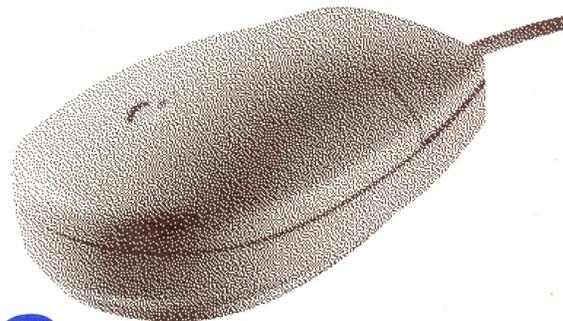




# II ALIVE

CELEBRATING THE APPLE II



## The Call of the Mockingboard

by Michael J. Mahon

When I purchased my first Apple II+ on the last day of 1980, one of the first things I did with it was write a program to record and play back scratchy sounds using the cassette port and the built-in speaker. (Later, I discovered how to reproduce sampled sounds with surprisingly good fidelity through that 1-bit audio system!) The Apple's built-in sound capabilities were fun to play with but, still, seemed very limited.

Apple sound improved significantly in the fall of 1982 at Applefest, when Sweet Micro Systems introduced the Mockingboard. Not only could it generate multiple tones simultaneously, but it could also produce very realistic effects and even speech (using an optional chip). Mockingboard was not the first Apple sound add-on, but, thanks to versatility and availability, it was an instant hit.

Mockingboard music and sound effects are supported by many games and music wares of the time. A sampling includes Skyfox, One On One, Ultima III-V, Silent Service, Pitfall II, Zaxxon, Thunderbombs, and Music Construction Set (MCS).

MCS was unique, providing a graphical interface for building musical scores with up to six voices. It also included routines which could be called

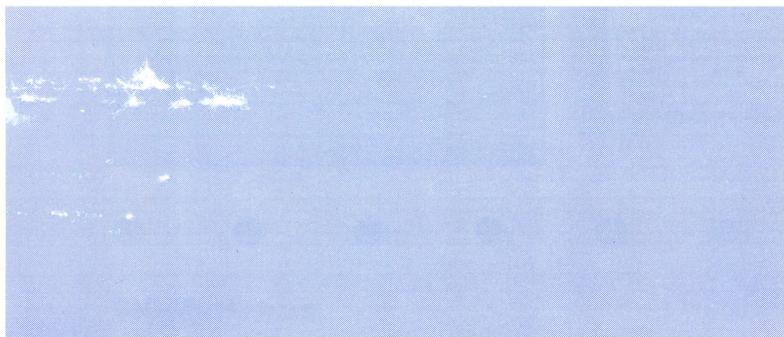
from your own programs to play songs as background music! Users transcribed many songs to MCS format, quite a few of which can still be found in disk libraries and on-line archives.

How can you get your hands on a Mockingboard? Well, although Sweet Micro is no longer on the scene, lots of Mockingboards were sold, and they regularly turn up at swap meets and garage sales. Still, as you haggle with a seller, it is well to keep in mind that the boards are also widely sought!

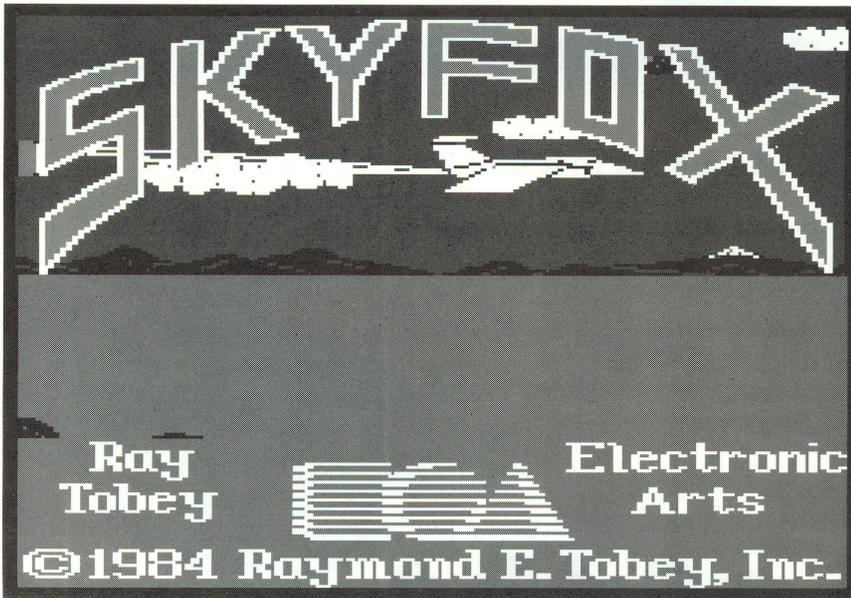
All Mockingboard cards share certain easily spotted characteristics. They have one or two 40-pin 6522 Interface chips and one or two 40-pin AY-3-8910 Sound Generator chips. You can also look for one or two small, 8-pin audio amplifier chips, each associated with a telltale miniature volume control.

While the boards are not hard to recognize, you must remember that several different versions were produced. The first Mockingboard was available in four models. The Sound/Speech I has a single sound output channel, which is shared by the Sound Generator and Speech Synthesizer (an optional Votrax SC-01 chip). Other original models include Sound II (stereo sound without speech), Speech I (mono speech only), and Sound I (mono sound only).

By 1985, the Mockingboard line had evolved into a different set of four products distinguished by a letter suffix of A, B, C, or D. The A and C models are stereo boards with two Interface IC's, two Sound Generator IC's, and one or two 24-pin sockets intended for the SSI-263 Speech Synthesizer IC. (The two-speech chip version can even sing in stereo!)



continued...



The B "model" was just a speech upgrade kit consisting of an SSI-263 speech chip. The only difference between A and C is that C came with one "B chip" already plugged in. Since few users ever added a second speech chip (and few software releases employed it), later production runs of models A and C omitted the second 24-pin socket.

Mockingboard D is a different animal—not a plug-in board at all. Instead it is a serial port accessory for the //c, with its own speakers and an external power supply. The D model has the same stereo sound and mono speech capabilities as the C board. Unfortunately, few were sold and the D model was not supported by many software vendors. Except for MCS, D-compatible wares are hard to find.

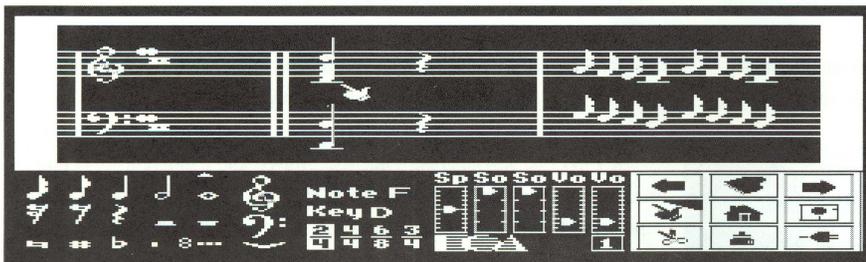
If you have a choice, your first Mockingboard should, probably, be a Sound II, A, or C model, because two-channel music and/or effects are widely supported features. However, don't pass up any good deals on Sound/Speech I or Speech

I, especially if you do not have already speech capability.

Once you get one, adding a Mockingboard consists of little more than plugging it in. The card usually goes into Slot #4, since this is where a few early games and demo programs expect to find it. The original audio cables tend to evaporate; so, you may have to build a simple stereo cable to connect your speakers or a stereo amplifier.

If you've never heard an 8-bit Apple (or, even, a GS) enhanced with a Mockingboard, you will be amazed at the richness of the sound that it can produce. Keep your eye out for one; you won't be disappointed. Happy hunting!

**For more information please contact the author, Michael Mahon at his email address: [mahon@lucy.cup.hp.com](mailto:mahon@lucy.cup.hp.com).**



## // ALIVE

Winter 1996 • Volume 4 Number 4

A Scantron Quality Computers Publication

<b>Publisher</b>	Scantron Quality Computers
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**Publication Schedule:** // Alive is published on a quarterly schedule, with issues appearing in Spring, Summer, Fall and Winter. Please allow until the 15th of the cover month for delivery (international subscribers allow slightly longer).

**Subscription Information:** U.S. subscriptions cost \$19.95 (for a four-issue, one-year subscription). In Canada and Mexico, the annual rate is US \$29.95. Outside North America, subscriptions are US \$39.95 (for surface delivery) and US \$49.95 (for airmail delivery). To subscribe, send check, money order, or credit card number (Visa, MasterCard, Discover, or American Express) to // Alive—Subscriptions at the address above. You may also subscribe by credit card by calling our Sales Department at the phone number above.

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// Alive (ISSN 1085-2050) is published quarterly by Scantron Quality Computers, 20200 Nine Mile Road, St. Clair Shores, MI 48080. POSTMASTER: Send address changes to // Alive, P.O. Box 349, St. Clair Shores, MI 48080. Second Class postage paid at St. Clair Shores, MI.

# Endangered? Useful? Active?

## *What's Doing with II User Groups?*

Are Apple II User Groups an endangered species? I think the answer must be "Yes" and "No". Yes; several of the clubs with which we have exchanged newsletters have a shrinking member base. Some are gone. (To the best of my knowledge, we, Applebyters, are one of the few Apple II-ONLY clubs left in the United States.) On the other hand, many clubs have merged with their local Mac User Group or some other club. Apple II User Groups are 'out there'; it's just that users may have to do some searching to find them.

We know there is a need for our club because it continues to be a source of valuable assistance to members. When a RAM chip went bad on my IIc memory expansion board and my printer suffered a stroke, it was a club member to the rescue.

We also try to help non-members who have a question or a problem with their Apple II's. A couple months ago, I came across a nice expanded-memory, duodisked IIe with Imagewriter II system sitting unused on the floor in an office. Its owner regretfully parked it there when she was assigned a '486 clone. She had used AppleWorks a lot and preferred it to her current system; but, something had died and she had no software to check out her system. I volunteered and found an easily corrected software problem. Another Apple II back in service!

Like many II User Groups, the Applebyter Computer Club started in 1979, the year Apple Corp. came out with the Apple II+ with 48K and

the Autostart ROM. For 17 years we have met monthly. For most of that time, we have had a newsletter, a club BBS, club-owned Apple II's, (currently a //e and a IIgs) and a library of software added to on a monthly basis.

The club's library is public domain, freeware and shareware. In a way, our library, since our club is so long-lived, is a history of Apple II's on disk. There are early and late Eamon adventures, utilities written for Integer BASIC, DOS 3.3, ProDOS, and GSOS. There are games, educational programs, graphics, fonts, and productivity software. I don't believe we have one of everything; but, we might be close!

Our members own and use a fairly wide assortment of computers. Apple II's are our common background, but Macintosh and PC-clones, OS2, MS-DOS, Windows of several varieties, Unix and Linux are spoken and understood by several members in good standing. When we gather for the business meeting, the conversation can cover a wide variety of subjects... which may not be only computer related.

In fact, the user group is a good social gathering of friendly people. In July or August, we hold the club picnic. For a loosely coordinated function, its amazing the variety of fine home-cookin' we've spread across the picnic tables. This last August, we picnicked under soaring oaks at Black Hawk State Park and were serenaded with a bag-pipe medley.

Every year in December, we hold an auction of stuff donated by members. The proceeds go back

into the treasury. Since several of our members enjoy going to garage sales and ham and/or computer fests, there's always some interesting offerings for the auction.

The Applebyter monthly newsletter is, mostly, a two-person project. The Secretary-Treasurer contributes the minutes of the meeting, and the Editor searches out interesting topics and cobbles up the articles. A problem which seems to be common to all club publications is getting article submissions by other members. (You know who you are!) It's quite a lot of work, but, also, fun. And, there's a certain satisfaction in being a big frog in our small pond.

I know there are people out there who need to belong to a user group. Certainly, this is true in the greater Davenport, Iowa Quad-Cities area; but, we cannot afford to advertise. Many users who go to schools, computer dealers, and service centers looking for answers don't even know we exist! Fortunately, several times in the last year, Apple's User Group locator has pointed people our way who have become new members.

Yes, Apple II clubs are, for the most part, small; but, we are 'getting by'. Some, like Applebyters, are even expanding a little. Check us out. It's a great time to locate an Apple II User Group and 'join up'!

Contacts: [n.crawford@genie.com](mailto:n.crawford@genie.com). Look for the Applebyters BBS at 319-388-8358 and web page at <http://www.augustana.edu/applebyters>. Apple User Group locator number is 800-538-9696.

# Hacking Platinum: Mac to Apple II

*Save your Apple 3.5" drive with a Mac Transplant!*

*by Stephen Buggie*

**U**sers who are devoted to the Apple II for the long haul may wonder which component will become the major maintenance bottleneck as we enter the 21st century. My vote goes to the Apple

"Platinum" 3.5" drive. Because of their delicate and heavily used mechanisms, they are likely to become scarce sooner than such items as the CPU, interface cards, or display monitor.

3.5" disk drives have dropped in price, as have other components; but, they are still costly to replace or repair. For example, just getting the read/write heads replaced runs about \$80. Fortunately, 3.5" drive mechanisms (including heads) are cheaply and abundantly available from a surprising source: the Macintosh world!

The basic Sony 3.5" mechanism is shared by Mac and Apple II. It stores 800K of data on a two-sided disk. Unlike the IBM version with its constant rotational speed, Mac/Apple II drives maintain constant head velocity by varying the rotational speed as the head assembly approaches or moves away from the disk hub. In fact, the platinum 3.5" drive supplied with the IIgs is directly Mac-compatible, although Mac does ignore the manual eject button.

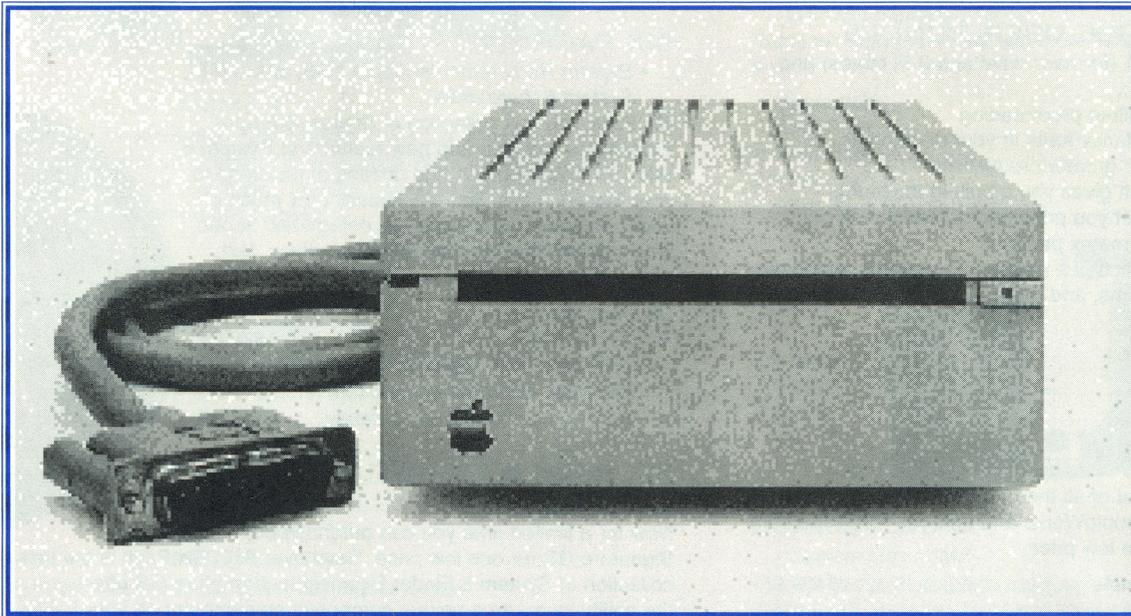
An older version of the external Mac 3.5" drive lacks the manual eject button and, in its casing, is

plug-incompatible with Apple II. However, thanks to advice provided by Ken Watanabe, I learned that the inner mechanism is identical among all versions of 800K Mac and Apple II drives! This is good news for Apple II users who wish to transplant the abundantly available mechanism into their platinum 3.5" drive casing.

So, why are Mac types a good source for these wondrous devices? Well, although Apple II owners continue to use and, even, add 3.5" drives, the units have declined in their utility for Mac owners who have shifted to hard drives, CD-ROM, etc. and away from floppies. If a Mac user has not already dumped his/her 3.5" drive at a swap meet, it is probably in some closet waiting to be rescued by a II user. Older Macs with good internal drives represent another low-cost source.

The actual salvaging operation is fairly simple. If you get an early version of the external Mac mechanism, it will be mounted in a plastic casing which, except for the missing eject button, resembles the Apple II platinum drive. Remove the mechanism from the casing, but save its round external cable and db-19 plug — that cable/plug can be used later to adapt flat-ribbon Apple II drives for use with the IIgs or IIIC!

The internal 800k drive mechanism can be salvaged from any mid-vintage Mac except for early models (Mac 128, Fat Mac 512)— those two models used a quaint single-sided 400k drive. Suitable models include the Mac Plus, Mac



metal shroud, lift away the should, and look inside.

Note that the round external cable terminates in a familiar IDE-20 flat-ribbon connector that plugs into the mechanism. Unplug the connector and slide the mechanism forward and out. It should have a shiny 'tin can' metal cover which you will want to place on the replacement mechanism. Mark "Front" and "Back" on the cover.

To remove it, 'unsnap'

SE, Mac II, or other Macs that have the standard DSDD 800K mechanism— newer Macs have incompatible high density drives.

Be sure to get a genuine Mac Sony drive mechanism, not a clone. (The suitability of non-Sony clones is uncertain.) Salvaged internal drives must be removed from the Mac internal mounting bracket. Just take out the four side-mounted bolts, and slide the mechanism forward.

You should anticipate that an internal drive from an older Mac may have seen plenty of use. If you have a choice, go for an external drive or an internal unit from an owner who used it "only to play Mac games". If buying by mail, it's a good idea to have the drive's head assembly protected from damage in case of rough handling. Ask the seller to ship the unit with a disk inserted.

Once you've gotten the mechanism, move everything— mechanism, worn out Apple II drive, containers to hold bolts, etc.— to a well-lighted work area that gives you plenty of elbow room. Tools needed include small and medium Phillips-head screwdrivers, small long-nosed pliers, and a felt-tip marker pen. If the area is at all subject to static electricity, take the usual precautions (e.g. wear a grounded wrist strap and/or touch tools and hands frequently to grounded metal).

The first step is to remove the worn/defective mechanism from its Apple II platinum case. Flip the casing on its back and rest it on cloth or newspaper with the front facing you. Remove the four shiny bolts from the bottom of the casing. Pressing lightly on the external cable's grommet, lift off the casing. It should come off cleanly. Use the marker pen to label "front-bottom", "left", etc. on the drive mechanism module.

At the unit's rear, observe that wire pairs terminate in RED and BLACK plugs. Write "R" and "B" on nearby metal surfaces to identify positions of the two plugs. Use the small pliers to pull each plug from its mounting pins. Now, you

it from the back, lift, and slide off toward the rear.

You are now ready to begin reassembly, but pause to appreciate what is before you. Hold the old mechanism and its Mac replacement side-by-side — they should appear identical. You can also check the age of each mechanism. Date of manufacture is coded on a sticker on the pancake motor (e.g., 8809 = September 1989).

To reassemble the drive with the new mechanism, simply reverse the steps outlined above: Slide on and snap down the 'tin can' cover, slide in the mechanism, press-in the ribbon connector, etc.. Move slowly and avoid forcing anything.

## Step-by-step, its an easy solution to hacking your Platinum 3.5"

can slide the mechanism module forward and lift it away from the case top. The wire-pairs from the eject-button and In-Use LED should remain tucked into their plastic side-braces.

The next step is to remove the actual mechanism from its shell. Remove the two medium Phillips mounting bolts (with flat washers) from each side. Remove the single medium Phillips bolt/washer that is centered on the upper-rear

Take the time at each step to check for proper fit. Once the case bottom is re-attached with the four shiny bolts, you're ready to plug in and try out the 'new' drive!

Contact: You can reach the author, Stephen Buggie at 505-863-2390. Or via email at [buggie@unm.edu](mailto:buggie@unm.edu), and, via mail, at Univ. of New Mexico-Gallup, 200 College Rd, Gallup NM 87301.

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\* System Requirements: 3.5" drive, 256 K enhanced ILe (65002 and MouseText)

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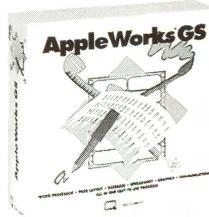
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- System Requirements: Apple IIGS, 1.25MB of RAM, hard drive

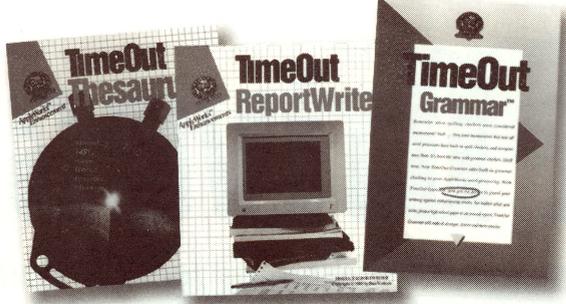
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# Test Drives

*Edited by Jeff Hurlburt*

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

## LEMMINGS

★★★

Free plus \$5 S/H, for 4MB Apple IIgs  
by Brutal Deluxe

Requires System 6, accelerator, two 3.5" drives or hard disk; stereo card recommended

*by Geoff Weiss*

Will IIgs owners, finally, get a chance to help hordes of otherwise mindless creatures escape over 90 hostile environments? Will Lemmings, the popular game from Psygnosis, ever be ported to Apple II? Yes! Brutal Deluxe, the programming team which brought us Tinies and Cogito, is putting the finishing touches to LemminGS. The game went into beta testing in October and should be released sometime this Winter.

At the beginning of each Level, lemmings drop in from a trap door. Since they are suicidally stupid creatures, it's up to you to clear the way and guide your charges around the dangers that lay ahead. Lemmings are constantly on the move; so, you must continually click-select needed Skills (like Build Stairs or Dig Holes) and choose a suitable lemming to perform the task. You have a set time to save a required percentage from grisly death.

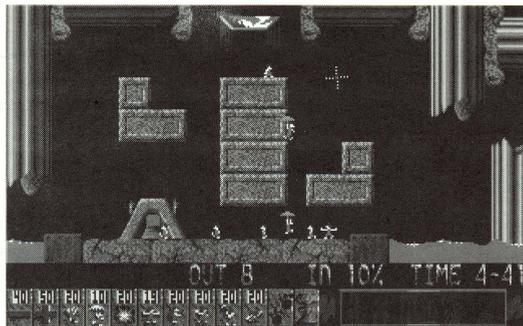
Having played Lemmings just once several years ago, I was, really, starting LemminGS as a novice. Fortunately, the first eight Levels are

designed to demonstrate each skill and to give you a chance to practice. Later on, you have to assign a variety of skills involving many lemmings. The beta had only 30 Levels and I managed to complete them all in a weekend. Brutal Deluxe promises that the remaining 60 Levels will be harder!

LemminGS is a very nice port of the original to GS's 320 x 200 super-res screen. The artists' use of multiple palettes is masterful and not at all obvious. A true bonus is that there are no 3200-color pictures; so, LemminGS is 100% compatible with the Second Sight video card.

On many Levels, the playing area is much larger than a single screen. Use of the keyboard or mouse allows panning of the entire game board. Since, as you scroll, there may be 100 lemmings marching around, digging, building stairs, etc., running with an accelerator card becomes, virtually, a requirement.

Because this is a beta, I have not rated the game; but, it's easy to rate the background music. In terms of variety and quality, it gets Four Stars!



There are 13 different musical scores used throughout the different Levels. The music, as well as the sound effects, are options that

can each be turned ON or OFF.

Brutal Deluxe is producing LemminGS as a kind of Christmas present. It is free, exclusively from Shareware Solutions II, to all registered purchasers of Brutal's first commercial release, Convert 3200. (If you don't own Convert 3200 and want LemminGS, you need to purchase Convert 3200.)

The complete game comes on two diskettes; but, a ten-Level demo will be available for downloading at popular Apple II ftp sites.

Take a look. If you like great animation, fun music, and challenging puzzles, you will love LemminGS!

Contacts: To order, registered Convert 3200 owners can send \$5 S/H to Shareware Solutions II, 166 Alpine Street, San Rafael CA 94901-1008. Convert 3200 is \$15. Questions? Email Joe Kohn at joko@crl.com.

## DEFENDER OF THE WORLD

★★★

Freeware for 1.5MB Apple IIgs

by David Ong Tat-Wee

Requires System 6; stereo card and joystick recommended

*by Mitchell Spector*

Admit it, at some point in your life you started something but never quite got around to finishing it. Be it some personal project, a goal, a life ambition or something physical your working on, the all too familiar phrase, "I'll get back to it later" pops to mind.

Computer programmers are no exception. Quite often they may start on a brilliant piece of software only to find school, a job, friends, family or other of life's commitments, eating at their time. Sadly, many fine computer programs end up in limbo, destined to spend an eternal life in the depths of a programmer's hard drive, hidden and forgotten like lost works of art.

On rare occasions, a programmer may act to rescue a creation from such a fate, choosing, instead, to make the in-progress work available for public viewing. Defender of the World is a case in point. In releasing it, David Ong Tat-Wee of Singapore has presented a gift to IIgs users of the world; and, there's no doubt, this, indeed, was a 'back-burner' treasure!

Defender' is the first game in a long time to bring arcade quality action to the Apple IIgs. Players are treated to a nonstop array of dazzling and fluid animation, special graphic effects, detailed images and explosive sound. The level of

*continued...*



entertainment offered is no less. At times you may very well forget your using a IIgs and believe your playing a Sega Genesis or Super Nintendo!

An adaptation of the popular Japanese game Gradius, Defender' puts you in the cliché role of a top-gun space fighter-pilot, earth's only hope against aliens set on taking over the world. You start off in deep-space, flying your futurist fighter-ship solo across a star field. Suddenly alien fighters come flying towards your path in group formation, intent upon your destruction!

At this point you have only a simple gun blaster to defend yourself, though, once you destroy each alien wave, a bonus "power" capsule will be left behind. Power capsules will sometimes be released as you fly through asteroid belts destroying meteors, as well. You'll want to collect as many as possible. Doing so allows you to increase your fire power, add various new weapons, or make yourself invincible.

A list of potential powers your ship has is displayed on the bottom of the screen. When you move your ship over a power capsule (identified by a "P") a weapon/power-up indicator will light-up. You can choose to select it right away, or collect more capsules to save for something more powerful. Each capsule moves the indicator up by one, to the next item.

By increasing order, available are "shot-speed", "guns", "side", "missile", "plasma", "magma" and "shield". The items "guns", "plasma" and "magma" control your main blaster weapon, your default weapon to start with will be "guns" (a small pellet blast). "Plasma" replaces it with a powerful arc-blast weapon while "magma" sends out large devastating fireballs.

it's possible to shot fireballs many times the size of your ship!

Selecting shot-speed accelerates all weapons, producing a more rapid fire. Additionally, "missile" allows you to add some extra fire power to your front arsenal with up to four missiles, while "side" simultaneously arms your left and right (up to three arced blasts on both sides of your ship). Finally, selecting shield makes your ship completely invincible for a short time period.

Caution is advised, however. Losing a life means reverting back to your last weapon. With skilled play, though, you can build up quite a formidable attack ship, with enough fire power coming from all sides to make even Captain Kirk blush!

Defender' will test your skills to the limit, having you navigate and fight through alien swarms, asteroid showers and aggressive large "bosses" who won't give up so easily. You'll fly through the darkness of space, brave chilling ice lands and travel below the earth's depths, in volcanically active and unstable caverns.

As a scroll-to-the-right style game, Defender' can be played by using a keyboard (via numeric keypad); but, joystick control is supported and highly preferable. As a easter-egg note to players less skilled regardless of control device, pressing 'Apple-Q' during game play automatically warps you to the next level.

Defender' is truly a ground breaking game; boasting detailed graphics and enormous sprites that move swiftly about with no slowdowns, even when your ship is armed to the gills spewing blasts in every direction! Certainly impressive are higher levels that even manage scrolling picture

You can increase this front-weapon multiple times, "guns" can have up to four bursts that spray outwards, "plasma" up to six times it's potency and "magma" up to four. In the case of the latter two, their size and power increase; so, for example,

backgrounds and multi-layer parallax scrolling, things one might imagine not possible on an Apple II.

The major downfall, of course, is the fact that the game remains in an unfinished state. Level-1 is complete and playable, but the next two levels tend to serve only as a demo, while the final level is nonexistence. As a result, graphics suffer somewhat too. While fair and decent to most, others may find they lack a sense of polish and professionalism expected with a high caliber game.

Digitized speech is incorporated throughout the game; yet, I feel a musical score— there is none to speak of, other than at the title screen— would have added more flavor. On the whole, it still succeeds beyond most expectations, I personally find it one of the best shoot-'em-up games currently available on the IIgs. If ever there was a word for "fun", "Defender'" is it! At long last, arcade excitement is brought back to the IIgs!

Contacts: Defender of the World can be downloaded from popular Apple II ftp sites (<ftp://apple2.caltech.edu/pub/apple2/games/dotw.shk>). You can reach David Ong Tat-Wee at [ongtw@iscs.nus.sg](mailto:ongtw@iscs.nus.sg).

### OPERATION LAMBDA

★ ★ ★ ★

\$25, for 1.25MB Apple IIGS

by Bret "Slixter" Victor

Requires System 6; hard disk optional; stereo card recommended

*by Adam Barr*

Operation Lambda is a new GS game which is sure to become a classic. Your objective is to rescue hostages being held in a 100-Level citadel.

Each Level is a single-screen maze made up laser barriers, blocks, and mirrors. You get a bird's eye view and control your character with the numeric pad.

The lasers are your major problem. These come in three different colors which can be deflected to open color-coded locks; but, their main purpose is to block your progress. To get to the hostages and exit a maze you must move

continued...

and rotate mirrors to deflect the lasers, use blocks as shields, and shoot generators to remove laser power.

A clock at the bottom of the screen tells how much time you have left to complete a Level. The more quickly you finish, the higher your score. If time runs out you lose a life. (If you or a hostage is hit by a laser you must restart the Level; but, you do not lose a life.) Lose all your lives and you're dead!

'Lambda does not include a Save Game; instead, it gives you a password every five Levels up to Level 90; thereafter, you get a password for each Level. Should you be killed, you can start

over at the spot where the last password takes you.

Though the game is a standard GS/OS program, it needs no acceleration to deliver smooth animation and responsive controls. Your action figure does not move unless you are pressing a direction key; so, even arcade novices can feel 'in command'.

'Lambda is challenging because the maze puzzles are a challenge; not because the game is hard to play. Some solutions are fairly easy to find; yet, others can take many retries to complete. A few Levels are very discouraging; but, if you keep trying, things click into place.

Need more time? Just set Difficulty to "Easy". The maze will be the same. Once you've got a Level figured out, switch to "Hard" for the maximum score. (The High Scores roster is saved to disk!) You must have Difficulty set to at least "Normal" when you win in order to see the "Special" graphics display.

Like other "Slixter" games, 'Lambda has a finished, professional look. The game's playing field is rendered in grey-scale with colors coming, mainly, from laser beams, door panels, and locks. Figures and game fixtures are crisp, nicely sized, and easy to identify. I think result is an attractive display free of clutter.

# checkpoints

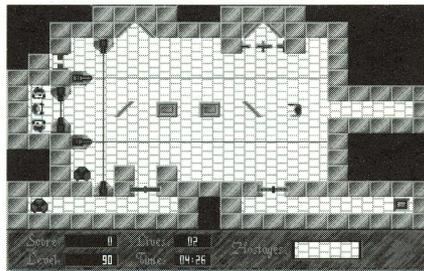
## QUICKFIX MULTIPLICATION LIBRARY by Kenneth C. Richardson

QuickFix is a library of high speed multiplication routines that accelerate integer multiplication three fold over standard routines. Moreover, because they do not use a lookup table, they do not eat up two banks of RAM and thus can easily fit into the cache of today's hardware accelerators. (The QkMul2 routine uses about 5k of space.) The library contains the following routines:

QkMul2 - unsigned 16x16 bit multiply with 16 bit result  
QksMul2 - signed 16x16 bit multiply with 16 bit result  
QkMul4 - unsigned 32x32 bit multiply with 32 bit result  
QksMul4 - signed 32x32 bit multiply with 32 bit result  
QkFixMul - 32 bit fixed point multiply with 16 bit of fraction

Currently, the routines are in a library file usable by ORCA/M. One simply has to copy the library file into the libraries folder of your ORCA program folder. The documentation explains how to use the routines from assembly. At this time there is no documentation for using the routines from "C" or Pascal.

I have found these routines indispensable for math intensive programs. For example, one of my first experiments cut time used by a program algorithm from 2.5 minutes down to 40 seconds. Thus, this program became usable for the first time, because I did not have to wait "forever" to



get the results. Possibly, you have a 3-D rendering program that will now require half the time because of the QkFixMul routine!

This is why I wrote the routines. I like to push the GS to the max and hope Quickfix will help others to do the same.

Contact: You can reach Kenneth at kcr103@email.psu.edu. To order Quickfix, send \$24.95, check or m.o. to Kenneth at 829 N. Second Street, 1st Floor, Philadelphia, PA 19123.

## LAMBDA PASSWORDS HINT

Stuck in Operation Lambda? If only you had the passwords, you could hop around the Levels at will!

Naturally, we are not going to just list them. Instead, here are three hints aimed at II users who enjoy playing with substitution codes:

1. Len = 8
2. Blocks 31 and 32 of the OPERATIONLAMBDA file
3. CBEDGFYX[Z]\\_^QP=RUTWV)(+\*

## JUST THE FAQs! by Nathan Mates

Covering everything from the Apple I to accelerating your Zip GS, the Apple II Frequently Asked Questions (FAQ) page on the web at <http://www.visi.com/~nathan/a2/faq/index.html> contains nearly a megabyte of regularly-updated info which I collect and organized for easy reference by fellow users.

You can find details on popular peripherals, lists of dealers, pinouts of connectors, source code, directions on how and where to download software from the net, troubleshooting tips, and tons of other information. The next time you have an Apple II question, stop by and get the FAQ's!

Contact: Ace bug-hunter Nathan Mates is the author of many GS utilities and other programs. You can reach him at [nathan@visi.com](mailto:nathan@visi.com). Nathan also posts the current FAQ's each month on [csa2](http://csa2.comp.sys.apple2) ([comp.sys.apple2](http://comp.sys.apple2)).

## READY FOR ADVENTURE?

by Tom Zuchowski

Eamon adventures are text-style quests which look and play much like those published by Infocom. Currently, there are 238 "Eamons" in the public domain with scenarios running the gamut from Swords & Sorcery through Sci-fi. Play times range from one to many hours.

Since nearly all Eamons are available in upper-case 40-column DOS 3.3 format, you can play on any Apple II or A2 emulator. The 62 titles for 80-column ProDOS are conversions of the top-rated one-quarter of the entire list and offer excellent gaming experiences.

Some of the best fun in Eamon-ing is creating your own adventure using the software tools contained on the Eamon Dungeon Designer Disk. DDD 7.1 represents a quantum leap over earlier versions and has the potential for quite sophisticated scenarios. In fact, Softdisk published three very high quality Eamon titles in issues 137, 152, and 156. When finished, your adventure can be registered— Eamon #239?!— and become part of a great gaming tradition.

You can obtain Eamon adventures and Designer materials from several sources, including ...

Caloke Industries, P.O. Box 18477, Raytown, MO 64133

Kula Software, 2118 Kula St., Honolulu, HI 96817

[ftp://apple2.caltech.edu/Zocalo/apple2/8bit/games/eamon](http://apple2.caltech.edu/Zocalo/apple2/8bit/games/eamon)

[ftp://ftp.gmd.de/if-archiv/games/appleII/eamon/guild/original](http://ftp.gmd.de/if-archiv/games/appleII/eamon/guild/original)

The Eamon Adventurer's Guild supplies regular news, updates, and reviews, via a quarterly newsletter. EAG has been around for almost 13 years now, and it is still going strong!

Contact: Tom Zuchowski, developer of Eamon designer materials and editor of the EAG Journal, can be reached at [tjz@mindspring.com](mailto:tjz@mindspring.com) or, via mail, at 7625 Hawkhaven Dr., Clemmons, NC 27012-9408.

## NEW USER GROUP GOES ON-LINE

Numbering such notables as Steve Wozniak among its founding members, the new Apple II Worldwide User Group is now on-line. Though

currently in its infancy, Chat rooms and other features to make II computing more interesting and productive are on the drawing board. Membership is free. To join or just visit, enter <http://wco.com/~3d5d1wsw/us-a2wug/>.

## MORE NEW WARES NEWS

Evan Day is searching for Infocom veterans interested in Beta-testing Frotz, a stand-alone Z-code interpreter for running the popular text adventure games on the IIGs. Frotz features include super-res display, sound and graphics support, elimination of disk accesses during play, and compact, speedy Game Save. You can reach Evan at [day@mail.cs.orst.edu](mailto:day@mail.cs.orst.edu).

Brian Hammack is doing some final checking on version 2.03 of 2qwk!, the freeware offline email/newsgroup reader for all Apple II's. Originally described in the Spring '96 issue, 2qwk!'s latest revision is said to fix bugs, improve speed, and add a number of 'most wanted' features. For the latest on v. 2.03 status, check [csa2](http://csa2) postings or email Brian at [brian.hammack@rook.wa.com](mailto:brian.hammack@rook.wa.com).

Developer, Clayburn Juniel, has announced release of Music Composer 4.0.0, complete with a finished Sheet Music interface, as a commer-

super-res freeware word processor that loads Text, Appleworks, Teach, AND SoftDisk-GS files. Except for Appleworks, it can save in each format, as well.

Coolwriter is packed with handy features, like an Edit option to strip those annoying Line Feed characters from net downloads. Mainly, Coolwriter doesn't choke, complain, or crash. To make it your choice for click-and-view Text file reading, just download from [apple2.caltech.edu](http://apple2.caltech.edu). Use an icon editor, such as Paul Elseth's nifty IconEd 2.0, to create a Text file icon and set the application path to Coolwriter— easy and, also, very cool!

## VOICES FROM THE ID?

There were two surprises in store for Apple II users who tuned their radios to a recent edition of the popular Art Bell late-night talkshow. One was speech researcher John David Oats's demonstration of Reverse Speech as "truth detector". Recordings of presidential candidates, celebrities, and children, when played in reverse, did seem to show what, really, the speaker had in mind.

One particularly effective illustration was the reversal of a young child's response to hav-



cial product. For current price and product details you can contact Clay at [clay1@primenet.com](mailto:clay1@primenet.com) or, via phone, at 602-274-6905.

NinjaForce programmers are finishing the GS port of Bomber Man, a game where up to four players get to blow up each other using bombs. "It's just the best multi-player game in the world!" reports Alexander Siegfried. You can look for project updates on [csa2](http://csa2) or email Alexander at [ug0@rzstud1.rz.uni-karlsruhe.de](mailto:ug0@rzstud1.rz.uni-karlsruhe.de).

## COOL WRITING

Like many GS users, I've used Teach as my quickie Text file viewer for years ... and put up with the program's "File too large" complaints, lock-ups, and other assorted quirks. Not any more! Rolf Braun's Coolwriter 3.0 is a compact

ing a tape recorder mike thrust at her. Forward, it sounds like normal pre-speech babble. In reverse, you hear "What's that?"!

The second surprise? John and Art, both experienced PC users, viewed the reversal process as something of a barrier to home experimentation requiring, perhaps, a special tape player! Yet, GS users have had access to sound recording and reversal for years. Dave Klimas's Sound Shop, Paul James's Sound Studio, and Lance Walley's Sound Ace can all handle voice or taped voice input and do reversals without a hitch. John says that the phenomenon is independent of language but cautions that much speech does not contain any meaning in reverse. You can get more details in John's book: *Reverse Speech, Voices from the Id.* (\$27.95, 800-231-1776)

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# More Zip from Your **ZipGSX!**

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*by William Baguhn*

**W**ith a soldering iron, a handful of miscellaneous parts, and an hour or so of spare time, you can modify your Zip GSX to get more zip. Maybe you've already added a larger cache or increased processor speed and wonder: Why bother? Well, why not? Let's face it. If you have a Zip GSX, you're obsessed with speed in the first place... why not go for more?!

As your manual explains, Zip GSX speed comes from having a faster processor which can access code and data from its high-speed cache RAM. The standard 'GSX has a unified cache, which means data and code have the possibility of overlapping. If the cache controller sees a need to bring in a lot of code, it will go to main memory and bring in up to 64k of code (or 16k in a 16k cache system) and, possibly, overwrite useful data.

The reverse is also true. If the controller feels that a lot of data needs to be brought in, it will cache the data, and, possibly, overwrite useful code, causing another slowdown when the code needs to be fetched again.

With a split cache, the code and data segments no longer overlap. Caching code cannot overwrite data, caching data cannot overwrite code. The drawback is that only 32k of data and 32k of code can be cached at once (in a 64k system), but usually this provides for more speed than being able to cache a 64k mix of both.

To do the mod, you'll need a ZipGSX version 1.02 with either 16k or 64k cache on it. If you're not sure exactly what board you have, it's pretty straightforward to figure things out: open the computer and look at the Zip. The board revision is silkscreened on just beneath the processor.

The cache size can be determined from the DIP switch settings. However, a simpler guideline is look at the TAG/DATA sockets and count the number of chips. If there are only 2 chips, you have either an 8k or a 32k cache. If there are 4, then you should have 16k or 64k.

To modify your Zip for the Split Cache, you'll need a good hobby knife that can cut the traces without damaging the board underneath too badly, as well as two or three small lengths of wire. You will also need a good pencil-style soldering iron, desoldering pump or braid, and high quality rosin core (NOT acid core) solder. I use Radio Shack's .032 60/40 rosin core solder. Kester makes excellent quality solder which is sold at many electronics supply shops.

There is a potential of damaging expensive and delicate hardware. For example, when cutting a circuit trace be careful not to cut deeply, lest you cut a trace in the next layer of the circuit board. If you're not experienced with cutting traces or soldering on circuit boards, find an old board and take some time to practice.

The actual mod is very simple. Steps 1-3 and 5 are for all boards. Step 4 is for 16k cache boards only.

1. Locate J6 and J7. They are both blocks of 3 pinholes, which may or may not have been soldered-in, near the bottom of the board next to connector J1, where the gray cable attaches. (See the "Split Cache Mod" picture.)

2. Cut the SMALL trace between pins 2 and 3 of both J6 and J7. This trace is on the back (solder side) of the board.

3. Solder in a piece of wire between pins 1 and 3, of both J6 and J7. A wire that has been bent into a U shape before soldering seems to work best, both for ease of installation and aesthetic value.

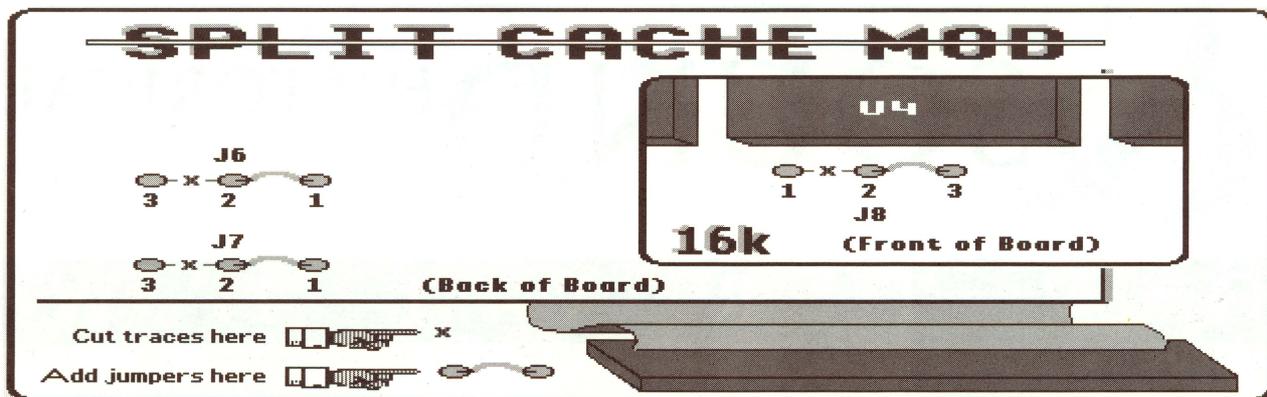
4. 16k systems ONLY: Cut the trace between pins 1 and 2 of J8 on the top side of the board. (J8 is below the Cache SRAM sockets) Then, solder a piece of wire between pins 2 and 3 of J8. (See the "16k mod" insert.)

5. Set the DIP switches appropriately. The DIP switches needing to be set are SW1-7 and SW1-8, they control the cache size. SW1-7 should be OFF for 64k, ON for 16k. SW1-8 should be ON.

Reversing these changes is fairly easy. If you decide that the performance change was detrimental, simply desolder the wires that you installed, and solder in wires to replace the traces that were cut.

I found that the split cache sped up my system notably, especially under the Finder and other desktop applications. Improvement was much less noticeable under text applications. (I haven't checked affect on compiling speed, yet.)

continued...



Personally, I think this is an excellent modification, well worth the time and effort. Splitting the cache probably didn't change the Dhrystone rating; but, it definitely made my system feel perkier!

I had lots of fun modifying my Zip GSX like

this. My next planned changes are to increase the speed of the processor, and, possibly, put the whole system into a full tower case. (I've even come up with good uses for the buttons and lights on the case front!) Anyway, good luck; and, have fun!

**Contact:** The author assumes no responsibility for possible disaster resulting from attempts to do this modification. For questions or comments, the author can be reached at [wbaguhn@nyx.net](mailto:wbaguhn@nyx.net).

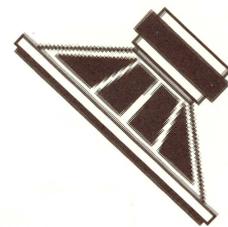
## TECHNICAL STUFF

With the Split Cache Mod, in addition to having the faster memory, you have it subdivided into two parts: code and data. The code part will hold only code that the cache controller circuitry thinks will be executed soon; and, the data part will hold only data that the cache controller thinks will be used soon. With large blocks of data as well as code in cache, the processor should not have to slow down, synchronize to the motherboard, fetch data or code, and then speed back up quite as often.

If you're wondering WHY the Dhrystone rating will not change much or at all, it has to do with the type of processing. Desktop applications and compilers have to deal with large chunks of information like window records and symbol tables. The more of these that can be held in cache without getting overwritten by code, the better (faster), because there is no need to slow down the processor to get the data.

With a Dhrystone test, however, there is very different data being processed. Dhrystone measures computation speed by re-processing the same small pieces of data many times; so, it should 'stay in the cache' whether or not it is split. The rating won't change because computation speed isn't changing.

# APPLE II GRAPHICS & SOUND HISTORICAL OVERVIEW



by Tony Diaz

Lets take a look at Graphics and Sound prior to the Apple IIs.

Circa 1980. ALF Products Company, a Denver Colorado based company had an entry in the exploding Apple II Market. A small music synthesiser card called the ALF Apple Music II. It featured 9 Voices and 3 Percussion Channels. Using this card consisted of a BASIC program that you used Paddles to enter your music, one to select the note, the other to select the position. The product had quite a following. It had two channel output and was completely programmable. It had a list price of \$195.00. The ALF card lives on today in software. See the end of this article for more information. In 1983 a Cranston Rhode Island based company called Sweet Micro Systems introduced Mockingboard. "Create the Sounds of the Universe."

With upto 8 octaves of sound, 4 per channel, and promising upgrades to speech in the future in addition to the sound Mockingboard was by far the most adapted by software companies. This was mainly due a massive campaign by Sweet Micro Systems to get the attention of software developers. An 800 number was even set up so you could call and hear Mockingboard in action.

The speech did become available in 1984. The most notable feature was—you could ad two speech chips, one each for male and female voices. Two speech voices and 8 octaves of sound on one card. Speech and Sound Effects & Music development kits were also made available to software programmers. This card really began to show up as early as late 1981. Jump ahead to

1991 for the moment, the year Ken William of Sierra On-Line made the quote "1991 will be the year that PC users discover the sound card", imagine that, The Apple II did it 10 years before. The original Ad-Lib and SoundBlaster card for IBM PC Compatible machines was really nothing more than Mockingboard was. Mockingboard could do both music and sound effects which made it attractive to programmers. Ultima III made very

extensive use of Mockingboard for it's sound track, something that would stick with the Ultima series until today. Will Harvey's Music Construction Set published by Electronic Arts brought computer music generation to the masses. Other companies that took a shot at the Apple II Sound market were RC Systems, they offered Slot Buster. A multi-function card that in addition to a sound and speech similar to Mockingboard also featured a real-time clock, serial and parallel ports. Quite a bit to have all on one card. Another entry by YAM Electronics also similar in capabilities was available for a short time.

Speech Synthesis and recognition would also come to the Apple II early in its life, in April 1983 Voice Machine Communications offered the Voice Input Module as a plug in card for any Apple II or compatible. AppleSoft BASIC, Magic Window, WordStar and Visicalc were just a few of the uses, now you could dictate to your computer. No more typing. All with no modification to your existing software. While it would take many hours to set up, teach the card your voice patterns and such it did work. There were at least 4 such products available for the Apple II at the time. Others had a headset with a mic but one of the options with the Voice Input Module was a wireless microphone with stand that sat on the desk. Speech Synthesis came to the masses via the Echo Speech Synthesiser by Street Electronics.

The Echo card also added sound with the introduction of the Echo II and Echo Plus. The Echo card was also widly adopted by software programmers due to marketing by Street Electronics. The Echo series of cards also had





an impact on another world. Blind people that could type could now also use a modem and get information and have the computer read it back to them, although rather primitive in the early 80s, but it caught on and even today remains a viable option as a use for an Apple II system. Another product available for about \$49.95 was called S.A.M. the Software Automatic Mouth.

S.A.M. was half the price of the competition and was only speech. Best of all, it was really only software, hence it's name. Although it did come with a small card that you placed in a slot and hooked the Apple's speaker into and then hooked an optional external speaker to. S.A.M. could be licensed for inclusion in your own programs and not require the hardware.

The hardware was simply an amplifier and simple circuit that it looked for and would not function without to discourage copying of the software.

The Apple //c was not about to be left out. Both leaders in the market, Sweet Micro Systems and Street Electronics set out to make a comparable product for the //c. Street Electronics produced the Cricket, a small external box with speaker and volume control that attached to the modem port. Mockingboard D from Sweet Micro Systems was announced, developers got pre-release units to adapt existing titles to but the product never shipped in great numbers if at all. Both products hooked to the serial port and were totally different with respect to software support than the cards for the rest of the Apple II's. Other than EA's Music Construction Set which was updated yet again for Echo II, Echo Plus and Cricket support in addition to Mockingboard, the //c devices didn't catch on nearly as well.

Enter Applied Engineering, not one to be left out of the game a souped up version of the AFL Apple Music II was created by them called the Super Music Synthesiser. It featured 16 'channels' and would drive 4 speakers. It had it's own software but would also work with anything made for the original ALF card. In 1985 Applied

Engineering wrapped it all up by releasing Phasor. An all in one sound and speech card for the Apple II.

Featuring Mockingboard and Echo compatibility, with speech built in already. As well as the Super Music Synthesiser all with a 4 Watt amplifier built onto one card.

But wait, there's more!

One of the best kept secrets of the Apple II and to this day, most people are still quite

SINCE THE  
BEGINNING OF THE APPLE II,  
AMAZING STRIDES HAVE BEEN  
MADE IN THE AREA  
OF SOUND TECHNOLOGY.

stunned when they hear about it, the Apple Cat II Modem could actually be used to play music and speech. What you say? All of the software for these features was written by various individuals and distributed for free. Your Apple Cat II modem could actually be an answering machine, turn on a cassette recorder to record the messages and even become a modern day Voice Mailbox System. Really! With one of the options offered by Novation, a Touch tone decoder chip you could have Actually had your Apple II answer your phone, "If you want to talk to mom, press 1, " etc. The voice would be computer generated and sound almost like S.A.M. or the Echo card. Why could you do all this with a modem? By tweaking the tone generator circuitry from your

own programming of course, not surprisingly, most of that information was actually furnished in the manuals that shipped with the modem, although not meant for that use. A program

called Silicon Secretary would handle all this and more. What Novation did promote was the modem could be used in conjunction with a BSR controller (available at Sears) to turn on and off household appliances.

Yes, even a clock program was written to use the Apple Cat II as a Clock for DOS and ProDOS. You could also call your house and command the modem via touch tones to send the signal to various appliances connected to the BSR Controller. All these extra features in a modem! Incredible.. but true!

The ALF Card lives on in software, a software emulator that will play any ALF or Super Music Synthesiser music file on the Apple IIs without the use of any hardware. During the playing of the song it even uses the same Apple HiRes display that the AFL and AE Players used. There is also a ProDOS 8 version of the program that runs on the //e and will play the files using either the original ALF card or either AE card. If the ProDOS 8 version is run on a IIs no hardware is required.

There are a few other music cards that I didn't mention, more detailed information on these and the others as well as the software for the ALF card and Apple Cat II Modems is available from <http://www.hypermall.com/~tdiaz> and via ftp from the popular Apple II ftp sites.

[Note: The software will be uploaded to both within the next couple weeks once this is accepted and used, II software titles are public domain and fully distributable with no strings attached]

For more information, contact Tony Diaz, the author at [tdiaz@hypermall.com](mailto:tdiaz@hypermall.com)



# Become Master of the Game!

*When I found Broderbund's Dark Heart of Uukrul for sale at a recent swap meet, it was snapped up without a second thought. Long on my "Must Try" list, the game has proved to be a fine multi-character adventure, playing much like such D&D greats as Champions of Krynn.*

*Inevitably, there came a time when it seemed that "Uukrul" had 'done me wrong'. Expensive armor and weapons were destroyed, rare artifacts were used up, etc. due to what seemed to be inordinately bad luck and/or an unfair lack of information. Then, my party came upon a message etched into a Temple wall: "When all else fails, cheat!" That was the last straw.*

## *Breaking into the* **DARK HEART** **of Uukrul**

*by Jeff Hurlburt*

The ultimate "game crack" is to have control of character attributes, items, money, etc.. One tactic is to use a block editor (such as the one included with ProSel) to search the Save diskette for a character's name and, then, edit on-diskette Game Save info. This did not work with 'Uukrul. The changes were made with no great difficulty but detected by the game as invalid. Evidently, Game Save data is protected via some kind of check sum.

You can, often, get around such schemes on the GS by doing an OA-CTRL-ESC, going to Visit Monitor, finding the character info stuff in memory, and doing the changes there. (If, after starting System 6, Visit Monitor does not show up as an option, go to the SetStart control panel, click "Enable Programmer CDA's", and reboot.)

'Uukrul is supposed to be "uncrackable"; so, naturally, it disables interrupts during key accesses. OA-CTRL-ESC is ignored. (Foiled again!)

Happily, there is more than one way to skin a dragon. If the game shuts down OA-CTRL-ESC access, then, perhaps, we should change the game program! A good start is to search the on-diskette copy of the main program for instances of AD 00 C0, a machine code instruction often used to read the keyboard. There are very few of these in Uukrul; so, it was easy to isolate the main KB input routine.

On my 5.25" version of the game, I found the

routine beginning at byte \$110 in block \$A5 on the Boot diskette:

```
2C 00 C0
10 FB
AD 00 C0
```

On a copy of the Boot diskette, this became

```
58
AD 00 C0
10 FB
78
EA
```

The new routine enables interrupts, waits for a keypress, and, then, disables interrupts. This, essentially, "cracks" the game. The GS user can interrupt the program at practically any moment, do a Visit Monitor, make desired changes, and exit back to the game.

Although you will need to start System 6 in order to mount the Visit Monitor CDA, 'Uukrul, at least the 5.25" version, does not launch from GS/OS. It is a Pascal-based game which boots from its own diskette. This is nice because it means that you will not need to hunt for the program in GS memory. It will reside in memory Bank \$00.

In 'Uukrul, you find the party's Food, as a two-byte hexadecimal value, at address \$976E. As usual, the low byte is first; so, for example, 5E 01 means you have \$15E, or, in decimal, 350 Food packets. (By the way, a cheapo Radio Shack calculator which does hex-to-decimal conversions is very handy for this kind of work!) The Party's Money is saved as decimal, lower bytes first, starting at address \$9770.

If, while in the monitor in 80-column mode, you enter 97E0.98EF (RETURN), you will see that character names show up in the right side of the display. As in most such adventures, 'Uukrul stores data for individual characters beginning with Name followed soon by Experience (in decimal) and values of attributes, like Dexterity, Piety, ..., in hexadecimal. To make it easier to see what's where, it's a good idea to jot down attributes, hit points, spell points, experience, etc. before going to Visit Monitor.

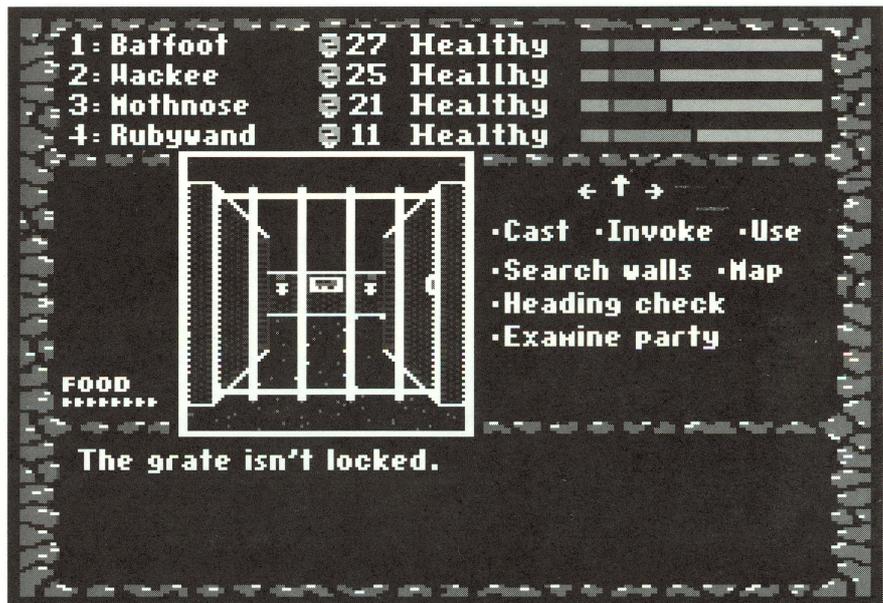
Toward the end of a character's entry are his/her possessions (weapons, armor, healing

salve, etc.) stored as two-byte codes. For instance, if a magic user is wearing Silken Robes, you will find 02 55. A charged-up Wand of Potency is 58 D0 and one which is worn out is 58 D8. (To recharge any charged item, you just change the final "8" to "0".) Figuring out what code goes with which item is fun and, as you can see, very useful!

The best time to interrupt most adventures is

best to set a value just below the point at which the next Level increase occurs. Otherwise, your higher Level may be recognized; but, you may get none of the Hit Point, Attribute, etc. boosts which go with advancement!

Similarly, when you decide to add some item to a character's inventory, do it by overwriting some other, roughly similar item. For instance, add a Healing Potion by replacing, say, a Flask of



during some non-special situation, such as while your party is exploring a maze. Once the mods (e.g. more Money, more Food, etc.) are done, you return to the game.

Your changes may not, immediately, be reflected in the display. No problem. Walking around a bit, battling some monsters, or visiting a shop will usually force a display update. (This also lets the program reinit pointers and other values which may have been affected.) Once it's clear that your mods have taken affect, do a Save.

When making changes, a good 'rule of thumb' is to avoid extremes. For example, if you need food, give yourself 400-500 packets, not 65535! Few D&D style adventures allow attribute values much above 18 (12 in hex); setting Strength to something like 127 (\$7F) could bomb the program.

If increasing a character's Experience, it is

Poison, not a 75 lb Mace! This reduces the chance of problems in games which maintain a separate item count for each character or keep track of total weight of items carried.

Perhaps most important, you do not want to spoil the game's challenge. Giving your party enough money to replace a valuable suit of Elfin Chain Mail destroyed by a lucky hit from an Acid Lizard may make sense; but, awarding your party 100,000 gold would ruin the value of many rewards supplied by the game for completing difficult quests. The same principle applies to Hit Points, Spell Points, etc..

In fact, 'breaking into' any game produces a new challenge: win with the minimum use of the powers at your disposal. Others, lacking such arcane knowledge, are free of this dilemma. Alas, it is a burden you must bear once becoming Master of the Game!

# too much fun: WHAT'S YOUR NETIQUETTE RATING?

by Jeff Hurlburt

It took a while, but you've gotten used to funny looking net addresses like "comp.sys.apple2" and "ftp://apple2.caltech.edu/pub/apple2/". Maybe, you have even done some downloads and posted messages. Now, you wonder: "Am I ready for more?"

As always, II Alive is ready to help! Just take the scientifically constructed Netiquette quiz to the right and you'll know exactly where you stand.

Directions: Briefly explain the meaning of each item. When done, check your answers, scoring "1" for each correct response. Take the sum and find your Rating in the Netiquette Ratings Table.

1. Guru
2. Lurk
3. Three or more "\$" in a message title
4. IMHO
5. :(
6. Troll
7. Mailbomb
8. FS (in a message title)
9. Flame
10. Flame ware
11. WTD (in a message title)
12. Spam
13. using all-capital letters in a message
14. AFIK
15. :(

## Netiquette Rating Table

Score	Rating
14-15	Guru
12-13	Advanced Poster
9-11	Poster
6-8	Advanced Lurker
3-5	Lurker
1-2	Newbie

## Answers

1- an expert 2- to read messages on a newsgroup but not post 3- indicates a "get rich quick" message (just "money" is not correct) 4- "in my humble opinion" 5- a sad face; a way to be sorrowful in a text message 6- to post a controversial message in hopes of provoking a flurry of responses 7- when thou- sands or millions of emails are sent to a user for the purpose of overwhelming his/her system 8- for sale 9- to post a message which attacks or insults 10- software to assist a user in writing flames 11- "wanted, to donate", e.g. a request for free hardware/software 12- to post off-topic messages, messages which just take up space 13- shouting for the entire message (considered rude) 14-"as far as I know" 15- a happy face; a way to smile in a text message



# Danger! Danger!

by Jeff Hurlburt

## Cases of Concern

Your Apple II's appearance is important. So, like most owners, you give your computer a periodic dusting, polish the logo insert, and sometimes even remove the case for a good washing. But, what about sunlight?

No, your Apple doesn't need light to grow; just the opposite. Many schools are discovering that prolonged exposure to sunlight turns Apple Platinum a dingy yellow-brown! Peter Liethen reports some success in restoration using cleanser and a plastic scrub pad; but, there are no guarantees. For long-lasting good looks, keep your Apple II away from sunny windows.

Speaking of cases, a few System Saver IIgs users are reporting breakthroughs—they push

on one of the front-mounted panel switches and, CRUNK!, punch a hole in the case! Evidently, long exposure to above-normal heat has made the plastic panel brittle.

If your System Saver has been cooling a hot-running IIgs, you may want to try a couple of preventative measures. First, replace the fan with one that can move more air per minute. Second, if your SS panel feels a bit springy, open the case and use liquid epoxy to reinforce the panel and add support near each switch.

## Perilous Plugging

Now that IIc's and IIc+'s are turning up regularly at swap meets and flea markets, usually sans manuals, a whole new generation of 'c users is

wondering about the "Monitor Socket". Actually, too many are not wondering; they note that the 15-pin socket is marked like the one on the GS, that a GS monitor plug will fit, and 'go for it'. Bad idea.

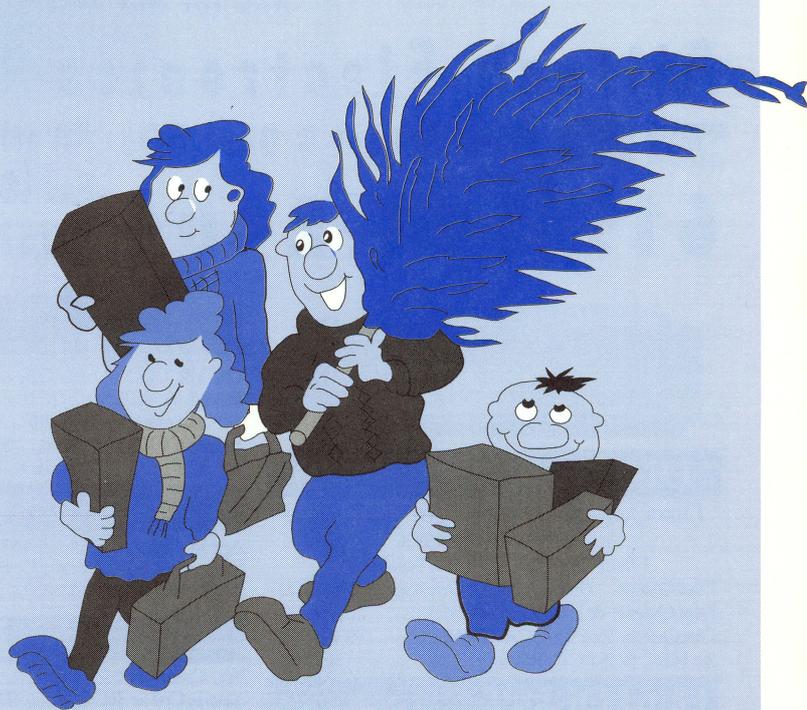
The IIc socket is not for connecting an RGB monitor. It is an interface intended for an RF modulator module to drive a TV display. The bad news is that a GS monitor will go black and just sit. The good news? Evidently, nothing is/was(!) damaged. (Okay, plugging in my GS monitor was a dumb move.) In fact, once the module is plugged in, you get very nice on-TV hires and double-hires displays.

Ah, yes! 'Tis the season for the cheery voices of carollers ...

Deck us all with Boston Charlie  
Walla walla wash  
and Kalamazoo.

Nora's freezin' on the trolley  
Swallar dollar, collar flower  
allagaroo!

(1951 version from Walt Kelley's Pogo)



Merry Christmas and a Happy New Year!

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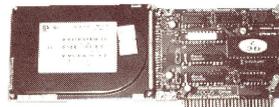
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