
F1 press function key 1- change selection
F3 press function key 3 to select file
press <enter> key-select root dir
F2 press function key 2 (explore disk)
F5 press function key 5 (display or modify)
press <enter> key-change display type
press <enter> key-change again
press down-arrow twice-cursor
should be at offset 48, hex 30
FF type "FF"
press <ESC> key
press <enter> key - to WRITE
```

Note: when fooling around with directories, Be Careful! You can easily mess up your disk. Remember, don't try this on your original disk!

Note also: If you install, then uninstall with the altered install count, BAKUP appears not to increment the number of installs. It will show 254 installs available after one install/deinstall cycle. However, with this many installs, and the technique outlined here, this should hardly present a problem...

IBM Softkey for...

Cornerstone
Infocom

Cornerstone Softkey technique

The following describes a method of completely unprotecting the hard disk installation of Infocom's Cornerstone, and a less complete method of unprotecting future versions which may render the first method obsolete.

The Cornerstone installation process creates a hidden file named INFOCOM.CNR in the root directory. This file contains two bytes, which represent in encrypted form the cluster number where the file is stored. When Cornerstone is invoked, the program first checks for the existence of the hidden file, and then compares the data with the cluster number in the directory. If the checks fail, Cornerstone looks for a legitimate system disk in Drive A. At present, on Cornerstone version 5.1, this can be completely circumvented by searching the file mme.exe for the two INT 13's it contains, and NOP'ing them out.

1. Rename a copy of mme.exe to something with a non-exe extension such as MME.ZAP.

2. Run DEBUG, and load MME.ZAP.

3. Now, at the debug prompt search for INT 13s.

S 01FFFF CD 13

Debug responds:

XXXX:86C9

XXXX:86E1

4. If this is not the case, you have a different version, though if it detects two INT 13's, it might be worth trying what follows, substituting the offsets that debug reports to you for those I am using.

E 86C9

Debug responds: CD.

90

press <spacebar>. Debug responds: 13.

90

press <enter> key

5. Now type:

E 86E1

Debug responds: CD.

90

press <spacebar>

Debug responds: 13.

90

press <enter> key

6. Now save the changes.

W

Q

7. Rename MME.ZAP to MME.EXE.

If desired, the hidden file INFOCOM.CNR may now be deleted from the hard disk, and the program will run without reference to it.

Now, for the second, and still incomplete method, which is unneeded at present but may become important if Infocom becomes aware of the simple method above and changes it to something more complex. As indicated above, the two bytes in the file INFOCOM.CNR represent a nibble for nibble encryption of the cluster number where INFOCOM.CNR resides. Although I have not yet worked out the exact rules of encryption, taking the hex digits of the cluster number from left to right, one adds plus or minus 4 to the first, plus or minus 2 to the second, plus or minus 4 to the third, and plus or minus 7 to the fourth. Thus, it requires at most 16 tries to create the correct contents of INFOCOM.CNR. The following examples may eliminate some of these:

Cluster	InfocomCNR
2401	6648
3218	7051
4601	0448
4801	0A48
4901	0B48
4851	0A18
4A01	0848
4B50	0919
5919	1A50
5A19	1850
6317	215E
8619	C450
8B19	C950
8D19	CF50
9B5E	D917
BA03	F84A
BF5E	FD17
D05D	9214

The cluster number can be obtained with any utility capable of displaying the directory contents, e.g. the Norton Utilities, Disk Toolkit, or even debug. It is given by the 27th and 28th bytes (i.e. bytes 26-27) of the directory entry for INFOCOM.CNR, which will appear early in the directory, either between or just following other entries for the root directory. The above encryption algorithm is applied, and the utility program then used to replace the contents. Note that for the purposes of this exercise, the bytes are taken as is, i.e. least significant byte first, not reversed to give the actual cluster number.

IBM Softkey for...

Carbon Copy v2.14

?

This easy patch will by pass the copy protection so you can make backup's run Carbon copy ver 2.14 on your hard disk.

1. Make a copy of the original disk.

2. Place the copy in drive 'A'
DEBUG LOGO#\$%&.SYS

3. Search the disk.

S 100 FFFE 8A 04 30 E4 3D 30 00

Will return number ssss:0000 that will be used next

4. Edit the bytes found.

E ssss:0000

8A.90 04.B8 30.30 E4.00

5. Search again.

S 100 FFFE 83 FB 30 A3 C6 00

Will return number ssss:0000 that will be used next

6. Edit bytes found.

E ssss:0000

83.90 FB.90 30.90

7. Name the file and save.

Ncc.bin

W

Q

8. Rename CC.BIN to CC.EXE
REN CC.BIN CC.EXE

That's all. your copy in drive 'A' is fixed. But you must run CC.EXE instead of CCSTART.EXE

IBM Softkey for...

Contraptions

?

Put Contraptions on hard disk

1. Copy CONTRAP.EXE to a new disk or directory. Also copy all the *. files.

copy contrap.exe b:

copy *. b:

2. Then, using DEBUG (in drive A):

B:

RENAME CONTRAP.EXE *.X

DEBUG CONTRAP.X

U 5D6D L 2

xxxx:5D6D CD13 INT 13

Note: If the above line does not show the indicated contents, then do not proceed with this patch.

A 5D6D

xxxx:5D6D JMP 5D71

xxxx:5D70

A 5D9F

XXXX:5D9F MOV DI,3

XXXX:5DA2 JMP 5DD5

XXXX:5DA5

W

Writing B7A4 Bytes

Q

RENAME CONTRAP.X *.EXE

IBM Softkey for...

Cadpower

Trilex

This patch will allow you to use the CADPOWER program by Trilex without having to have the security diskette in drive A:.

1. Copy the file DO.EXE to CADPOWER.BIN

2. Load CADPOWER.BIN into memory using DOS' DEBUG program

debug cadpower.bin

3. Modify the program

ED554 BF.29 04.C0 00.F8 2A.EB

E4.13

W

Q

4. Rename CADPOWER.BIN to CP.EXE

Limitations

This patch ONLY eliminates the need for having the security disk in drive A:. The program will continue to search for all data files on drive A:. If drive A: is not your default drive, you will have to use DOS' ASSIGN command to redirect all disk I/O from drive A: to your default drive.

IBM Softkey for...

Enplot v1.1

?

First, make a back-up copy of the ENPLOT system disk. NEVER mess around with your original disk!

Using a disk utility such as Norton Utilities, search the file ENPLOT.EXE for the following byte strings and change them as shown below:

Search for E8 6A 00 72 0A and change to: E8 6A 00 90 90 (nop out a jump)

Search for E8 13 00 72 05 and change to: E8 13 00 90 90 (nop out another jump)

Search for F8 C3 F9 C3 and change to: F8 C3 F8 C3 (get rid of carry set)

Search for C3 B4 00 CD 13 and change to: C3 B4 00 90 90 (nop out a disk access)

Search for CD 13 and change to: 90 90 (nop out a disk access)

Search for 61 3A 65 6E 70 6C 6F 74 2E 70 72 6F 00 and change to: 65 6E 70 6C 6F 74 2E 70 72 6F 00 00 00 (get rid of "a:" prefix)

Search for 61 3A 65 6E 70 6C 6F 74 2E 70 72 6F 00 and change to: 65 6E 70 6C 6F 74 2E 70 72 6F 00 00 00 (get rid of second "a:" prefix)

ENPLOT is now fully unprotected. It may be run from a hard disk, RAM disk, or floppy. It may be freely copied via COPY *.*

unClassifieds

How to place an UnClassified Ad

Send a typed sample copy with appropriate instructions. (If possible, send text on a 5.25" Apple format disk.) Use up to 40 characters per line, we will adjust word wrap.

Special Graphics Instructions: The first three words of the first line are printed in bold for free. If you want other words bolded, use 5 characters less per line. Use 10 characters less per line if you have a lot of uppercase bold letters. Bold letters are wider than normal. If the typed copy does not show bold, circle the words you want bolded and, on the side, write BOLD. If you want a line centered, write CENTER next to that line. There is no charge for centering any line.

You must check your ad for errors, the first time it runs. Errors on our part will be corrected, then, for free. Errors or changes on your part will be charged a \$5 processing fee.

★★★★ New Rates (per line) ★★★★★

Computist club member25¢
All others35¢

The minimum order is \$5.

- Our liability for errors or omissions is limited to the cost of the ad.
- We reserve the right to refuse any ad.
- Washington state residents add 7.8% sales tax.
- Send a check or money order (funds drawn on US bank only) for the entire amount to:

COMPUTIST unCLASSIFIEDS
33821 East Orville Road
Eatonville, WA 98328

WANTED

"Most Wanted List" Software

Need help to deprotect a disk?

Softkey hobbyist is interested in acquiring copy protected software to deprotect. Good track record, many successful attempts. Original disk will be returned along with softkey for COMPUTIST. Especially interested in older software (pre-1988) but will give any disk a shot. I'm especially interested in:

Drol ---Broderbund
Serpentine ---Broderbund
Spare Change ---Broderbund
Wings of Fury ---Broderbund
Star Cruiser ---Sirius
Space Eggs ---Sirius
Falcons ---Picadilly
Microwave ---Cavalier

System: Apple IIe, 128K. Send disk to:

Rich Etarip
824 William Charles, Apt #2
Green Bay, WI 54304

Lode Runner Fun Club

1900 optional Lode Runner screens available for exchange with your original screens.

Toshikazi Yamamoto
#706 Minami-Ikebukuro-Jutaku
1-13-21 Minami-Ikebukuro, Toshima
Tokyo 171 Japan

Help! Looking for

a working copy of Eureka & The Graphics and Sounds Development System from the book "Eureka" by Timothy Knight published by Baen Computer Books. Also seeking a copy of Superworks (Appleworks for IBM).

CK Bevan
PO Box 941072
Atlanta GA 30341-0072

Wanted! Information

on Cracking IBM protection. Also software like Copywrite, Locksmith PC, Central Point Software's PC Option board and PC Watch. Also send list of Apple II items for sale.

Joe Torzewski
51625 Chestnut Road
Granger IN 46530

Apple II Nerd?

The **Ultimate** reference library!
Complete Call A.P.P.L.E.!
Complete InSider!
Complete A+!
Complete COMPUTIST
All 10 Nibble Expresses!
Many, many extras!

Shipping alone would cost a fortune. The highest bid received by year-end 1992 takes them all. Send to:

The Amazing Spiderman
PO Box 4851
Carson CA 90745

For sale:

Complete collection of COMPUTIST. From #1 thru 83 except #27 & #43. It is in excellent condition except for two issues that have slight tears and a few have slight pen marks. I am asking \$80 for the set and will not sell single issues.

Ronald H Stein
126 Roxbury Park
East Amherst NY 14051

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Curt Patch15
Joe Trodello15
Unknown21

Apple Most Wanted

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63 Alien MindPBI Software
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75 AnchormanVirginia Reel
74 Animals of the PastFocus Media
72 AnkhDatamost
73 Ant FarmSunburst
67 AquatronSierra
63 Bad Street BrawlerMindscape
73 Bank Street Beginner's FilerSunburst
73 Bank Street School FilerSunburst
63 Beyond ZorkInfocom
65 BilestoadDatamost
69 Blue Powder - Grey SmokeGrade
74 Birds - Trees & FlowersFocus Media
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67 Bouncing KamungasPenguin
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80 The Product Monitor •Features, Notes & such: •Add Copy II Plus file handling to your BASIC program. See A Copy II Plus PLUS! •Comments on the Beginner's Book •Formatting 720K disks as 1.44M HD. See Holy Megabytes! •How to SAVE hexdumps as CDA's •Logging ProDOS Drives •The Basics of Kracking (part 7) •The Basics of Kracking (part 8) •Bitkeys: •Black Magic •Guild of Thieves •Gunslinger •King's Quest Series •Leisure Suit Larry •Man Hunter: New York •Police Quest •Realms of Darkness •Saracen •Sierra Boot Disks •Silicon Dreams •Space Quest Series •Ultima V •Wizardry Series •Xyphus •Softkeys: •Ancient Art of War •Battle Chess •Bridge 6.0 •Captain Blood GS •Dinosaur Days v1.0 •Empire •Fahrenheit

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81 The Product Monitor •Bitkeys: •Micro Typewriter •Softkeys: •Backyard Birds •Balance of Power •Chemistry: Balancing Equations •Chemistry: The Periodic Table •Chuck Yeager's AFT •Equation Math •Estimation: Quick Solve I •Estimation: Quick Solve II •Five-Star Forecast •Fossil Hunter •Grammar Toy Shop •Instant Survey •Micro Typewriter v4.0 •Murphy's Minerals •Patterns •Picture Chompers •Probability Lab •Professor AI's Sequencing Lab •Stickybear Shapes (ProDOS 1.5) •Study mate (the grade booster) •Sun and Seasons •The Duel: Test Drive II •Time Navigator •Tomahawk •Windwalker •APT's: •Where in Europe is Carmen Sandiego? •Where in the USA is Carmen Sandiego? •Where in the World is Carmen Sandiego? •Where in Time is Carmen Sandiego? •Playing Tips: •Windwalker •IBM Softkeys: •Crime Wave •Gauntlet II •Stunt Driver •Thexder II •Wing Commander

82 The Product Monitor •Features, Notes & such: •GS/DSP: Update on IIGS Enhancement Board •Two-World Transfers: Apple to IBM and Back •Softkeys: •Advanced Applesoft Basic •Apple Assembly Language •Bad Dudes •Bubble Bobble •Captain Goodnight •Chemistry - Balancing Equations •Chemistry-Periodic Table •Comics •CommuniKeys •County Fair •Electric Crayon (This Land is your Land) •Gorgon •Hi Res Tool Kit •High Rise •Invisible Bugs •Jawbreaker •King's Bounty •Might and Magic II •Miner's Cave •Mission Control •Mystery Matter •Mystery Objects •Note Card Maker •O'Riley's Mine •Outliner •Platoon •Risk v1.4 •Space Station Freedom •To Preserve, Protect, and Defend •Wood Car Rally •APT's: •Captain Goodnight •Elite Plus •The Maps of Kings Quest V •Playing Tips: •Elite Plus •IBM Softkeys: •ABC Monday Night Football •Abrams Battle Tank •Battlehawks 1942 •Bop'n Wrestle •Centurion •Champions of Krynn •Command HQ •Indianapolis 500 •Jack Nicklaus' Greatest 18 Holes of Major Championship •Life & Death II: The Brain •Lowblow Boxing •M1 Tank Platoon •Might and Magic •Might And Magic II •Nuclear War •Pipe Dream •Populous •Railroad Tycoon •Red Storm Rising! •Silpheed v2.2 •Street Rod •Test Drive II •Vette •Wing Commander

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#84 The Product Monitor •Bugs: Another bug in

AppleWorks 3.0 •Bug in Captain Goodnight Softkey •Bug in Gorgon Softkey •Bugs in "Where In The USA Is Carmen Sandiego GS" •Features, Notes & such: A fix for "Putting... Super Boulder Dash on a Hard Disk •An ELITE Craft ...without NMI •Boot code tracing Star Maze •EZ APT's with Compare Disk program •Notes on Hacker II •Run MECC On Hard Disk •Super Boulderdash APT Explanation •The Basics of Kracking Part 10 •Windwalker GS Editor •Advanced Playing Techniques: Eidolon •Elite •Super Boulderdash APT Explanation •Bitkeys: MECC Copy System/Label Utility •Midwest Software •Softkeys: Alge - Blaster Plus •Arcade Machine (The) •Axis Assassin •Backyard Birds •Bandits •Bill Budge's Space Album •Borg •Chemistry: Balancing Equations •Chemistry: The Periodic Table •Cleanwater Detectives •Clock •Communikeys •Conquering Decimals (-,-) •Conquering Decimals (X,/) •Conquering Fractions (-,-) •Conquering Fractions (X,/) •Conquering Math Worksheet Generator •Conquering Percents •Conquering Ratios & Proportions •Coordinate Math •Decimal Concepts •Dungeon Master's Assistant vol2 •Early Skills (2 diskettes) •Equation Math •Estimation Quicksolve I •Estimation Quicksolve II •Estimation Strategies •Exploring Gas Laws •Five-Star Forecast •Flip Out •Fossil Hunter •Fraction Concepts, Inc. •Fraction Practice Unlimited •Grammar Gazette •Grammar Toy Shop •Instant Survey •Instant Survey Sampler •Invisible Bugs •Keyboarding Klass •Kinder Concepts •Little Town Zoo •Living Cell (The) •Lunar Greenhouse •Mastertype's Writer •Math Facts Tracker •Measureworks •MECC 3.5" ProDOS disks •MECC Outliner •Miner's Cave •Minotaur •Money •Mystery Matter •Mystery Objects •Paper Plane Pilot •Patterns •Picture Chompers •Probability Lab •Problem Solving With Nim •Rings of Saturn •Space Station Freedom •Spell It •Spellevator •Spelling Puzzles and Tests •Spelling Series Toolkit •Star Maze •Sun & Seasons •Teaching Scientific Inquiry •Time Navigator •Time Navigator Around The World •Time Navigator Leaps Back •To Preserve, Protect & Defend •Type Attack •Weeds To Trees •What's First? What's Next? •Wood Car Rally •Woolly Bounce •Playing Tips: Gemstone Healer •IBM Softkeys: Battle Chess II •Carrier Command •Colonel's Bequest •Continuum •Crime Wave •Crimewave v1.1 •Curse of the Azure Bonds •Dragon's Lair •Dragon's Lair II •Earl Weaver's Baseball v1.5 •Earthrise •Escape From Hell •F-15 •Where in U.S.A. is Carmen Sandiego?

#85 The Product Monitor •Bugs: A bug in AppleWorks 3.0 •Bugs in the Copy II Plus •Bugs in "Where in the USA is Carmen Sandiego GS" •Features, Notes and such: A "LISTable" version of Warship & WWI Battlecruise •Copy II Plus discontinued? •Dazzle Draw Patch to Save the Configuration •Fastcopy Enhancement problem •Locksmith Fastcopy (2 GS) Help •PDOS (ProDOS RDOS) v1.1 •PDOS Examples •PDOS Updates: Changes for v1.1 of PDOS •PDOS Updates: Changes for v1.1 of RDOS Transfer •Question and Help for Wings of Fury by Broderbund •RDOS Transfer Utility v1.1 •The Basics of Kracking Part 11 & 12 •Advanced Playing Techniques: The Duel: Test Drive II GS •Bitkeys: Midwest Software •Softkeys: Airheart •Battle Cruiser •Battle For Normandy •Battle Group •Battle of Antietam •Battle of Shiloh •Bomb Alley •Breakthrough in the Ardennes •Calendar Crafter v1.3 •Carrier Force •Cartels and Cutthroats •Clue •Computer Air Combat 1.1 •Computer Air Combat Data Disk •Computer Ambush 2.0 •Computer Baseball •Computer Bismarck 1.1 •Cosmic Balance •Cosmic Balance II •Cyclod •Cytron Masters •Eagles •Epidemic •Fifty Mission Crush •Fighter Command •Galactic Adventures •Galactic Gladiators •Geopolitique 1990 •Guadalcanal Campaign •Imperium Galactum •Kampfgruppe •Kampfgruppe Scenario Disk One •Kinder Concepts •Knights of the Desert •Mech Brigade •Napoleon's Campaigns: 1813 & 1815 •North Atlantic '86 •Objective: Kursk •Operation: Market Garden •Phantasia •President Elect •Pursuit of the Graf Spee •Reforger '88 •Ringside Seat •Risk 1.4 •Road to

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#86 The Product Monitor •Bugs: Bug in Airheart softkey •Bug in Minotaur softkey •Features, Notes and such: IIGS Resources •Paint Works Gold on a hard drive? •PC Keyboard Fix •Placing Battle Chess on a Hard Drive •The Basics of Kracking Part #13 •The Basics of Kracking Part #14 •Softkeys: Analogies Tutorial •Arithmetic Facts Learning Aid •Book Worm •Cause & Effect •Circus Math •Comparison Kitchen •Early Addition •Epoch •Extra! Extra! •Factor Opinion •Figurative Language •Foundations in State History: Focus on Indiana •Go to the Head of the Class •Indiana Jones in Revenge of the Ancients •Intellectual Software disks •Introductory Genetics •Kids at Work •Magic Candle •Mastery Arithmetic Games (1989) •Medalists: Create Your Own •Medalists: Presidents •Microcomputer Workshops disks •Microzine #19 •Milt's Math Drills •Money Works •Monsters and Make Believe •Mrs. Wigglesworth's Secret •Multiplication Puzzles •Mystery of the Witch's Shoes •Paint with Words •Parts of Speech Nouns •Parts of Speech Verbs I •Punctuation Skills Commas •Punctuation Skills End Marks, Semicolon, and Colon •Questron II •Quotient Quest •Rounding •SAT Score Improvement System Algebra •SAT Score Improvement System Geometry •Sea Speller •Sheila •Superstar Ice Hockey •Test Drive •The Case of the Missing Chick •The Skeletal System •Trivia Machine •Way Out •Who, What, When, Where •Word Scrambler and Spelling Tutor •IBM Softkeys: Artwork •Faces •Heat Wave •Hoverforce •Indy! The Graphic Adventure •Kings Quest III •Space Harrier •Teenage Mutant Ninja Turtles

#87 The Product Monitor •Bugs: Bug in Algebra vol 3 & 4 •Bug in Matchmaker World Geography Facts •Bug in PSAT Word Attack Skills •Bug in PSAT/SAT Analogies •Bug in SAT Word Attack Skills •Features, Notes and such: Basics of Kracking Part #14, The •Build Your Own Stereo Board! •Kracking SSI's RDOS •MECC 3.5" disk softkeys •MECC 5.25" disk softkeys •Notes on Test Drive II cars disks •Questron II CDA v2.0 •Softkeys: Blue Grass Bluff (5.25") •Bluegrass Bluff (3.5") •Botanist's Apprentice (The) •Cause & Effect: Mountain Climbing Blue Level •Cleanwater Detectives (3.5") •Cleanwater Detectives (5.25") •Context Clues: Hidden Treasure Red Level •Drawing Conclusions: Chief of Detectives Blue Level •Drawing Conclusions: Chief of Detectives Red Level •Estimation Activities (3.5") •Estimation Activities (5.25") •Fact or Opinion: Smart Shopper Blue Level •Fact or Opinion: Smart Shopper Red Level •Field Zoologist, The •Following Directions: Behind the Wheel Red Level •Getting the Main Idea: Around the World Blue Level •Getting the Main Idea: Around the World Red Level •Grammar Gazette (3.5") •Grammar Gazette (5.25") •Grammar Monsters (3.5") •Inference: School Days Blue Level •Inference: School Days Red Level •Journey to the Age of the Dinosaurs •Littletown Zoo (3.5") •Littletown Zoo (5.25") •Living Cell (3.5"), The •Living Cell (5.25"), The •Outpost •Paper Plane Pilot (3.5") •Paper Plane Pilot (5.25") •Pensate •Problem Solving With Nim (3.5") •Problem Solving With Nim (5.25") •Reading for Detail: Race Track Blue Level •Reading for Detail: Race Track Red Level •Sequence: What Comes First Blue Level •Sequence: What Comes First Red Level and much more...

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