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Volume 3 Issue 3
JULY 1990

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GAME REVIEWS

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Technical Support
If you have a problem operating part of your magazine,
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calling for A.X. Magazine TechnicalSupport, and please have
the Issue number, and any other relevant
information ready.301-220-1296 (10am to 5pm EST)

A.X. Magazine's PD Disk Contents for Issue 3.3

☆ Console Buffer
by William J. Fritz

Console Buffer is for CLI users who would like to have a
history and/or hardcopy (either file or device) of their
console input and output. It works with both CLI and
shell windows. Console I/O is saved in a buffer, the size
of which is set by the user; the default buffer size is 100
lines.

☆ DirWork v1.01
by Chris Hames

Need to get around your directories quickly and simply?
An excellent show is built in that loads the next picture
while you're looking at the last.

☆ Lollibobs: Animate's First Demo

An excellent sight and sound demo. Dancing multicol-
ored balls that change patterns with each right mouse
click. Reboot your Amiga and get another demo. Click
both mouse buttons and your Amiga reboots.

☆ Train

Create a train layout complete with two trains and auto-
matic and manual track switches. See and hear the trains
traverse the track courses which can be saved and reload-
ed later.

☆ Soundtracker Player and One Song

You heard the first great song on the A.X. 3.3 disk: RRA.
Now hear another fantastic composition: Ecstacy. Also
included, the multi-tasking player.

☆ Zitrax

A very nice but difficult to master shoot'em up, complete
with parallax scrolling. When you are finished, rebooting
this game will give you a surpise.

See reader survey for details!

Dragon's Lair: By: Mike Hubbartt

Escape from Singe's Castle

The video game that probably caused the biggest uproar during the early 1980s was a phenomenal release from former Disney animators at Don Bluth Productions. Which game was it? *Dragon's Lair*. Run on a laser disk player (the first video game to do so), with loads of action, unparalleled graphics, and good sound, *Dragon's Lair* always drew a crowd at the arcade. *Dragon's Lair* also did very well in the home-computer market.

How do you follow up a winner like *Dragon's Lair*? How about with a sequel (just like the movies) called *Dragon's Lair: Escape From Singe's Castle*? This game comes on a five disk set that can run from either floppies or a hard drive. The scant documentation (after all, this is more an arcade game than anything else), consists primarily of a large map with a parchment-like appearance, and an addendum with configuration information. The game runs (and multitasks) on a 512K system, although it can obviously do more on a 1MB system. Additionally, this game can link with the original *Dragon's Lair* to form a LONG adventure for the avid gamer residing in your home!

You are Dirk the Daring, and your mission is to rescue the beautiful Princess Daphne from the castle of Singe the dragon. Many are the dangers you must face, but you must free Princess Daphne from the dragon; use caution moving from room to room in your search. One wrong step can mean the end of you and Daphne. If you want help in the game, activate the indicator box displayed at the bottom of the screen; it shows you which direction to move the joystick in critical situations. Select the game level from Easy, Medium, or Hard; this changes the number of rooms to navigate before freeing Princess Daphne.

An option to increase the difficulty of the game (for those that whiz through in no time flat--which excludes me) is the room flipping option, which flips the rooms around after Dirk dies. Now this may not sound like much, but what happens is that when you would normally move to the left,

you must instead move right (and vice versa), thus the confusion factor multiplies. I had a hard enough time getting through in the normal way; I tried this option once, and I now see how changes in perspective might make this game interesting again to those who have mastered all three skill levels.

The game not only installs on a hard drive, but recognizes and works with 68010 and 68020 systems. Saving a previous game is simple enough, in fact you can save five different games. As with the original, I like *Dragon's Lair: Escape From Singe's Castle*, for its quality graphics and its entertainment value. When playing this game with friends, we seem to enjoy watching and helping others play as much as being at the joystick ourselves! Do I recommend *Singe's Castle*? This is not a cheap game, so you may want to head over to a local software dealer and ask to see it if you missed the original game in the arcades. I like it, and am glad I don't need to feed my computer fifty cents every time I lose (too often)--but hey, isn't that why we like arcade games ported over anyway? Another winner from Bluth Productions.

Dragon's Lair: Escape From Singe's Castle
$59.95
Visionary, Ltd
15235 Shady Grove Rd.
Suite 100
Rockville, MD

You can link Escape from Singe's Castle to the original Dragon's Lair to form a long adventure for the avid gamer in your home.

Dirk the Daring hard at work slaying the dragon.

A Review

Deja Vu II: Lost in Las Vegas

By Robert Stransky

You wake up on the floor in the bathroom of a cheap hotel. Who are you and how did you get here? Slowly things start to come back. You're Ace Harding, private detective, and you're up to your eyeballs in trouble. Tony Malone, a big time Las Vegas gangster thinks that you owe him a lot of money and you've got just a week to come up with the dough--or else. Tony has his thugs watching you just to be sure you don't try anything funny. No big deal, this is nothing new to you. You've been in trouble like this before.

Welcome to *Deja Vu II: Lost in Las Vegas*, the latest of the *Deja Vu* series distributed by Mindscape. The theme of this game is similar to that of the original *Deja Vu: A Nightmare Comes True*. You've got to use your head in order to save your butt. The world is a complicated place, full of things that might be of use--if you can put the pieces together. If you don't...well, I don't have to tell you what will happen if you...

Deja Vu II picks up where its predecessor left off. Joey Siegel, the guy who you were accused of killing in the last game, was closely tied to Tony Malone, the Las Vegas gangster who had you kidnapped and brought to Las Vegas. Mr. Malone thinks that you have the $112,000 that was unaccounted for after Siegel's death. Malone has told you that you'd better give him back his money in one week, "or else." How are you going to get that money? Should you go to the police? Should you try to hide? The answers to these and other questions will be revealed as you play the game.

This adventure game uses both text and graphics to tell its story. The screen is divided into several different areas during play. A picture of some sort, which shows your current location, is always in the upper left corner. Across the bottom of the screen is a scrollable text box. I liked this feature because it permitted me to review text that had been displayed a number of steps back. In the upper central portion of the screen is the inventory box. This box gives a graphical representation of each item that you are presently carrying. To grab an item, you point to the item in the current scene and then drag it into the inventory box. Items can be opened (if possible) by clicking on them and using the "open" gadget.

Whenever an object is opened, a new window titled "contents of object" appears, with the contents displayed in it. For example, to get money out of your wallet, you would need to open up your pants, then open up the wallet image which would be found in the "contents of pants" window. You could then see the contents of the wallet in the "contents of wallet" window. While this works just fine, I found that it was quite easy to get a lot of windows on the screen at one time. You might respond, "so what?" Well, this program is designed to work with only 512K of RAM. Although I had no problems running this game with the 3MB of RAM installed in my computer, I suspect that users who run this program on computers with less memory might have problems.

In the upper right hand corner of the screen is the command window. A number of action verbs are available during the story. You can examine, open, close, speak to, operate, hit or consume objects, as well go through doorways. Directly below the command window is another window with gadgets representing known exits. Double clicking on one of these gadgets has the same effect as clicking on its image in the current scene window. However, sometimes it is necessary to use the exit window to leave an area. This brings up one of the program's weak points (at least in my opinion). Whenever in an area, you cannot look around to see what is behind or beside you. While this may simply be a pet peeve, I like to be able to turn about within my surroundings in order to observe everything. I found that the

LETTERS

EDITOR

to the

PLAY TIME

Dear A.X.,

I don't like to spend a lot of time learning games, but once in a while a game is great to relax; your inclusions fill the bill. Generally, your magazine is great. Keep up the good work.

Myron Schroeder
Hagerstown, MD

Thanks for the kind words! We'll do our best.

SUBSCRIPTION RATE

Dear A.X.,

I would like to see a cheaper subscription price. You people think because our passions override our rational thought and we buy a $2000 computer, that we can afford $70 for a magazine subscription. Some (A.X.) staff members have to let their $400,000 houses go, and trim some fat or something. We don't have money to burn like the East Coast. The Northwest isn't capable yet. Sorry. The magazine is good. I can rent software and form my own opinion for much less though.

Chuck Sullins
Spokane, WA

If someone around here has a $400,000 house, I'd sure like to know about it. In fact, the same passions override most of the rational thought around here, that's why we do this stuff for a living. As for the subscription rate, there's

nothing we can do about that, but maybe you could get the paper-only subscription for only $14.95.

ROOM FOR IMPROVEMENT
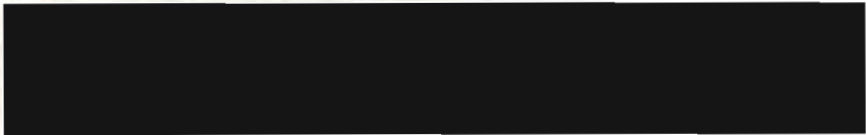
Dear A.X.,

I think the magazine is great--you cover a lot without using too much space on one topic--you get to the point. I would like to see coverage on mail ordering. I would also like to see coverage on the different brands of hardware. You should use a rating system in your entertainment section. For example, give each software item a rating in playability, graphics, and sound.

Eric Partaker
Chicago, IL

Thanks for the great ideas. We are currently considering a rating system for entertainment reviews and we are definitely planning to cover hardware developments in more detail. As for mail order, what do you need to know?

A.X. Magazine

Manx Aztec C Compiler v5.0: The Updates Continue

by Mike Hubbartt

One of the best known product competitions in the Amiga marketplace is between Lattice and Manx; both produce quality C compilers that have extremely loyal followers. These two companies have released somewhat consistent updates to their products in an effort to have the best compiler available in the Amiga marketplace. Lattice released its last major update, version 5.x, over a year ago, while Manx hasn't released a major update to version 3.6a in quite a while. Finally, after making loyal Manx users wait longer than expected, Manx has released the new version of their compiler--version 5.0. This update has everything Manx promised and once more tightens up the competition between Lattice and Manx.

The first major change is in the documentation. The manual is divided into five different sections. The documentation organization has undergone major improvements since version 3.6a, with the Table of Contents and the Index both showing improved accuracy (as much as I've used them, I should know). Each section of the manual has its own Table of Contents and Index, simplifying locating specific information--this I like!

The first section of the manual, Users Guide, gives an overview of the system and quickly explains how to get started with the compiler. The second area, Reference Manual, covers the compiler, assembler, linker, Manx utilities, debugger, errors and ANSI language specifications. The third area of the manual is the Library Manual, and covers specifics for all the library functions included with the program. The fourth section covers UniTools: Diff, Grep, Make, and Z. The fifth area of the manual deals with the Source

Level Debugger (*SDB*), a program previously sold separately but now included with the Manx *Aztec C Developer System* at no extra charge. *SDBF* is also included to deal with ffp math libraries, since *SDB* covers the other math libraries. The Manx *Aztec C Professional System* now has the Z editor (so similar to Vi) included at no extra charge.

The second major change with this upgrade is the compiler. The compiler has many new options, including an environmental variable (CCOPTS) so the programmer can select preferred options every time the compiler is invoked. A program module's memory model (small/large code, small/large data) is selected while invoking the compiler, and you can choose whether or not to compile with 3.6 or 5.0 rules. *Aztec C* will let you generate your own headers (of course) or use precompiled ones.

Another change in v5.0 is the use of 32-bit integers by default, instead of 16-bit integers, as in earlier versions. Manx's reason for change to 32-bit integers was to help programmers new to C, since using 16-bit integers requires paying attention to details sometimes overlooked by many new programmers. Manx also added another math library (Manx IEEE), which is reported to be the most accurate math library included with *Aztec C*.

The next change in v5.0 deals with environmental variables. Besides the CCOPTS environmental variable mentioned earlier, *Aztec C* has CCEDIT, INCLUDE, and CLIB. INCLUDE and CLIB set search paths for header files and libraries (just like v3.6a). CCEDIT allows the selection of a text editor when the compiler finds an error; this option allows the programmer to change the code and resume compiling after leaving the editor. Nice, eh? CCEDIT uses QuikFix to interface Z or any text editor that supports ARexx (TxEd+, Cygnus Ed, Uedit). QuikFix can even work in tandem with Make. The programmer simply declares these environmental variables in the start-up sequence, just like with v3.6a.

Aztec C normally uses a two-pass run with the assembler to optimize the code. Version 5.0 lets you specify a single pass through the assembler to save time if you just want to test the code without consideration for size reduction provided by the optimization stage. Additionally, the v5.0 assembler supports the 68000, 68010, 68020, 68030, 68881, and 68851.

The utilities included with *Aztec C* are: text archiver/dearchiver, file dump, file comparison, object file information, disk usage (like UNIX's DU), hex dump, object file librarian, list files and directories (like the UNIX LS command), list object code, sort object module list, and system time and date.

Installing *Aztec C* on the hard drive is quick and painless. To get up and running with the compiler took very little time. I worked with a few dozen general C programs before experimenting with source code for programs compiled under v3.6a. I was able to compile every 3.6a (and even the two 3.4 files I tried) with little difficulty. I did have to use the cc -3 (to specify 3.x rules) with one program, which isn't as bad as it could have been. V5.0 seems a little faster than 3.6a, although that judgement is subjective since I did not run benchmark time tests when compiling.

Aztec C 5.0 comes on four diskettes which can be easily installed on a hard drive or on floppies. The manual is bound, not loose-leaf like previous versions of the product--the one main change of v5.0 I did not like. The quality of the documentation is far superior to that of previous releases. The explanations in the manual are also considerably better than those in previous documentation, although they could still stand improvement--more examples for beginners. The compiler will run on Amiga 500/1000/2000/2500s with 512K memory or more--naturally more is better, since copying the compiler files onto a RAM disk means fewer disk accesses and faster accesses than from a hard drive. Although long in coming, *Aztec C* does not include a global optimizer; a lacking I hope is corrected very soon (after all, Lattice's compiler has one). Draft-standard ANSI compatibility was an important addition to v5.0. Overall I like the many new features of Manx's *Aztec C v5.0*. The features were long in coming, but much needed, and will again breath life into the great Amiga C compiler competition.

Aztec C Compiler v5.0
The Professional System
$199.00
The Developer System
$299.00
Manx Software
P.O. Box 55
Shrewsbury, NJ 07702
(800)221-0440

Aztec C 5.0 comes on four diskettes which can be easily installed on a hard drive or on floppies.

RVF Honda

by Joe DiCara

Of all the motor sports, motorcycle racing has the largest worldwide following. Except on our continent, major motorcycle races attract hundreds of thousands of fans; even club level events get big crowds. Competition among riders for the top factory rides is intense and is the dream of many a youth. In these racing circles names like Kenny Roberts, Eddie Lawson, Joey Dunlop, and Carl Fogarty are more well known then A. J. Foyt, Little Al Unser, and Dale Earnhardt.

So it should come as no surprise that the best bike racing simulations come from Europe. One of the best of these is *RVF Honda*, produced by MicroPlay, a subsidiary of MicroProse Software. These folks obviously love motorcycle racing. Just reading the introduction to the game gives you some appreciation of their excitement and involvement with this form of racing; this enthusiasm has, happily, been carried into this program. Of the three good motorcycle simulations available, this program is the best at depicting levels of difficulty and competition found in Grand Prix racing.

Overview

The competition is divided into three groups or levels: Clubman, National, and International. Starting at Clubman, you must complete a race season as Champion before graduating up to the next level. There are 26 tracks in all, each one provides a different challenge. Some are long and fast, others slow and tight. You must learn to negotiate long fast sweepers as well as tight hairpins and chicanes. Most tracks have hills, so be prepared for blind curves. There is also plenty of track-side detail: a drivable pit lane, timing and spectator bridges, braking markers, trees, bushes and other objects. You race against eight competitors: each in different team colors and each with the best machine his sponsors can provide.

Practice Run

RVF Honda is a faithful race simulation, not an arcade game. So, unless you practice, it's almost guaranteed that you'll be last after the first turn. *RVF* is not uncontrollable, it is demanding!

To begin, select "practice;" this places you at the starting line. Your perspective is third person: slightly behind and at eye level. Clicking the joystick button starts the rider pushing the bike. When enough speed is gained he hops aboard and fires the engine. The animation is superb and the engine sound is glorious. Once the rider is mounted, the bike accelerates, quickly pegging the tach. Pushing the joy stick forward and clicking the button upshifts the transmission. Track objects and scenery fly by in a blur; corners come up very fast. At first you're reactions will lag behind the bike; practice will solve this problem.

As you become engrossed with the simulation, you might find yourself leaning with your rider into each turn. Watch the rider closely, notice that he squats down into an aerodynamic position. Come off the throttle and he lifts his head and peeks behind. If a turn is taken too fast (and you will) the bike drifts off the track onto the shoulder and into the bushes. The resulting crash animation is good, and ends with the push/start sequence. All this detail and animation is super smooth and very believable.

The Race

This simulation does not allow any tinkering with bike equipment or settings; no tire compounds to select, or suspension settings to fool with. Some might like it this way, I would have preferred some variables. During the practice session, lap times are recorded determine grid positions. When you are satisfied with the posted times, its time to race.

Your bike and rider are put on the grid, somewhere in the midst of the eight other racers with the starter lights to one side. If you expect to keep up with the pack you must blip the throttle, keeping the revs near red line. Depending on your technique, you'll either blast off with the leaders or you'll pull a big wheelie, generate to much wheel spin, and drop back in the pack. Bikes are overtaken and advance away at very believable rates. They lean and bob just like your rider, their engine sounds sync and unsync with yours. As you pass a rider it's easy to bump together; fortunately neither rider ever falls--there is just a slight loss of speed. This means you'll be racing more, and crashing less.

As the race progresses, stats are kept on positions, best lap time, and the interval between your guy and the guy up front.

Smart Competition

While a few of the riders do let you pass easily, the top three or four are very tough. If you manage to pass any of them, they don't just play follow the leader. They actually seem to try harder, putting pressure on you. If someone gets past

Making the Intelligent Choice

Memory. Eventually you will need more. If you don't think you do now, just wait until you try to draw that slightly more complicated picture, make that animation just a little bit larger, or try to multi-task one more utility.

When you begin looking for memory expansion, there are a few things you should know and keep in mind.

1. If you have a speed-up card with a 68020, 68030, or even the mythical 68040, then 32-bit memory will make your Amiga even faster. Only 68020/30/40 processors can make use of 32-bit memory. With a regular Amiga, 32-bit memory won't do a thing for you, so opt for the less expensive 16-bit memory. Why is 32-bit memory faster? Think of how much faster it is to travel on an eight lane highway than on a four lane highway. Not as many traffic jams, are there? A 68020/30/40 Amiga can send twice as much data through the wider 32-bits memory as through the narrower 16-bit memory.

2. How much memory with which an expansion product comes populated tells you basically how much memory comes with the product. A memory card populated with 1MB will give you an additional 1MB of memory once you plug it in. On the other hand, an unpopulated 8MB card will give you no extra memory until you populate it.

3. Future expansion is an important consideration. If you buy a 2MB card, and months later you discover you need an extra megabyte on top of that, you will be out of luck. So, if you think you might be engaging in memory intensive computing in the future (graphics, animation, raytracing, desktop publishing, serious multitasking) then you should consider paying some extra money for that 8MB card...just in case.

4. What kind of chips an expansion product uses can also make a difference. Basically a byte is made up of eight bits. So one megabyte = eight megabits. Confused? It gets worse. The standard method for describing memory chips is: x(K) by y(bits). Here are some examples:

256x1 means 256K by one bit. Since you need eight bits, not one bit, you need eight of these chips to make a full 256K bytes (eight bits). Since it is only 256K, you will need four sets (256 x 4 = 1MB). So if you opt for a memory expansion product that requires these chips (which are not uncommon), think about having to buy 8 x 4 = 32 chips! Yes, 32 chips to make a full megabyte.

1MBx1 means one megabyte by one megabit. So you need eight of these chips to make one megabyte (eight bits = one byte). Although you only need eight of these to make a full megabyte, you will pay a little more for the convenience of the compactness of these types of chips.

There are other variations, but the two above are the most common.

5. Speed--why do you have to know how fast a chip is? For the same reason you need to know the bit features of a chip (256x1 or 1Mx1); in case you want to expand your memory expansion yourself. If you bought a 2MB card that was only populated with 1MB, you could upgrade that card to a full 2MB simply by adding more chips. So before you run off to your local computer swap-meet to buy bulk chips or order something from a memory mail order company, you should know what to buy. Speed wise, it is always best to add chips that are the same speed as the ones already in your expansion product. You can generally read the speed of a chip off the top of the chip in nanoseconds, i.e. 120ns = 120 nanoseconds.

If you are buying an empty or unpopulated memory expansion, and are planning to populate it yourself and save a few dollars, you need to know the speed tolerance of the product. Expansion products usually have a range of speeds they can tolerate. Chips beyond your speed tolerance will not work. Keep in mind that a faster chip does not make your computer any faster.

6. Wait states. Sometimes the memory expansion is operating too slowly for your computer to tolerate, so occasionally (during cycles), the computer will have to wait for a moment for memory to catch up. Obviously, this will slow your computer down. Most contemporary memory expansion products do not have wait states, but if you

Memory Expansion

are interested in someone's used expansion, you should ask if it has any wait states.

7. Auto-configuration is a feature that is not absolutely critical, but definitely makes life just a little nicer. Basically, whenever you turn on your computer, an autoconfiguring expansion will automatically be recognized by your computer. A non-autoconfiguring expansion will be recognized only after you manually run a small utility every time you boot up. This is fine so long as you are booting from your own Workbench, and not some other software program that is autobooting.

8. Passing the bus is important for external expansion products (for the Amiga 1000 and 500). If the product does not pass the bus (where expansion connects), then you cannot attach any other items to your computer (unless the memory is the last item).

9. Few people worry about how much power an expansion product takes up; most people shouldn't have to. Power comes into consideration when you have lots of expansion products either inside your Amiga or attached externally to the bus. If you have too many products, or one of those products consumes too much memory, you may find your Amiga crashing more often than it should.

10. Knowing by what increments the memory can be expanded can be important for people on limited budgets. If your memory can only be expanded in 1MB increments, then you will have to wait until you've saved enough to buy 1MB worth of chips. Some expanders allow you to expand in 512K increments, so you only have save up half as much.

11. Additional software is always nice. Some products come with software to help you test your memory chips. Memory chips are quite sensitive. In fact, static on your body too slight to even feel, is easily enough to burn some serious holes through the substrate of memory chips and ruin them. So if you are installing your own chips, test software can be a godsend to tell you which chips out of 32 or 64 are blown. Other software may include recoverable RAM disk software. A recoverable RAM disk is a part of RAM that acts as another floppy disk, but can survive rebooting. Even though Workbench comes equipped with such a RAM disk, the software supplied by manufacturers of expansion products is usually superior.

MEMORY EXPANSION

PRODUCT NAME: M501 Memory/Clock Expansion Unit for A500
MANUFACTURER: MicroBotics, Inc., (214)437-5330
RETAIL PRICE: $59.95
FOR USE WITH: Amiga 500
MEMORY POPULATED WITH: None
EXPANDABLE TO: 512K
INCREMENTS: 512K
TYPE OF MEMORY CHIPS: 256K x 1
SPEED OF THE CHIPS: 150 nanoseconds
RAM: 16 bit
AUTO-CONFIGURING: Yes
INTERNAL OR EXTERNAL: Internal
POWER SOURCE: The computer
USER SUPPORT: Technical support telephone number, (214)437-5330
OTHER FEATURES: Battery backed clock; this is a 501 clone

PRODUCT NAME: SC 501
MANUFACTURER: Spirit Technology Corporation, (800)433-7572
RETAIL PRICE: $69.00
FOR USE WITH: Amiga 500
MEMORY POPULATED WITH: None
EXPANDABLE TO: 512K
INCREMENTS: 512K
TYPE OF MEMORY CHIPS: 256K x 1 or 4
SPEED OF THE CHIPS: 150 nanoseconds
RAM: 16 bit
AUTO-CONFIGURING: Yes
INTERNAL OR EXTERNAL: Internal
POWER SOURCE: The computer (less than 250 milliamps)
USER SUPPORT: Technical support telephone number, (800)433-7572
OTHER FEATURES: Optional battery backed clock and calendar

688 ATTACK SUB

by: Scott Krehbiel
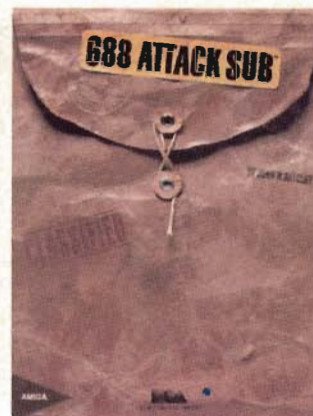
You're cruising at one third engine speed at a depth of 400 feet when you see a sonar contact and your crewman tells you it's submerged. Could that be the Soviet sub? It vanishes as you increase engine speed to approach. Since you're in the top thermal layer, the contact could have dived into the next region to trap his engine noise. You dive. As you pass the thermal layer, you see the three subs that were hiding in the deep, their sounds masked by the temperature change. Caught by surprise, you rise to re-enter the upper thermal layer, but something follows you up. You listen to the sonar analysis, and hear a high pitched warbling hiss: a torpedo. You quickly fire a noisemaker, cut the engines, and turn hard to starboard. The torpedo slips past you toward the noise, and you sink back toward those three subs with your weapons crew waiting. It's time to play rough.

688 Attack Sub by Electronic Arts, provides a challenging twist to the idea of gaming skill. Aim is not necessary; speed is needed in decision making, not at the fire button. The greatest departure from the world of action games is that you're usually shooting in the dark (quite literally). Unless you're using your periscope, which requires that you're only 20 feet deep, you can't see your opponents. Instead, you must listen for them.

In 688 Attack Sub, you're the captain of a U.S. Los Angeles class nuclear sub, the 688, or a Soviet Alpha class nuclear sub, if you prefer. Most controls function the same on both subs, but the missions are created to be opposing; if your mission in the 688 is to defend some tankers then your mission in the Alpha is to sink those tankers. The game even prints its messages to you in a pseudo-Cyrillic script, when you're in the Alpha, for environment.

Since you and your adversary can't see one another, you have to rely on sonar, which acts like radar but uses underwater sound. Usually, you will be using passive sonar, which listens for noisy things like schools of fish, other subs, whales, surface ships, tor-

pedoes, and so on. Occasionally, you will need to use active sonar, which emits the famous ping and listens for how that ping is reflected off other underwater objects. Unfortunately, this lets everyone in the area know exactly where you are. One very nice feature of the program is that it allows you to listen to the sound being picked up by passive sonar, and shows the resulting frequency analysis. It's really quite easy to distinguish a whale from another sub. The manual explains the characteristic analysis of subs, ships, torpedoes, and biological sounds. This way you can judge the probable identity of many sonar contacts before your sonar man gets the contact's identity established.

Once sonar contact is established, torpedoes or missiles can be fired. Torpedoes, which have a range of 7.5 nm, are guided by cables which reel out from the sub. This allows the launching sub to guide the missile as long as the sub has a sonar fix on its target. Outside this range, the torpedoes emit a series of pings to track their target. This is quite handy in that you can often hear incoming torpedoes, though it

Speed is needed in decision making, not at the fire button...
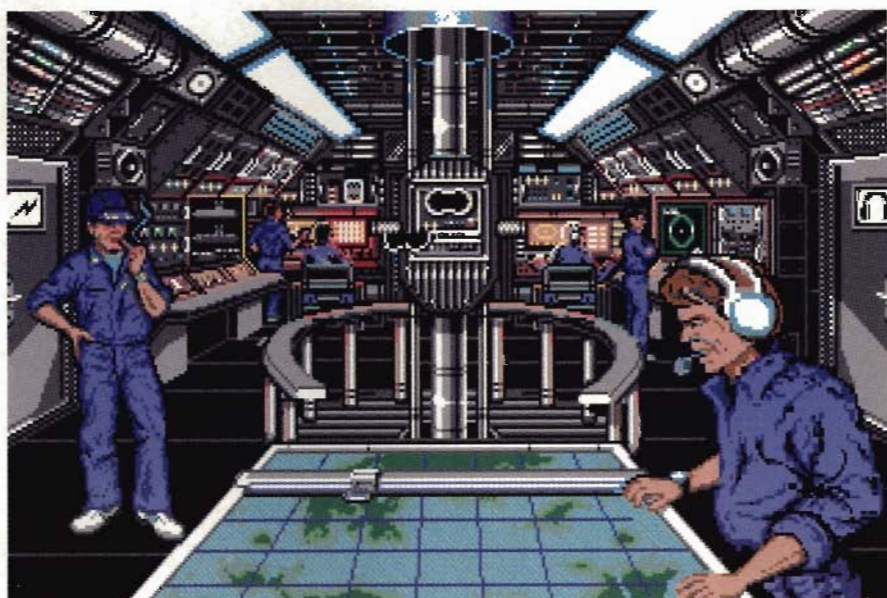
A look inside the 688 ATTACK SUB.

Stunt Track Racer

Review by Joe DiCara

*...you're
in for
something
completely
different.*

We all have standards. Everything we do, buy, or use is evaluated and judged against what our personal experience determines is best. For many people an Apple II or PC-XT probably was the standard by which they judged home computers. So when the Amiga came along, and it was compared to these machines; the Amiga easily became our new standard.

The same process applies to software evaluation, including games. Each of us has our favorite flight simulation, adventure, or action/arcade game. A new program would have to be very special or different to replace one of them; *Stunt Track Racer* is just such a program. This is a game the likes of which you have never seen before.

Buck Rogers, Start Your Engine

You know that in normal racing they start a race by dropping the flag. In *Stunt Track Racer* they start a race by dropping the car. The action begins when a crane lifts your vehicle up to the track surface, then, while the car is still swinging in the breeze, actually drops each car to start the event. With this type of beginning you know you're in for something completely different.

When you begin to drive, you immediately notice a big difference in the way the car is controlled. You'll think someone has changed your old joystick into the most precise proportional controller available. Of course, it's just that the programmers have figured out a better way to control the vehicles. As you get more into the racing you might find yourself laughing and marveling at the gyrations of the two cars as they jump, bounce, careen, and fly around over a most unbelievable racetrack.

Stunt Track Racer cannot be called a simulation because nothing like it exists yet in this world. The game scenario is set in the year 2006. It seems Formula One racing has been banned because speeds got too high and safety was nonexistent. Therefore, the refugees from this elite group had no where to vent their energies and talents. Fortunately, exhibition and stunt driving acts were still allowed; after all, most spectators were only seeking thrills anyhow. So, it was only

natural that all the ramp jumping, hill climbing, two-wheel rim riding, and car smashing and crashing would come together to create the all-time dare-devil challenge--The Stunt Track!

Thunderdrome Meets Roller Coaster

Imagine the wildest roller coaster you've ever seen. Make it just a little wider than three dump trucks, put in some wild banking; add steep ramps complete with wide chasms; stick in a drawbridge; finally remove all guard rails and protective barriers of any kind. Of such things Stunt Tracks are made. Do the names--The Stepping Stones, The Hump Back, The Ski Jump, The High Jump--give some clue to their character?

A special track requires a special race car. If you could combine the straight-line speed of a dragster, the handling of a F1 or Indy car, the toughness of a NASCAR stocker, the tricks the moonshine runners used, and a dash of aerodynamics from an F-18, you'd have something like a Stunt Track race car.

All these special tracks and equipment also require special drivers. As a Stunt Track driver you will pit your skill and courage against guys with names like Road Hog, Bully Boy, High Flyer, and Max Boost.

Your Mission, Should You Choose to Accept It...

The objective of all this is to become the Champion of the Stunt Track Racer League. This league is divided into four groups, each one offering better drivers and more demanding tracks. Become Division One Champ and you'll get a shot at the Super League. There you'll mix it up with the ultimate drivers and vehicles.

Each division has three drivers. You and two computer opponents make up Division Four. The season involves six races held on two different tracks. After a round-robin of six races (some of which happen behind the scenes) the top driver advances to the next division. In the process, the guy that finished last in that next highest division gets bumped down. This bumping and movement of drivers, which takes place in all division, is an
continued on page 50

Wshell has been the premier CLI replacement shell since its release over two years ago. Written by William Hawes (author of *ConMan* and *ARexx*), *Wshell* replaces the bland CLI with an enhanced environment for those who choose not to use the icons of WorkBench programs. Why not use icons? WorkBench has its place, but the majority of public domain/shareware software in the Amiga community is written for access from CLI, which people use most often for programming. *Wshell* is the only assembly-language Amiga shell and has always been loaded with features, but this new release is packed with even more surprises! Here's a look at *Wshell 1.2*.

Wshell has some command changes. Alias and Resi are now built-in commands, and do not need to be accessed as external commands. Since these commands are part of the shell and available when called for, there is no need to load them as resident. *Wshell* also supports dynamic command buffering size. Previously, the length of the command line entry was limited to 240 bytes; *Wshell 1.2* automatically adds more space as it is needed. Echo, Endskip, and If have also been modified and allow greater AmigaDOS 1.3 compatability.

FComp is a new program shipped with *Wshell v1.2*. The program provides filename completion based on partial information you provide. To use *FComp*, you enter a partial path and filename, press the ESC key, and it will provide the file for which you are searching.

A new configuration file has also been added to *Wshell*. S:config-Wshell contains the environmental options needed for use with the *Wshell* library. This replaces the SetWSH configuration file from previous versions of *Wshell*.

Hogger, a program added to *Wshell 1.05*, was used to detect and remove a "hanging forbid" caused by programming mistakes. This feature works automatically with *Wshell 1.2*. *Exec.IO* has also been added to *Wshell 1.2*. *Exec.IO* is a program that allows reading from a file instead of the standard input stream, and outputting to another file instead of the standard output using the READ and WRITE arguments.

A few changes have been made to the Prompt string and Titlebar variables: %c produces the full path name, whereas %C produces a short path name; %e now reports elapsed time including minutes; %mc displays available chip memory; %mf shows available fast memory; %mp shows public memory free; %t displays time in the 24

Wshell Update v1.2

By: Mike Hubbartt

hour format (military time); %T displays time in the standard 12 hour format; and %w displays the original window title before the other variables overwrite it.

Other new features of *Wshell 1.2* include a modification to SetExecute that make it more compatible with Amiga DOS 1.3. The script bit of AmigaDOS 1.3 is also supported by *Wshell 1.2*. However, the *Scriptify* program included in an earlier version of *Wshell* is still included for people who want to make a script file executable without setting the Protect Flag of AmigaDOS 1.3.

Two reported bugs from *Wshell 1.5* concerning the REXX and IF commands have been corrected in *Wshell 1.2*. Piped shells now inherit the task priority of the parent shell in *V1.2*. Append redirection will now create a file if it doesn't exist and flush the output buffer after the command ends. This avoids errors encountered in earlier versions of *Wshell* and piping.

Wshell 1.2
Update Price: $5.00
New Purchase Price: $50.00
William Hawes
P.O. Box 308
Maynard, MA 01754-0308
(508)568-8695

An Overview of the latest upgrade.

What does it take to be a writer for a computer magazine? What should you write about? What tools do you need? To whom do you submit your articles. How well will you be paid? Putting your Amiga experience into print may help another Amigaphile out of a serious predicament while adding a pleasant green lining to your wallet. Yes, you can make a few bucks while typing away on your Amiga at all hours of the day and night!

Who writes reviews and articles for Amiga computer magazines? Amiga users just like you and me. Some writers are considered expert in some specific area of Amiga use, while others are enthusiastic about a particular new program or hardware add-on they just discov-

ered. The main requirement for writing about an Amiga product is a thorough understanding of how it works. Most Amiga magazines accept articles from free-lance writers--authors who are not committed to a single magazine, but who write on an article by article basis for many publications. You don't need a college degree to be a writer, just a desire to share your views or discoveries, and sufficient self-discipline to finish a project once you start.

Several magazine editors I work with have told me that while quite a few readers will call in with good ideas, few actually follow through and send in an article. If your idea is as good as you think it is, send it in. The best thing that can happen is that your article will get pub-

FOR FUN AND MONEY

WRITING FOR AMIGA magazines

by: Mike Hubbartt

lished; the worst thing will be that it won't. What have you got to lose? Most magazines will accept unsolicited articles, but it will save you a lot of time if you examine past issues of the magazine you wish to submit to, and verify that an article on a particular product you want to write about hasn't appeared yet.

What program or topic should you write about? When writing for a magazine, you need a suitable topic that interests both you and the reader. Most magazines prefer that you come up with your own ideas for articles. It takes motivation to spend sufficient time learning a product to clearly explain it to another person; it helps if you have enough interest in the product to really dig into it. Know as much as pos-

sible about the product before starting your article--call the publisher/developer (without identifying yourself as a reviewer) and ask as many questions as you can think of. This will demonstrate to you the product support your readers will receive--an important bit of information for your article. Unless the product is a game or a simple tool, work with it for at least one or two months to gain familiarity with the product's idiosyncrasies.

What I generally do when initially looking at a program is make a backup (if possible) and then load the program without looking at its manual. This is how I find out how intuitive the product menus are. I work with the program for one or two hours; only then do I read

Dunlap Utilities

By: Robert Stransky

Dunlap Utilities, from Progressive Peripherals and Software, is billed as "the Ultimate Amiga Utility!" While I admit that the utilities contained in the package are handy, I do not necessarily agree that these programs represent the best of the Amiga utilities. I have seen many excellent programs for the Amiga, and although they do not come bundled together like *Dunlap Utilities (DU)*, they each individually offer better features and flexibility than the *DU* equivalents. However, *DU* does offer something that the other utilities don't-- integration.

Dunlap Utilities is a group of about 45 modular programs which are designed to work together in order to increase productivity. The key to this integration lies in *DU*'s "OpenTool" program. This program opens a public message port through which the other various utilities can communicate with one another. While many of the utilities can be run individually, use of the message port significantly enhances their usefulness. The utilities are grouped together on the disks by functional area: audio, graphics, DOS, system, and text. Audio functions provide tools for loading, unloading and playing sounds. Graphics tools include utilities for loading, unloading and displaying pictures. Tools are also included for moving and closing windows.

The DOS utilities perform tasks such as re-naming and dismounting DOS devices, removing and resetting paths; and evaluating, changing and verifying floppy and hard disks. System functions available include opening and closing other utilities, performing script and menu activities, screen blanking, and a number of icon maintenance tasks. A phone dialer program is also included. Text functions permit setting the system font, viewing and printing text and building menus for use by *DU*.

Together, these utilities are supposed to perform tasks which are either difficult or inconvenient to perform using only the WorkBench environment. All of the utility programs have icons, and each icon can be associated with a number of tools. (By "tool," I am referring to entries in the "Tool Types" list shown on the WorkBench "Info" screen. This screen is accessed by selecting an icon and then selecting "Info" from the WorkBench.) These tools are used to pass parameters to the utility, in much the same way as one would pass parameters to a program run from the CLI.

None of the utilities are particularly spectacular, although by using combinations of the utilities together, interesting effects can be produced. The manual discusses the possibility of having certain programs run after a period of inactivity (or alternately to have a script performed whenever activity is sensed). For example, *DU* could perform a disk backup or verification after the machine had been inactive for a few minutes, or could cause the screen to be blanked.

One of the more unusual utilities permits the user to peek inside the operating system and see what is going on. The "Access-Text" utility, when combined with the "DOSList," "ExpansionList," "FontList," "IntuitionList" or "SysList" tools, permits you to see structures of the various libraries in use. This information can be a great help learning how the Amiga works or debugging software.

The utilities come on two unprotected disks. A script is provided for installation of the utilities on a hard drive. A 196 page manual accompanies the software and is chock full of tutorials. From reading the manual, I assume that this software is targeted the novice Amiga user who needs a simple way to get around on the machine.

Unfortunately, due to the complexity of the programs, I'm not sure that a rookie would be able to get these utilities to work.

I found that using these utilities was unlike anything I had done before on my Amiga. To utilize a utility, you must click on the utility's icon, then hold the shift key down and click on a number of other icons, then select "Load" from the Workbench menu. If you selected/clicked items in the wrong order, either nothing would happen or the screen would flash, indicating an error. Although the intent of these utilities is to make life simpler, I found things became much more complicated when I tried to use them.

Once I had the programs running, I found that they sometimes froze up for no apparent reason. No guru, just an unresponsive mouse and keyboard. Rebooting the computer was the only way out of this situation. This problem is unacceptable, as it could cause loss of valuable data from the RAM disk. I was not able to consistently reproduce this condition, although it always seemed to surface at the worst possible moment. I also discovered that *DU* will not function if the "fastrom" option of the "SetCPU" program has been enabled. (I suspect that this is related to the renaming of the WorkBench screen to "Fastbench .")

If you are in need of a group of integrated utility programs, then *Dunlap Utilities* just might fill your needs. However, if modularity is not essential, then any number of public domain or shareware programs may actually perform better than *DU*. Each public domain utility is tailored to a specific task, and is usually optimized to be either extremely fast, user friendly, or both. The author of *DU* chose to concentrate on making his programs work with each other rather than on optimizing any single program to be exceptional. But there is a tradeoff in every situation. For my money, I'll just get the utilities that I need and skip the rest.

Dunlap Utilities
$79.95
Progressive Peripherals & Software
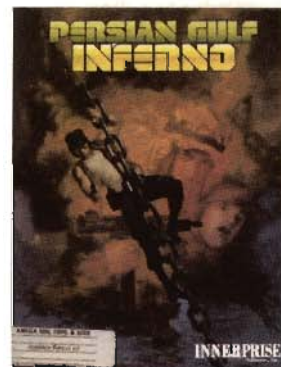464 Kalamath St.
Denver, CO 80204
(303)825-4144

PERSIAN GULF
I N F E R N O

Review by Robert Stransky

*F*anatical Mideastern terrorists threaten to detonate a nuclear warhead in the middle of the largest petroleum deposit ever discovered. *Persian Gulf Inferno*, a new game by Innerprise Software, plays upon a troubling, but particularly credible scenario: nuclear extortion of the world economy by terrorists. In this game, you become a highly skilled commando whose mission is to disarm a nuclear warhead hidden somewhere within a large oil rig and to rescue the United Nations observers who were kidnapped when the rig was taken over by "Mashad," a group of terrorists. You start with virtually no firepower and must subdue groups of terrorists who are patrolling the oil rig as you search for weapons, ammunition, and other supplies.

The graphics, soundtrack and sound effects of this game are excellent! The opening sequence looks and sounds as if it came from a movie. The playfield scrolls smoothly from left to right, as well as up and down. The soundtrack is interesting (although repetitive) and creates a sense of tension which complements the action on the screen. This game also boasts great digitized sound effects. The terrorists shout out foreign phrases and you can hear your footsteps echo through the oil rig as you run through corridors and climb stairs. I thought that the sounds produced by the various weapons and explosives were particularly realistic. My only complaints are that the screen occasionally flickered during floppy disk access and that doorway shaped openings filled with wierd graphics occasionally appeared during play. However, these are small gripes and do not detract from the great overall playability of this game.

The strategy of the game is simple. Explore the oil drilling rig in order to locate weapons, ammunition, supplies, and the hostages. As you find each group of hostages (there are several) you are given important tips, such as the location of other groups of hostages or information concerning the nuclear warhead. Be careful, because you will encounter

groups of terrorists armed with machine guns. You must kill these terrorists or be killed! Your character can survive nine bullet hits without any real trouble, but the tenth one means instant death and the certain destruction of the oil field. Fortunately, there is a doctor among the hostages and he is able to bandage up some of your wounds.

During your mission, you may find several different types of weapons. Each of these weapons has its own particular advantage. You begin the game with a 9mm automatic pistol, but a 12 gauge shotgun and Uzi submachine gun are hidden somewhere in the maze of corridors, stairways and elevators. (The Uzi is by far the most effective weapon, but you will find the shotgun to be quite effective, although a bit slow to fire.) Also scattered throughout the rig is the ammunition which you will need for your weapons. Ammunition is not interchangeable, so you may be forced to change weapons if you run out. Keycards and plastic explosives come in handy for opening the many doors which you will encounter.

The screen is divided into two sections during play. The large upper section is the game playfield. You will be able to see your character and surroundings as you travel throughout the oil rig. The level of detail of this game is excellent. Characters walk

Your mission is to disarm a nuclear warhead and rescue the United Nations observers who were kidnapped by terrorists.
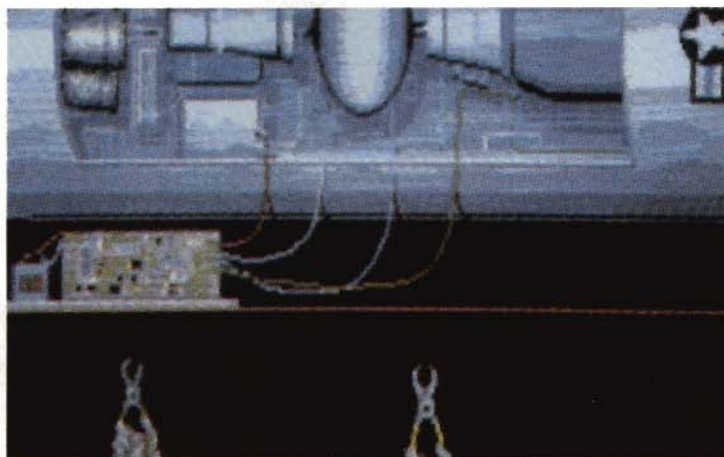
Disarming the nuclear bomb ...

JIGSAW

by: Robert Stransky

REVIEW

When was the last time you put together a jigsaw puzzle? Do you remember how much fun you had? With *Jigsaw!*, from Britannica Software, you can now use your Amiga to experience the challenge and satisfaction of putting together those puzzles. While Britannica claims that this game is educational, I consider it to be just plain fun. Although 13 different pictures come with the program, this game permits you to take most any low resolution (320x200) picture and transform it into a puzzle. You can also select the number of pieces and the difficulty of the puzzle. Additionally, two people can play this game, each taking turns solving puzzles; a countdown timer keeps track of who solves his puzzle fastest.

The puzzles created by *Jigsaw!* are not exactly like those that you might be used to. To create a puzzle, your picture is cut into a number of identical rectangles. (You have a choice of eight, 20, 40, 50, 80, 128, 60 or 200 pieces.) These rectangular pieces fit together in any order, so you have to solve the puzzle by remembering how the picture looked. In ad-

dition, when the "hard" or "very hard" difficulty level is selected, some of the pieces are rotated (upside down), flipped (turned horizontally) or both. This makes *Jigsaw!* much more challenging than any conventional jigsaw puzzle.

Jigsaw! is designed to promote visual memory and shape recognition. By forcing the user to remember how the original picture looked and making him/her try to spot patterns in the pieces. While all of this sounds terribly boring, it is actually quite enjoyable. An "easy" puzzle with 200 pieces takes about 30 to 40 minutes to solve, while an eight piece puzzle can be solved in about 20 seconds! As you become more skillful, select the "hard" and "very hard" difficulty levels to make the puzzles much more challenging.

This program is very flexible. Menu choices permit the selection of the number of puzzle pieces, difficulty of the puzzles, and number of players. Games can be saved and reloaded later. Help is also available in case you get stuck while solving the puzzle. You can see the entire picture as it should look, or you can have the program pieces which are not in their correct locations. In order to prevent cheating, the program adds a penalty number of seconds to your score each time you ask for help.

To move pieces, you simply click on the piece that you wish to move and then move the mouse pointer to where you want the piece to be moved. When you are satisfied, click the left mouse button and the pieces will be swapped. If the piece is now in its proper location, an "audio clue" will sound to let you know. A percent completed graph gives a running total of how far you've come with the puzzle. When using the "hard" or "very hard" options, pressing the right mouse button while the cursor is pointed at a piece will cause the piece to rotate or
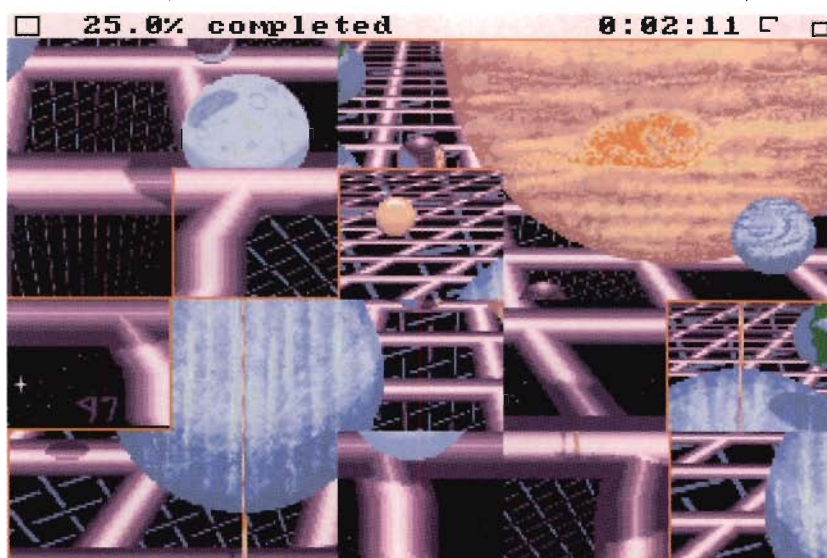
One of the puzzles included with JIGSAW.

Should You Take the

Risk

and Get

a

Clue?

By: Steve King
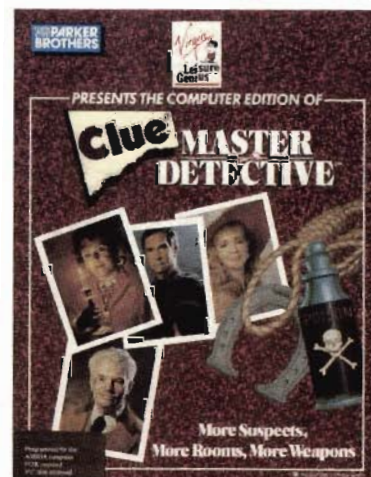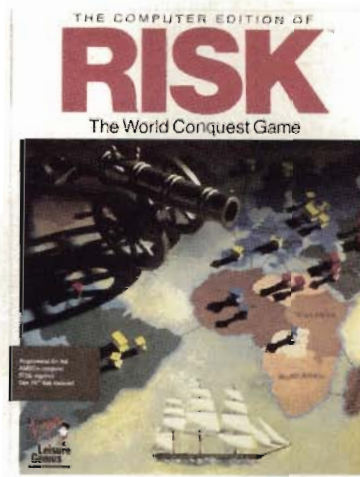
A Review of the New Amiga Versions of the Classic Board Games CLUE Master Detective and Risk

Parker Brothers, one of the most recognized names in the toy industry, has brought two of its most famous board games, *Risk* and *Clue*, to the computer. While both are quite successful in the board game format, *Clue* seems to have lost something in the translation while *Risk* has not.

CLUE

The object of *Clue* is to move yourself around the rooms of a mansion to try to determine who committed a murder, in which room, and with which weapon. In *Clue Master Detective* (the British version of *Clue*) there are several more suspects, rooms, and weapons than in the game we are familiar with. You play the role of any of the ten characters. At least two other players are needed but they may be controlled by humans or by the computer. You have the option of providing the computer players with three levels of intelligence to tailor the game to your skill level. The layout is similar to the board game and provides an overhead view of the floor plan of the mansion. The characters are represented by markers which

move from room to room according to the roll of a graphic pair of dice. When they enter a room, the screen displays a view of that room with an animated character moving around accompanied by a lone digitized sound (such as a horse whinny in the stables). These views are blocky pre-C64 graphics which are hardly recognizable, and only one person is ever shown in a room at a time. Luckily, the game provides an option to turn off these views and animations.

After you make your "suggestion" in a room, any players who have the appropriate cards display them. So if you have more than one human player, he or she must turn away to avoid seeing them. The computer keeps track of the cards that you have seen and permits you to mark others as you see fit. If you have a printer, you have the option of printing all of the suggestions and passed cards that have occurred as the game progresses.

All in all, while the game play is faithful to the board game (the English version, that is), *CLUE Master Detective* is a graphically inferior game and would probably be enjoyed only by those avid *CLUE* fans who cannot find anyone else to play with.

RISK

On the other hand, Mastertronics obviously managed to find a superior programming team to translate *RISK* to the computer. As you may know, *RISK* is a game of world domination where 42 territories are divided up among the players, who place their armies in each. The players then attempt to conquer and control adjacent territories and continue doing so until one player controls the entire world.

RISK game board screen.

The map itself is an oversized screen which you scroll around by using the mouse. A menu option also displays the map on a single screen for strategic planning. Up to six players can participate, but you can, of course, play against the computer. As in *CLUE*, you can select the ability of the computer players. Each player is represented by a different color and the territories are shown in the colors of their conqueror.

RISK has incorporated numerous start-up and game options to provide a wide variety of scenarios. Rather than playing to conquer the world, you may elect to capture several of your opponents' headquarters or certain designated continents. At start-up, you have the option of individually placing your armies in the various countries or letting the computer do it for you quickly. During play, as you attack adjacent territories (and lose armies in the process), you have the option of selecting the Do or Die Attack mode which

continues an attack until either the conqueror or defender is completely eliminated. Other options speed up the game considerably by eliminating messages and other decisions you would normally have to make. There are even menu items to allow you to automatically conquer a territory of your choice and even to change sides.

All in all, I found the graphics and sounds in *RISK* to be quite good and the game to be fast-paced and enjoyable. Of course being able to play against the computer is a great way to play *RISK* when you are the only human around. The manual is quite thorough and contains a helpful strategy and tips section. It would have been nice, however, if during an attack the two territories involved were shown graphically rather than solely by text messages.

The problem with computerized board games is that they are inherently designed to be played on a board, on a table, with family and friends gathered around in the spirit of friendly competition. All of this is lost when the game is put on a computer as it is often impractical to crowd a bunch of people near the computer and pass the mouse around. In my opinion, these two games are best suited for those fans of the game who want to play but have no available human opponents.

CLUE Master Detective game board screen.
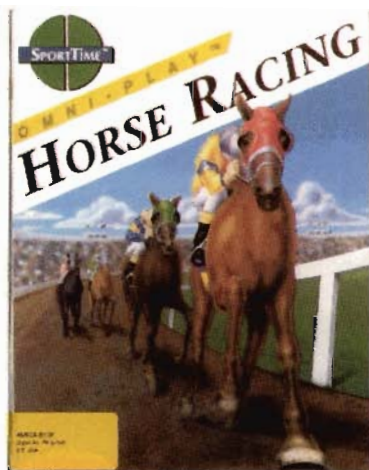
Omni-Play Horse Racing

By Steve King

Omni-Play Horse Racing is not merely an arcade-type horse racing game, but rather, a complete system which simulates all aspects of the horse racing industry. The basic game consists of a master system disk containing a simple city race track, 128 horses and twenty computer bettors with varying personalities and abilities. You also get an additional disk containing Track One, a country race track.

The uniqueness of this program first becomes apparent at the opening screen, which displays buttons for all of the available and planned options and upgrades. As you purchase the various additional modules, you use this screen to install and select them. It is also at this screen that the program's most annoying characteristic is revealed. Even though the simulation was developed on the Amiga, it was obviously designed with the PC in mind; the mouse pointer (a hand) and the menu selection options are controlled by a joystick rather than a mouse.

To begin, you select "Handicapper's Tournament," the basic game which allows twenty bettors (up to four of which can be human players) to bet on nine races at the track. All of the results, including the bet-tors' successes and failures and the horses' statistics, are continually updated and saved to disk for use in the next meet. This selection takes you to the Main Menu. The top half of the screen displays the players' names and current bankrolls; the middle portion the various game options and pa-

The Starting line.

rameters; and the bottom portion the menu choices.

When you play for the first time, you should select "Tournament Options" which allows you to add new bettors (such as yourself) to the roster. Most important is selecting one of the three difficulty levels. In the easiest, only the basic abilities of the horses are considered and their moods, as well as the abilities of the jockeys are disregarded. In the Normal level, more of the horses' abilities and the condition of the track are taken into account. In the Hard level, all factors are considered. At this point, you must also select the Win Condition, which can depend upon the monetary success of the players, the number of races run, or the number of races bet. From this screen you can also load a new racetrack or set of horses. Finally, you can activate the Auto Play Mode which continually runs the races without human intervention. This feature is an excellent way to familiarize yourself with the game. Once you have selected these options, you return to the Main Menu to begin the meet.

The next step is to select the Entry Information option. This displays the names of the horses entered in the race by the computer, along with some basic performance information, including the odds of each winning the race and the number of times each has finished in the money. By moving the pointer to a particular horse's name and clicking the joystick button, detailed past race performance data for each horse is displayed. As the horses complete the simulated races, the results are added to this data.

A photo finish !

Considerable work is required to sift through the horses' performance statistics to attempt to pick the winner.

and the amount. When you are finished, you return to the Main Menu to start the race.

At this point a picture of the racetrack is displayed, accompanied by the traditional trumpet post call. Next, each horse walks to the starting gate to give you an opportunity to recognize it during the race. At the starting bell, the horses bolt away and the race begins, complete with digitized sounds of thundering hooves and roaring crowds. At all straightaways you actually see the animated horses racing across the screen while at the turns the screen switches to an overhead view with numbers representing the horses. All of the horses names are displayed at the bottom of the screen in order of their current positions.

Pressing the function keys toggles the view from animated to overhead views, or permits you to focus on a particular horse. You can even replay the homestretch portion of a race if you desire, or jump directly to that segment to save time. By pressing F10, you can advance to the end of the race and review the results on the toteboard. If by chance there is a photo finish, the picture can also be reviewed. If you select Track Zero, almost all of the regalia is omitted and all you see is the race; this obviously makes for a faster game.

After the race concludes, the Winner's Circle screen is displayed showing the winning horse and jockey and then the program returns to the Main Menu where you can select the Last Race Payoffs screen to review the results of the race and see how much you may have won (or lost as the case may be). By selecting the Betting *continued on page 68*

Once you have studied this information and hopefully have selected the horses you feel will come "in the money," move on to the Next Race Payoffs screen which displays all of the possible payoffs for the horses, including combination bets such as exacta, quinella and triple. Before you actually place your bet, you might want to take a look at some of the other informational screens which display detailed post position, and jockey and entry history in spreadsheet form. The program treats this data much like a database and permits you to sort it by column criteria. On these screens you can ascertain the mood of the jockey and his success record as well as the effect of post position on winning.

If you aren't certain which horse to bet on, you have the opportunity to buy a tip from the "expert" computer bettors who will charge you according to their handicapping ability. If you choose this option, the program displays pictures of the bettors with important statistics about each, including the percentage of times that he has won money on a race and an assigned risk index. When you are ready to place your bet, proceed to the "Bet On A Race" screen, which displays a picture of several betting windows. Using the joystick, you pick the horse, the type of bet
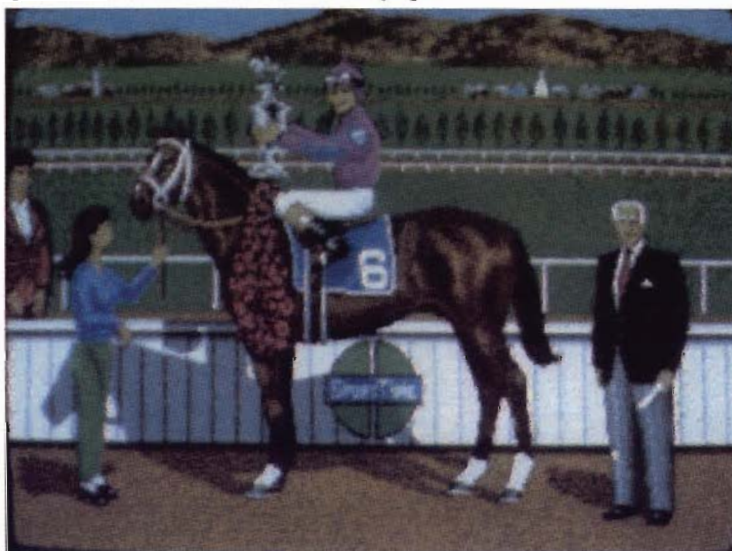

The Winner's Circle.

688 ATTACK SUB

Confirming order to activate sonar.

really is a strange feeling to hear the tracking pings of a torpedo which could bring your destruction. All torpedoes have a range of 10 miles in 688 Attack Sub. Although in real life this number would vary depending on the type of torpedo, the range was made constant for the sake of playability.

The Los Angeles class also comes with a variety of missile types, some of which drop torpedoes into the water close to the target. Others carry charges, some nuclear, which can destroy ships or land targets.

Another handy device is a noisemaker, which is fired in a manner similar to weapons. It imitates the sound of your sub, allowing you to cut engines and let a decoy take the hits.

The really tricky part of 688 Attack Sub is using thermal layers and your ship's noise to your advantage. Thermal layers are horizontal barriers where the water temperature drops abruptly, trapping many sound waves in the temperature region where the sound source is. Often, releasing a noisemaker, cutting engines, dropping below a thermal layer, and radically changing course will lose pursuers, but this isn't very easy to do quickly. If a pursuing sub drops into your thermal layer, it can usually get a fix on you again.

The underwater world created in 688 Attack Sub is very realistic and enjoyable. The manual is not overly technical, but provides plenty of information about the workings and strategies of a sub. Even the technical reference charts can be interesting to read. The information is rather spread out and the manual is best read in one sitting, but this is easy to do. 688 Attack Sub is definitely an example of genius in creating a realistic simulation that is both playable and enjoyable. ▲

**688 ATTACK SUB
$39.95**

From:
*Electronic Arts
P.O. Box 7578
San Mateo, California
94403-7578
(415)572-ARTS*

A.X. CALENDAR

JUNE

29-July 1 *AmiEXPO*. *Hyatt Regency, Chicago, IL, (800)32 AMIGA.*

SEPTEMBER

15-16 *World of Commodore and Amiga*. *Valley Forge, PA, (416)595-5906.*

OCTOBER

5-7 *AmiEXPO*. *Disneyland Hotel, Anaheim, CA, (800)32 AMIGA.*

5-7 *World of Commodore and Amiga*. *Rosemont, IL, (416)595-5906.*

NOVEMBER

8-11 *AMIGA '90, AmiEXPO International*. *Convention Center, Cologne, West Germany, (800) 32 AMIGA.*

30-Dec 2 *World of Commodore and Amiga*. *Toronto, Canada, (416) 595-5906.*

AMIGA

NEWS

Digital Composite Television

DCTV (Digital Composite Television), by Digital Creations is a new display and digitizing system which includes image processing software for digitizing video images and converting IFF images into *DCTV* graphics for display. *DCTV* uses normal high resolution display modes on the Amiga, but it interprets the video signal in a new way; by using a complex compression system, *DCTV* takes the digital video signal that comes from the Amiga RGB port and converts it into full color composite video with broadcast television quality.

DCTV allows the Amiga to create composite video images with millions of simultaneous colors. For example, 24-bit high resolution rendered images can be displayed without the distortions and limitations normally associated with low resolution Amiga displays. Because *DCTV* uses the Amiga display as its frame memory, full color animations are possible.

DCTV is also a "slow" scan video digitizer. Using any color camera, *DCTV* can capture a full color composite video frame in about 10 seconds. Once the video image is captured, *DCTV* image processing controls allow complete picture manipulation including conversion to any IFF format.

Additional *DCTV* products include *DCTV Paint, DCTV Animation,* and *DCTV-RGB Converter.*

Digital Creations
2865 Sunrise Boulevard, Suite 103
Rancho Cordova, CA 95742
(916) 344-4825

Amiga Touch Screen

Future Touch, a division of Amigo Business Computers, is offering the first integrated touch screen system for the Amiga computer. The *Future Touch* system includes kiosk, computer with 40MB hard disk with 1MB of RAM, laser disk, genlock, flicker-free multi-sync touch screen color monitor, stereo amp and speakers, multi-channel serial port card, and authoring and painting software.

Future Touch consists of a thin, continuous, transparent film on a glass panel. The touched position is determined by measuring changes in the small AC signal which results when pressure is applied to the touch panel. Variation in the signal corresponds to the location of the touch.

Designed for commercial and educational interactive media applications, *Future Touch's* uses include public information kiosks, automatic teller machines, computer based training, executive information systems, and aids for the physically impaired.

Driver software provides touch input which is compatible with the functions that currently require use of the mouse. The finger touch performs identically to the mouse, allowing the user to resize windows, drag icons and windows, open windows with double touch, move the insertion point in a document, create graphics, and run applications. The driver software also works with all paint and graphic programs; the brush follows the finger as the user draws on the screen. Authoring packages that work with *Future Touch* include *AmigaVision, CanDo, Pilot, The Director, Learning Curve, Micro Text, Interactor, VIVA, Logo,* and *Ultra Card.*

☞

Showmaker lets the Amiga manipulate and establish communication with any external device from laser disk players to MIDI keyboards.

Marketed by Business Technology Services, *Future Touch's* prices range from $4,607.00 for the desktop model to $12,442.00 for a fully configured free-standing kiosk designed for commercial applications.

Business Technology Services
485 Fifth Avenue-Suite 1402
New York, NY 10017
(212) 682-2910

Amiga Developers Association Begins

The Amiga Developers Association was created at a meeting held in Washington, D.C. on March 15, 1990. An Executive Board was nominated and elected, including:

Chairman
Mike Halvorson of Impulse, Inc.
First Vice Chairman
Andrea Geiger of Telmak, Inc.
Second Vice Chairman
Melissa Jordan Grey of Blue Ribbon Bakery, Inc.
Treasurer
Bruce Benesh of Applied Engineering
and
Secretary
Rick Rodriguez of VRS Media.

Harry Copperman, President of Commodore Business Machines, addressed the assembled developers and other members of the Amiga community with words of encouragement for the organization and indicated Commodore's willingness to respond to communications from the ADA. He acknowledged a number of areas in which Commodore needs improvement in its support of the Amiga line and indicated that a major portion of Commodore's resources are being allocated in that area. Copperman was asked how long his administration would be given to turn things around; he earnestly declared that this was Commodore's last chance. Jeff Scherb, Copperman's liaison to the developer community, also spoke and answered questions from the group.

The developers decided to create a list of issues and concerns that the Executive Board would later consider and prioritize. The Board is preparing position papers for its first membership drive; a series of descriptive ads will appear shortly in Amiga magazines.

Users and developers interested in joining the ADA as developers or associate members are urged to contact Mike Halvorson at (612) 566-0221.

Editor's Note: "Amiga Developers Association Begins" was reported and written by Steve Gillmor.

Showmaker: A Revolutionary Product for Desktop Video

To be released in May, Gold Disk's *Showmaker*, a new multimedia presentation generator, lets anyone build continuous self-running presentations that incorporate internally or externally produced text, images, computer graphics, animation, music video and audio. Geared to the professional, but not out of the reach of the non-professional, *Showmaker* lets the Amiga manipulate and establish communication with any external device from laser disk players to MIDI keyboards. Because the program can play and load data from the hard disk simultaneously, presentations created with *Showmaker* can be much longer than those running exclusively out of memory. *Showmaker* works with the A1000, A2000, and A2500 with a minimum of 1MB of RAM and is expected to sell for around $400.00.

Gold Disk is now shipping *Outline Fonts*, a collection of over 35 arbitrarily resizeable *Compugraphic* outline fonts for use with either desktop publishing (specicifially *Pagesetter II*) or *Professional Draw*. *Outline Fonts* allows professional typefaces to be incorporated into any document or graphic design and requires an Amiga 1000, 2000, or 2500 with at least 1MB of RAM. The suggested retail price is $199.95.

Gold Disk, Inc.
P.O. Box 789
Streetsville, Mississauga
Ontario, Canada L5M 2C2
(416) 828-0913

TV*SHOW

Zuma Group has just released *TV*SHOW Version 2.0*, a graphics, animation, and sound display program in which the user builds a presentation

by adding event types from the CREATE EVENT window; event types include SCREEN EVENTS which displays an entire screen, OBJECT EVENTS which flies or wipes an object over an existing screen image, ANIM EVENTS which plays an ANIM 5 animation, and CYCLE EVENT which turns color cycling on or off. The user is free to combine Amiga graphic and animation image formats, including overscan, HAM, and extra halfbrite, in a single presentation.

After adding each event, the user can choose from over 40 variable speed transition effects such as fades and pattern wipes from the TRANSITION window. The EDIT window then lets the user set the display time, transition speed, and sound track for each event.

The Editor function allows for playback specified by number of seconds or a click of the mouse. The Editor function also allows the user to delete, insert, move, or loop events. The KEY EVENTS feature allows particular events in the presentation to be logged for quick retrieval. Because the program takes advantage of the Amiga's multitasking capabilities, the presentation length is limited only by disk space.

*TV*SHOW* supports both IFF 8SVX sampled sound and synthesized speech playback from a text file. Sound playback parameters include volume, playback rate, and looping.

*TV*SHOW* requires a minimum of 1MB of memory. The package comes complete with a 200 page user's guide which includes program installation instructions, seven tutorial lessons, and a reference section with step by step instructions for all program functions, four appendices, and an index. The suggested retail price for *TV*SHOW Version 2.0* is $99.95.

Zuma Group, Inc.
6733 North Black Canyon Hwy.
Phoenix, AZ 85015
(602) 246-4238

VidGen Upgrade

Microft has upgraded its background graphics generator, *VidGen*, which is designed for use in video production and multimedia presentations, to now support *Pro Video Gold* and *Broadcast*

Tilter. Microft also makes a PAL version of *VidGen*; registered owners may upgrade to the new version for $5.00. For owners who purchased *VidGen* after February 1, 1990, the upgrade is free with the return of a receipt and registration card. A demonstration disk is available at no charge.

Microft Software, Ltd.
P.O. Box 1072
Exton, PA 19341
(215) 363-2832

Discounts for Education

Following Commodore's lead to focus marketing on education, Great Valley Products is launching an educational program of its own. All elementary, secondary, and high schools accredited by a State Board of Education and all college and vocational schools approved by the government or an accrediting agency are eligible for GVP discounts. The program also extends to students and faculty members of any qualified college, university, or technical school.

Great Valley Products
225 Plank Ave.
Paoli, PA 19301
(215) 889-9411

Rejuvenate the Amiga

The new Rejuvenator Expansion Board from Expert Services allows the A1000 to take advantage of the new 1MB Agnus chip and use Kickstart-ROM in the machine to switch back and forth between the internal Kickstart-ROM and booting from a Kickstart disk. The board contains 1MB of memory, thus allowing the Rejuvenator to become `the new chip-RAM. The motherboard ☞

Because the program takes advantage of the Amiga's multi-tasking capabilities, the presentation length is limited only by disk space.

TreasureTrap takes place in the 100 rooms of the sunken shell of the Esmeralda, the resting place of a priceless cargo of solid gold bars, as well as the home of a collection of aquatic friends and foes.

chip-RAM then becomes fast-RAM; a 512K Amiga will have 1.5MB of RAM after the conversion. The Rejuvenator plugs onto the existing pins; two lines run to the clock timing chip.

Expert Services
5912 Centennial Circle
Florence, KY 41042
(606) 371-9690

William Tell and Aquatic Creatures Escape From the Zoo

In Electronic Zoo's *The Legend of William Tell*, you become William Tell, the land's most skilled crossbow marksman, on a quest to rescue your son from Gessler's castle and free Switzerland from the clutches of Austrian tyranny. You explore mountains, forests, towns, and buildings and encounter knights, monks, peasants, wolves, and wild boar that can help or hinder your struggle for survival. In order to succeed, you must acquire food and drink and gather weapons, scrolls, keys and gold. When the going gets tough, you can unleash the power of your three different crossbows complete with a vast selection of quivers, arrows, winders, and sights. *The Legend of William Tell* sells for $39.95.

Treasure Trap takes place in the 100 rooms of the sunken shell of the Esmeralda, the resting place of a priceless cargo of solid gold bars, as well as the home of a collection of aquatic friends and foes. You must dodge poisonous jellyfish, slithering electric eels, and some creatures you've never seen before. You can ride a friendly grouper or let a red snapper loose to gobble up the crabs that block your way. It takes a quick hand to find the gold, a quick mind to solve the puzzles, and a combination of both to gain the final reward. The suggested retail price is $39.95.

Xiphos, the futuristic space odyssey that combines arcade shoot 'em ups with a sophisticated 3D simulation and strategic adventure, will be available for the Amiga in June.

In mission mode, you are thrust into a space ad-

venture that includes role-playing and simulation. Xiphos, an all powerful intelligence constructed by the Ziphons, is believed to be disrupting the space/time continuum. The Galactic Council has chosen you to undertake a stealth mission to infiltrate the hierarchy of artificial universes and destroy Xiphos.

In arcade mode, *Xiphos* presents, from an out-of-cockpit view, an array of enemy ships including scouts, fighters, cruisers, mother ships, and star bases. Each ship has its own point value for its successful destruction. You fire beam and particle weapons, homing and straight-line missiles, and tractor beams while using your compass and radar displays to keep track of enemy ships. The suggested retail price is $39.95

Electronic Zoo
3431-A Benson Ave.
Baltimore, MD 21227
(301) 646-5031

Fast, Fast, Fast

Among three new products from Xetec is *FastCard Plus*, a hard card which allows the A2000 to have a hard drive and up to 8MB of RAM without using any drive bays and using only one expansion slot. Specifications include DMAx hardware, autoboot ROM, archive utility, jumperable SCSI ID, and full support of auto-configuring protocol. *FastCard Plus'* pricing begins at $249.95 (with *Mini FastCard*).

Another of Xetec's new products is *FastTape*, a back-up system for all Amigas. The system exclusively uses TEAC SCSI cassette streamers. Specifications include high archival speed, X-Stream archive software, and file oriented back-up/restore feature. *FastTape's* pricing begins at $746.95.

Mini FastCard, a SCSI interface for the Amiga 2000, uses the same DMAx technology as the *FastCard*, but makes it more compact and economical. *Mini FastCard* sells for $149.95.

Xetec, Inc.
2804 Arnold Rd.
Salina, KS 67401
(913) 827-0685

LAN Rover in The Art Department

ASDG, Inc. announced at AmiEXPO on March 16, 1990, *The Art Department*, a full-featured, 8-bit and 24-bit image processing software system which incorporates fast image rendering and conversion technology, and the *LAN Rover* Ethernet board.

The Art Department can create magazine-quality color separations from nearly any image data source with up to 24-bitplanes; the program is compatible with ASDG's *ReSEP* and Gold Disk's *Professional Page*. ASDG boasts that the program also converts 24-bit images to Amiga-displayable images faster than is possible with any other product on the market.

The Art Department uses a modular file loading interface and comes with a *DigiView* 24-bit loader and a Super-IFF loader, thus supporting any IFF format image with up to 24-bitplanes, including EHB, HAM, AHAM, SHAM, Dynamic HAM, A-Res, and Dynamic Hi-Res file formats. ASDG soon will release loaders for 24-bit *Sculpt 4D*, 24-bit *Turbo Silver*, 32-bit *Rendition*, 8-bit *GIF*, 24-bit *Targa*, and 8-bit and 24-bit Tiff files. The program not only can make fast image reduction and enlargements, but also has the ability to perform color to gray scale conversions which can add resolution to images.

Features include powerful palette control, 208 Amiga rendering/video modes, six methods of dithering, an automated image "touch up" mode, and a unique facility that uses proprietary edge-detection technology to create line art from any image. The suggested retail price for *The Art Department* is $89.00.

Now shipping, the *LAN Rover* Ethernet board for the Amiga 2000, 2500, and 3000 computers, comes selectable between "thick" and "thin" Ethernet, fully conforms to the IEEE 802.3 standard, performs Direct Memory Access, and features a 16-bit data path and on-card memory management.

The four-layer *LAN Rover* comes complete with a low level general software driver that lets providers of networking software program sufficient "hooks" to effectively use ASDG's hardware. This driver features a "copiless" architecture which eliminates the need for most packet copying.

Starting in May, 1990, Syndesis Corporation will offer the *Lan Rover* in conjunction with its own TSSnet Amiga-DECnet connectivity system. The resulting product will tie Amigas into networks of Minicomputer and Mainframes from Digital Equipment Corporation.

ASDG Inc.
925 Stewart St.
Madison, WI 53713
(608) 273-6585

Soft-Logik and LaserUp! Join Forces

Soft-Logik Publishing Corporation, developers of *PageStream* desktop publishing software, announced the formation of a publishing relationship with LaserUp! Software. LaserUp! has agreed to develop an object-oriented drawing program that will be marketed by Soft-Logik, who has not yet decided upon a name or release date for the new product.

Soft-Logik has also released *PageStream Version 1.8.*, which features enhancements such as a significant speed increase, a font manager, font list, and several new print drivers. In supporting *PostScript* resident and downloadables, *Version 1.8* includes file requesting, crop and registration marks, spell checking, and the drawing of arcs and elliptical arcs. *PageStream Version 1.8* also allows the individual colors of a separation to be printed as well as the screen frequency and angle of each separation to be defined.

Soft-Logik Publishing Corporation
11131 South Towne Square #F
St. Louis, MO 63123
(314) 894-8608

DigiFeX Usurps Creative Microsystems

All Amiga products previously manufactured and available from Creative Microsystems, Inc. are now manufactured and available from DigiFeX Corporation.

DigiFeX will soon release *Video Adaptor Deluxe*, designed to send a video signal from any Amiga to various video hardware. The device, which attaches to the Amiga's RGB port, allows the ☞

The Art Department can create magazine-quality color separations from nearly any image data source with up to 24-bitplanes...

Amiga to interface with virtually all composite monitors, Commodore 64 and 128 monitors, VHS and Beta VCR's, and S-VHS monitors and VCR's, all while maintaining output to the RGB monitor.

DigiFeX Corporation
610 Main St.
Oregon City, OR 97045
(503) 656-8818

Majelix Coloring Disk for My Paint

Centaur Software is now distributing a sequel to the coloring disk, *Alphabet Fun*, for *My Paint*. Disk #2, *Majelix Characters*, was created by Saddleback Graphics and teaches beginning reading by focusing on phonics and sight reading. The *Majelix* coloring disk provides an introduction to all 29 of the *Majelix* characters, which gives children a reference to the phonics code, and thus helps them with their reading skills.

Centaur Software, Inc.
P.O. Box 4400
Redondo Beach, CA 90278
(213) 542-2226

ProWrite 3.0

New Horizons has announced a major upgrade to *ProWrite*, the multi-font, graphic word processor. The upgrade is based on user requests and includes multiple column support, thesaurus with over 300,000 cross references, macros, and ARexx port.

ProWrite 3.0 also allows the user to control nearly all aspects of printing, including dot density, aspect ratio, and paper size. Moreover, printer-resident fonts of pica, elite, condensed, and wide may be printed on the same page simultaneously using *ProWrite 3.0*.

New Horizons has not, however, included PostScript support directly in *ProWrite* because, according to Brian N. Sarrazin, Vice President of Sales and Marketing, "most users don't have a *PostScript* printer and (New Horizons) won't penalize users with code they'll never need." This new modular approach lets a user print directly to a PostScript device from *ProWrite*. To work, *ProScript* and *ProWrite* must reside in the same

"most users don't have a PostScript printer and (New Horizons) won't penalize users with code they'll never need."

drawer on the disk. The purpose of this modular programming is to keep size down and speed up. The package has a suggested retail price of $175.00. Upgrade prices are as follows:

From Version 1.0	$75.00
From Version 2.0	$60.00
From Version 2.5	$50.00

New Horizons Software, Inc.
206 Wild Basin Rd., Suite 109
Austin, TX 78746
(512) 328-6650

UltraCard Plus Upgrade

At AmiEXPO in Washington, Intuitive Technologies announced an upgrade to its *UltraCard Plus* software package. Version 1.9 includes support for read-only files, the ability to display and manipulate HAM images, direct icon import, and asynchronous ARexx support. Version 1.9 also includes significantly enhanced error handling capabilities including automatic editing of scripts containing syntax errors.

The *Commercial Browser*, the most significant of the additions, allows stacks created with *UltraCard* and *UltraCard Plus* to be processed by the "MKCOMMERCIAL" utility which encrypts and converts the stack so that it can be used with *Commercial Browser*. Once a stack has been commercialized, it is protected from user modification and inspection. This protects the author's work in a manner similar to a language compiler. The encryption is password-based and may be reversed if the password is known.

UltraCard Plus Version 1.9 sells for $100.00 and works with any Amiga. *UltraCard* users may upgrade to *Version 1.9* for $40.00. *UltraCard Plus* users may update to the latest version at no charge by sending a self-addressed, stamped envelope to Intuitive Technologies.

UltraCard and *UltraCard Plus* are now available exclusively through mediaMAXX. Users can call 800-456-MAXX for sales and technical support.

Intuitive Technologies
1199 Forest Ave., Suite 264
Pacific Grove, CA 93950
(408) 646-9174

Imagine: Rendering Software

Available May 31, 1990, *Imagine* is a professional 3D object creation, animation, and rendering software package which utilizes advanced techniques for image creation. By implementing a unique approach, *Imagine* allows images to be rendered in various formats. *Imagine* works on all Amigas, but Impulse suggests two disk drives or a hard drive. The suggested retail price is $349.95.

Scheduled for release on July 4, 1990, *FireCracker/24* gives the A2000 24-bits of resolution per pixel while delivering more than 16 million colors. The *FireCracker/24*, which is inserted into any of the 100-pin bus connectors on the motherboard, supports numerous resolutions and has its own internal dual ported high speed video RAM. The package includes a comprehensive paint program that allows painting in 16 million colors in real time. The suggested retail price is $895.00.

Impulse, Inc.
6870 Shingle Creek Parkway #112
Minneapolis, MN 55430
800-328-0184

Fractal Art Creativity Software

MegageM announced the release of *FractalPro*, fractal art creativity software which consists of two programs: *HAMandel 3.0* and *AutoMag 3.0*, both of which can be used from either WorkBench or CLI. *HAMandel 3.0* produces Amiga fractal images; *AutoMag 3.0* generates smooth animation sequences of fractals. By sharing a consistent user-interface, the two programs put the world of fractal art at the fingertips of any Amiga enthusiast. *HAMandel 3.0* allows the user to explore Mandelbrot and Julia Sets, as well as other fractals. The key to *FractalPro's* 256 color pictures is its unique exploitation of the Amiga HAM graphics mode.

HAMandel has a complete Amiga user interface and its pictures can be saved or loaded by floppy or hard disk. The pictures are IFF compatible and fully congruous with other HAM graphics programs for the Amiga. *HAMandel* includes all of the features needed for exploring fractal art, including zoom in, zoom out, change colors, and load and save pictures. There are also many powerful and convenient extras such as built-in

support for 68020/68030 processors and automatic use of extended precision math when required. *HAMandel* is available separately from the *FractalPro* system.

AutoMag 3.0, the second component of the *FractalPro* package, is a fully interactive program for generating sequences of any of four types of fractal images (Mandelbrot and Julia Sets, and their cube analogs). With tools supplied on the disk, *AutoMag's* image sequences can be assembled into smooth "pan" and "zoom" animations in the Amiga standard ANIM file format. Sequencing options of *AutoMag 3.0* include pan (linear motion) to the right, left, up, or down, as well as zoom in and zoom out. Each image in a sequence may be set to differ from its predecessor by either three percent or six percent in size (zoom) or position (pan). Images are automatically saved to floppy or hard disk (in Amiga standard IFF format) as soon as they are completed; the program continues to generate additional images without user intervention. A set of images suitable for conversion into an Amiga animation file may be generated in only a few hours. *AutoMag* users have the same fractals, color control, and math options available in *HAMandel 3.0*. *AutoMag 3.0* is available only in the *FractalPro* system.

The *FractalPro* two disk set sells for $89.95. *HAMandel 3.0* sells for $49.95.

MegageM
1903 Adria
Santa Maria, CA 93454
(805) 349-1104

Pic-Magic Enhancements

Joe's First Company has released a new *Pic-Magic* professional-quality creative package, *Living Logos*, to be used with *Sculpt/Animate 4D* and *Turbo Silver*. The package includes three vertex oriented fonts that were created in *Sculpt/Animate 4D*. *Sculpt* users simply import the font by using the Load Type option; *Turbo Silver* users load each letter as an object. The two disk package sells for $39.95.

Joe's First Company has also released three new professional-quality clip art packages for use with *Pic-Magic*. *Fantasy Pack One* is devoted entirely to a fantasy/medieval/role-playing theme and ☞

By implementing a unique approach, Imagine allows images to be rendered in various formats.

THIS ISSUE

A.X. MAGAZINE ISSUE 3.3

Here is a sample of what to look for on this issue's companion disk set.

○ Worldmapper

This program plots geographic data and coordinate grids on six different map projections. The program is based on CARTOG.PAS which accompanied "Mapping the World in Pascal" by Robert Miller and Francis Reddy, BYTE, Dec '87, page 329.

○ IFF2EX

This CLI based program enables the user to convert an IFF ILBM file to an executable program that will automatically display the picture file contained in it, eliminating the need for an additional display program. Exit by pressing the left mouse button.

○ Soundtracker Player and Song

A multi-tasking player and a great song: RRA.

○ Calc 3.0 by Jimmy Yang

This is a multi-function calculator written in Manx C. It operates differently from other calculators in that you can see the expression you are evaluating on the screen. There are three models: programmer, scientific and graphing, as well as 26 memories, full mouse or keyboard operation, pull-down menus and lots of other goodies.

○ IFFMaster by Junix of Arcane

IFFMaster is an IFF ILBM utility that loads and saves IFF ILBM and Raw format pictures. It is able to save the palette as binary or source file, as well as in sprite format.

○ MiniBlast by Anders Bjerin

For your relaxation pleasure, a game.

○ Soundtracker 2.5

Music is written with Soundtracker 2.5 by building up patterns. Soundtracker holds a table with information about the sequence in which these parts must be played. Also included are some sample songs.

○ Tiny Programs

Here are some tiny programs for your CLI enjoyment: UnProtect--makes protected AmigaBASIC programs listable; uClock--title bar clock; ld--four-color, four-column directory lister; Prefs--loads and saves Preference settings without booting; SysList--lists current devices, libraries, or ports; kal and kal2--two small kaleidoscope program; TBar--changes the pattern in the title bars of all intuition windows.

○ YAFR: Yet Another File Requester

v1.15 by Dave Schreiber

Well documented C source code for a file requester.

○ Pictures

Three raytraces in *Professional 3D*: Cryocafe, Amiga, and King.

Dice trace by Ken Goecke with *TurboSilver*.

ON DISK

The A.X. Magazine Two Disk Set

DISK INSTRUCTIONS

1. At the Workbench prompt, boot from your favorite WorkBench disk. It is important that your Workbench disk be relatively complete.
2. After you insert the A.X. Disk, an A.X. disk icon will appear. Double click that disk's icon to expose the magazine icons.
3. From here, everything is point and click. Double click the disk icons to expose more icons. Other animations and items can also be started from their icons.
4. Be sure to read any available instructions icons before trying to start any programs.

BAD DISK?

So you think you have a bad disk. Don't worry. Simply send your original disk back to us, and we will promptly replace it.

WHAT DOES A BAD DISK LOOK LIKE?

If you encounter a message saying that one of your disks has a "Read/Write Error," then you probably have a bad disk. Or, if your Amiga suggests using *DiskDoctor* to fix it.

WHAT SHOULD YOU DO?

That's easy. Simply send that disk to us, with a small note as to the problem you encountered, and we will gladly send you a new disk.

Please send your bad disk to:

A.X. Magazine - BadDisks Urgent
6820 Distribution Drive
Beltsville, MD 20705

TECHNICAL SUPPORT

Technical support is being provided by NewAge Computers. When you call, please say you are calling for A.X. technical support. Also please have the issue number, and any other relevant information ready.

1-301-220-1296

*By using
16 patterns
and
eight different
spacing presets,
IntroCAD Plus
makes up
to 128 different
hatching
combinations
possible.*

includes heroes, knights, and creatures. *The Wedding/Couples Package* includes clips of brides, grooms, flower girls, mothers-in-law, couples in love and other formal and religious images. *More Fantasy Images* includes just that. All images are contained on two disks of EPS versions of each graphic and two disks of IFF super-bitmap sized and IFF hi-res brush-sized versions of each graphic. Packages sell for $29.95 each.

Joe's First Company Inc.
208 Glenayr Rd.
Toronto, Ontario
Canada M5P 3C3
(800) 387-8967

IntroCad Plus and 3D Professional

Progressive Peripherals & Software's *IntroCAD Plus* has the simplicity, speed and laser-like output of the original *IntroCAD*, but also includes layers, hatching, user-definable fonts, keyboard equivalents, preference files, a script language, and ARexx support.

IntroCAD Plus uses 16 selectable layers for organizing drawings. Drawing commands allow editing or searching of all objects in one or more of the specified layers. Layers can be selected, ignored, or made invisible while a layer summary screen displays all 16 layers, side by side.

By using 16 patterns and eight different spacing presets, *IntroCAD Plus* makes up to 128 different hatching combinations possible. The package provides several new font styles and a font builder for creating an unlimited number of custom fonts.

Keyboard equivalents allow the user to replace all menu options with keystrokes or program macros, and thus perform several operations with the touch of a key. The user can also save work settings to a preference file which will execute upon the loading of the program.

IntroCAD Plus comes equipped with a script language which is fully compatible with the ARexx programming language. Moreover, entire scripts can be saved or recalled with a keystroke.

IntroCAD Plus is available for all Amigas with 1MB or more of RAM; 68020/68881 version is also included. The suggested retail price is

$149.95. For a limited time, Progressive Peripherals & Software is allowing owners of the original *IntroCAD* to upgrade for $75.00.

Another of Progressive Peripherals & Software's new products, *3D Professional*, is a three dimensional modeling, rendering, and animation system, which allows objects, backgrounds, and text to be set into motion.

Scripts and key frames allow for manual or automatic control of animations. However, more precise control of objects and animations is possible through the ARexx compatible script language. *3D-Professional* also includes *Animation Station*, which is designed to facilitate editing, manipulation, and creation of special effects, and stereo sound for single or multiple animation frames.

The four disk package includes tutorial and reference manuals and an instructional video tape. *3D Professional* will ship in May with a suggested retail price of $499.95.

Progressive Peripherals & Software
464 Kalamath St.
Denver, CO 80204
(303) 825-4144

Dr. Ami and Barney Bear

Coming soon is *Dr. Ami;* this memory and hard drive diagnostic utility system, which consists of two programs, *Memory Doctor* and *Drive Doctor,* is designed for the average Amiga user. *Memory Doctor* will scan all system and expansion memory, locate and identify defective and incorrectly seated chips, and map out bad memory locations. *Drive Doctor* will scan all disk sectors, locate and identify sectors with hardware and software errors, and map out bad sectors. The suggested retail price is $49.95.

Also new from Free Spirit, *Barney Bear Goes to School,* a colorful, musical game for children ages three to eight, allows young children to play and learn on the Amiga without any supervision. See review in this issue.

Free Spirit Software
P.O. Box 128
58 Noble St.
Kutztown, PA 19530
(215) 683-5609

Naval Warfare Simulation and Genetic Mutations

InnerPrise Software has added a naval warfare simulation to its list of joint efforts with Parsec Development Team. In *Operation Spruance*, you are the captain of the Spruance Class Destroyers flagship. You control the 170 meter war vessel as it performs one of five different missions in the Persian Gulf. All of the weapons, enemies, depths, beacons, and instruments in the bridge are authentic, and all factors within the fictional missions are realistic. *Operation Spruance* sells for $49.95.

Also new from InnerPrise, *The Plague* is set on a scientifically engineered breeding ground for genetically enhanced species. As a devastating plague spreads across the planet, the inhabitants become hideously mutated. You must destroy all mutant life forms before the mutants annihilate the planet. Gameplay varies over four levels with six weapons.

InnerPrise Software, Inc.
128 Cockeysville Rd.
Hunt Valley, MD 21030
(301) 785-2266

A HelpKey for the Amiga

HelpKey Development has just entered the Amiga community with its first product, *The Buddy System for DeluxePaint III*, a two disk tutorial set that guides the user through all of the features provided in *DeluxePaint III*. *The Buddy System* runs simultaneously with *DeluxePaint III* and provides information, descriptive pictures, and guided demonstrations with a click of the mouse. All features from the basic functions of the drawing tools to the advanced techniques of animation of *DeluxePaint III* are covered. The tutorial also includes demonstrations of many practical techniques such as textures and special effects.

HelpKey specializes in the area of professional computer and video consultation, research, and development with current emphasis on audio-visual, tutorial software and professional video related applications. Their goal in entering the Amiga community is to assist all types of Amiga users in achieving their desired level of expertise for various Amiga applications.

HelpKey
6671 West Indiantown Rd.
Suite 56360
Jupiter, FL 33458
(407) 694-1756

Game Utility

Nordic Power, the game utility from Data & Electronics, stops a game at the push of a button and allows the user to freeze, pack, or restart a game. The GRAPHICS function allows the user to transfer graphics or sprites into another game and merge multi-part games into a single part program and save instantaneously. The TRAINER-BRAKE feature allows games to be played in slow motion, so the user can practice his skill.

Data & Electronics
P.O. Box 3153, NL-5902 RD
Venlo, Holland

A Newcomer Applies Itself to the Amiga

Applied Engineering, an Apple peripheral marketer, announced on March 15, 1990 its entry into the Amiga hardware peripheral market. Their debut into the market features the first high-density 3.5" external disk drive; an external 2400 bps modem with optional MNP-5 and send-fax capability; an internal 2400 bps modem with optional MNP-5 and send-fax for the 2000 series; and a memory/clock card for the A500. According to Bob Carroll, Applied Engineering's President and CEO, "We've been impressed with Commodore's commitment to seriously market the Amiga line. There's an enormous opportunity for a company our size. One that has the resources--both engineering and customer service--and the willingness to invest in the market for the long term. It's an ideal fit for AE."

Applied Engineering
P.O. Box 5100
Carrollton, TX 75011
(214) 241-6060

The Buddy System runs simultaneously with DeluxePaint III and provides information, descriptive pictures, and guided demonstrations with a click of the mouse.

*The motion
of the user's hand
manipulating
virtual 3D objects
resembles
the motion of the
hand
manipulating
similar objects
in the
real world.*

Quarterback Upgrade

Central Coast software has upgraded its disk backup program, *Quarterback*. *Version 4.0* now displays hard disk volumes as well as a visual progress bar. A print catalog has been added to the menu, so the user can create an archive report after the backup is completed. *Quarterback 4.0's* additions also include a "slow" backup mode, a backup volume "test" mode, and volume numbers added to the backup volume disk ID. The update to *Quarterback* is available for $10.00 with the return of the master *Quarterback* diskette.

Central Coast Software
424 Vista Ave.
Golden, CO 80401
(303) 526-1030

DVS-Wonder

The *DVS-Wonder* by Delaware Valley Software will provide 100% compatibility with the EDS abilities of the upcoming Amiga models, while it uses the current A1000 expansion bus peripherals. It also allows the user to retain the ability to use various Kiskstart versions for compatibility with older software. The *DVS-Wonder* allows the Amiga owner to enhance the A1000 by providing:

1. 1 MB of chip RAM.
2. Motherboard memory converted to fast RAM.
3. Use of standard or enhanced Agnus.
4. Use of Enhanced Denise.
5. Software selection of one of four Kickstart ROMs.
6. A500/A2000 compatible clock with battery backup.
7. A500/A2000 compatible audio filter switch.
8. Reduction of bus noise.

Pricing for the *DVS-Wonder* begins at $124.95.

Delaware Valley Software
P.O. Box 2007
Upper Darby, PA 19082-0507
(215) 446-9227

Caligari Broadcast: Professional Animation Software

Octree Software has released *Caligari Broadcast*, a conceptual design and animation software package. The primary applications of the package are corporate presentations, industrial training, educational video, conceptual design, advertising production, interior and architectural design, broadcast and cable television production, and fine art. *Caligari* integrates all stages of a real world production cycle: conceptualization, modeling, scene building, rendering, choreography and control of video equipment for recording to VCR.

The Broadcast Rendering module will produce photo-realistic images with texture mapping, environment mapping, shadows, and anti-aliasing using 16.7 million colors. The renderer includes Gouraud, Phong, metal, and environment shaders with a translucency option.

Caligari does not incorporate a window based environment; the user's actions are performed in virtual three dimensional space. This space is an approximation of the everyday physical world. The user can move, rotate, scale, and modify 3D objects simply by moving the mouse cursor and watching the scene change as he moves the mouse.

The motion of the user's hand manipulating virtual 3D objects resembles the motion of the hand manipulating similar objects in the real world. Octree Software boasts that there is no learning time necessary for using the system, since the user does not have to master any new skills.

For the consumer market, Octree has introduced a $249.00 version of *Caligari* without animation capabilities. The list price for a full production system software with broadcast quality output and the Object Design Module is $3,495.00.

Octree Software
311 West 43 St., Suite 904
New York, NY 10036
(212) 262-3116

Name

Address

A.X. Magazine

6820 DISTRIBUTION DRIVE
BELTSVILLE, MD 20705

Fold into thirds with this side on the outside.

WE VALUE YOUR OPINION, SO PLEASE GIVE US ANY SUGGESTIONS BELOW.

The Founding of the Amiga Developers' Association

By: Steve Gillmor

The Amiga community took an important step forward in Washington D.C. when it elected an Executive Board to head the newly founded Amiga Developers' Association. The ADA was the brainchild of Mike Halvorson, who heads Impulse, Inc., the Minneapolis-based software and hardware developer (*Turbo Silver, VoRecOne, VD-1 Framebuffer*). Halvorson's idea was to create a group that represents a unified voice that speaks directly and effectively to Commodore and to the press--both Amiga specific and industry-wide.

AmigaWorld Magazine fleshed this idea out, created a by-laws structure, incorporated a non-profit organization in all 50 states, and hosted an initial get-together at the Dupont Plaza Hotel the day before AmiExpo. A mailing was sent out prior to the meeting and a list of potential nominees was assembled to fill a five person executive board.

Commodore's President of U.S. Operations, Harry Copperman, spoke to the assembled group about the role of the ADA in communicating the needs, desires, and concerns of Amiga developers, users, and others to Commodore. Copperman also spoke about Commodore's five point plan for this crucial year of Amiga development. CBM plans to:

1. Enhance Commodore's image by linking it directly to the Amiga product.

2. Lead with proprietary technology, especially in the United States, while continuing to take advantage of strong MS-DOS line sales overseas.

3. Recruit new distribution and enter into new target markets like the Federal government environment.

4. Solidify Amiga's position in the educational market by filling the void created by Apple's abandonment of the Apple II line.

5. Clean up customer support and satisfaction, answer the phones, and encourage an environment for repeat business.

Jeff Scherb, CATS Vice President, and hand picked representative to the developer community, was introduced at the meeting. Scherb spoke about Commodore's commitment to the Amiga line.

The following officers were elected at the meeting:

Mike Halvorson, Impulse, Inc., Chairman
Andrea Geiger, TelMak, First Vice-Chairman
Melissa Jordan Grey, Blue Ribbon Bakery,
    Second Vice-Chairman
Bruce Benesh, Applied Engineering, Treasurer
Rick Rodriguez, VRS Media, Secretary

Developers discussed the most important concerns and came up with the following list: international marketing; development of an ADA endorsement system/seal of approval; developers product exchange; anti-piracy/copy protection plan; distribution; cooperative purchasing; standardization of interface/look and feel; international liaison; marketing research; legal advice; Commodore liaison; "evangelism" committee; user group liaison; trade show presence.

In the time since the Washington launch of the ADA, many more concerns have developed. The announcement of the Amiga 3000, the inclusion of Operating System 2.0, and Commodore's authoring system *AmigaVision* in a "bundled" MultiMedia Platform, signals the next phase in the Amiga's evolution. ARexx's inclusion in OS 2.0 means that the Amiga's ability to function as a desktop video workstation will be strengthened, enabling most if not all programs to share data and "look-and-feel" in what appears to the user as one "super-application." The rise of authoring systems technology like *CanDo, UltraCard, AmigaVision,* and others opens an era of user-defined applications that can speak directly to the many unique market niches the Amiga can service.

Finally, a unified voice from the Amiga community?

Curiosity Won't Kill This Bear!

By: Joe DiCara

As you might guess, *Barney Bear Goes To School*, by Free Spirit Software, is an educational game intended for children of preschool and kindergarten age. In this game, Free Spirit Software has created a program intended to challenge a child's natural curiosity, while developing his ability to interact with the computer. The game is divided into two parts: the story and the school room. The story has a lesson or two for the child, while the school room uses two games and a coloring book as teaching tools. Through experimentation and exploration of game sections, screens and options, a child is introduced to the alphabet, colors, numbers, objects, shapes, and words.

Educational programs like *Barney Bear* are

not new to the Amiga. A similar look and feel can be found in many early Amiga programs designed for children. *Barney Bear* sets itself apart from the rest in that it effectively utilizes many of the Amiga's advanced features, especially multi-tasking and speech capability.

With games of this type the ability to load quickly and move smoothly through the program is essential. Unless the next picture, word or sound is loaded in a timely manner the program runs the risk of losing the child's interest. This is where we see multi-tasking put to good use. You might notice that while a sound or tune is playing, the disk will be accessed for more data or the next picture--that's multi-tasking at work. Loading one of the two disks into memory speeds up the program. While the benefits are obvious, this also means

the game only runs correctly on Amigas with at least 1MB of memory. On the plus side, only one disk drive is required; therefore, operation is smooth and free of disk-swapping.

Amiga speech is used very effectively and is one of the best implementations I've yet heard. Pronunciation is usually very clear, with voice inflection used well to emphasize the subject. As a compliment to speech, clean digitized sounds are used effectively. Perhaps the only area of disappointment is the artwork. All the art is done in low-resolution mode. While adequate, the detail, perspective, and use of colors are not up to the highest Amiga standards.

Its Time for School, Barney!

The program is introduced with calliope music and the Amiga's best male voice. At this point, the child is offered the option to hear the story of Barney Bear or go directly to the school room. A click of the appropriate mouse button selects the path. Let's take the full tour.

In the story, the child is allowed to explore Barney's bedroom and closet and the kitchen; he is finally given a lecture on crossing the street safely. Each screen requires some action by the child. Most children quickly learn the operation of the mouse, but even if they miss everything, the Amiga voice keeps prompting and encouraging. Soon, point and click becomes second nature.

At this point the game enters the school room. Again Amiga welcomes the youngster and invites exploration. This screen is actually the menu to the main program and allows selection of 13 objects or activities. This is the list of selectable items: alphabet, numbers, words on the blackboard, numbers on the blackboard, attendance book, apple, bell, toy train, truck, drum, blocks, paints and a picture on the easel. Each selection teaches something about shapes, colors, letters, or numbers.

A is for Apple

If the child selects the alphabet, Amiga recites the alphabet and then, starting with A, pronounces the letter while displaying a corresponding picture and word. It then
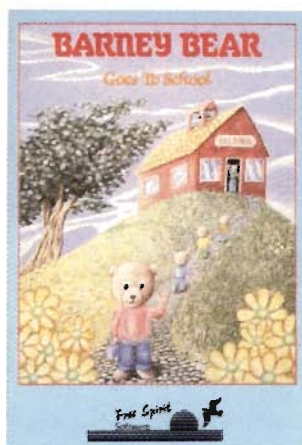
explains that A is for apple, B is for ball, and so on. These pictures and words are also used in the first game--*Spell It*.

When selected, *Spell It* randomly shows a picture, its matching word, pronounces the word, spells it, then asks the child to type the correct spelling. The program pronounces each letter only after the correct key is typed. A nice touch here allows the child to type ahead. After three words the child is brought back to the school room.

Selecting the numbers on the blackboard starts the *How Many* game. This program randomly displays one to ten objects along with the numbers from one to ten and asks how many apples or zebras are shown. After three rounds the child is again returned to the school room.

The final activity available is the paint easel. Selecting the paint jars teaches color words. Selecting the picture sends us to a paint program. Here the child can select from eighteen pictures and color them as desired.

Parting Comments

The acid test for all programs of this type is: can a child use the program, can the program hold the child's interest, and most importantly, does the program teach anything? *Barney Bear* is successful in all points. The neighbors' kids were invited to try out the *Bear*. The hours of giggles and requests to play it again are the proof.
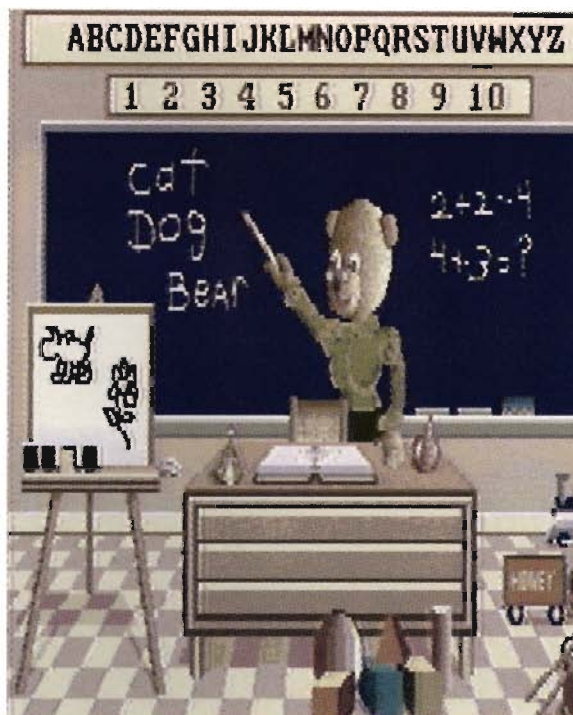
Barney Bear Goes to School
$34.95
Free Spirit Software
P.O. Box 128
58 Noble St.
Kutztown, PA 19530
(215)683-5609

The schoolroom is the main menu of the program. Thirteen of the objects in this picture select another screen.

the manual. After reading the manual from cover to cover, which usually takes about two hours (except with programming languages), I work with the program for another hour or two. I now usually have enough of a feel for the product, to go back through the manual and outline it.

The next step is to work with the program for about four weeks, on and off, and see how well it performs over time. It takes time to learn enough about a program to correctly write about it. You don't have to spend all of your time working with the program; work with it a for a couple of days and let it sit for a couple of days--the same way most people will use a new program. (If I like the program, I contact one of the magazines and see if they would like either an article or a review of the product.) As you can see, this method allows you to examine more than one product at a time, depending on how much time you are willing to spend working on articles. Work with the type of software you are most interested in, so that it is easy to spend the necessary time with the product. If you like word processors or other productivity software, make these programs your first concern.

When writing the article, address the questions people need answered about product features: Does the word processor save ASCII files? How compatible is the animation file with another animator program? Does the product work under WorkBench 1.2, 1.3, and ARP?

Work with the type of software you are most interested in, so that it is easy to spend the necessary time with the product.

Does the program use music or sound? Do you need to reboot the machine to exit the program? Can you multi-task with the product? These are just a few important and specific questions you need to answer in your article. You should also address product hardware restrictions (is it limited to machines with 1MB ?), owner manual quality and ease of use (is the index accurate?), customer support (can you contact people who know the answers to your questions?), product installation (hard disk installable?), and any bugs you find. BE THOROUGH. When working with database programs, work with databases from 10 to 1000 records, and generate tables showing its performance at the different record sizes. Do comparisons of products when possible--such as compiling speed, code size or memory requirements.

Magazines generally require you to send an ASCII text file on disk and a printed copy of the article. Place the disk inside a piece of folded cardboard or a padded envelope for protection while going through the mail. I use a legal-sized mailing envelope, to hold the disk and printed article, so the printed copy is not folded, and I mark the outside of the envelope with the words: "Magnetic Media--Do Not X-Ray." I also have the printed copy double-spaced, so the editors can easily make any needed corrections. Rare is the article that won't need at least a couple of editorial changes, so double-spacing helps the editors neatly tune-up your article. Do not expect to see a word-for-word copy of your article in the

Guidelines for Product Reviews and Tutorials

Here are responsibility guidelines I follow for each article:

1. I am responsible for providing accurate and unbiased information to the readers of the magazine. Many people base their Amiga product purchasing decisions on magazine reviews; before a person spends $50 to $500, he wants to know all about that product. If you ignore or miss major faults in a product, the reader may waste his money and you may have misled your audience. On the other hand, if I don't like a specific product feature myself, I keep an open mind and ask others that

use the product their opinions before making a final judgement. I am only one person and cannot always see all the advantages and disadvantages of a product feature.

2. I am responsible for providing an article that does not harm and possibly enhances, the image of the magazine that is publishing my work. If the editor of a magazine likes an article enough to publish it, I feel it is a compliment. Be accurate and fair so that readers will not question the magazine's credibility. As most editors are busy trying to get the next issue out, you will not endear yourself to an editor that has to spend time examining the product you wrote about, and see if you goofed up!

3. I am responsible for providing software developers with an honest and realistic view of their products. I have yet to find a single Amiga developer who was deliberately releasing bad merchandise. When in doubt, call and ask the developer to explain his reasons for anything you find questionable. If a program constantly brings up the GURU, there may be a hardware incompatibility problem; it is best to find out exactly why there is a problem, and then report it so the readers can judge for themselves. As a programmer, I understand that it is difficult to produce bug-free software. All the developers I have dealt with want to know if you see any problems so they can correct them. ◭

magazine. Editors are there to correct grammatical errors and clarity problems, and they will do just that, so don't be surprised or offended.

If you are going to write articles for a magazine, you will definitely need a word processor. You don't need an expensive one; as long as it generates ASCII text files, it will suffice. Of course, the more expensive word processors are loaded with features that are desirable, but you can live without them for awhile. You may find features such as a spell checker, grammar checker, and an automatic backup option, very useful and you may want to add them on later.

CONCLUSIONS

There are many Amiga magazines to submit articles to. Your best bet is to examine your favorite magazine, and then call and see if they accept free-lance articles. Most magazines have Author's Submission Guidelines, a list of dos and don'ts. Request a copy of these guidelines if you seriously want to write an article. You can find the phone numbers for the editorial offices of a magazine on its masthead. Consider both the paper and disk-based magazines; they all have large markets and need many articles to fill them. Magazine pay rates vary a great deal, so ask the magazine about their rates and pay schedules. Also, be aware that most magazines accept articles now for far-in-the-future issues, so it will be a while before you see any money, but don't give up--just be patient!

What ever your reason, if you want to write for an Amiga magazine, just do it. It takes a little work, but is well worth the effort to most writers. Writers draw a considerable amount of criticism, so be prepared for good and bad remarks about your articles. There will always be a diversity of opinions, and you will certainly find people willing to agree with or dispute your findings. Remember, if an editor likes your article enough to publish it and pay you for it, it can't be too bad. Don't get discouraged by remarks made by others, and keep on writing!

Editors' Note: Now that Mike has told you how to do it, just do it! Send submissions for A.X. Magazine's Amiga Software and Information, GRAf/x Magazine, and The Amiga Insider to:

Hahn-Wallace Publishing Group
Editorial Department
6820 Distribution Dr.
Beltsville, MD 20705
(301)595-0950

It takes time to learn enough about a program to correctly write about it.

Editorial Comment on Grammar Checkers and Spell Checkers

Although grammar and spell checkers are a handy tool for writers, they are no substitute for human editing. The computer program can scan a document for digressions from grammatical rules and spelling conformities, but because the computer does not understand the text, it cannot really edit. Your spouse, date, parent, child, or friend may not know the difference between passive and active voice or sentence run ons and fragments, but

s/he can tell you if the writing makes sense. Your Amiga can't do that...at least not yet.

To illustrate this point we have reprinted a nonsensical paragraph here that passed through several computer spell checkers. This paragraph has shown up so many places you may have already seen it, but it makes our point so well that here it is again.

They're know miss steaks in this newsletter cause we used special soft wear witch checks your spelling. It is mower or lass a weigh too verify. How ever it can knot correct arrows in punctuation ore usage: an it will not fined words witch are miss used butt spelled rite. Four sample; a paragraph could have mini flaws but wood bee past by the spell checker. And it wont catch the sentence fragment witch you. There four, the massage is that proofreading is knot eliminated, it is berry much reek wired!

by: Alex Adams

I WANT MY DTV

Concise and easy to understand, Desktop Video Graphics are excellent for someone starting in video.

Background samples from DTV Graphics.

TELEGRAPHICS' DESKTOP VIDEO GRAPHICS

As a relative newcomer in the Amiga world, I was looking for some information about desktop video that would help me understand what all the hoopla was about. I found it in TeleGraphics' video tape series, Desktop Video Graphics. I wanted a detailed explanation of DTV and the equipment that was necessary to produce those wonderful videos I had seen done on the Amiga. Desktop Video Graphics gave me what I was looking for.

TeleGraphics' first tape, Video Graphics Techniques, gives a beginner level explanation of the steps in planning and creating very simple graphics for video. It gives basic descriptions of the differences between RGB and NTSC composite signals, explains why you need a genlock for combining signals, and provides other easy to understand background information. The tape also covers the basics of titling, special effects, and backgrounds, and gives hints about preventing problems such as chroma crawl and flicker in simple, concise terms. The tape concludes with a segment on producing simple graphs and includes hints for choosing the type of graph to use (pie, bar, line, etcetera) depending upon what you are trying to show.

The second and third tapes in the series are substantially more detailed and technical than the introductory first tape. The second tape, Color Cycling Animation, comes with a disk showing samples of work used in the tape. These samples are viewed with a paint program and can be manipulated to fit into your own videos. The video walks you through the steps in creating animation and special effects using color cycling and an IFF paint program. It gives detailed instructions and on screen examples of flow diagrams and character animations.

The third tape in the series, Digitizing for Effect, goes over the details of digitizing all sizes of two dimensional originals and three dimensional objects using *DigiView* software and hardware. The tape shows examples of different setups using a variety of cameras, lights, and connections, as well as suggestions and hints as to which combinations work best. The tape proceeds to walk you through digitizing with excellent screen shots and explanations of menu items.

Overall, the TeleGraphics tapes are very good for someone starting in desktop video. They are concise and easy to understand, and avoid computer jargon and overly technical details that could easily confuse beginners. The first tape in particular is very basic and gives a good overview of the video field that is easy for a novice to understand. However, if you are already familiar with DTV you may find this tape too simple. It does do an excellent job of explaining the basics, and

John Kelly explains color cycling.
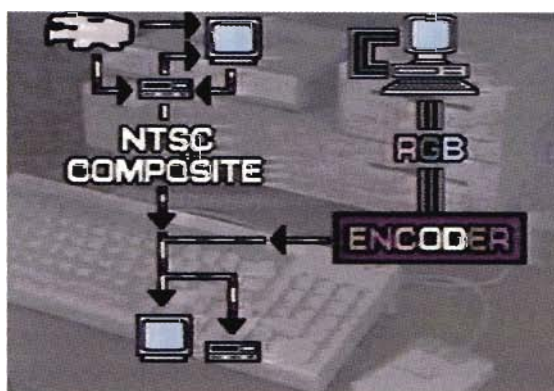
Tape 1 explains why an encoder is necessary.

I mean basics, of video and includes some helpful hints on what type of graphics are most successful. Video Graphics Techniques explains what type of titling, background, and special effects give you the best results, but these hints are very basic and concern design theory rather than details on producing these effects with the Amiga. If you are interested in general information about design and graphics, you may find this tape helpful, but if you have some video experience and understand the basic ideas of design, you may want to skip this tape and move directly to tape number two.

The second and third tapes, however, are useful to an experienced video professional, and are still a valuable resource for beginners. Their detailed and yet simplified explanations of complicated processes are intelligent and enlightening. The tapes take you through color cycling and digitizing step by step, showing you exactly what to do on own Amiga. You can stop the tape and go over details again while following the instructions on your own machine. Not only does the tape take you through the creation of simple animations, it also gives you numerous hints on creating your own original work as well as warnings and instructions about common problems that you may face. If you want to do simple animations, this may be the best purchase you could make to get you started.

Tape two also includes an animation disk with samples from the tape that you can view and, with *DeluxePaint*, personalize to fit into your own video creations. The animations are simple but effective little pieces that you may want to use for yourself, such as a marquee with moving lights and a space for your own words. Even if you choose to create your own graphics, these samples can give you some ideas that will get you going in the right direction.

Tape three is the most technical of the series and possibly the most educational. Digitizing for Effect shows you the advantages and disadvantages of different types of cameras, lighting, and hookups, including hints on how to overcome some of the problems. I was very impressed with the large number of sample setups that TeleGraphics included in the tape. After you are set up with the proper equipment, the tape walks you through the steps of digitizing a picture and explains

in detail the *DigiView* menu. This tape is a must for someone who is interested in digitizing. The in-depth comparison of cameras and equipment will help you choose the best equipment for your needs and the on-screen instructions will show you how to do the actual digitizing in a simple, easy to understand way.

These tapes are well produced and are very interesting to watch. Each tape has many samples of Amiga graphics and explains how the tricks were done. By viewing the tapes, you will quickly see why TeleGraphics is such a good teacher; they use the Amiga very effectively and their experience shows. Although the presentation is a little corny at times, it is amusing and easy to watch. The tapes are relatively short, about 30-35 minutes each, but each gives you all the information you need without losing your interest. The high quality presentation is a good indication that these people really know video and that their helpful hints come from experience. The series, with the possible exception of the first tape, is very informative and will be of great assistance to anyone in the video field.

After seeing these first tapes, I am anxious for more in the series from TeleGraphics. Keep 'em coming.

> *By viewing the tapes, you will quickly see why TeleGraphics is such a good teacher*
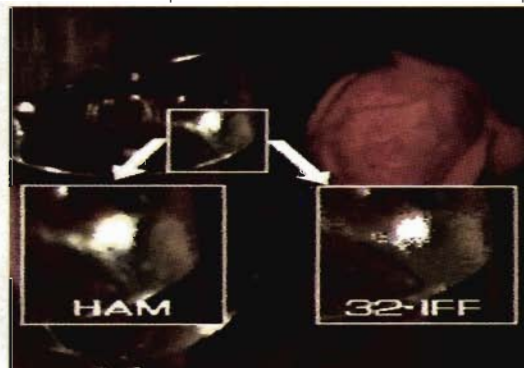
Tape 3 explains the difference in HAM and 32-IFF.
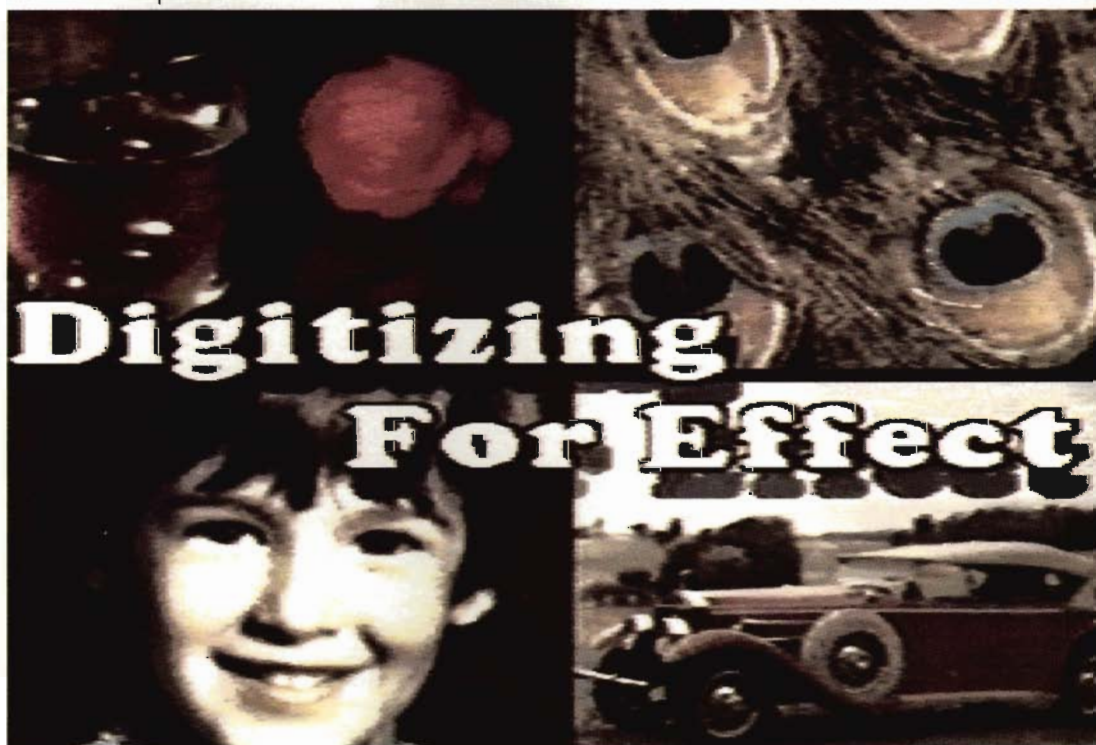
Digitizing samples from Tape 3.

...find yourself laughing and marveling at the gyrations of the two cars as they jump, bounce, careen, and fly around a most unbelievable racetrack.

example of the many small details that, when added together, establish a new high-water mark for race games. While primarily a single player game, the addition of the 11 computer opponents, competing for a championship on eight different tracks insures hours of challenging fun.

Perhaps the best two features of the game are the multi-player mode and the computerlink option. The multi-player mode allows up to eight players to race in their own league, competing individually against a computer controlled car. The computerlink option is a simple and very reliable link between two Amigas connected via the serial port and null modem cable. This option provides the ultimate in racing thrills and spills.


The Stunt Track

A New Star Is Born

Stunt Track Racer has provided my family with many hours of fun and excitement. We have played countless rounds in all player modes, including the computerlink option. In all those hours of play, the game as never locked up or failed in any way.

This is a very special piece of software that should be part of your game library. In this short review I can not adequately describe all the features and game-play of this most excellent game.

Stunt Track Racer operates on any 500, 1000, 2000, or 2500, needs a minimum of 512K, and requires OS 1.2 or higher.

Stunt Track Racer
$39.95
MicroPlay
180 Lakefront Dr.
Hunt Valley, MD 21030
(301)771-6717
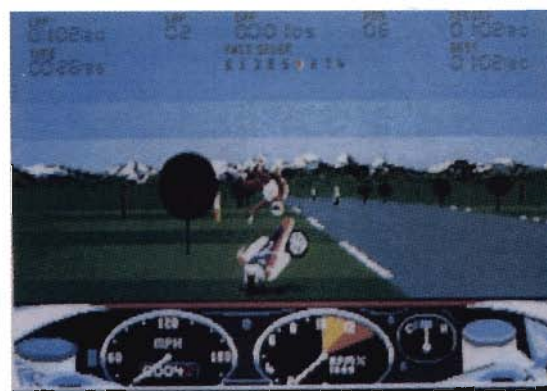
RVF Honda - a one player game.

you, then you must work harder to re-pass. It makes for a very realistic race.

Multiplayer Mode and Other Problems

This is a one player game, but the capability to race head-to-head using a data link to a second computer (Amiga or Atari) is available. Unlike most other games *RVF* uses the parallel port and an 11-wire cable. If you are not skilled in the soldering arts do not attempt to construct this cable without help. The link-up procedure is also very complex. Even when procedures were followed exactly, we could only obtain a link when our A500 was the master unit. The multiplayer feature has proven to be unreliable; but, if you can, try it.

Being a European game, *RVF's* graphics are in PAL mode, which means on our American machines the very bottom of the screen is cut off. The program refers you to the manual once for off-disk copy protection. As for system requirements, *RVF* needs 512K and OS 1.2 or better.

Conclusion

If you enjoy motor sports, especially motorcycle racing, *RVF* is for you. Graphics, sound, and game play are excellent. The variety and detail of the tracks, combined with driving demand, adds up to a challenging race simulation.

RVF Honda
$39.95
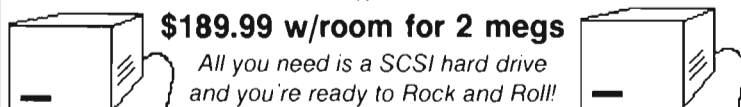MicroPlay
180 Lakefront Dr.
Hunt Valley, MD 21030
(301)771-6717

In the previous issue...

Amiga News and New Products
Amiga news from COMDEX in Chicago, the National Computer Graphics Association show in Philadelphia, and incredible new Amiga graphics boards. Article by Jay Gross

The Gossip Fence
A little bit of knowledge can be a dangerous thing. Total Fiction by Jay Gross

Stop The Presses
The latest news. Paper articles have lag times, but disks don't. Here is the latest on a new Amiga computer and more.

Virus Warning
A purported newer version of VirusX3.3 is really a virus. Important Information

WORKING DEMO: Font-Works ICON
Load an Amiga font, add a drop shadow, color, and a lot of other things. The demo does everything but save. You MUST use the icon! Included are some tips on how to make the best use of the demo version included in this issue. Have fun.

ABOUT the Font-Works Demo
PLEASE read this first, before running the Font-Works demo. The guru will haunt you if you don't!

FONTS: To Add To Your Own Workbench
Whether you are using a paint program, or wordprocessor that supports different fonts, you are probably tired of your typical, same old fonts. Here are some more fonts to add to your collection. Complete with an ICON utility to install them on your own disk.

UTILITY: Workbench Toggle
This icon driven utility will let you switch between your normal Workbench, and a HIRES Workbench screen without going to preferences, and without rebooting.

ICONS: For Your Workbench
If you are tired of looking at those same old Workbench icons, here are a few more to spruce up your Workbench screens. Simply "drag" them over to your own Workbench disk.

What's New
From the latest in hardware add-ons, a new mouse, Word Perfect's Amiga policy, software, a new president at Commodore, and more.

UTILITY: FreeSpace Indicator
This convenient icon driven utility will display in a small window exactly how much space you have free on your disk drives, memory and virtual RAM DISK (if you have one). When ever you are copying things, or just looking for a disk with a little extra space, this is the just the ticket. Program by R. L. Stockton.

DeluxePaint III: Even More "Deluxe"
Dan Silva's third generation of the king of paint programs is now shipping! Article by R. Shamms Mortier, PhD.

What's Up With Caligari?
The $2,000 3D art program readies a scaled-down version for normal humans! Article by R. Shamms Mortier, PhD.

Image Processing Overview
An overview of what Image Processing is, and exactly what it can do. Take a look at this article for a general understanding before diving into the separate articles.

The 80286 Amiga Bridgecard
All the information worth knowing about the latest in Bridgecard technology: 80286.

PageStream: New DTP On The Block
Soft-Logik's PageStream is a new desktop publishing program for the Amiga. Article with screenshot illustrations by Shamms Mortier

PageStream: A Second Opinion
Some like it, some like it not. This is another view of PageStream. Review by Hap Azziz

SPREADSHEET: Template - Expenses
This template will help you keep track of expenses on a business trip. To use this, you need Analyze! or some other 123 compatible spreadsheet program. You can use this application as is, or adapt it to your own needs.

Professional Page Template: Business Stationary
This version 1.2 template, creates business cards, letterheads, and business # 10 envelopes on your Amiga. Requires Professional Page 1.2

HARDWARE NEWS: SubSystem 500
Adding A2000 cards to an A500 with the SubSystem 500 by Pacific Peripherals Article by Jonathan Hardy

Draw Routines In Modula-II
The adventure continues continuing. More neat features to the program. Article, program, and Modula-II source by Rich Bielak

SOURCE CODE: Modula-II Draw
The .MOD and .DEF source files for the demonstration program Draw are on disk # 3 in the DRAW directory.

PROGRAM: Draw
This is the compiled, working program so far. Program by Rich Bielak

Object Oriented Programming
First of a series on C++ and object oriented programming on the Amiga. Article by John E. Ramspott

Introduction X Window System
X-Windows on the Amiga. What Is It? Who needs it? How does it Work? Article by John E. Ramspott

Using Lint
Lint is a program for helping you program in C by finding those errors. Article by Mike Hubbartt

DMCS Printouts: The Complete Story
The full story on how to get good-looking music scores out of DMCS. PART 1 Article by John Thompson

"M" - Let Your Amiga Do The Walking
This new algorithmic composer for the Amiga gets overviewed by our resident musician, Glen Deskin. He takes a look at what M is, and what it can do for you musically.

DMCS Printouts: The Story Continues
More tips and tricks for getting good-looking scores out of DMCS. PART 2 Article by John Thompson - continued from part 1

A New Standard MIDI File Format
It is about time. Now you can move sequences back and forth between different MIDI programs easily, get sequences from other computers and convert them for the Amiga and more. By Glen Deskin.

Getting Started With Amiga Music
A beginner's guide to Amiga music software. What does what, and how well. Article by Sally Ann Hubbard

Music Sampler Library
Here's how you can get disks of A.X.'s music columnist's creations. PD and shareware disk library by Sally Ann Hubbard

MUSIC: Rockin' Bach
The music you hear is the A.X. Theme Song for this issue, Rockin' Bach. Original Sonix music composition by John Thompson

MUSIC: Tropical Treats
This is music from the land of eternal summertime. Original Sonix music composition by John Thompson

BBS Spotlight
Taking a closer look at a couple of Amiga BBS's around the country. Column by Chris Bailey

Protocols Continued Again
Everything you never even wanted to know about good ol' Xmodem.

You're Cordially NOT Invited...
Mindscape's Uninvited puts you in the drivers seat. Then the fun starts... Review by Kevin C. Rohrer

Blast! ... From the Past
Incognito's Footman and Demonware's Evil Garden. Arcades revisited. Article and reviews by John E. Ramspott

Falcon vs FA/18
The latest salvos in the Amiga Flight Simulation wars. Review by Mike Hubbartt

How 'Bout Them Hobbits!
Looking around Tolkein's fantasy world with War in Middle Earth. Review by Mike Hubbartt

Three New Ones From Sega
Alien Syndrome, Outrun and Space Harrier - new Amiga arcade-style games. Article and reviews by John E. Ramspott

PROGRAM: DrawPoker ICON!
Get your odds charts and your rabbit's foot out. This is the REAL THING! Program by NEEDTHIS - run this from ICON ONLY!!!

The Meanest Streets
Double Dragon and Techno Cop, gorey games for the action-oriented. Article and reviews by John E. Ramspott

Painting Pictures Under Duress
PowerStyx: Like playing with Deluxe Paint's patygon fill option. Review by John E. Ramspott

The Ami Exchange Social Register
Here's where and how to send what and to whom at A.X. Magazine.

Artists, Get Published!
An engraved invitation to artists to submit work for use in A.X. Magazine.

The Just For Fun Department
Bud and Sally take a turn at Battle Chest. Er, Chesssssssss. Humor by Everitt Mickey

All of this and more appeared in Issue 2.3 of A.X. Magazine.
1-800-2-THE-MAG
THE Magazine For The Amiga

PRODUCT NAME: Half Megabyte Clock Calendar
MANUFACTURER: Skyles Electric Works, (415)965-1735
RETAIL PRICE: $99.95
FOR USE WITH: Amiga 500
MEMORY POPULATED WITH: 512K
EXPANDABLE TO: 512K
INCREMENTS: 512K
TYPE OF MEMORY CHIPS: 256K x 1
SPEED OF THE CHIPS: 120 nano-seconds
RAM: 16 bit
AUTO-CONFIGURING: Yes
INTERNAL OR EXTERNAL: Internal
POWER SOURCE: The computer
USER SUPPORT: Technical support telephone number, (800)227-9998
OTHER FEATURES: Battery backed clock and calendar; alternative to A501

PRODUCT NAME: 512K RAM Expansion
MANUFACTURER: Datel Computers, (800)782-9110
RETAIL PRICE: $119.95
FOR USE WITH: Amiga 500
MEMORY POPULATED WITH? 512K
EXPANDABLE TO: 1MB
INCREMENTS: 512K
TYPE OF MEMORY CHIPS: 256K x 4
SPEED OF THE CHIPS: 80 nano-seconds
RAM: 16 bit
AUTO-CONFIGURING: Yes
INTERNAL OR EXTERNAL: Internal
POWER SOURCE: The computer
USER SUPPORT: Technical support telephone number, (800)782-9110
OTHER FEATURES: N.A.

PRODUCT NAME: EXP-512
MANUFACTURER: Progressive Peripherals and Software, (303)825-4144
RETAIL PRICE: $149.95
FOR USE WITH: Amiga 500
MEMORY POPULATED WITH: None
EXPANDABLE TO: 512K
INCREMENTS: 512K
TYPE OF MEMORY CHIPS: 256K x 1
SPEED OF THE CHIPS: 150 nano-seconds
RAM: 16 bit
AUTO-CONFIGURING: Yes

INTERNAL OR EXTERNAL: Internal
POWER SOURCE: The computer
USER SUPPORT: Technical support telephone number, (303)825-4144
OTHER FEATURES: Battery backed clock and calendar

PRODUCT NAME: Supra RAM 500
MANUFACTURER: Supra Corporation, (800)727-8772
RETAIL PRICE: $149.00
FOR USE WITH: Amiga 500
MEMORY POPULATED WITH: 2MB
EXPANDABLE TO: 2MB
INCREMENTS: 2MB
TYPE OF MEMORY CHIPS: 1MB x 1
SPEED OF THE CHIPS: 120 nano-seconds
RAM: 16 bit
AUTO-CONFIGURING: Yes
INTERNAL OR EXTERNAL: External; passes the bus
POWER SOURCE: The hard drive
USER SUPPORT: None
OTHER FEATURES: Battery backed clock and calendar

PRODUCT NAME: Base Board
MANUFACTURER: Expansion Systems, (415)656-2890
RETAIL PRICE: $159.00
FOR USE WITH: Amiga 500
MEMORY POPULATED WITH: None
EXPANDABLE TO: 4MB
INCREMENTS: 512K, 1MB and up by 1MB
TYPE OF MEMORY CHIPS: 256K x 4
SPEED OF THE CHIPS: 150 nano-seconds
RAM: 16 bit
AUTO-CONFIGURING: Yes
INTERNAL OR EXTERNAL: Internal
POWER SOURCE: The computer
USER SUPPORT: Technical support telephone number, (415)656-2890
OTHER FEATURES: Fits in 501 slot

PRODUCT NAME: 2 Megabytes Internal Memory
MANUFACTURER: Skyles Electric Works, (415)965-1735
RETAIL PRICE: $249.95

FOR USE WITH: Amiga 500
MEMORY POPULATED WITH: None
EXPNADABLE TO: 2MB
INCREMENTS: 0, 512K, 1 and 2MB
TYPE OF MEMORY CHIPS: 256K x 4
SPEED OF THE CHIPS: 100 nano-seconds
RAM: 16 bit
AUTO-CONFIGURING: Yes
INTERNAL OR EXTERNAL: Internal
POWER SOURCE: The computer
USER SUPPORT: Technical support telephone number, (800)227-9998
OTHER FEATURES: N.A.

PRODUCT NAME: IN500
MANUFACTURER: Spirit Technology Corporation, (801)458-4233
RETAIL PRICE: $289.00
FOR USE WITH: Amiga 500
MEMORY POPULATED WITH: None
EXPANDABLE TO: 1.5MB
INCREMENTS: 512K
TYPE OF MEMORY CHIPS: 256K x 1
SPEED OF THE CHIPS: 150 nano-seconds or less
RAM: 16 bit
AUTO-CONFIGURING: Yes
INTERNAL OR EXTERNAL: Internal
POWER SOURCE: The computer (less than 600 milliamps)
USER SUPPORT: Technical support telephone number, (800)433-7572
OTHER FEATURES: Includes installation disk

PRODUCT NAME: SIN 500
MANUFACTURER: Spirit Technology Corporation, (800)433-7572
RETAIL PRICE: $289.00
FOR USE WITH: Amiga 500
MEMORY POPULATED WITH: None
EXPANDABLE TO: 2MB
INCREMENTS: 512K, 1 or 2MB
TYPE OF MEMORY CHIPS: 256K x 4
SPEED OF THE CHIPS: 150 nano-seconds
RAM: 16 bit
AUTO-CONFIGURING: Yes
INTERNAL OR EXTERNAL: Internal
POWER SOURCE: The computer (less than 700 milliamps) or independant
USER SUPPORT: Technical support telephone number, (800)433-7572
OTHER FEATURES: Installation disk, software support disk

PRODUCT NAME: EXP-1000
MANUFACTURER: Progressive Peripherals and Software, (303)825-4144
RETAIL PRICE: $429.95
FOR USE WITH: Amiga 500
MEMORY POPULATED WITH: None
EXPANDABLE TO: 1MB
INCREMENTS: 1MB
TYPE OF MEMORY CHIPS: 256K x 1
SPEED OF THE CHIPS: 150 nano seconds
RAM: 16 bit
AUTO-CONFIGURING: Yes
INTERNAL OR EXTERNAL: Internal
POWER SOURCE: The computer
USER SUPPORT: Technical support telephone number, (303)825-4144
OTHER FEEATURES: N.A.

PRODUCT NAME: EXP-8000+
MANUFACTURER: Progressive Peripherals and Software, (303)825-4144
RETAIL PRICE: $549.00
FOR USE WITH: Amiga 500
MEMORY POPULATED WITH: 2MB
EXPANDABLE TO: 8MB
INCREMENTS: 2, 4, and 8MB
TYPE OF MEMORY CHIPS: 1MB x 1
SPEED OF THE CHIPS: 150 nano seconds
RAM: 16 bit
AUTO-CONFIGURING: Yes
INTERNAL OR EXTERNAL? Internal
POWER SOURCE: The computer
USER SUPPORT: Technical support telephone number, (303)825-4144
OTHER FEATURES: Socket for 68881 co-procesor

PRODUCT NAME: IMPACT HC + 2 (Hard Card + 2)
MANUFACTURER: Great Valley Products, (215)889-9411
RETAIL PRICE: $599.00
FOR USE WITH: Amiga 500
MEMORY POPULATED WITH: None
EXPANDABLE TO: 2MB
INCREMENTS: 2MB
TYPE OF MEMORY CHIPS: 1MB x 8SIMMs
SPEED OF THE CHIPS: 120 nano-seconds

RAM: 16 bit
AUTO-CONFIGURING: Yes
INTERNAL OR EXTERNAL: Internal
POWER SOURCE: The computer
USER SUPPORT: Technical support telephone number, (215)889-9411
OTHER FEATURES: Requires IMPACT A500-HD/XX

PRODUCT NAME: Supra Drive RAM Expansion Module
MANUFACTURER: Supra Corporation, (800)727-8772
RETAIL PRICE: $599.00
FOR USE WITH: Amiga 500
MEMORY POPULATED WITH: None
EXPANDABLE TO: 2MB
INCREMENTS: 2MB
TYPE OF MEMORY CHIPS: 1MB x 1
SPEED OF THE CHIPS: 120 nano-seconds
RAM: 16 bit
AUTO-CONFIGURING: Yes
INTERNAL OR EXTERNAL: External; passes the bus
POWER SOURCE: The computer
USER SUPPORT: Technical support telephone number, (800)727-8772
OTHER FEATURES: $699.00 with Supra SCSI Interface

PRODUCT NAME: A500 HD
MANUFACTURER: Great Valley Products, (215)889-9411
RETAIL PRICE: $699.00
FOR USE WITH: Amiga 500
MEMORY POPULATED WITH: None
EXPANDABLE TO: 4MB
INCREMENTS: 2MB
TYPE OF MEMORY CHIPS: 1MB X 8SIMMs
SPEED OF THE CHIPS: 120 nano-seconds
RAM: 16 bit
AUTO-CONFIGURING: Yes
INTERNAL OR EXTERNAL: External; does not pass the bus
POWER SOURCE: Independant from the computer
USER SUPPORT: Technical support telephone number, (215)889-9411
OTHER FEATURES: N.A.

PRODUCT NAME: FastRAM
MANUFACTURER: Xetec, Inc., (913)827-0685
RETAIL PRICE: $99.95
FOR USE WITH: Amiga 500 and 1000
MEMORY POPULATED WITH: None
EXPANDABLE TO: 8MB
INCREMENTS: 256K
TYPE OF MEMORY CHIPS: 1MB x 8
SPEED OF THE CHIPS: 80-100 nanoseconds
RAM: 16 bit
AUTO-CONFIGURING: Yes
INTERNAL OR EXTERNAL: Internal
POWER SOURCE: The computer or independant
USER SUPPORT: Technical support telephone number, (913)827-0685
OTHER FEATURES: Can expand by varying amounts depending on SIMM

PRODUCT NAME: ToolBox Memory Board
MANUFACTURER: Expansion Systems, (415)656-2890
RETAIL PRICE: $279.95
FOR USE WITH: Amiga 500 and 1000
MEMORY POPULATED WITH: None
EXPANDABLE TO: 8MB
INCREMENTS: 512K, 1MB, and by 2 MB thereon
TYPE OF MEMORY CHIPS: 1MB x 1
SPEED OF THE CHIPS: 150 nano-seconds
RAM: 16 bit
AUTO-CONFIGURING: Yes
INTERNAL OR EXTERNAL: External; passes the bus
POWER SOURCE: Independant from the computer
USER SUPPORT: Technical support telephone number, (913)827-0685
OTHER FEATURES: Allows for use of 2000 type boards on the 500

PRODUCT NAME: X-RAM
MANUFACTURER: Spirit Technology Corporation, (801)458-4233
RETAIL PRICE: $382.00
FOR USE WITH: Amiga 500 and 1000
MEMORY POPULATED WITH: None
EXPANDABLE TO: 8MB

INCREMENTS: 2MB
TYPE OF MEMORY CHIPS: 1MB x 1
SPEED OF THE CHIPS: 100 nano-seconds
RAM: 16 bit
AUTO-CONFIGURING: Yes
INTERNAL OR EXTERNAL: Internal
POWER SOURCE: The computer (less than 600 milliamps)
USER SUPPORT: Technical support telephone number, (800)433-7572
OTHER FEATURES: N.A.

PRODUCT NAME: M103 Memory Expansion
MANUFACTURER: MicroBotics, Inc., (214)437-5330
RETAIL PRICE: $49.00
FOR USE WITH: Amiga 1000
MEMORY POPULATED WITH: None
EXPANDABLE TO: 256K
INCREMENTS: 256K
TYPE OF MEMORY CHIPS: 64K x 4
SPEED OF THE CHIPS: 150 nano-seconds
RAM: 16 bit
AUTO-CONFIGURING: No
INTERNAL OR EXTERNAL: Internal
POWER SOURCE: The computer
USER SUPPORT: Technical support telephone number, (214)437-5330
OTHER FEATURES: N.A.

PRODUCT NAME: Insider 2 for A1000
MANUFACTURER: Michigan Software, (313)348-4477
RETAIL PRICE: $150.00
FOR USE WITH: Amiga 1000
MEMORY POPULATED WITH: None
EXPANDABLE TO: 1.5MB
INCREMENTS: 512K
TYPE OF MEMORY CHIPS: 256K x 4
SPEED OF THE CHIPS: 120 nano-seconds
RAM: 16 bit
AUTO-CONFIGURING: Yes
INTERNAL OR EXTERNAL: Internal
POWER SOURCE: The computer
USER SUPPORT: Technical support telephone number, (313)348-4477
OTHER FEATURES: 10 year battery backed clock and calendar

PRODUCT NAME: Ammeg I A1000
MANUFACTURER: Kline-Tronics, (717)764-4205
RETAIL PRICE: $163.95
FOR USE WITH: Amiga 1000
MEMORY POPULATED WITH: None
EXPANDABLE TO: 1MB
INCREMENTS: 1MB
TYPE OF MEMORY CHIPS: 256K x 1
SPEED OF THE CHIPS: 150 nano-seconds
RAM: 32 bit
AUTO-CONFIGURING: Yes, under 1.2
INTERNAL OR EXTERNAL: External; does not pass the bus
POWER SOURCE: The computer
USER SUPPORT: Technical support telephone number, (717)764-4205
OTHER FEATURES: Includes a program about installing RAM chips

PRODUCT NAME: 1.5 Megabyte Internal Memory with Clock and Calendar
MANUFACTURER: Skyles Electric Works, (415)965-1735
RETAIL PRICE: $249.95
FOR USE WITH: Amiga 1000
MEMORY POPULATED WITH: None
EXPANDABLE TO: 1.5MB
INCREMENTS: 512K
TYPE OF MEMORY CHIPS: 256K x 1
SPEED OF THE CHIPS: 120 nano-seconds
RAM: 16 bit
AUTO-CONFIGURING: Yes
INTERNAL OR EXTERNAL: Internal
POWER SOURCE: The computer
USER SUPPORT: Technical support telephone number, (800)227-9998
OTHER FEATURES: N.A.

PRODUCT NAME: IN1000
MANUFACTURER: Spirit Technology Corporation, (801)458-4233
RETAIL PRICE: $289.00
FOR USE WITH: Amiga 1000
MEMORY POPULATED WITH: None
EXPANDABLE TO: 1.5MB
INCREMENTS: 512K
TYPE OF MEMORY CHIPS: 256K x 1
SPEED OF THE CHIPS: 150 nano-seconds or less
RAM: 16 bit

AUTO-CONFIGURING: Optional
INTERNAL OR EXTERNAL: Internal
POWER SOURCE: The computer (less than 600 milliamps)
USER SUPPORT: Technical support telephone number, (800)433-7572
OTHER FEATURES: Battery backed calendar and clock; software support disk with memory test and installation information

PRODUCT NAME: StarBoard 2
MANUFACTURER: MicroBotics, Inc., (214)437-5330
RETAIL PRICE: $339.00
FOR USE WITH: Amiga 1000
MEMORY POPULATED WITH: None
EXPANDABLE TO: 2MB
INCREMENTS: 1MB
TYPE OF MEMORY CHIPS: 256K x 1
SPEED OF THE CHIPS: 150 nano-seconds
RAM: 16 bit
AUTO-CONFIGURING: Yes
INTERNAL OR EXTERNAL: External; passes the bus
POWER SOURCE: The computer
USER SUPPORT: Technical support telephone number, (214)437-5330
OTHER FEATURES: Can install MultiFunction Module or SCSI Module

PRODUCT NAME: 8 Megabyte for A2000
MANUFACTURER: Skyles Electric Works, (415)965-1735
RETAIL PRICE: $200.00
FOR USE WITH: Amiga 2000
MEMORY POPULATED WITH? None
EXPANDABLE TO: 8MB
INCREMENTS: 2MB
TYPE OF MEMORY CHIPS: 1MB x 1
SPEED OF THE CHIPS: 100 nano-seconds
RAM: 16 bit
AUTO-CONFIGURING: Yes
INTERNAL OR EXTERNAL: Internal
POWER SOURCE: The computer
USER SUPPORT: Technical support telephone number, (800)227-9998
OTHER FEATURES: N.A.

PRODUCT NAME: 8-UP! (DIP)
MANUFACTURER: MicroBotics, Inc., (214)437-5330
RETAIL PRICE: $239.00
FOR USE WITH: Amiga 2000
MEMORY POPULATED WITH: None
EXPANDABLE TO: 8MB
INCREMENTS: 2MB
TYPE OF MEMORY CHIPS: 1MB x 1
SPEED OF THE CHIPS: 120 nano-seconds
RAM: 16 bit
AUTO-CONFIGURING: Yes
INTERNAL OR EXTERNAL: Internal
POWER SOURCE: The computer (800 milliamps)
USER SUPPORT: Technical support telephone number, (214)437-5330
OTHER FEATURES: Comes with memory test software

PRODUCT NAME: 8-UP! (SIMM)
MANUFACTURER: MicroBotics, Inc., (214)437-5330
RETAIL PRICE: $239.00
FOR USE WITH: Amiga 2000
MEMORY POPULATED WITH: None
EXPANDABLE TO: 8MB
INCREMENTS: 512K
TYPE OF MEMORY CHIPS: 1MB x 8
SPEED OF THE CHIPS: 120 nano-seconds
RAM: 16 bit
AUTO-CONFIGURING: Yes
INTERNAL OR EXTERNAL: Internal
POWER SOURCE: The computer (800 milliamps)
USER SUPPORT: Technical support telephone number, (214)437-5330
OTHER FEATURES: Comes with memory test software

PRODUCT NAME: Octabyte
MANUFACTURER: Spirit Technology Corporation, (801)458-4233
RETAIL PRICE: $289.00
FOR USE WITH: Amiga 2000
MEMORY POPULATED WITH: None
EXPANDABLE TO: 8MB
INCREMENTS: 2MB
TYPE OF MEMORY CHIPS: 1MB x 1
SPEED OF THE CHIPS: 100 nano-seconds
RAM: 16 bit
AUTO-CONFIGURING: Yes

INTERNAL OR EXTERNAL: Internal
POWER SOURCE: The computer (less than 600 milliamps) or independant
USER SUPPORT: Technical support telephone number, (800)433-7572
OTHER FEATURES: N.A.

PRODUCT NAME: MegaBoard 2000
MANUFACTURER: Progressive Peripherals and Software, (303)825-4144
RETAIL PRICE: $599.95
FOR USE WITH: Amiga 2000
MEMORY POPULATED WITH: None
EXPANDABLE TO: 2MB
INCREMENTS: 512K, 1 or 2MB
TYPE OF MEMORY CHIPS: 256K x 1
SPEED OF THE CHIPS: 150 nano-seconds
RAM: 16 bit
AUTO-CONFIGURING: Yes
INTERNAL OR EXTERNAL: Internal
POWER SOURCE: The computer
USER SUPPORT: Technical support telephone number, (303)825-4144
OTHER FEATURES: N.A.

PRODUCT NAME: Supra RAM 2000
MANUFACTURER: Supra Corporation, (800)727-8772
RETAIL PRICE: $599.00
FOR USE WITH: Amiga 2000
MEMORY POPULATED WITH: 2MB
EXPANDABLE TO: 8MB
INCREMENTS: 2MB
TYPE OF MEMORY CHIPS: 1MB x 1
SPEED OF THE CHIPS: 120 nano-seconds
RAM: 16 bit
AUTO-CONFIGURING: Yes
INTERNAL OR EXTERNAL: Internal
POWER SOURCE: The computer
USER SUPPORT: None
OTHER FEATURES: Unit will configure at 6MB

PRODUCT NAME: ProRAM 2000
MANUFACTURER: Progressive Peripherals and Software, (303)825-4144
RETAIL PRICE: $649.95
FOR USE WITH: Amiga 2000
MEMORY POPULATED WITH: None
EXPANDABLE TO: 8MB

INCREMENTS: 2MB
TYPE OF MEMORY CHIPS: 1MB x 1
SPEED OF THE CHIPS: 150 nano-seconds
RAM: 16 bit
AUTO-CONFIGURING: Yes
INTERNAL OR EXTERNAL: Internal
POWER SOURCE: The computer
USER SUPPORT: Technical support telephone number, (303)825-4144
OTHER FEATURES: N.A.

PRODUCT NAME: IMPACT A2000-8/X
MANUFACTURER: Great Valley Products, (215)889-9411
RETAIL PRICE: $749.00
FOR USE WITH: Amiga 2000
MEMORY POPULATED WITH: None
EXPANDABLE TO: 8MB
INCREMENTS: 2MB
TYPE OF MEMORY CHIPS: 1MB x 8SIMMs
SPEED OF THE CHIPS: 120 nano-seconds
RAM: 16 bit
AUTO-CONFIGURING: Yes
INTERNAL OR EXTERNAL: Internal
POWER SOURCE: The computer
USER SUPPORT: Technical support telephone number, (215)889-9411
OTHER FEATURES: N.A.

PRODUCT NAME: IMPACT A2000-03RAM/4
MANUFACTURER: Great Valley Products, (215)889-9411
RETAIL PRICE: $1999.00
FOR USE WITH: Amiga 2000
MEMORY POPULATED WITH: 4MB
EXPANDABLE TO: 8MB
INCREMENTS: 4MB
TYPE OF MEMORY CHIPS: 1MB x 8
SPEED OF THE CHIPS: 80 nano-seconds
RAM: 32 bit
AUTO-CONFIGURING: Yes
INTERNAL OR EXTERNAL: Internal
POWER SOURCE: The computer
USER SUPPORT: Technical support telephone number, (215)889-9411
OTHER FEATURES: Runs at 28 megaherz or higher

DIRECTIONS For The 90s

Well, it's here. You've probably seen the media flurry about the new Amiga 3000. Are you asking yourself what exactly is different about this new Amiga and what is it good for?

For a long time now, Commodore has been attempting numerous marketing strategies. For a short while, Commodore cheapened the Amiga line with lower cost parts and components, trying to reduce the overall costs, then attacked the mass market through various discount chains such as Sears. This didn't work too well--many Amiga dealers were slightly infuriated; sales did not flourish.

Then Commodore began to attack vertical markets such as desktop video, music, and desktop publishing. As for desktop video, the Amiga was clearly superior to other machines. So, the Amiga installed itself as the desktop video computer.

In the areas of desktop publishing, music and education, the Macintosh and Apple have been firmly entrenched for several years; it would take a lot of resources and time to uproot Apple.

Recently, at an unveiling of the Amiga 3000, Commodore announced its new concentration for the 1990s: multimedia.

What is multimedia? The bringing together of video, stereo, graphics and animation in a presentation of information. The heart of multimedia must be a multi-tasking computer, capable of outstanding graphics, video and stereo. Sound like the Amiga?

In the 70s, the rage was word processing and spread-sheeting; the 80s had desktop publishing. Now that the 90s are here, it seems that multimedia is taking hold--fast. Multimedia as a powerful, entertaining, educational medium. Multimedia as a new efficient means of technical and job training.

Imagine multisensory, multimedia business presentations and interactive museum and trade show displays. Now imagine an IBM PC clone handling all this, or a Macintosh. Tough to picture at a cost under tens-of-thousands-of-dollars, isn't it.

Now envision an inexpensive, 25 Mhz, fast, full stereo, video-capable Amiga sitting in the midst of this multi-mediagenic flurry. An Amiga that smoothly multi-tasks and communicates between videodisc players, stereo compact disk players, touch screens and more. Meanwhile, the operator plays PacMan in another task while the sound and graphics fly. All this gives new meaning to the phrase:

Only the Amiga Makes It Possible.

So while the market begins to slowly catch fire with multimedia; businessmen and producers begin to burn with the possibilities. Leading in this market will be none other than the Amiga. Once again, with that machine sitting on your desk, you will be years beyond the rest of the computer community.

So what about this new Amiga 3000? Does it make my Amiga 2000 or 500 obsolete? Can my current Amiga do multimedia? What do those new chips do? Can I put them in my current Amiga? Should I upgrade to an Amiga 3000? Can I get this new Workbench 2.0 to work on my Amiga 500 or 2000? Is Workbench 2.0 a hardware upgrade?

These are natural questions that come to mind amidst all that is going on. In the next several issues of A.X., we will be discussing some of these topics, among others. But for now, if you must know some of the answers...

Nice, no, yes, lots, yes, maybe, yes, and yes.

A Review

Baud Bandit MNP/Level 5 Plus Modem

by Cheryl Peterson

The *Baud Bandit* MNP/Level 5 modem is a 2400-baud external unit that connects to the Amiga through its external serial port. It supports several levels of error checking including MNP (Microcom Networking Protocol) Levels 2-5. Level 5 includes the ability to compress and decompress data.

The unit is the same length and width as a standard Amiga external disk drive, so it will fit comfortably on top of one. It is about an inch high and has eight indicator lights on its front panel. The on-off switch is located on the back of the unit along with the phone and serial connectors. For the color conscious out there, it is flat-black with red lights.

Installation of the unit is very simple; remove the unit from the box, attach the cable to the back of the unit, attach the other end of the cable to the serial port on the back of the Amiga, plug in a phone line. Then tell the operating system to address the serial port. A flip of a switch and it's ready to go.

Using my favorite terminal package, I had no trouble signing online using the old AT commands that I was familiar with. I tested both direct input through my keyboard and input via the terminal package with equally satisfying results. I tested several terminal programs and they all worked just fine. The AT command set made it unnecessary to even reference the manual before using the unit.

My first tests of the modem consisted of doing the normal things I do with a modem

on a daily basis. I signed on to CompuServe and downloaded a long series of messages; I uploaded answers to those messages, then downloaded some files. All at 2400 with the lowest amount of error correction. I then tried setting up my program to use Level 4 error correction; it worked equally well. Immediately after recieving the modem, I needed to spend several hours doing downloads. With almost four hours of continuous operation, the modem functioned flawlessly. I saw no errors at all in any of the large amounts of information that I downloaded over the course of a week's period of time.

When I sat down and went through the manual, I found it very well organized. The information I needed was easily identifiable. There was some interesting reading about MNP protocol: what it is and how it works. It did not go into enough detail on specific applications for the technology, but it did give the basics. I found that the documentation was quite right about the use of MNP slowing down X-modem transfers. Since both the software and the hardware are doing error-checking, the redundancy actually slows the process.

Since MNP Level 5 adds compression to the process, it is possible to get even more redundant. Briefly, if you are doing file transfers from a computer that stores its files in a compressed format (such as ARC, ZIP, or LZH), using MNP Level 5 can actually slow down the transmission speed. This is because the hardware is compressing data that has already been compressed

once. This compression can't be successful since the data is already compacted and the hardware must add more data on how to decompressed the information at the other end of the transmission. This means that the hardware at each end is wasting time compressing and decompressing data and adding more data to the bit stream.

So who would want to use an MNP modem? Anyone who connects with a networked system or who has noisy phone lines. The error-checking capabilities do help in situations where you aren't using any software error-checking for data transmissions. This includes online conferencing (such as CompuServe's CB Simulator or GEnie's Roundtable conferences), reading online messages (from a public access BBS or other electronic mail service), or polling a database on a network.

Anyone who uses their computer to access a high speed data network will see significant gains if the networked system supports Level 5 transfer protocol. Few computers on a network store their files in an archived format.

The volume on the speaker had been turned down on the *Baus Bandit* I received, so (according to the manual), I needed to adjust the volume with a small flat-head screw driver. Fortunately for me, I keep one on a shelf right next to the computer. Unfortunately for me, the speaker did not work in the unit I received. This was only a small inconvenience and did not make the unit unusable. It was a bit disconcerting,

however, since I had grown used to hearing the sound on my other 2400 baud modems. Volume control is not adjustable by the software; it would have been nice if both methods of adjustment were available.

My call to Progressive Peripherals' technical support was answered promptly. I was told that if I would send it back, they would ship me another unit within 24 hours. Or, if I preferred, they would have UPS pick up the unit at Progressive Peripherals' expense and replace the modem when it arrived to them. They also indicated that if I had bought it through a dealer, the dealer would replace the defective unit. My experience with Progressive Peripherals in the past has always been that they handle user support problems promptly.

I found the *Baud Bandit* had most of the same features I've come to expect in a modem. It's flexible, allowing many modes of operation. With the hook-switch flash ability, if you're using the modem on a PBX-type phone system, you can even have the modem transfer a call to another line. The *Baud Bandit* can also be used in a mode where it won't hang up even if the carrier is lost; this enables the unit to function with a radio system using a packet-switching signal. For those wanting to download software or communicate via a HAM radio, this is an important consideration. A section of the manual is dedicated to this topic.

A great feature of the *Baud Bandit* is the variable connect speed with automatic fallback. If you instruct the modem to connect at one speed and the receiving computer isn't working at the specified speed, the *Baud Bandit* connects anyway and then informs you of the connection speed. The connect result is sent to your computer at the speed specified in your original instruction. Therefore, if you request a 2400 baud connection and get connected at 1200 baud, the modem maintains the connection while apprising you of the situation. You can then change your terminal parameters to the correct baud rate without disconnecting and redialing.

Because of its ability to effectively communicate at greater than 2400 baud (when it is using Level 5 compression mode it can achieve significantly

A great feature of the Baud Bandit is the variable connect speed with automatic fallback.

higher throughput), the modem must have some way of supporting this accelerated rate. The *Baud Bandit*'s controls include the ability to override the automatic fallback. To use the faster speeds you may have to "lie" to your telecommunications program and tell it that your modem is running at 4800 or 9600 baud. This may take some experimentation on your part.

The internal modes provided should allow the *Baud Bandit* to be used with computer systems in the US, Canada or in Europe. European modems use a different protocol than American, and at least one of the protocols provided will connect with a foreign system.

I really liked the *Baud Bandit*. Installation was easy. The manual was informative and well-organized. So far, the modem has done everything I have asked of it. If you need an inexpensive 2400 baud modem with MNP capabilities, I think this one will suit your purposes. The price is not much higher than a standard 2400 baud modem. If I did not already have a couple 2400 baud modems, I would be inclined to buy this one.

Features: 300, 1200 and 2400 baud communication; auto-answer, auto-dial, Hayes-compatible AT command set; pulse or tone dialing; dial-tone and busy signal recognition; programmable non-volatile memory for configuration storage including 28 registers and the ability to store a frequently dialed phone number; front panel indicator lights for high speed, auto-answer, carrier detect, off hook, recieve data, send data, terminal ready and modem ready; supports Bell 103 at 300, Bell V.24 at 1200 and Bell 212A at 1200, CCITT v.21 at 300 baud, CCITT V.22 at 1200, CCITT V.22 bis at 1200 and 2400 baud; hook-switch flash capability; self-test mode.

Required additional purchase: Appropriate cable for connecting unit to computer's RS-232 port.

Baud Bandit MNP/Level 5 Plus modem
High Speed Telecomm with Error Checking
$199.95
Progressive Peripherals and Software
464 Kalamath St.
Denver, CO 80204
(303)825-4144

A Review
A Review
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A Review

inability to look around seemed to detract somewhat from my involvement in the story.

As you may have guessed already, the user interface of this program is almost entirely mouse driven. The only thing that the keyboard is really used for is for speaking to other characters. You simply point to an object and click, then click on the desired action verb from a small window. Mouse shortcuts have been provided for frequently used commands. That is, if you double click on an object, an action verb is assumed; for most objects it is "examine", for closed doors it is "open," and for open doorways it is "go." This can save a lot of time instead of having to move the mouse around on the screen to select items and verbs.

Deja Vu II comes on a single unprotected disk. A script is provided in order to install the game on your hard disk. A 14 page manual is also included to get you started. The manual explains the commands in detail, and also guides you through a sample session intended to teach you some of the intricacies of the program. The manual was written for the Mac version of this game, but the Amiga version is close enough that you can get the general concepts quite easily.

The only major problem that I had with this program was that it simply would not run with the 68030 board on my computer switched on. Whenever I attempted to run the program, the machine would immediately guru. Although this is not a major problem, the game is designed to multitask with other programs. I like to run my 68030 as often as possible, so this is an inconvenience. I suspect that other owners of A2500/30 computers (or the equivalent) will also find this to be somewhat annoying.

Aside from the problems I have discussed, *Deja Vu II* is quite an enjoyable diversion. The interface is extremely easy to use and the game world is very detailed. There is enough complexity in the plot to keep even veteran adventure game players interested for weeks. If you find the going too rough, a hint book is also available. For an enjoyable trip into the world of the private dick, I recommend *Deja Vu II*.

DejaVu II: Lost in Las Vegas
$49.95
Mindscape, Inc.
3444 Dundee Rd.
Northbrook, IL 60062
(312)480-7667

...Deja Vu II is quite an enjoyable diversion.

Draw PROGRAM

LOADING & SAVING PICTURES

Part IV of the *MODULA 2* programming tutorial

by: Richie Bielak

In this installment of the Modula-2 tutorial we will modify our DRAW program, so that it will be able to load and save pictures. As you know, pictures on the Amiga are saved using IFF/ILBM format. Rather than write routines to read and write IFF formated files, we will use code already written by others. In particular, we will use a Public Domain library of routines that handle all the aspects of reading and writing IFF/ILBM files.

Since the IFF routines are collected in an Amiga library, our first task will be to develop an interface between Benchmark Modula-2 and the library code. Once this is done, we can modify the DRAW program to use these routines to save and load pictures.

AMIGA LIBRARIES

To make the job of an Amiga programmer easier, useful routines are often grouped into libraries. For example, the routines used to manipulate intuitive objects (i.e. windows, screens, menus, et cetera) are found in one library. Not only do libraries save programmers' time, but they also save system memory by letting many programs share the same code. This makes a lot of sense on a multi-tasking machine, where concurrent programs use the same code.

Amiga libraries can be loaded anywhere in available memory; this method results in efficient use of system memory, but it complicates the access to the library routines. The routine starting addresses are likely to be different each time the library is loaded. Therefore, library routines are always invoked though a "jump table," described below.

When a library is opened, the address of the library structures is returned. This address is called the "base" address of the library. Preceding the base address is a table of JUMP instructions pointing to actual library routines, as pictured below:

```
JUMP rtn-N
...
JUMP rtn-3
JUMP rtn-2
JUMP rtn-1
Library Base ---> start of library structures
...
```

Therefore, to call a library routine, the application program needs to know the base address of the library and the offset of the routine's JUMP instruction in the table. Note that since the jump table is placed before the rest of the library structures, the offsets into the jump table are always negative.

This scheme of calling library routines has two important advantages. First, the library code can reside anywhere in memory. Second, if library code is modified but the jump table remains unchanged, not all application programs using the library will have to change. This second feature is very important, as library code is often corrected or expanded, yet still remains compatible with older programs.

CALLING LIBRARY ROUTINES FROM M2

The Benchmark Modula-2 compiler does not provide a direct method for calling library routines; instead, one has to imbed machine instructions into Modula-2 programs. To make calling library functions easier, it is best to write one "glue" module which contains all the required machine code. Any other modules needing the library can call the "glue" module in the usual way.

To better see how the imbedded machine code

We will modify our DRAW program, so that it will be able to load and save pictures.

looks, let's consider a detailed example. The code below calls "OpenIFF" function from the IFF library:

```
PROCEDURE OpenIFF (FileName :
        ADDRESS) : IFFFileHandle;
BEGIN
SETREG (A0, FileName);
SETREG (A6, IFFBase);
INLINE (JSRA6, -30);
RETURN ADDRESS(REG(D0))
END OpenIFF;
```

The only parameter to the "OpenIFF" function is the address of the file name string. This address must be passed in register A0 (as the documentation for the IFF library tells us). If the file is opened successfully a "handle" will be returned in register D0. (Recall that the 68000 processor has 16 registers D0 thorugh D7 for data, and A0 through A7 for addresses.)

To place a value in the processor's register, we use the procedure SETREG from module SYSTEM. For example, the statement "SETREG (A0, File-Name)" loads the address of the file name into the A0 register (A0 is a constant)."

The second SETREG instruction loads the base address of the IFF library into register A6 from the "IFFBase" variable. "IFFBase" has been set earlier by call to "OpenLibrary.

At this point we can execute a JSR (Jump to Subroutine) instruction to transfer control to the library routine. In assembler this instruction would look like this:

```
JSR -30(A6)
```

This means, jump to subroutine whose address is computed by adding the contents of A6 to -30. Since A6 contains the base address of the library, this instruction transfers control to the appropriate JUMP entry in the library jump table.

In Modula-2 we must use the INLINE procedure to place the actual instruction and the offset into the program:

```
INLINE (JSRA6, -30)
```

"JSRA6" is just a number that encodes the instruction JSR together with appropriate addressing mode (i.e. A6 relative).

Finally, when the library routine returns control to our code, we retrieve the result from register D0,

by using the function REG. As its name indicates, REG returns the contents of the specified processor register.

IFFLIBRARY MODULE

The "glue" module for the IFF library is called IFF-LIBRARY (see the disk for source files). The IFF-LIBRARY.DEF, the definition module, not only defines all the functions that are available, but also declares the types needed by some of the calls. In addition, error code constants and bit masks are also declared in the definition module.

The procedures "OpenIFFLibrary" and "CloseIFF Library" open and close the library. "OpenIFF Library" sets the variable "IFFBase." As we have seen above, this variable is needed for all the other library calls.

"OpenIFF" and "CloseIFF" procedures are used to open and close output IFF files. "NewOpenIFF" also opens an IFF file, but it lets the caller specify where in memory work buffers should be placed (i.e. public, chip memory, et cetera).

The following procedures are used for reading IFF files: "GetBMHD," "GetColorTab," "GetView-Modes" and "DecodePic." "GetBMHD"--Get Bit Map Header--obtains the information about the bit map stored in the file. The information returned includes size of the bit map and the number of bit planes. The "BitMapHeader" record declared in IFFLIBRARY.DEF shows exactly what information is returned. "GetColorTab" retrieves the color table; "GetViewModes" returns a "ViewModeSet" which describes the type of display (i.e. low/hi-res, interlace, et cetera). Finally, "DecodePic" decompresses the data representing the picture and places it in memory.

Saving an existing picture into a file is somewhat simpler. Only one procedure, "SaveBitMap," must be called. In addition, a portion of a bit map may be saved using the "SaveClip" procedure.

The last procedure in the IFFLIBRARY module is "IFFError." "IFFError" should be called to obtain an error code whenever any other call to the IFF library fails.

LOADING AND SAVING PICTURES

The two procedure that save and load pictures are found in the new module called FILES. FILES.DEF exports only two procedures "SavePicture" and "LoadPicture." Each of these procedures takes the screen pointer as a parameter

and returns TRUE if the save or load operation completed succesfully.

Since the "save" operation is easier, let us first consider the "SavePicture" procedure. After making sure that the IFF library is opened, and after getting the name for the new file, the following call performs the actual save. Note that "sp" is the pointer to the screen whose bit map is being saved.

```
WITH sp^ DO
result := SaveBitMap (LastFile,
        ADR(BitMap),
ViewPort.ColorMap^.ColorTable,
    CompressFlag);
END;
```

The first paramater, "LastFile," contains the name of the file entered by the user. The following parameters are the addresses of the screen's bit map and color table; the final parameter specifies that the data compression should be used in the stored bit map.

Loading a picture into memory is somewhat more complicated. First, we have to open the file to be loaded, then extract the information about the bit map and the colors. Finally, the compressed data has to be decoded and placed in memory. A lot more error checking needs to be done while loading, as many things can go wrong. For example, the file might not exist, or it might not be in IFF format.

Assuming that the file to be opened exists and is in proper format, the following code performs the open and obtains the bit header information:

```
VAR
fh : IFFFileHandle;
bhp : BitMapHeaderPtr;
...

fh := OpenIFF (ADR (LastFile));
bhp := GetBMHD (fh);
```

Using the information from the bit map header we can determine if the picture will "fit" in the DRAW program's screen. It will fit if the size of the bit map is not bigger than 640 by 200 pixels.

Next we can read the color table and, if the number of colors is not greater than eight, we can reset the colors for the current screen. The code below accomplishes this task:

```
count := GetColorTab (fh, ADR(colorTab));
LoadRGB4 (sp^.ViewPort, ADR(colorTab),
    count);
```

The call to "DecodePic," shown below, decompresses the picture's data and loads it into the screen's bit map:

```
result := DecodePic (fh, ADR(sp^.BitMap));
```

The load operation is completed by closing the picture file with the "CloseIFF" procedure call.

Complete code for loading an IFF picture, along with all the error checking, is found in the "Load-Picture" procedure in FILES.MOD module.

FILE REQUESTER

The FILES module uses a very simple file requester to obtain the name of the file to load or save. Two buttons ("OK" and "Cancel") and a string gadget displayed in a window comprise the requester. As before, the "SimpleWindows" and "SimpleGadgets" modules are used to create this requester.

The code for the file requester is found in the "Get-FileName" procedure (FILE module). This procedure sets up the requester window and gets the file name typed by the user.

To obtain a sequence of characters from the user we must use a string gadget. A string gadget is created by calling the "AddGadgetString" procedure from the "SimpleGadgets" module:

```
AddGadgetString (20, 30,
        BuffSize-1, BuffSize,
        ADR(LastFile));
```

The first two parameters above specify the position of the gadget in the window. Next, the size of the display field and the size of the character buffer are passed. The final parameter is the initial value to be displayed.

Our requester should return a value to the program when either the "OK" or "Cancel" buttons are clicked, or if the RETURN key is pressed at the end of a file name. To make sure that our program receives an IDCMP message when the RETURN is hit, we have to modify the activation flags in the string gadget. The line below accomplishes this (assuming

"LastGadget" points to the string gadget record):

LastGadget^.Activation :=GadgetActivation:=
Set {RelVerify};

The characters typed into the string gadget by the user are placed into a special buffer, which is allocated by the "AddGadgetString" procedure. In order to process the user's input we must gain access to this buffer. The pointer is found in the "SpecialInfo" record, attached to the string gadget's record. Assuming that "sip" is declared to be "StringInfo Ptr," the following code obtains the pointer to the character buffer:

sip := LastGadget^.SpecialInfo;
buffp := sip^.Buffer;

If the user presses RETURN or clicks on the OK button, then the contents of the character buffer are copied into the "LastFile" variable using this assigment:

LastFile := buffp^;

The remainder of "GetFileName" is similar to the gadget handling code that was discussed in more detail in previous installments of DRAW.

SHOWERROR MODULE

One additional module has been introduced in this version of the DRAW program. This module, called SHOWERROR, is used to display an error message. The procedure "Error," exported by SHOWERROR, takes two parameters: a screen pointer and an error string. The error message is displayed in a window on the specified screen. The window contains a single "Continue" button. The code for the "Error" procedure is straight forward; it follows the familiar pattern of routines that handle IDCMP messages.

SUMMARY

This completes this installment of our Modula-2 tutorial. Next time we will improve our file requester, by using the ARP library. [A]
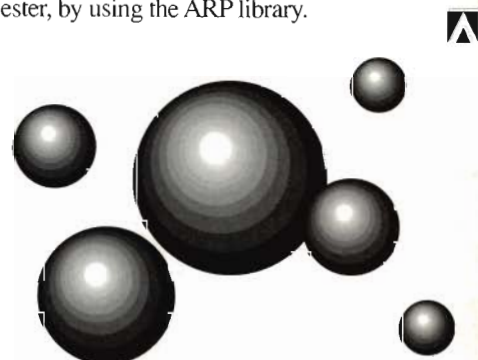
both in front and behind objects on the rig. The characters even recoil and bleed after being shot. Obviously, a great deal of effort went into making this game as realistic as possible.

The lower portion of the screen contains status information. Important things such as time remaining until warhead detonation (the game starts with about 25 minutes on the clock), your character's status (number of hits) and the current floor level, are displayed here. Types of weapons available, the weapon currently selected, rounds of ammunition remaining and other supply information are also displayed in this portion of the screen.

Selection of weapons is easily accomplished by pressing either F1, F2 or F3, depending on the number of weapons available. Your character can fire while standing or crouched. You can also make your character tumble to a crouched firing position while running. And the game can be paused (in case the phone rings) by pressing the "P" key.

The game comes on a single copy protected disk; although it can't be copied using the AmigaDOS "Diskcopy" command, the commercial disk duplicating programs can copy it with ease. This game, like many others, does not work with a GVP 68030 accelerator board turned on. A 14 page game manual is also included which gives a detailed chronology of events leading up to scenario, as well as instructions on how to play. Some hints and tips are included to help you get going. The manual, although brief, is well written and explains most of the game controls, except how to make the elevators stop at the floor you want. (Pressing the joystick "fire" button will make the elevator stop at the floor it is approaching.)

For excellent fast-paced action, this game is a real winner! The sound and graphics are outstanding, and the two combine with the plot to make this one of the most compelling games I've seen in a long time. Strategy? This kind of game doesn't really need it. If you enjoy shoot-'em-ups, you'll surely love this one. Adding tactical elements like the dependence upon ammunition and absolute time limit just enhances the fun. Besides, isn't it time you did your part to help stop terrorism?   ◣

Persian Gulf Inferno
$49.95
Innerprise Software, Inc.
128 Cockeysville Road
Hunt Valley, MD 21030
1(301)785-2266

Can you reassemble this puzzle?

flip. This may be necessary in order to solve the puzzle.

The program can display any 320x200 pixel picture as long as it contains no more than 32 colors. I wish that the authors would have permitted hi-res (640x200) and interlaced (320x400 or 640x400) pictures as well. An obnoxious soundtrack is included, fortunately it can be turned off before it becomes too annoying. The audio clues can also be turned off if so desired. The program permits you to choose between three different audio tones for your audio clues.

The only thing that I disliked about *Jigsaw!* was the form of copy protection that is used. The disk is totally unprotected; in fact, the manual encourages that a backup copy of the disk be made. The problem lies in the code that must be typed in each time the program is started. The code is a six digit number which must be read from a four page code manual. No problem, right? Well, the manual uses purple ink on dark red paper. This low contrast color combination was chosen to prevent people from taking the manual to the nearest photocopy machine. Unfortunately, unless your computer is in a very well lighted area, you may not be able to read the numbers.

If you are in the market for a game that does more than just entertain, look closely at *Jigsaw!* While it doesn't teach how to read or do math, it does teach important conceptual skills. Besides, it is fun! With the ability to select the number of pieces and difficulty of the puzzles, this game can tailor to just about any age group and skill level. The ability to load alternate pictures helps to prevent boredom with this program. And because it comes from Britannica, you can trust it.   ◣

Jigsaw! The Ultimate Electronic Puzzle
$39.95
Britannica Software
345 Fourth St.
San Francisco, CA 94107
(800)572-2272

For excellent fast-paced action, Persian Gulf is a real winner!

Commodore has expressed a desire and willingness to listen to a coordinated voice represented by the Amiga Developers' Association; the ADA's task is to gather, organize, and address the flow of information and ideas that, up until now, have had no place to accumulate. The Board of Directors have initiated an inaugural membership drive to bring to the table not just developers, but also all Amiga enthusiasts as associate members.

I (Steve Gillmor) was appointed Director of Communications to the Board of Directors, and have been setting up telecommunications facilities including FAX transmissions and the various on-line networks. Associate members will be able to communicate with the ADA and each other via a special ADA Zone area on American PeopleLink. The ADA newsletter will be available soon and will contain important information about standardization issues regarding OS 2.0, marketing, packaging, press relations, and the input pipeline to Commodore. The key ingredient that the Amiga has provided to a whole new class of users is access. The ADA must provide access to the developer, Commodore, and the computing community at large. Commodore is used to dealing with this type of organization; similar groups have had an enormous impact on other platforms, particularly in the Apple/MacIntosh community.

The Amiga has a great story to tell, but it needs structure, human interest, and a common voice. The Amiga Developers' Association is simply the sum of its parts; it's there to serve the community, not reign over it. It's each developer's responsibility to join, participate in committees that reflect its interests and talents, and create the power needed to effect change. The Amiga has survived because of its unique properties and the crucial contributions of its third-party developers, but it requires a cohesive vision and a collaborative effort with Commodore to succeed and prosper. Call the ADA at 800-328-0184 or write Mike Halvorson at Impulse, Inc., 6870 Shingle Creek Parkway, Minneapolis, MN 55430.

A Sign of the Times

History option you can also see how the other players bet and how well they are doing. There are also statistics for each that show average profit, percentage of wins, largest win and that bettor's risk index. At this point you can return to the Main Menu and run another race or quit the game, knowing that when you resume, all of the statistics, options and conditions will be reloaded and used again.

Omni-Play Horse Racing is a challenging simulation which requires good judgment and a great deal of strategy. Considerable work is required to sift through the horses' performance statistics to attempt to pick the winner. To succeed, you must often combine your judgment with the tips of the experts that you purchase. The manual is excellent as it steps through the game in great detail providing notes and tips on how to win. If you get tired of the basic game, you always have the option of purchasing additional, reasonably priced modules. The animation and graphics are well done and actually give you the feeling of being at the track. The disk is not copy protected and can easily be installed on a hard drive. The game play itself can often be slow and grueling, as much more is involved than simply displaying animated horses circling a racetrack. But if you enjoy a challenge, *Omni-Play Horse Racing* will provide you with endless hours of fun.

Omni-Play (TM) Horse Racing
$49.95
Stable Owners Option Module
$19.95
Track 2 Support Disk
$14.95
DesignStar Consultants, Inc.
SportTime Division
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...Omni-Play Horse Racing will provide you with endless hours of fun.

Stable Owners Option Module

Omni-Play Horse Racing was specifically designed to be expandable and there will be numerous optional game modules available which can easily be integrated into the master system. The *Stable Owners Module* is one such module that is presently available. *Stable Owners* allows up to four live people to play the role of horse owners; they can enter their horses into the races. As in the basic game, *Stable Owners* has its own set of win conditions which you can set. These conditions include: a stable earning a specific amount of money; having the most cash at the end of a meet (250 racing days); or winning the ultimate Sport-Time Derby, a special race at the end of the meet where invitations are extended only to the top four stables.

Before you begin, you may select a difficulty level. The easiest limits you to entering no more than one of your horses per race per day. As the levels become more difficult, the program imposes more restrictions regarding the frequency of entering your horses. Next you and the other eight stables must select fourteen horses from the 128 provided. You can do this manually by rotation, or let the computer do it for you. Once you have a full stable of horses, you must decide which ones you will enter in a particular race. This will depend upon the length of the race, the track condition and the quality of the race. As each type of race requires you to pay an entry fee ranging from $100 to $75,000, you must make certain strategic decisions or quickly face bankruptcy. You must also select a jockey who, depending on how good he is, will receive from six to 20 percent of the horse's winnings. Once you have selected your jockey and entered your horse, you may switch back to the Handicapper's Tournament game to place your bets and run the race. When playing with the *Stable Owners Module*, you make money by placing winning-bets, as well as by owning the horse that finish in the money.

SportTime has already announced upcoming releases of several additional modules which will further enhance the simulation. The *Jockey Competition Module* will allow you to "ride" a selected horse as the race is run. The *Historical Racing Module* will provide a selection of 128 championship horses such as Secretariat and Man-O-War, and let you run what-if races. A *Prediction Analysis Module* will not only analyze your betting performance, but will take actual data from newspapers and predict the odds of those real horses running in real races.

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